An Architectural Investigation into the Relationship between Doric Temple Architecture and Identity in the Archaic and Classical Periods.

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Abstract

The predominant approach to the study of Doric temple architecture during the twentieth century has been the evolution model, which connects a temple's design directly with its date of construction (Dinsmoor 1950; Lawrence 1996). Thus, the model allows temples to be dated to distinct decades, based upon their 'key' proportions, such as the length of the plan. B.A. Barletta's (2011: 629) recent article entitled *State of the Discipline: Greek Architecture* discussed the need for constant reassessment of the proportions of Doric temples and their chronology, particularly in light of recent discoveries and new publications, suggesting that a reconsideration of the evolution model was now required.

In the same article, Barletta (2011: 630) discussed the growing trend amongst classical archaeologists towards analysing the social role of temples. With the exception of the temple sculpture, which has generally been studied separately (Marconi 2007; Østby 2009; Maggidis 2009: 92-93), the move towards a social understanding of the temple has had little effect upon the study of the buildings' designs. Although a number of studies have begun to investigate the role of architectural design in conveying meaning (Snodgrass 1986; Østby 2005), the studies are limited, both chronologically and geographically, by the constraints of the evolution model.

Given the 'mathematical' image of classical architecture studies, and the subject's "current lack of academic popularity" (Snodgrass 2007: 24), it is perhaps not surprising that a review of the evolution model and the social role of architectural design are long overdue. To this end, this study re-analyses the connection between date and design, demonstrating that a temple's design was not entirely controlled by the date of its construction. Rather, temple design was affected by the sub-regional inter-group competition which was so prevalent in sanctuaries during the archaic and classical periods and the expression of identity on behalf of the different dedicatory groups.

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Architectural Abbreviations

FoW	Foundation Width
FoL	Foundation Length
SW	Stylobate Width
SL	Stylobate Length
KrSt	Krepidoma Steps
CeW	Cella Width
CeL	Cella Length
FC	Façade Columns
FlC	Flank Columns
FS	Façade Axial Spacing
FlS	Flank Axial Spacing
Rmp	Ramp
DF	Double Front
LD	Lower Diameter
CH	Column Height
UD	Upper Diameter
AbH	Abacus Height
AbW	Abacus Width
EH	Echinus Height
NH	Necking (including Annulets) Height
ArH	Architrave Height
FrH	Frieze Height
EntH	Entablature Height
MW	Metope Width
TW	Triglyph Width
Flts	Flutes
ScuM	Sculpted Metopes
ScuP	Sculpted Pediment(s)
ScuC	Sculpture above the Cella Porches
ScuO	Sculpture (Other)

Glossary

(*After* Dinsmoor 1950 and Coulton 1977)

Abacus	The uppermost member of the capital.
Anagrapheus	A template used to specify the design of a particular element.
Adyton	The innermost room of a temple generally separated from the cella by a wall with a doorway.
Annulet	A projecting ring, generally one of several at the bottom of a Doric echinus.
Architrave	The lowest member of the Doric entablature.
Arris	A sharp edge formed by two surfaces meeting at an external angle as in the flutings of the Doric column.
Axial Spacing	Distance from column axis to column axis.
Cella	The central building of a Doric peripteral temple, usually comprising a pronaos, naos and opisthodomos or adyton.
Double Contraction	Two axial spacings from the corner are narrowed in order to place a triglyph over the corner.
Echinus	The convex moulding of circular plan which supports the abacus of a Doric capital.
Entablature	The superstructure carried by the peristyle columns, usually divided into three parts, the architrave, the frieze and the geison.
Entasis	The slight convex curve given to the arris of a Doric column.
Epistatai	A committee chosen to oversee the design of a temple.
Euthynteria	The Greek term for the top course of the foundations, used as a levelling course.
Flutes	The vertical channels employed in the shafts of the Doric columns.
Frieze	The middle member of the Doric entablature composed of repeating triglyphs and metopes.
Geison	The Greek term for the cornice, the upper member of the entablature.
Guttae	Small pendant tapering cylinders like pegs under the triglyphs and mutules of a Doric entablature.
Hypotrachelium	One or more grooves under the necking of the Doric capital which mask the junction of capital and shaft.
Krepidoma	The stepped platform of the Doric peripteral temple.
Metope	The sunken panels, often square in shape, between the triglyphs in the Doric frieze.
Mutules	A projecting slab on the soffit of the Doric geison.
Naos	The main room inside the Doric temple, containing the cult statue.
Opisthodomos	The recessed porch in the rear of a Doric temple.
Panhellenic	Relating to all Greeks.
Paradeigma	Specimen of an element (such as a capital), which would be repeated by the builders, and were eventually incorporated into the finished building.
Pediment	The triangular termination of a ridge roof, occasionally containing relief sculpture.
Peristyle	A covered colonnade which surrounds a temple.
Pronaos	The porch in-front of the naos.
Pteroma	The passage between the walls of the cella and the peristyle colonnade.
Ramp	A sloping causeway or a sloping approach to a temple engulfing the steps.
Regula	Projecting bar below the taenia.
Shaft	The main body of a column, between the base and the capital.

Sima	The terracotta or marble gutter of a building, on the gables and sometimes on the flanks; it may or may not be moulded; if it occurs on the flanks it is provided with outlets for rain water at intervals, often in the form of lions' heads.
Single Contraction	One axial spacing from the corner is narrowed in order to place a triglyph over the corner.
Soffit	The exposed lower surface of the geison.
Stoa	A building with its roof supported by one or more rows of columns parallel to the rear wall.
Stucco	The thin lime facing applied to poros to conceal coarse inequalities.
Stylobate	The upper step of a temple, which formed a platform for the columns.
Syngraphai	Text based instructions for the construction of specific buildings.
Taenia	Continuous band along the top of the architrave.
Thymele	A circular sacred structure.
Toichobate	Top level of the cella foundations, visible (and slightly raised) from the stylobate.
Triglyph	A projecting member separating the metopes, emphasized with two vertical channels.

Chapter 1: Introduction

> It may be that the greatness of the Greeks is not demonstrated most of all in their architecture; but it is by their architecture…that we may now most readily comprehend their civilization in all its bearings (Dinsmoor 1950: xvi).

Despite originally being published in 1927, Dinsmoor's *The Architecture of Ancient Greece* still forms the standard textbook in the study of ancient Greek architecture in the English language. Consequently, Dinsmoor's approach to the study of ancient architecture, a chronological explanation of the differences in the building designs, has been the adopted approach in the majority of subsequently published temple studies (see, Scranton 1964; Tomlinson 1989; Lawrence 1996; Mertens 1996; Martin 2003). The predominance of the approach is linked to the general belief amongst scholars of ancient architecture that design is ultimately determined by date, an argument referred to here as the evolution model. In her 2011 article on the state of the discipline of classical architecture studies, Barletta (2011: 629) discussed the need for constant reassessment of the connection between the proportions of Doric temples and their date. The amount of recent discoveries and new theories, such as Østby's (1995a) lower date for the Selinous temples, and the discovery of the Temple of Apollo at Metropolis (N21, Intzesiloglou 2002), indicate that a reassessment of the evidence for a chronological evolution in temple design is long overdue.[1] Furthermore, directly connecting the differences in design to the temples' dates of construction, in the current manner, limits any understanding of the meanings that the temples were built to convey.

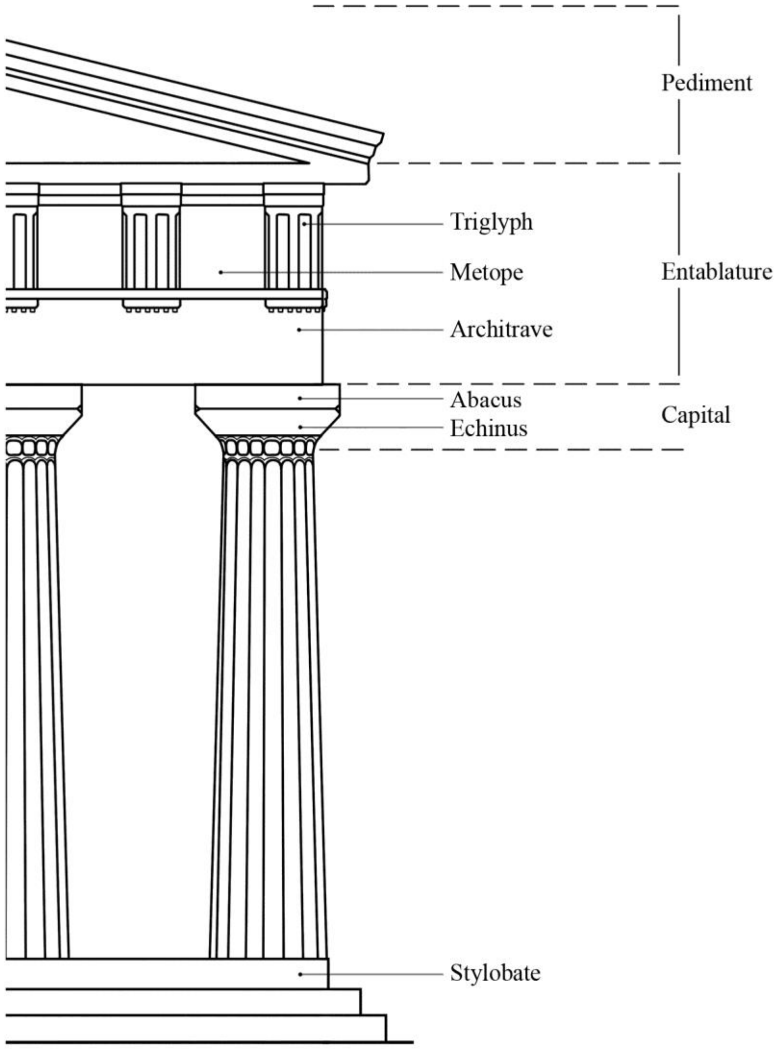
[1] The Doric peripteral temples in this study are all assigned a catalogue code composed of a letter and number. The catalogue entry for each temple in the study can be found in Appendix V. These are discussed in more detail when the data-set is introduced in Chapter 4.

Attempts by classical scholars to assign meaning to ancient artefacts have generally overlooked the physical temple architecture, instead preferring to focus upon their sculpture (Marconi 2007; Barringer 2008; Østby 2009; Maggidis 2009: 92-93). Although a number of recent studies have begun to investigate the role of architectural design in conveying meaning (Snodgrass 1986; Nielsen 2002; Østby 2005), the studies are generally limited, both chronologically and geographically, by the restraints of the evolution model. Therefore, in order to understand the reasons for the differences in the designs of the Doric peripteral temples, this study re-analyses the connection between their design and date, demonstrating that contrary to the observations of the earlier evolution scholars, such as Dinsmoor (1950), a temple's design was not as directly connected to its date of construction as was once felt. Rather, through a Panhellenic, regional and polis-based study of the size, shape and decoration of the individual elements that comprise the Doric peripteral temple, this study suggests that a temple's design was determined by inter-group competition and the desire of the temple clients to express their distinct identities.[2] Consequently, this study demonstrates that the differences in the temple designs had meaning in the ancient world and were not simply reflective of a chronological Panhellenic design trend.

The Doric Order

The Doric order of architecture was widely used on the Greek mainland and in the Greek colonies of South Italy and Sicily to embellish various types of monumental buildings. The order was characterised by the use of certain design elements. For example, in the Doric order, as opposed to the Ionic, the columns do not make use of an ornate base; instead, they rest directly upon the structures' top step, the stylobate (Figure 1). The capital of the Doric column utilises a distinctive shape, formed from a convex, cushion-like echinus and a rectilinear abacus (Bahn 2002: 130). Atop the columns rests the entablature, which comprised a plain architrave topped by a frieze of alternating three-grooved elements known as triglyphs and recessed panels known as metopes.

[2] The term 'client' is used in this study to refer to the individuals and groups that paid for the temples. Occasionally the term 'patron' is used, and this is used to refer to the traditional 'evolutionary' understanding of the patron/architect relationship. The distinction is discussed further in Chapter 2; however, it is important to highlight that the term 'client' is intended as a contrast to the word patron and that no additional meaning is intended.



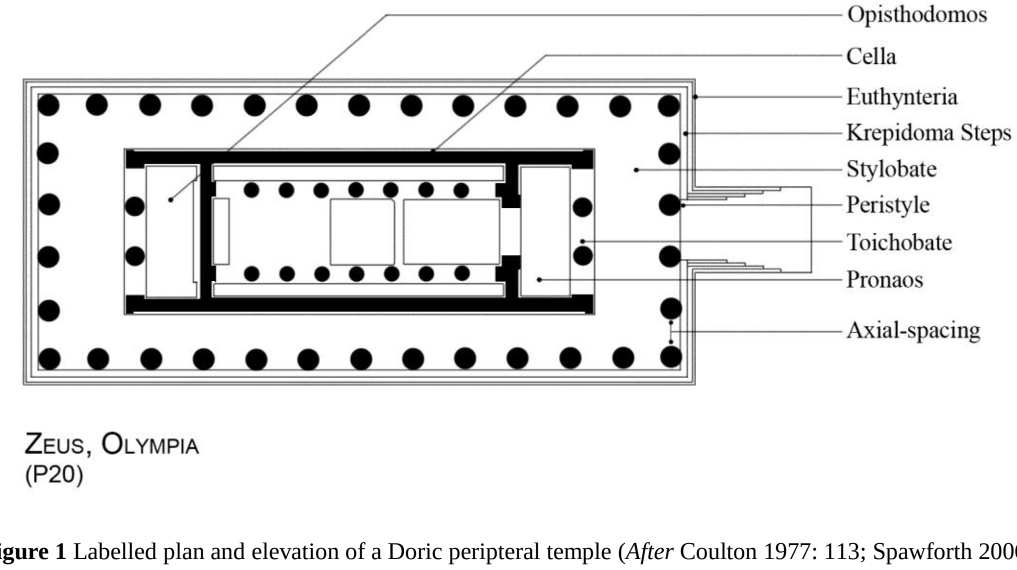


Figure 1 Labelled plan and elevation of a Doric peripteral temple (*After* Coulton 1977: 113; Spawforth 2006: 152).

The Doric order was used in the construction of different types of buildings (Figure 2; Figure 3), including: stoas, such as the Royal Stoa at Athens; various political and civic buildings, including the Bouleuterion and the Square Peristyle in the Athenian Agora (Townsend 1995); choreagic monuments, such as that of Nicias below the Athenian Akropolis (Townsend 2004: 307); monumental gateways (propylaia), such as the propylon to the Sanctuary of Demeter at Selinous (Miles 1998); theatre skenai, such as the fourth-century skene to the Theatre of Dionysos in Athens (Townsend 1986) and treasuries, such as, the Athenian Treasury at Delphi and the treasury in the Sanctuary of Hera at Foce del Sele (Montuoro and Zanotti-Bianco 1938). However, the order is most commonly found on the religious structures identified as temples. Although various different temple forms were utilised in the Greek world (Figure 2), such as the prostyle design used on the Temple of the Athenians on Delos (Dinsmoor 1950: 183), the in-antis design found at Torone (Cambitoglou 2002) or the columned halls, double stoas and circular buildings found at Eleusis, Epidauros and Thorikos (Boersma 1970: 79; Goette 2001: 218; Dinsmoor Jr. 1982); a peripteral temple was instantly recognisable because of the colonnade (of columns) that surround all four sides of the building (Figure 4, Figure 5).

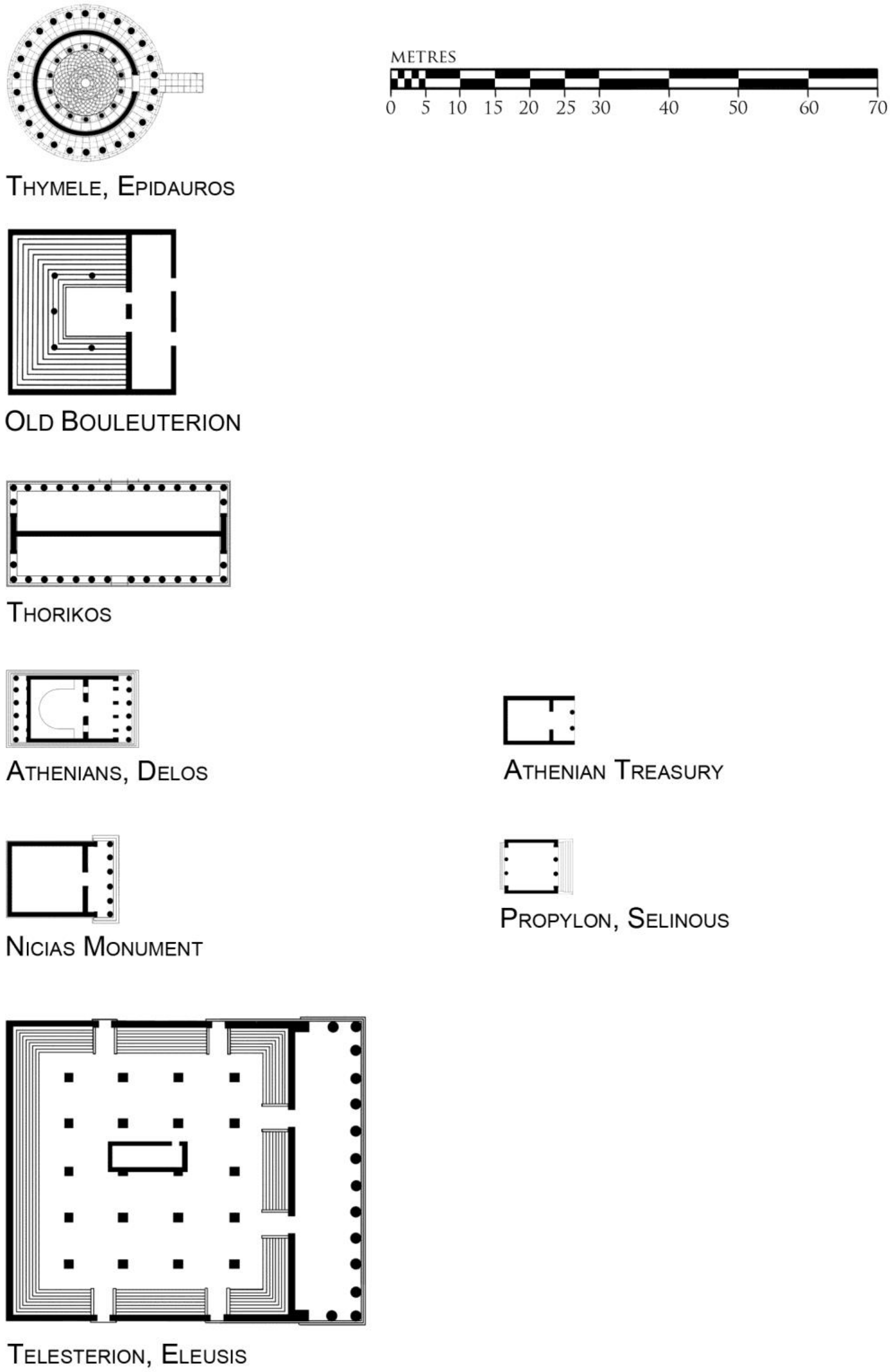


Figure 2 Plans of buildings, other than peripteral temples, which utilised the Doric order (*After* Boersma 1970: 204, 243; Tomlinson 1983: Figure 11; Miles 1998: 41; Goette 2001: 218).

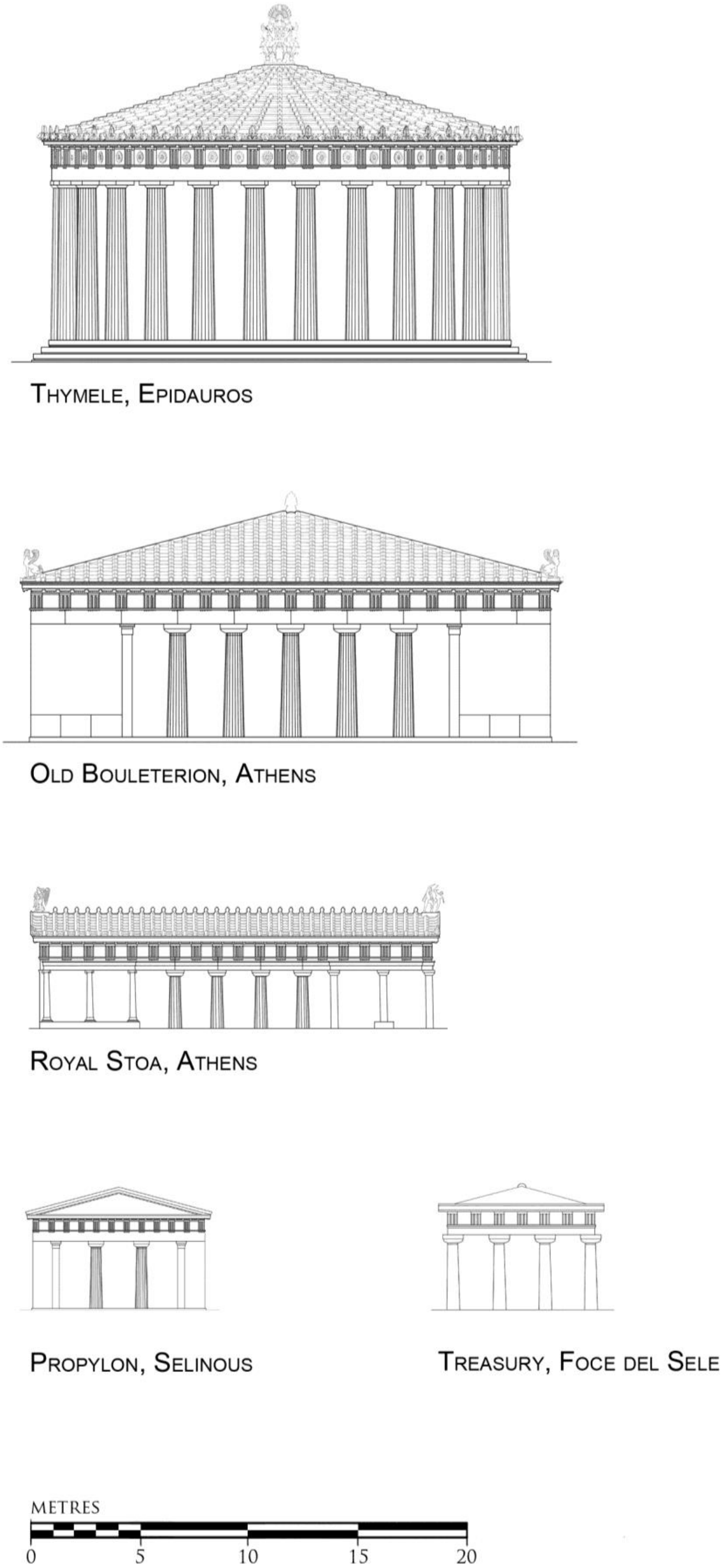


Figure 3 Elevations of the Thymele at Epidauros, the propylon to the Sanctuary of Demeter at Selinous, the Treasury at Foce del Sele, the Old Bouleuterion and the Royal Stoa in Athens (*After* Krauss 1951: Tavola XXXVIII; Tomlinson 1983: 63; Shear Jr. 1994: 235; Miles 1998: 53; Mee 2011: 61).

The peripteral temple seems to represent a significant investment of resources over the other non-peripteral temple types discussed above. The peristyle does not appear to fulfil any particular practical function (see Chapter 3) and, thus, the addition of a peristyle to a temple project is likely to be due to the visual effect of the surrounding columns. Indeed, a number of temples that were originally constructed as non-peripteral were later 'upgraded' through the addition of a peristyle, as happened to the Temple of Apollo at Cyrene (O12). The peristyle also represented a significant investment in man-hours and money. For example, fluting one of the 36 columns on the Temple of Nemesis at Rhamnous (A11) cost around 76 drachmas per column, with a workman's wage being around one drachma per day. However, fluting the columns on other temples cost considerably more; for example, the fluting on the columns of the Erechtheion cost around 350 drachmas per column (Boersma 1970: 78). The primarily aesthetic role of the peristyle, as well as the enormous cost associated with its erection, suggests that the addition of a peristyle to a temple had significance for those who constructed it. Furthermore, the repeated use of the Doric peripteral style, on multiple temples around the Greek World, implies that the temple builders knew they were utilising an identifiable building 'type' to ensure that their temple was recognised as important by the ancient Greek worshippers. Therefore, it is appropriate to analyse the peripteral temple as a separate 'type' of building to those that also utilise the Doric order, such as the in-antis temples.

Despite the inherent similarities between buildings that utilise the same order and have a surrounding peristyle of columns, the design of Doric peripteral temples varies from building to building, particularly in relation to their size, shape and decoration (Figure 4). For example, the Temple of Zeus Olympios (Temple B) at Akragas (S8) has stylobate dimensions of 52.74m by 110.095m supporting 7 façade and 14 flank columns (the corner columns being counted twice), whereas, the Temple of Nemesis at Rhamnous' (A11) stylobate is shorter and narrower, measuring 9.96m by 21.431m, supporting 6 by 12 flank columns (Miles 1989: 154, 158 n.48). Furthermore, the temple plans could be altered through the addition of supplementary elements, such as, the double colonnade at the eastern end of the Temple of Apollo at Syracuse (S22) and the ramp on the Temple of Aphaia on Aigina (A14).

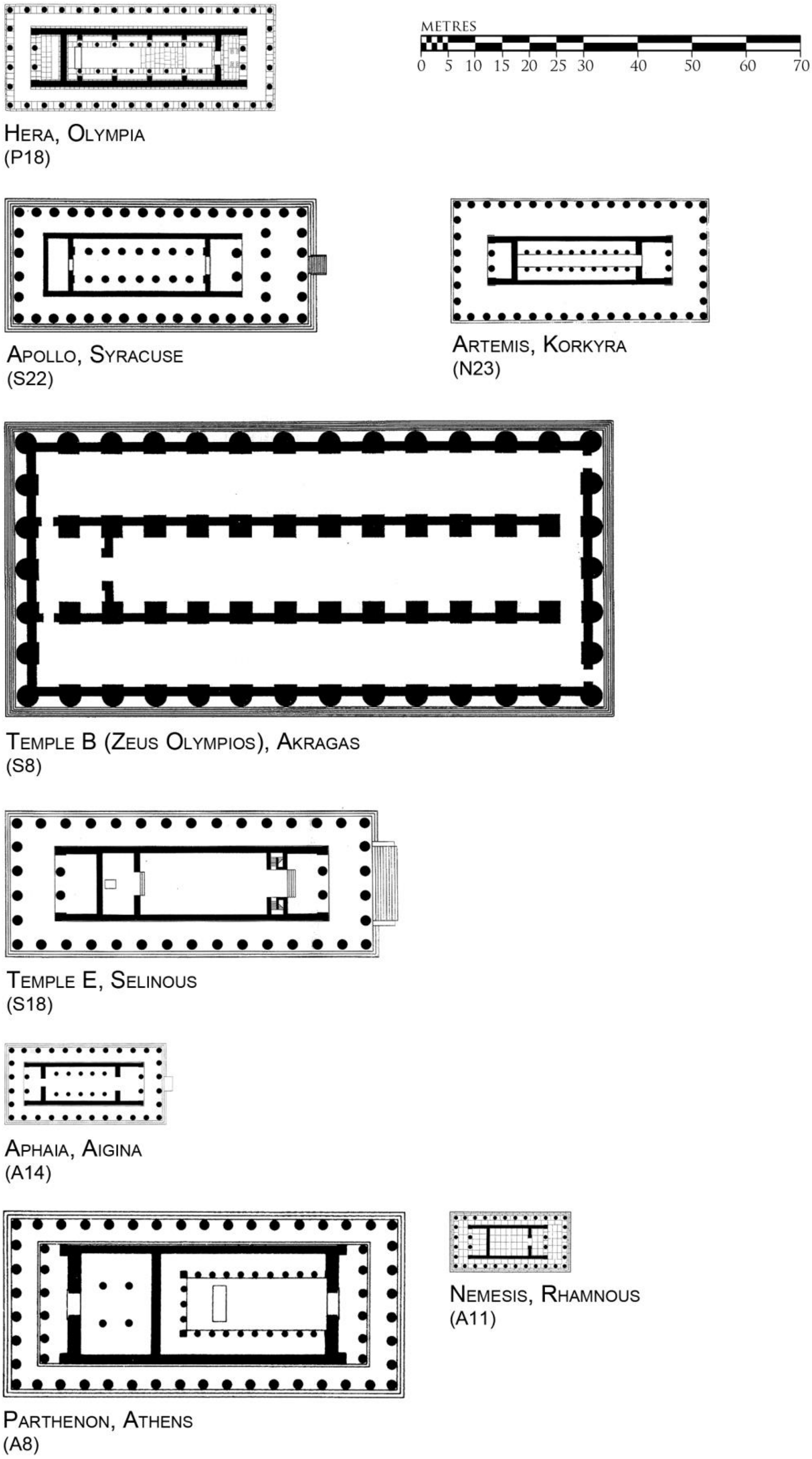


Figure 4 A number of Doric peripteral temple plans with different designs (*After* Mallwitz 1972: 81; Wurster 1974: 107; Coulton 1977: 42; Mertens 1984: 164, Beilage 26; Miles 1989: 143; Pedley 2005: 69).

The size, shape and decoration of the individual elevation elements could also be different from building to building (Figure 5). For example, the Temple of Apollo at Syracuse (S22) and the Temple of Zeus at Nemea (P17) are very similar in overall size, yet the Temple of Apollo at Syracuse utilises short squat columns, whereas the columns on the Temple of Zeus at Nemea are much taller and more slender. Likewise, the shape of the capitals could also be very different; for example, the capitals of the Temple of Apollo at Syracuse are considerably more ‘flaring’ when compared with capitals belonging to the Temple of Zeus at Nemea. Furthermore, although neither of these two temples utilises additional sculptural decoration, many Doric peripteral temples did. For example, the metopes on the Hephaisteion in Athens (A6) bore sculpture, whilst the Temple of Athena Alea at Tegea (P6) had sculpture in its pediments.

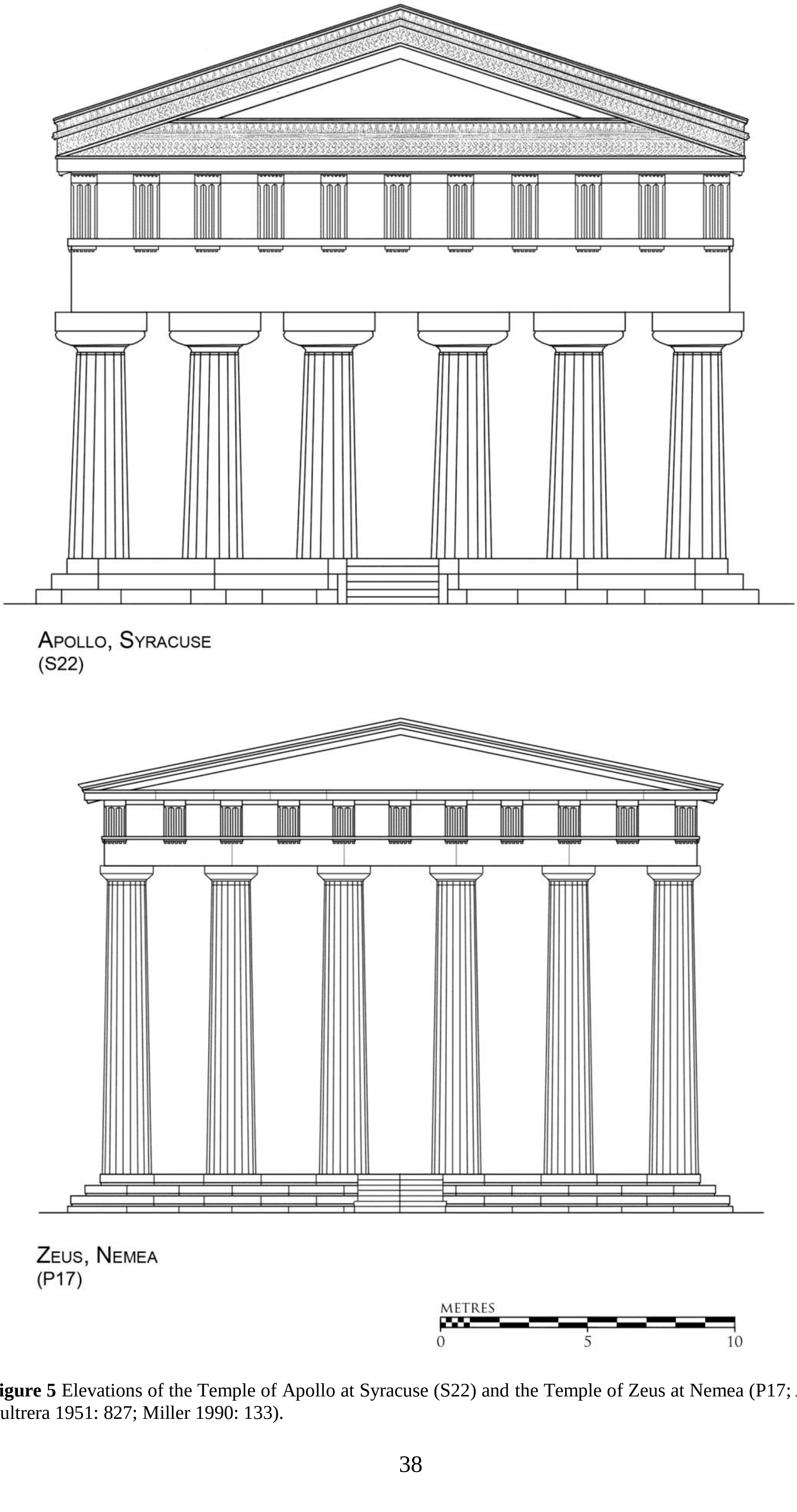


Figure 5 Elevations of the Temple of Apollo at Syracuse (S22) and the Temple of Zeus at Nemea (P17; *After* Cultrera 1951: 827; Miller 1990: 133).

Chronological Limits of the Study

In order to analyse these differences in design, this thesis focuses upon the Doric peripteral temples of the sixth, fifth and fourth centuries B.C. The sixth century has been chosen as the start date for the project as it was around the start of this century that the complete Doric peripteral order first became manifest in stone, with the construction of the Temple of Hera at Olympia (P18; 600-590), the Temple of Artemis at Korkyra (N23; 580-570) and the Temple of Apollo at Syracuse (S22; 590-580).

Indeed, the origin of the order and the presence of earlier, wooden 'Doric' peripteral temples has been a particular focus of scholarly debate, especially in relation to the speed at which the elements emerged and their possible origins (Pausanias 5.16.1; Vitruvius 4.2.2; Marsh 1885; Holland 1917; Dinsmoor 1950: 41ff.; Hersey 1988: 31; Tomlinson 1989: 17; Holmes 1995: 156-172; Mertens 1996: 320; Cooper 1996c: 397; Østby 2000: 239-241; Wilson Jones 2002; Spawforth 2006: 24; Barletta 2009a; 2009b; Gebhard 2010; Mee 2011: 279-280). A number of possible wooden peripteral temples have been identified, including the archaic Temple of Poseidon at Isthmia, which dates to the first half of the seventh century and the late seventh-century Temple of Apollo at Thermon (further examples can be found in Appendix II.1).[3] However, the lack of preserved, recognisably Doric elements from these early temples, the often highly conjectural nature of their reconstructions and the fact that a temple of wood would have to use different design conventions from a temple of stone, means that this project is limited to peripteral temples whose construction is primarily completed in stone.[4]

A number of temples that belong to the sixth, fifth and fourth centuries have also been excluded, due to the lack of preserved evidence that they were either Doric or peripteral. For example, despite Dinsmoor's (1949) attempted reconstruction, the so-called 'Great Temple' at Corinth has not been included in this study. The exclusion of the 'Great Temple' is due to a lack of foundations for the extant Doric blocks, which make it impossible to confirm that the elevation elements belong to a Doric peripteral temple, rather than another type of structure. Likewise, the absence of published information also prevents the inclusion of a number of temples, such as, the archaic peripteral temple in the lower city at Orchomenos (see Appendix II.2). Another group of peripteral temples that have been excluded from the analysis are those of the 'Campanian Tradition' from

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[3] A number of scholars have proposed that the discovery of possible terracotta metopes at Thermon is indicative of the fact that the late seventh-century Temple of Apollo was constructed in the Doric order (Holloway 1969: 281; Dinsmoor and Dinsmoor 1996: 377). However, the lack of additional, unambiguous, evidence for a Doric elevation, such as Doric capitals, has precluded the inclusion of this temple in the data-set.

[4] A full list of temples that have been excluded for being too early, too late or having insufficient evidence for inclusion in this study is presented in Appendix II.

Campania in Italy, such as Temple B at Pyrgi and Temple II at Satricum (Heurgon 1966: 5; Barletta 1996; Spivey and Stoddart 1990: 123-125). Although these temples were peripteral, it is generally agreed that they belong to a separate architectural tradition to the 'Greek' Doric temples analysed as part of this study (De Waele 1994; Barletta 1996). The exception to this is the inclusion in the data-set of the Temple of Minerva at Pompeii (I13). Although it is argued by both Barletta (1996) and De Waele (1994) that the Temple of Minerva belongs within the Campanian tradition, it is, in Barletta's words "the most thoroughly Hellenized of all the temples in non-Greek Italy". The presence of a number of Doric capitals belonging to the temple indicates that the temple's constructors intended for their temple to be seen as part of the 'Greek' Doric tradition of South Italy and, thus, should be included in the study.

The project ends with the conclusion of the fourth century and the construction of the Doric peripteral temples at Pherai (N22) and Apollonia (O13). A number of scholars have argued that construction in the Doric order had all but ceased by the Hellenistic Period, the intricacies of the design causing it to fall out of favour amongst Greeks of this period (Dinsmoor 1950: 267; Dinsmoor and Dinsmoor 1996: 379; Tsakirgis 1996: 408). The protagonists of this argument often quote the Roman architect Vitruvius (4.3.1):

> Some ancient architects denied that temples should be built with the Doric order because false and unpleasant modular systems were generated in such buildings: this is what Tarchesius said, but also Pytheos, and especially Hermogenes.[5]

However, the Doric order continued to be used into the third century and beyond (see Appendix II.3) for both religious architecture, such as the temple at Cori dating to the first century (Robertson 1979: 209), and civic constructions, such as the Roman Agora in Athens (Camp 2001: 193). Indeed, Tomlinson (1963) has argued that, contrary to the opinions cited by Vitruvius, the Doric order does not become unfashionable in the fourth century. Rather, fewer Doric temples were constructed because mainland Greece was not as prosperous as it once was; whilst around the same time, many Hellenistic kings were 'Hellenising' and chose to construct temples in the style of their local Greek culture, which happened to be Ionic, hence the seemingly increased use of Ionic in this period. Furthermore, the changing political and social landscape in Greece at the end of the fourth century resulted in a changing attitude towards the construction of monumental architecture and the introduction of "variable influence" from "the non-Greek architecture which had now become more familiar to the Greeks" (Lawrence 1996: 151). The

[5] This translation and all translations of ancient texts are referenced in the bibliography.

changing role of Doric monumental architecture towards the end of the fourth century is best demonstrated through the increased construction of stoas towards the end of the fourth century (Hansen and Fischer-Hansen 1994: 85). There is very little evidence for stoas in the sixth century, mostly being constructed in "primitive materials," perhaps suggesting that the stoa had a lower architectural status than the temple in this period (Coulton 1976a: 37). However, in Athens, in the closing years of the fifth century, the stoa appears to improve in status and is constructed with growing monumentality and increased frequency. Throughout the subsequent centuries, particularly during the Hellenistic period, throughout the Greek world, the stoa became the choice structure with which to elaborate sanctuaries (Coulton 1976a: 7). A brief overview of the stoas in Coulton's catalogue (1976a), dating to the periods of study in this thesis, demonstrates the increasing interest in stoa construction, especially when compared to the decreasing rate of Doric temple erection during the same period (Figure 6, Appendices I and V). Furthermore, it is suggested that the 'independent polis' declined and disappeared in the second half of the fourth century as a consequence of Philip II's and Alexander the Great's conquests (Hansen 1994: 15-17). Therefore, it is the changing social climate and attitudes towards monumental architecture during the Hellenistic period, and not the lack of temple construction, that precludes the inclusion of temples beyond the fourth century in this study.

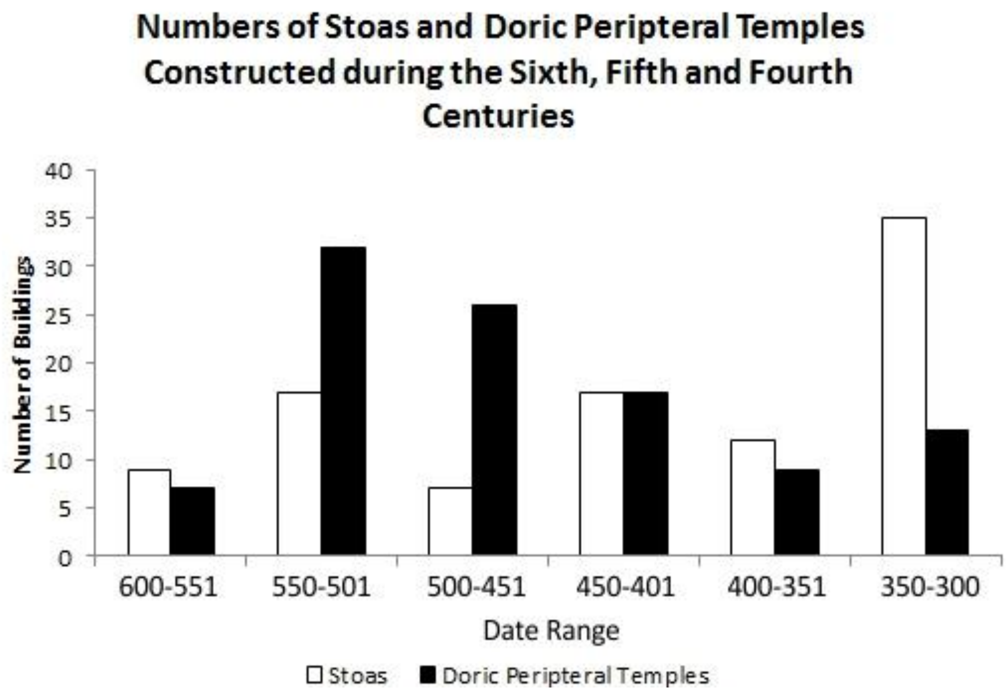

Figure 6 Graph showing the numbers of stoas and Doric peripteral temples constructed during the sixth, fifth and fourth centuries, demonstrating the increased trend towards the construction of stoas at the end of the fourth century (see Appendices I and V).

Thesis Layout

The first half of the thesis is primarily concerned with placing the study into its context, as well as introducing and explaining the data-set. To this end, Chapter 2 reviews the past literature relating to Doric peripteral temple design, demonstrating that further investigation into the connection between date and design is required if the differences in the temple designs are to be understood. Chapter 3 explains the reasons for focusing upon the size, shape and decoration of the exterior elements of the Doric order and includes a brief overview of the 104 temples that comprise the data-set. Chapter 4 explains the reasons for focusing upon particular architectural elements as well as the criteria that were applied with regard to the inclusion of measurements based upon scholars' hypothetical restorations.

The second half of the thesis focuses upon analysing and explaining the data-set. Chapter 5 analyses the data-set on a Panhellenic scale, demonstrating the wide variety of different temple designs that were utilised and the lack of evidence for a direct connection between temple design and date. Building upon the conclusions of the previous chapter, Chapter 6 analyses the data-set at a regional level, demonstrating that the plan dimensions of the temples appear to belong to sub-regional groups of remarkably similar sizes, but with different elevation designs. Chapter 7 explains the presence of these sub-regional groups through a discussion of the utilisation of religious architecture in inter-polis competition and the expression of the clients' social and political identity. Chapter 8 applies the results of this analysis to a number of polis based case studies, further demonstrating the importance of temple size and design in inter- and intra-polis competition. Consequently, it is argued that the differences in the designs of Doric peripteral temples are connected to distinct expressions of identity on behalf of the various groups that dedicated temples during the archaic and classical periods.

Chapter 2: Temple Design: The Scholar, the Architect and the Patron.

> The Classical, it has been well said, is the only universal style in architecture, and Greek temple building stood at its heart. Its influence extends, with interruptions, through time, via Roman architecture, the Italian Renaissance, Palladio and Inigo Jones, into Neo-Classicism and the specific 'Greek revival' of the 1780's…. Even in the practice of today, its reign cannot be said to be over (Snodgrass 2007: 24).

The above quotation from Snodgrass conveys the depth of history and tradition behind the study and appreciation of Greek temple architecture. Knowledge of Greek architecture in the western world has expanded enormously over the past 350 years, and each generation has had a somewhat different understanding of the essentials of Greek heritage (Winter 1984: 103). From temple restorations based largely upon readings of the first-century BC Roman architect Vitruvius (see Adam 1990 for various examples), to complex 'readings' of entire architectural sculptural programs (Marconi 2007; Barringer 2008), the analysis of Greek temple architecture has remained a dominant element in the study of the classical world, particularly in France, Germany, Greece and the United States (Snodgrass 2007: 23).

Comprehensive overviews of the historiography of Greek architecture have recently been published by Winter (1984), Spawforth (2006) and Barletta (2011) and there is no need to repeat their discussions here. Instead, this chapter concentrates upon a review of the studies that specifically address the differences in Doric temple design, which is the focus of this thesis. In order to review the vast number of studies that relate to this subject, the chapter is split into two sections. The first half addresses the traditional approach to the study of Doric temple architecture, discussing the art-historical Panhellenic 'evolution' model and the growing emphasis upon identifying the meaning behind the differences. The traditional evolution approach to the differences in Doric peripteral temples connects the variations in their designs to their date, with the designs changing on a Panhellenic scale at a seemingly constant rate until they reach 'perfection' in the mid-fifth century. As the study of Greek architecture has progressed, the application of the model has become increasingly complex and more recent approaches have focussed upon how variations in design were used to convey meaning. Building upon these studies, the first half of this chapter demonstrates that the differences in temple design should be understood as having meaning and significance at a regional, rather than Panhellenic level.

The second half reviews the role of the ancient architect, and argues that, contrary to the demands of the evolution model, the architect would not have been the sole arbiter of a temple's design. The evidence suggests that the ancient architect had to work closely with a design committee, indicating that the temple designs were influenced by more local concerns than has traditionally been argued. Consequently, this chapter demonstrates the need for further investigation into the traditional paradigm of Panhellenic evolution of the Doric temple and a more wide-ranging regional analysis of the meaning behind the architectural differences, an important and revealing area of investigation that has been overlooked in previous studies.

The Panhellenic Evolution Model

Origins of the Model

The traditional method for analysing Doric peripteral temple architecture has been to study the individual buildings in relation to a single Panhellenic trend in architectural style. The evolution model, as the argument is referred to in this thesis, has been the most dominant approach to temple studies since the late eighteenth century.

The origin of the evolutionary view of the development of art and architecture can be traced to statements of some ancient authors, including Philo of Byzantium, Vitruvius and Pliny the Elder, though none of them presented a systematic or theoretical treatment. This was to come to some extent with the writings of Vasari in the Renaissance, but above all with Winckelmann's highly influential 1764 study on the *History of Ancient Art*.[6] Winckelmann aimed to create an ordering of Egyptian, Greek, Etruscan and Roman art that would clarify the rise and decline of styles and chart them chronologically. Winckelmann believed that the art produced in fifth-century Attica was 'perfect' and this perfectionism was attributable to the "circumstances of individual liberty" achieved through the introduction of democracy (Spivey 1996: 23; Tanner 2006: 36). Of the eighteenth-century architectural studies, the publications by the architects Stuart and Revett are the most revered (Snodgrass 2007: 17). Unlike the earlier scholars of classical architecture, for whom 'classical' meant Roman, Stuart and Revett (1968: I) considered

[6] For discussion see Barletta (2001: Chapter 1) and Wilson Jones (Forthcoming: Chapter 3).

Greece as the "great mistress of the arts, and Rome, no more than her disciple". Stuart and Revett's books on *The Antiquities of Athens*, published in 1762, 1787, 1794 and 1816, contained measurements and drawings of the most important buildings of Athens (Snodgrass 2007: 17). Their discussions of the architecture followed Winckelmann's model, suggesting that Greek architecture reached its highest peak of excellence in mid-fifth-century Athens under Perikles (Stuart and Revett 1968: III).

Following Greece's independence and the founding of the Greek Archaeological Society in 1837, there developed a new recognition that the classical past formed an essential part of Greek national identity. The Athenian Akropolis was cleared of its Byzantine, Frankish and Ottoman remains and archaeological excavations were conducted. Following the excavations, the classical temples of the Akropolis, such as the Ionic Temple of Athena Nike and the Doric Parthenon (A8), were rebuilt in their classical guise (Whitley 2001: 31; Athanassopoulos 2002). However, given the general lack of standing Doric temples, the proposed temple restorations of the eighteenth and early nineteenth centuries were still largely based on preconceived romantic notions, which were reinforced by ingenious interpretations of Vitruvius (Winter 1984: 103). This resulted in temples being rebuilt with little regard for scientific accuracy; for example, the 1836 reconstruction of Temple I (Dioskouroi) at Akragas (S3) contains sections from multiple buildings including elements of Roman date (Marconi 1929: 96, 98). However, following the rediscovery of the temples at Poseidonia and the study of the temples at Akragas, during the third quarter of the eighteenth century, the reliance on Vitruvius began to subside.

The conception of the modern study of Greek architecture is commonly dated to the last quarter of the nineteenth century, with a reduction in the reconstructions based on Vitruvius and the commencement of the large scale sanctuary excavations (Snodgrass 2007: 24). The foreign powers, Russia, Britain and France, were no longer allowed to export endless amount of antiquities but instead were granted permission to establish schools in Athens, devoted to the study of the classical past (Whitley 2001: 31; Morris 2006; Barletta 2011: 615-6). With the start of German excavations at Olympia in 1875, as well as the French excavations at Delphi and the American excavations at the Argive Heraion in 1892, the era of scientific excavation of entire sites had begun, one purpose of which was to establish a reliable chronology and clarify the whole range of ancient Greek architectural development (Winter 1984: 103; Snodgrass 2007: 18).

As a consequence of the excavations at the major sanctuaries and the continuing interest in the Panhellenic evolution of architectural design, a number of studies set out to measure the key elements of Doric temples in order to help catalogue and clarify the rate of the evolution. These studies are exemplified by the work of Koldewey and Puchstein (1899), who measured the remains of a number of temples in South Italy and Sicily, a work so important that it still forms the basis for many modern studies on Sicilian temples today (Barletta 2011: 615; also see tables of measurements in Mertens 1984: 214-217). Despite the widespread belief in the evolution of temple design, there had been very little attempt to clarify the relationship between chronology and the Panhellenic development of design. In an attempt to resolve this, in 1894 Marquand published an analysis of the proportions of the Selinuntine temples, which charted the relationship between their dates and their designs. Marquand's results suggested that a link between date and proportion could be found; however, he expressed significant reservations regarding the validity of the results, especially in relation to all ratios evolving in a single linear direction at a constant rate.

Despite Marquand's misgivings, temple scholars continued to make strong connections between date and design, and continued to debate the rules for the design of the 'perfect' temple (Dinsmoor 1950; Lawrence 1996). Indeed, it is often overlooked that the very idea of 'perfection' and consequently the concept of a steady evolution towards 'perfection', are based solely upon modern perceptions of ancient 'perfection'. For example, in Coulton's (1977: 98, 99) work on the proportions of Doric temples, published 83 years after Marquand's study, he states (added emphasis): "*Most people feel* that the experimentation was successful, and the later buildings were more harmonious and satisfying than the earlier… by the Hellenistic period, elements were carved with less care, and to *most people's taste* with less expressive form". However, the model's usefulness in helping to ascribe dates to poorly preserved temples and the conservative nature of late nineteenth century classical archaeology meant that the evolution model with the rise, peak and decline of architectural styles remained the most conspicuous paradigm (Whitley 2001: 35).

Development of the Model

During the late nineteenth and early twentieth centuries a vast number of new buildings, which required a place in the Panhellenic evolution, were uncovered. At the beginning of the twentieth century Anderson and Spiers (1903) thought it was reasonable to treat *The Architecture of Ancient Greece and Rome* in a single volume. The significantly larger body of material that was available for study two decades later meant that the second edition of the work had to be divided into two volumes, that on Greece revised by W.B. Dinsmoor, originally published in 1927, and the Roman section by Thomas Ashby.

Snodgrass' (2007: 24) recent referral to Dinsmoor's book as "the most learned and detailed handbook of the twentieth century" highlights the importance of his book and its influence within the study of Greek architecture. However, Dinsmoor's approach to the study of temples followed that of his predecessors, removing the buildings from their contemporary contexts and analysing them as art-pieces in an attempt to present the evidence for Panhellenic evolution and the superiority of fifth-century Attic architecture. Dinsmoor (1950: 147) assigned the 'rise' of style to the archaic period and the Persian Wars (600-450 BC), the 'brief culmination' to Athens under Perikles (450-400 BC) and the 'beginning of the decadence' to the fourth century, with the Parthenon (A8) being considered the pinnacle of Doric design (Figure 7). Lawrence (1996: 58), another influential proponent of the evolution argument, whose book was originally published in 1957, believed that the Parthenon came "as near perfection as is humanly possible".

Aside from the Parthenon, the 'standard' Doric temples of the 'best period' were characterised by 6 façade and 13 flank columns, exemplified by the Hephaisteion at Athens (A6; 450-440) and the Temple of Poseidon at Sounion (A9; 450-430; Dinsmoor 1950: 53; Figure 7). The arrangement of 6 façade by 13 flank columns, or two times façade columns plus one (2X+1), has been considered by almost all subsequent subscribers to the evolution argument to be 'the best' (for example see, Winter 1976: 143; 1978: 156; Dinsmoor and Dinsmoor 1996: 377; Cooper 1996e: 400; Pedley 2005: 69; Barletta 2009a: 79; Prokkola 2011: 185).[7]

[7] This is despite Vitruvius' (3.2.6) statement that a peripteral temple had to have 6 by 11 columns (of which there were none in fifth-century Athens), which led Robertson (1979: 71) to suggest that the ideal design for the peripteral Doric temple was not reached until the fourth century, an idea that has received little subsequent attention.

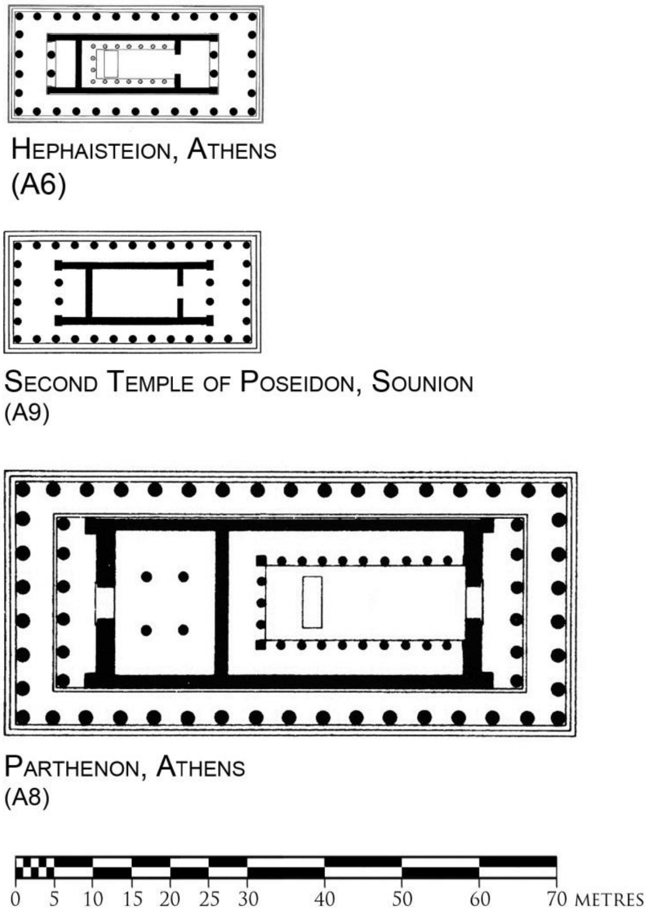

Figure 7 Plans of the ‘perfect’ Doric peripteral temples of fifth-century Attica (*After* Boersma 1970: 196; Pedley 2005: 69; Barringer 2008: 116).

The idea of perfection and evolution was not only confined to the number of columns in the temple’s peristyle; the overall proportions of the Parthenon (A8) were believed to be the best, with the columns’ height in relation to their lower diameter also being considered ‘perfect’. In line with the evolution theory, the ‘perfect’ proportions of the Parthenon were deemed to stand at the end of a long series of gradually evolving shapes (see Table 1, as outlined by Brown (1906: 178)). Such was the belief in the evolution of proportions, that even when the excavated column drums of the Tholos at Delphi suggested a reconstruction of the columns with five drums, rather than four as had been previously believed, Dinsmoor (1950: 234 n.3) argued that it should still be restored with four, because this produced the correct ratios for the Tholos’ fourth century date.

Date	**Temple**	**Column Dimensions**
7th c. BC	Old Temple of Corinth	Column not quite 4 diameters in height
End of the 7th c.	Old Temple of Selinous	Column 4.5 diameters
6th c.	The most recent Temple at Selinous	Column 4.5 diameters
6th c.	Temple of Zeus, Selinous	Column 4.66 diameters

Date	Temple	Column Dimensions
6th c.	Temples of Artemis, Syracuse	Column 4.40 diameters
6th c.	Temple of St. Mary of the Column, Syracuse	Column a little less than 5 diameters
6th c.	Grand Temple of Poseidon, Paestum	Column 4.5 diameters
6th c.	Temple of Demeter, Paestum	Column 4.8 diameters
6th c.	Temple of Zeus, Olympus	Column 4.6 diameters
5th c.	Temple of Athena, Aegina	Column 5.33 diameters
5th c.	Temple of Theseus, Athens	Column 5.5 diameters
5th c.	The Propylaea, Athens	Column 5.5 diameters
5th c.	The Parthenon, Athens	Column 5.5 diameters

Table 1 Table of column diameters reproduced from Brown (1906: 99).

It is also generally agreed that the decoration applied to the temples evolved over time, not only in relation to the style of the sculpture, but also the patterns that were employed to decorate the individual elements (Brown 1906: 198). Likewise, the belief in the subsequent ‘decline’ in architectural style and the decadence of the fourth century temples has led Hodge and Tomlinson (1969: 192) to put forward the unusual suggestion that the lifting bosses, which were removed from the temple once the blocks had been lifted into place, were actually used as decoration in this period. This idea of a Panhellenic evolution of column numbers, proportions and decoration has susequently formed the underlying base for a number of notable studies into Doric temple architecture (for example, Østby 1994b: 41; Sowerby 1995: 171; Rhodes 1995: 1, 74; Barletta 2005: 71-72; 2009a: 79; Pedley 2005: 68-69; Prokkola 2011: 158-159).

Fundamental to the evolution argument is the assumption that the ancient architects were chiefly concerned with beautifying and refining the constructive features of the Doric order (Dinsmoor 1950: 147; Lawrence 1996: 58; Wescoat 2012: 239). Coulton (1977: 97) has suggested: “The target of regular and satisfying form, and the achievement of it through experimentation, could reasonably be ascribed to all architects from the mid-seventh century onwards”. Accordingly, it was the architect’s responsibility to maintain the evolutionary progression in temple design, with each architect slightly modifying the design of his predecessor. Therefore, the architects would maintain and control the steady evolution of design and improvement, regardless of the buildings’ locations. For example, Plassart and Blum (1914: 84) argued that the similarities in the designs of the temple at Orchomenos (P5) in the Peloponnese and the Temple of Athena at Assos (O1) in Turkey are indicative of the two temples sharing the same date, despite the geographical distance. Consequently, under the evolution model, the differences between the buildings’ designs were understood to be little more than ‘steps’ towards perfection, and little attempt was made to understand the reason behind the different designs, as the paradigm provided the ability to date temple remains in the absence of historical texts and without recourse to archaeological sources.

Complicating the Model – Western Architecture

Despite subscribing to the overall model of evolution, many scholars disagreed with how it should be applied to the surviving architecture. The main point of contention was the apparent difference between the architecture of the western colonies and that of the mainland, which proved difficult to reconcile in a single evolutionary line. For example, it was observed that the Sicilian temples were larger than their mainland counterparts and that some design features of the mainland temples, such as double contraction, could not be found in the west until a much later style of architecture was adopted (Dinsmoor 1950: 80; Marconi 2007: 29). As such, temple scholars began to debate how the evolution model could be applied to these seemingly distinct lines of development and, consequently, which 'school' made the greatest progress towards perfection during the sixth century.

Dinsmoor (1950: 69) argued that the initial development of Doric design happened in the west and influenced the mainland. However, once the development of style was complete, the architects in the colonies began to place more emphasis upon garish ostentation, rather than the refinement of proportions, which resulted in a certain "cultural lag" or "provincialism" in the colonies. According to Dinsmoor's (1950: 110) argument the two traditions were brought together around the middle of the fifth century, with the construction of the 'hybrid' class of temples in the west, epitomised by the Temple of Victory at Himera (S12), and their contemporary structures on the mainland, such as the Temple of Zeus at Olympia (P20). However, it is generally argued that the 'hybrid' temples in the west were copies of the mainland temples, rather than the resulting products of two separate traditions (Skele 2002: 42).

Another line of argument suggests that the two traditions developed completely separately until the fifth century, when the western architects saw the achievements of their mainland counterparts and "abandoned their originality, together with their crudity" (Winter 1976; Lawrence 1996: 89). Likewise, Mertens (1996: 320, 322, 327, 330) argued that the traditions evolved separately, each developing their own unique trends, before the western architects decided to accept mainland traditions. However, he also suggested that some colonies (Syracuse, Megara, Selinous, Gela and Akragas) were already more familiar with mainland traditions than others, especially than those of South Italy. It has also been suggested that many innovations originated on the mainland and were introduced to the west over time (Bookidis 1967: 427-429; Coulton 1983: 463; Wescoat

1989: 85; Holloway 2000: 114), rather than the sudden collision of the two traditions as argued by Dinsmoor (1950: 111).

Due to the general acceptance of the evolution model, it became impossible to see the differences in designs of the western temples and their divergences from the single line of evolution as anything other than 'lag', due to the 'provincial' nature of the western poleis and their subjection to 'barbaric influences' (Dinsmoor 1950: 75, 92). Robertson (1979: 85) went further in suggesting that Athens specifically was the driving force behind the development of temple design in the sixth century and that the highly original sixth-century Temple of Athena at Assos (O1) "is an imitative provincial work, conceivably due to Athenian influences".

Conversely, a number of arguments suggested that influence may also have gone the other way, by arguing that the traditional view of western Greeks as 'backward' and reliant upon the mainland for cultural inspiration and artistic progress is too simplistic (for example, see Miles 1989: 54; 2000). Indeed, Coulton (1984: 43-44) has argued that a number of features of the Parthenon (A8), such as the slender and closely spaced columns, may have come to Athens from the Greek west via the Temple of Apollo on Delos (O8), whilst Mertens (1996: 332) and Lattimore (2006: 461) believe that Libon, the architect of the Temple of Zeus at Olympia (P20), may have been stimulated by the designs of western architecture, rather than vice versa.

The different temple designs, not only between the mainland and the west, but also within the mainland itself, have also made it difficult to come to a general agreement regarding the end of the 'rise' of the Doric style and the beginning of the 'culmination'. For example, Dinsmoor (1950: 70) suggested that the important elements for the 'perfection' of the late fifth century came together in the period 500-450 BC. However, Lawrence (1996: 99) argued that the work was already complete when the fifth century began. Later scholars suggest that the change between rise and culmination came with the construction of the Temple of Athena Polias on the Athenian Akropolis (A3) or the Temple of Aphaia on Aigina (A14), which have been variously dated between 525 and 470 (Childs 1994: 4; Whitley 2001: 225; Martin 2003: 76; Spawforth 2006: 64). As such, it was clear that the model could not simply be applied on a Panhellenic scale in a straightforward way and that the argument required further refinement.

A line of investigation into temple design that has run concurrently with the evolution model is the attempt to understand the methods that were used by the ancient architects to design their temples. Despite many different scholars suggesting solutions to the problem, there is very little consensus as to whether the design system was based upon a fixed size module, such as a triglyph, the use of standardised measurement, such as a standardised 'foot', or a successive method with little prior planning (Norton 1877; Coulton 1974; 1975; Tobin 1981; Seki 1984; De Waele 1988; Haselberger 1996; Wilson Jones 2001; Waddell 2002). There is significant difficulty applying the methods as there is no clear single measurement upon which to base any calculations. For example, multiple foot lengths have been suggested, even in relation to single buildings, as demonstrated by the dozen or so different foot measures that have been published for the Hephaisteion in Athens (A6, De Waele 1988; Wilson Jones 2000: 75; 2001: 676; Pakkanen 2006: 177-179). In this regard it is notable that the Oxford relief, the Salamis relief and the builder's rule and square discovered in the Ma'agan Mikhael shipwreck off the coast of Israel indicate that multiple linear measures, from diverse sources, may have been used in Greek construction in the fifth and fourth centuries (Wilson Jones 2000; Stieglitz 2006). Yet is is also true that a few foot units were accepted standards over a relatively wide range. A case in point is the attestation of a unit of 327 mm on both the Salamis relief and on the Ma'agan Mikhael finds, this being the same that Doerpfeld derived from the accounts relating to the Erechtheion, while 10 ft intervals of the same unit were marked out on the temple at Segesta (Mertens 1984). Similarly, some sense of pattern may be deduced from the tendency for hypothetical design modules and triglyph widths in the Classical period to correspond to multiples such as 25 or 30 dactyls of the ca. 327 mm foot (Wilson Jones 2001). Nevertheless, analyses based around modular readings and proportional rules may be criticised as only being applicable with relative certainty to a few buildings in specific periods (Seki 1984; Wilson Jones 2001; Pakkanen 2004: 85 n.3). It is unclear if the modern measurements utilised to help calculate the ancient design techniques are sufficiently accurate for such a purpose (Pakkanen 1994) and likely that the formulated design rules are overly complex, were probably only applicable in certain circumstances and subject to diverse local conditions (Bundgaard 1957: 129; Coulton 1975: 99; Tobin 1981: 379; Waddell 2002: 1). For these reasons, this thesis will not consider the ancient processes of design and measurement that led to the buildings' construction but insted utilises absolute measures to compare the differences in the buildings' appearance. Indeed, as discussed by Coulton (1975: 99) a study of temples' size and shape of the type completed in this study should be helpful in future discussions of ancient units of measurement.

Complicating the Model - Further Problems and Regionalisation

As further analyses of the architecture were completed and new temples were discovered, the application of a single overarching evolutionary theory based solely on the temples' designs became even more complicated. Some scholars began to doubt the existence of the fourth-century ‘decline’ from aesthetic perfection, arguing that the reduction in the numbers of constructed Doric temples was linked to a change in prosperity in the various parts of the Greek world and was not simply an indication of the growing aversion towards the Doric order (Tomlinson 1963). Likewise, Dinsmoor’s (1950) model failed to explain why the ancient Greeks continued to design new temple forms into the fourth century, if the ‘perfect’ appearance had already been discovered in the late fifth century. Consequently, during the second half of the twentieth century there became a “new appreciation of the period 400-100 BC” (Winter 1984: 105).

It also became clear that elements of the ‘perfect’ fifth-century temple plans had already emerged during the sixth century. For example, the ‘provincial’ Temple of Athena at Assos (O1), constructed in the second half of the sixth century, utilised the ‘perfect’ 6 by 13 temple plan (Dinsmoor and Dinsmoor 1996: 378, Figure 8). Similarly, Scranton (1946: 39) demonstrated that temples of broadly similar date utilised remarkably different interior designs; for example, Temples C, D and F at Selinous (S16, S17 and S19) were all believed to belong to the late sixth century, but they have different dimensioned and proportioned inner buildings (Figure 8). Indeed, such was the implication of this observation that later scholars, in an attempt to maintain the effect of the evolution paradigm upon the main external elements of the Doric order, began to suggest that religion determined the layout of the cella (Plommer 1950: 109; Dinsmoor and Dinsmoor 1996: 377). For example, Winter (1976: 143) and Mertens (1996: 327) argued that it was the difference in religion that led to the wider gap between the cella and peristyle of the Sicilian temples, believing this may have been used more extensively for cult purposes in Sicily than elsewhere.

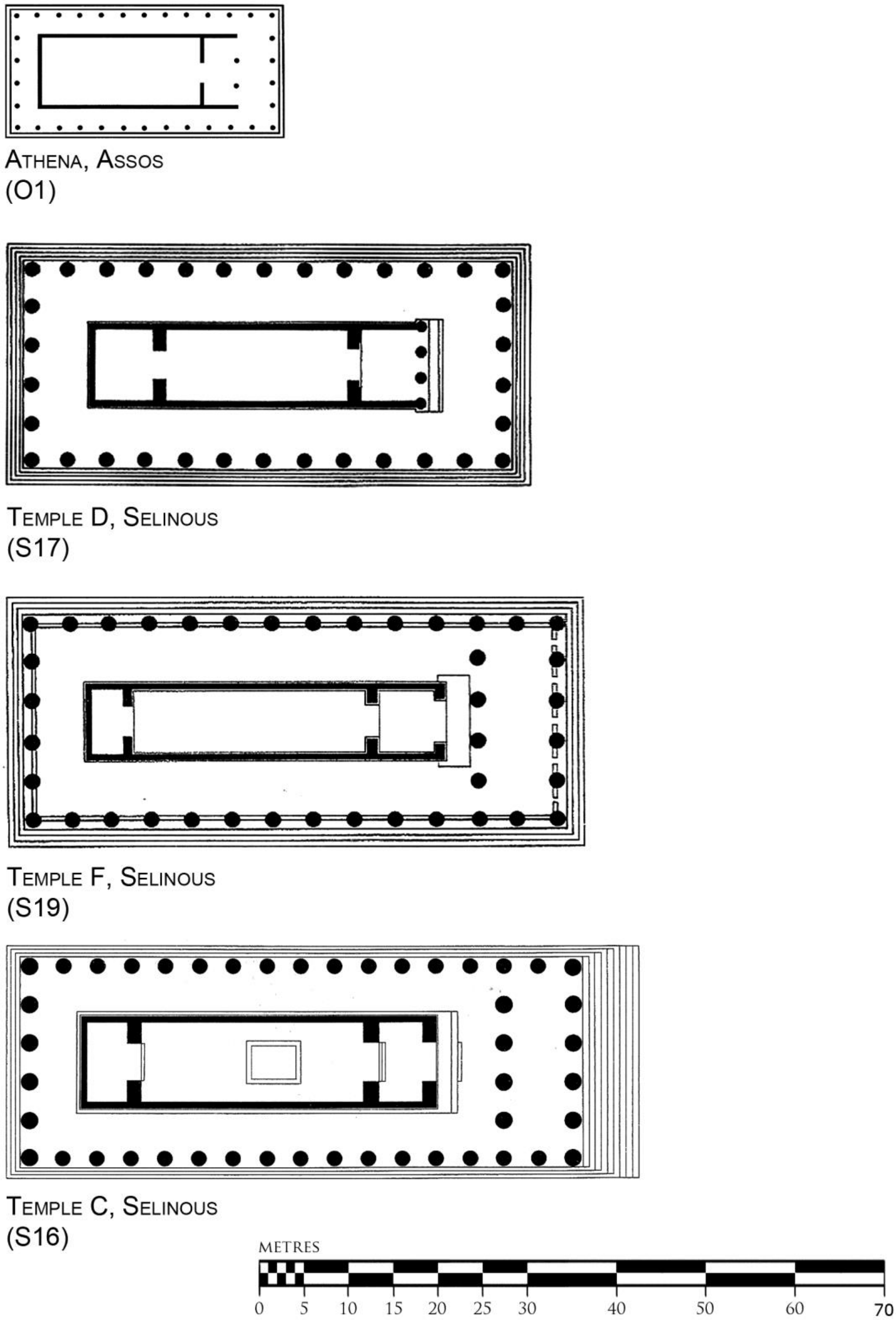

Figure 8 Plans of the Temple of Hera at Olympia (P18), the Temple of Athena at Assos (O1) as well as Temples C (S16), D (S17) and F (S19) at Selinous (*After* Mallwitz 1972: 81; Mertens 1984: 164, Beilage 26; Spawforth 2006: 191).

As a further consequence of new analyses and discoveries, regional trends in temple design began to be identified. Previously, proponents of the evolution argument would only acknowledge the impact of local influences when a building could not be forced into their individual model of Panhellenic evolution; for example, Dinsmoor (1950: 92) suggested that the unusually short peristyle on the Temple of Athena at Delphi (N17) was due to the temple's position "athwart a narrow terrace", while the uncharacteristically long proportions of the contemporary Temple of Apollo at Delphi (N16) were "the result of the introduction of the adytum between the cella and the pronaos". Likewise, Mertens (1996: 332) has argued that the long proportions of Temple E at Selinous (S18) were due to the refusal of the Selinuntines to remove the adyton and the builders' "lack of confidence in achieving the classical balance".

During the second half of the twenthieth century a growing number of scholars began to observe that some elements of temple design were distinctly local. As the concept of 'regional' design was contradictory to the idea of Panhellenic development, the local trends were generally subsumed into the evolution model as short-lived tangents to the single overarching evolutionary line. For instance, although Shoe (1936: 183; 1952: 4, 22) argued vigorously for the general chronological development of Greek mouldings and their usefulness in dating temple architecture, she acknowledged that there were certain discrepancies between the mouldings of the western and mainland temples and, in addition, certain local styles existed amongst the colonies. For example, the fifth-century temples of Akragas appear to have made use of their own unique sima form (Shoe 1952: 25).

Similarly, Coulton (1977: 105; 1979: 82) argued that column capital shapes did not evolve at a consistent Panhellenic rate, as had been previously postulated. For example, it had generally been accepted that as the ancient architects moved from site to site, refining the proportions of the Doric temples, each new building would utilise a capital that was slightly less bulging than on the previous temple. As such, the shape of the capital could be used to help date the architecture (Johnson 1936: 48; Dinsmoor 1950: 90; Scranton 1964: 27; Lawrence 1996: 68). Coulton (1977: 105; 1979: 82) noted, however, that no two sets of Doric capitals, even on the same building, have precisely the same proportions and echinus profile; for example, the pronaos and peristyle capitals on the Temple of Zeus at Nemea (P17) have noticeably different proportions (Hill 1966: 45). Coulton (1977: 105) suggested that instead of a gradual evolution, the capital underwent three distinct changes, albeit with regional variations in uptake. During the archaic and classical periods, it is also likely that there was a predominance of short-lived local styles; for example, he demonstrated that the buildings of fifth-century Attica made use of a standard capital design not used elsewhere (Coulton 1977: 106; 1979: 90). Coulton (1984) later went further, suggesting that the entire form of the Doric temple did not evolve as smoothly as has been previously postulated and identified distinct fifth-century

Attic forms in other areas of the architecture, such as the ratio of entablature height to column height.

Similar trends towards local designs, not solely based upon Panhellenic chronological change, have been identified by other scholars. For example, Winter (1990; 1993) noticed that during the archaic period various regions developed their own roofing systems, which were categorised by both technical and decorative functions and were often based around individual city-states. Furthermore, Pfaff (2003a: 195) suggested that the use of graduated heights of the krepidoma steps and the inclusion of ramps are strongly associated with the Peloponnese, whilst, Bookidis (1967: 505), Goldberg (1982) and Marconi (2007: 217) have all identified regional trends in the decorative schemes of Doric temples.

Indeed, a number of studies have argued that there was a wider variety of different designs in the sixth century than simply those of the mainland and western traditions discussed above (Prokkola 2011: 158, 185, 188; Wescoat 2012: 1-4, 204, 235). Barletta's (1990) analysis of the 'Achaian' or 'Ionian Sea' style demonstrated that a vast amount of regional variety existed in the temple architecture of the sixth century. For example, capitals with leaf necking are only found in certain poleis in South Italy, the Peloponnese and on Korkyra and have consequently been linked to local taste and political associations between the various poleis (Barletta 1990: 49, 52). Moreover, Barletta (2009a: 77) suggested that during the early sixth century the form of the cella building, as well as the number and arrangement of the peristyle columns, were affected not only by the building's date but also its location.

Although it is acknowledged amongst scholars of the twenty-first century that there is a greater variety in the temple designs of the sixth century than has been previously postulated, it is still generally suggested that the buildings were all part of a pioneering 'creative' period, which existed prior to the late archaic period, at which point inter-regionality and shared principles of design meant that temple design began to move along a single evolutionary road towards 'perfection' in the fifth century (Østby 2000: 257; Barletta 2009a: 82; Wescoat 2012: 1-4). Therefore, classical temple scholars continue to try, with varying degrees of success, to adapt the model and fit the local and regional differences into a grand narrative of Panhellenic design development; however, it is now felt that the argument is more nuanced and not as straightforward as was once presented by Brown (1906) and Dinsmoor (1950).

Complicating the Model – Meaning and Identity

The inherent contradiction involved in applying a chronological model to a data-set that demonstrates regional tendencies has led some scholars to explore the meaning behind different temples' constructions. Consequently, these studies have tended to concentrate upon understanding the reason why a community built a Doric temple, rather than focusing on the intricacies of design that concerned scholars such as Brown (1906) and Dinsmoor (1950). The investigation of meaning in classical architectural studes is not a 'new' topic; indeed, Vitruvius (4.5.6-7) famously felt that the Doric order represented the male body and the Ionic the female. It is not the aim of this section to discuss all instances whereby classical architecture was thought to bear meaning,[8] rather to focus upon studies that suggest the construction of temples in different locations and different designs was due to their meaning. In the last few decades the association of the differences in classical architecture and meaning has attracted attention as scholars seek to move away from seeing a direct connection between design and date.

Edlund (1987: 143) and De Polignac (1995) have suggested that all peripteral temples in extra-urban sanctuaries (up to 15 or 16km away from an urban centre), regardless of their specific designs, served the particular interests of a single polis, especially in relation to making claims to land holding.[9] Furthermore, it is argued that placing Doric peripteral temples in these frontier sanctuaries served to emphasise a city's 'Greekness' (Edlund 1987: 143). The link between the construction of a temple and the desire of the constructors to demonstrate their Greek identity, has found particular authority in relation to the Doric temples of Sicily and South Italy. It has long been noted that the cities of the west constructed a large amount of monumental architecture, especially when compared to the cities of the mainland (Sjöqvist 1973: 64). The large number of temples in the western colonies has been linked to a "spirit of militant Hellenism" amongst the colonists, which has subsequently been associated with a represention of their 'Greek identity' (Sjöqvist 1973: 64; Mertens 1996: 319). In this sense, particular western temples are seen as forms of propaganda, whilst the meaning behind the majority of Doric temples is overlooked, or they are assumed to have none (Mertens 1996: 334). For example, Burford (1961: 91, 93) argued that the temple at Segesta (S13) was built by the Segestans in order

[8] For example, studies such as those by Holland (1917), Hersey (1988: 31) and Wilson Jones (2002), which seek to identify the meaning behind the appearance of the triglyph frieze are not discussed here as they focus upon the meaning of a single element of the Doric order, rather than the decision to build a temple in a particular location or in a certain way.

[9] This idea has also been suggested by Marinatos (1993) and Pedley (2005). However, Spencer (1995) prefers to see extra-urban sanctuaries as representing the interests of the urban elite, whilst Hall (2006), Voyatzis (1999) and Forsén *et al.* (1999) suggest that extra-urban sanctuaries were owned and used by multiple competing or friendly cities.

to demonstrate their Greekness to the Athenians, whereas the Temple of Asklepios at Epidauros (P9) was built purely to serve the needs of an expanding cult.

The main problem with the theory of specific western temples being seen as symbols of Greek identity is that it overlooks the historical circumstances under which the monumental temples of Sicily and South Italy were built. These temples do not belong to a time when the colonists were trying to affirm their supremacy over their non-Greek neighbours or were being threatened by them. Indeed, Small (2004) suggested that in South Italy there was a large amount of peaceful interaction between the Greek cities and native aristocratic elites during the sixth century. Marconi (2007: 30) further argued that far from being symptomatic of Greek communities under pressure from their non-Greek neighbours, the monumental temples of the colonial Greek west were the signs of wealth, power, and superiority of the communities that erected them. Indeed, whilst it may be true that the western Greeks built larger temples than those on the mainland, the mainland Greeks constructed more temples than those in the west (Marconi 2007: 29). Furthermore, the idea that colonial temples were used as statements of Greekness, whilst those on the mainland were not directly involved in such propaganda, being built simply as art-pieces, is somewhat contradictory and overlooks the potential role of all Doric temple architecture to convey meaning.

In fact, it has recently been suggested that architecture, particularly architectural sculpture, was used to address issues of individual polis identity rather than simply reflecting the ‘Greekness’ of the colonists (Marconi 2007: 30). Wescoat (2012: 4) suggests that as the city temple, the Temple of Athena at Assos (O1) served not only as an expression of contemporary civic identity and pride, but also as a reflection of cultural values. Although the temple was dedicated to the divinity, it was meant to be seen by human beings whose responses were important; thus, Wescoat (2012: 4) hypothesises that the sculptures on the building served a purpose and had meaning beyond their decorative value.

Despite it not being generally agreed that iconography can be directly liked to politics (for example see Whitley 2001: 257), it has generally been felt that a building’s sculptural programme bore particular meaning (for example, Spivey 1996: 98; Marconi 2007; Barringer 2008; Maggidis 2009: 92-93; Østby 2009). More recently, Holloway (1999) argued that the metope sculptures of Temple C at Selinous represented the consolidation of state religion. Furthermore, Hölscher (2011: 55), in relation to the fact that many temples’ sculptures depict similar myths, has suggested that citizens of a polis would identify with the myths depicted on their buildings, whether they represented myths specific to that city or not. However, not all temples carried sculpture and in these instances the architecture itself is left to display any intended meaning.

Due to the nature of their analysis, studies into the meaning behind the temple architecture have tended to avoid discussing the buildings' physical appearance. However, the temples' appearance is integral in understanding the ways in which the groups who built the temples wanted to appear (Cherstich 2006: 31). Consequently, a number of studies have begun to suggest that the similarities and differences between the various buildings' designs bore meaning. For example, Strøm (1989: 198) suggested that if Argos is to be seen as controlling the Argive Heraion, "one should expect to find examples of corresponding building activity in Argos during the period in question". Likewise, Holmes (1995: 175-176), studying eighth- and seventh-century architecture, identified that sanctuaries with political ties to a city seem to adopt the city's architectural style, suggesting that "the ancients recognised decorative details and exploited them as characteristic emblems of a city or region".

The idea of meaning behind architectural similarities between buildings was also identified by Snodgrass (1986) in relation to both Doric and Ionic peripteral architecture. Snodgrass (1986) noted that, despite their extraordinary size in relation to the other Doric temples, Temple G at Selinous (S20) and the Temple of Zeus Olympios (Temple B) at Akragas (S8) had very similar stylobate dimensions (50.07m by 110.12m and 52.74m by 110.095m respectively). Snodgrass attributed these similarities to 'peer-polity interaction', suggesting that the two projects were designed to rival each other, with both cities having a long history of political competition. Therefore, it was argued that in this instance, the temples' dimensions and proportions were not affected by Panhellenic design trends; rather, local circumstances, as well as political and social competition, determined the buildings' size.

Further analyses in other locations have shown that architectural design was used on a local, rather than Panhellenic, scale to convey meaning (Stevenson 2001: 86-87). For example, the use of the Ionic style on tomb architecture in sixth-century Cyrene is contrasted by Cherstich (2006: 25-31) with the predominantly Doric style used in the public architecture of the city, arguing that the diverse styles were used in order to display the affiliation and cultural identity of the tomb occupants. Similarly, Skele (2002: 29, 45) has suggested that the peculiarities in the design of the Temple of Athena at Poseidonia (I8) may be linked to the assimilation of indigenous populations into the city, whilst Lattimore (2006: 460) argued that the use of the Ionic and Doric order on the Temple of Athena at Poseidonia (I8) may reflect the colonists' consciousness that all styles were ‘theirs’, rather than foreign. However, the most complete case study to date, analysing both meaning and temple design together relates to the temples of sixth-century Arcadia.

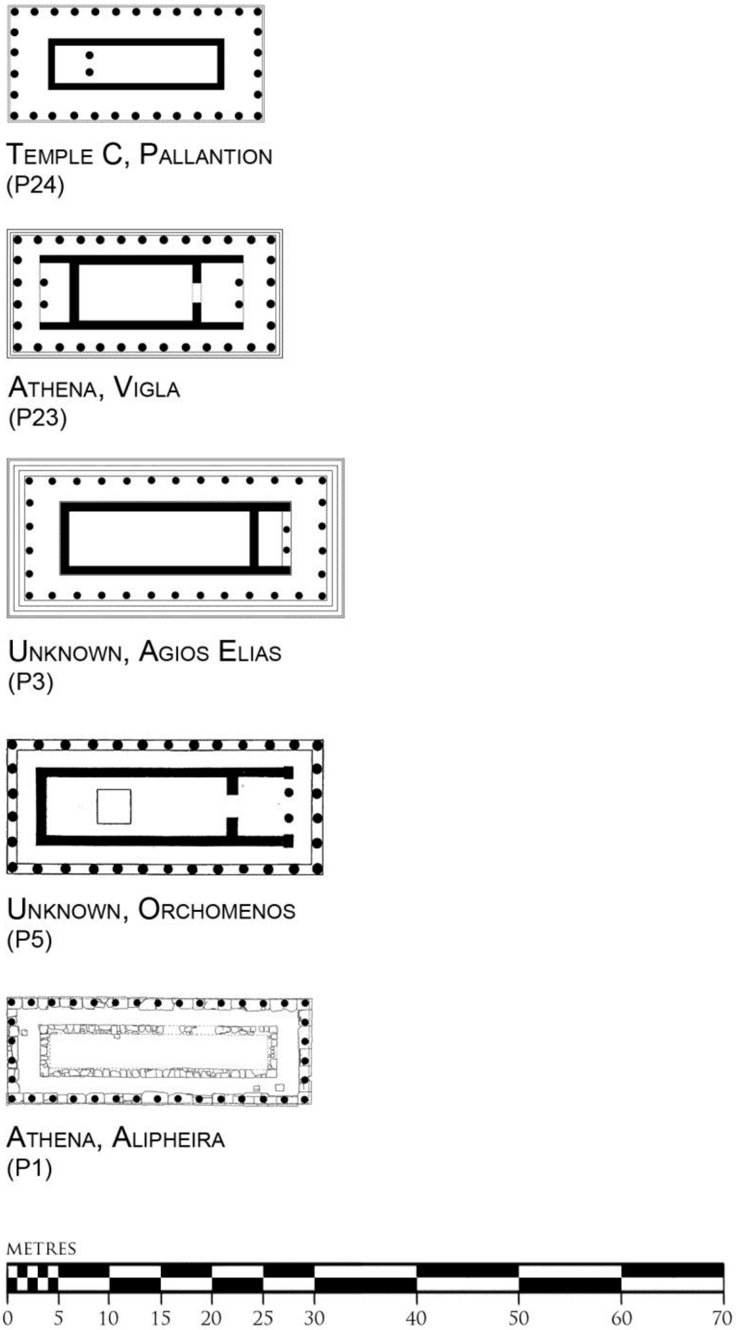

Figure 9 Plans of Østby's 'Arcadian' tradition temples (*After* Østby 1991: 45; 1995b: Figure 188, Figure 194, Figure 195, Figure 200).

Østby (1991; 1995b; 2000; 2005) identified a series of temples in archaic Arcadia that utilised similar features in their designs (Figure 9). The main identifying factors of the 'Arcadian' style are: differentiated axial spacing on the façade and the flank, the use of 6 by 13 columns, the use of marble, and the use of similar dimensions. For instance, the Temple of Athena at Vigla (P23) and Temple C at Pallantion (P24) were constructed with similar overall widths, the foundations of the Temple of Athena measuring 11.55m by

24.33m compared to the 11.4m by 25m of Temple C. The repeated use of such design similarities, in contrast to the Panhellenic evolution trend in the wider Greek world, prompted Østby (2005: 501) to associate the use of this style with the same notion of inter-state competition identified by Snodgrass (1986). Indeed, Østby (2005: 501) went further than Snodgrass and associated the differences in the designs of the buildings with the separate expressions of identity on behalf of the supporting cities. Consequently, Østby's study associates the similarities and differences of the Arcadian temple designs with the conveyance of meaning. Further to this study, Nielsen (2002: 181-4; Nielsen and Roy 2009: 262) has argued that the date of construction may also be a significant factor in the identification of architectural competition in Arcadia. For example, the construction of temples in the neighbouring communities of Orchomenos and Mantinea, around 530, are seen as efforts to re-affirm their separate local identities, and the degree of difference between the temple designs was desirable in order to assert their local identity in the face of outsiders. Therefore, studies of this type, which utilise the detailed art-historical analysis to suggest that the similarities and differences bore meaning, view the buildings' designs as having an active social role, rather than simply as objects designed to reflect contemporary Panhellenic trends.

Unfortunately, despite this strong indication of the importance of regional architectural trends, the Arcadian group is still identified by Østby (2005) as being a single 'tangent' to the overall linear evolution of Doric architecture in the sixth century. Consequently, Østby's (2000: 257; 2005: 493) study is limited geographically to Arcadia and chronologically to the sixth century, in order to avoid the 'mainstream' of archaic Dorism, which is felt to be exemplified by the Temple of Apollo at Corinth (P7). Furthermore, the various scholars who have analysed the so-called 'Arcadian' tradition are unsure as to when the local tradition ended. For example, Østby (2005), as well as Forsén *et al.* (1999), included the temple on Agios Elias (P4) within the 'Arcadian' tradition, whilst Nielson (2002: 180) argued that the temple demonstrates an "awareness of Panhellenic developments". Indeed, Winter (2005: 486) argued that the series comes to a close with the earlier Temple of Athena at Vigla (P23) and excluded the Agios Elias temple all together. Consequently, notwithstanding the fact that the Arcadian sixth-century temples' differences are recognised as vehicles that expressed meaning, the buildings are inherently viewed as a brief tangent on the path of Panhellenic evolution.

To summarise, the first half of this chapter has demonstrated the current issues relating to the application of the traditional evolution model to the physical temple remains. The review indicates that the model has significant underlying problems, especially with regard to its reliance on perceptions of perfection. The appearance of 'perfect' elements in the sixth century and the amount of variety in the designs of the temples that ultimately refuse to be organised into a linear development, further suggest that there are problems with the model.

Recent studies, such as those by Winter (1990; 1993) and Barletta (1990), have suggested that the traditional model cannot be applied in such a simple way and that differences in the designs might be due to various regional as well as Panhellenic trends. Barletta's 2011 article on the state of the discipline discusses the need for future studies to place buildings not only in their architectural but also their social context. In contrast to earlier art-historical scholars such as Dinsmoor (1950), recent studies by Snodgrass (1986), Østby (2005) and Nielsen (2002) have begun to analyse architectural design as well as trying to understand the buildings' social importance and meaning. Their work, analysing the design of the temples at a regional level, in an attempt to understand the reasons behind their similarities and differences has demonstrated that the variations in the temple designs, once believed to be indicative of 'fashion' and date, had significance in the ancient world. As argued by Miles (1998: 54), the application of a Panhellenic evolution model may actively obscure any intended significance of variation in design. Unfortunately, despite the indication that temples were used to convey meaning, the Arcadia study was limited both geographically and chronologically in order to avoid contradicting the Panhellenic evolution model. However, the Arcadia study provides an insight into the regional and social role of the design similarities and differences in the ancient world. Nevertheless, before a more wide-ranging regional analysis of similarities and differences can be completed, a large scale re-analysis of Panhellenic design trends and the assumed role of certain groups within the evolution argument, such as the architects, need to be completed, in order to identify any Panhellenic trends in temple design.

The Architect

It is a widely accepted premise that some level of conscious thought went into the design of Doric peripteral temples and traditionally, this process has been seen as the sole responsibility of the architect (Coulton 1975: 59; Rhodes 1995: 68-74). As discussed above, the architect is a fundamental element of the evolution model and consequently, scholars who utilise the evolution model have a very clear-cut understanding of the temple commissioning process. For example, the process is outlined by Coulton (1974: 98; 1977: 16, 74) who states that it was the patron's concern to decide upon the temple's size, as "it was upon the size that the cost would largely depend", whilst it was the architect's responsibility to look after everything else, including both technical and design matters, as well as overseeing the craftsmen and the project's administration. This view of the architect as chief builder, foreman, surveyor and master-designer has largely been maintained into twentyfirst-century studies of Doric temple architecture (for example, Barletta 2005: 95; 2009a: 80; 2011: 628; Tomlinson 2006: 161).

In actuality, the very nature of the evolution model requires the architect to undertake these responsibilities. For the evolution model to work, ancient Greek architects had to have been world-famous, wandering, master-architects who designed buildings alone, regardless of outside pressures or the nature of the society in which they were working. Viewing the architects in this light explains how the temple's shapes were able to evolve at such a smooth rate over vast geographic distances and why the primary goal of a temple's design was to achieve 'perfection'. Indeed, the ancient Greek architects are considered to be so powerful that Østby's (2005: 493) group of local (Arcadian) temple designs could only exist because of the unusual presence of local architects, and, to this end, the Temple of Apollo Epikourios at Bassai (P4) and the Temple of Athena Alea at Tegea (P6) were excluded from his analysis because Pausanias (8.41.7-9, 8.45.5) suggests that they were created by architects from outside Arcadia.

Such was the belief that the architect was solely responsible for the entirety of a temple's design that, similar to the works of Beazley and the attribution of pottery paintings to different artists, it was thought that unique details of execution attested to the individuality of the architect (Symeonoglou 1985a: 49; Snodgrass 2007: 21, 22). A number of scholars went as far as to assign temples to anonymous architects based on stylistic and typological details. The most famous, and widely accepted example is the 'Theseum architect' (Figure 10B), whose attributed temples include the Hephaisteion in Athens (A6), The Temple of Poseidon at Sounion (A9), the Temple of Athena at Pallene (A10) and the Temple of Nemesis (A11, Dinsmoor 1950: 181-182; Plommer 1950; Meiggs 1963: 39; Hodge and Tomlinson 1969; Winter 1978: 156). Other 'unknown' hands have been identified using the same methodology; for example, it is argued that a single architect constructed the Temple of Athena at Syracuse (S23) and the Temple of Victory at Himera (S12, Dinsmoor 1950: 109; Figure 10A).[10] Likewise, the Temple of Artemis at Kalydon (N1) and the Temple of Poseidon at Velvina (N2, Figure 10C) are argued to be designed by a single architect (Lawrence 1996: 144), and a single architect is thought to have designed the Temple of Athena Alea at Tegea (P6) and the Temple of

[10] This methodology is also used on other temple types: for example, Shear (1963: 389) argued that the similarities between the Ionic Temple of Athena Nike on the Athenian Akropolis, the Illisos temple and the Temple of the Athenians on Delos are so numerous that they all should all be attributed to Kallikrates.

Zeus at Nemea (P17, Robertson 1979: 145-146; Figure 10D). Indeed, similarities between the Temple of Athena at Karthaia (A16), a number of buildings in the Argive Heraion and the Temple of Hera at Olympia (P18) led Østby (1980) to suggest that the Temple of Athena at Karthaia was designed by a ‘Peloponnesian’ architect.

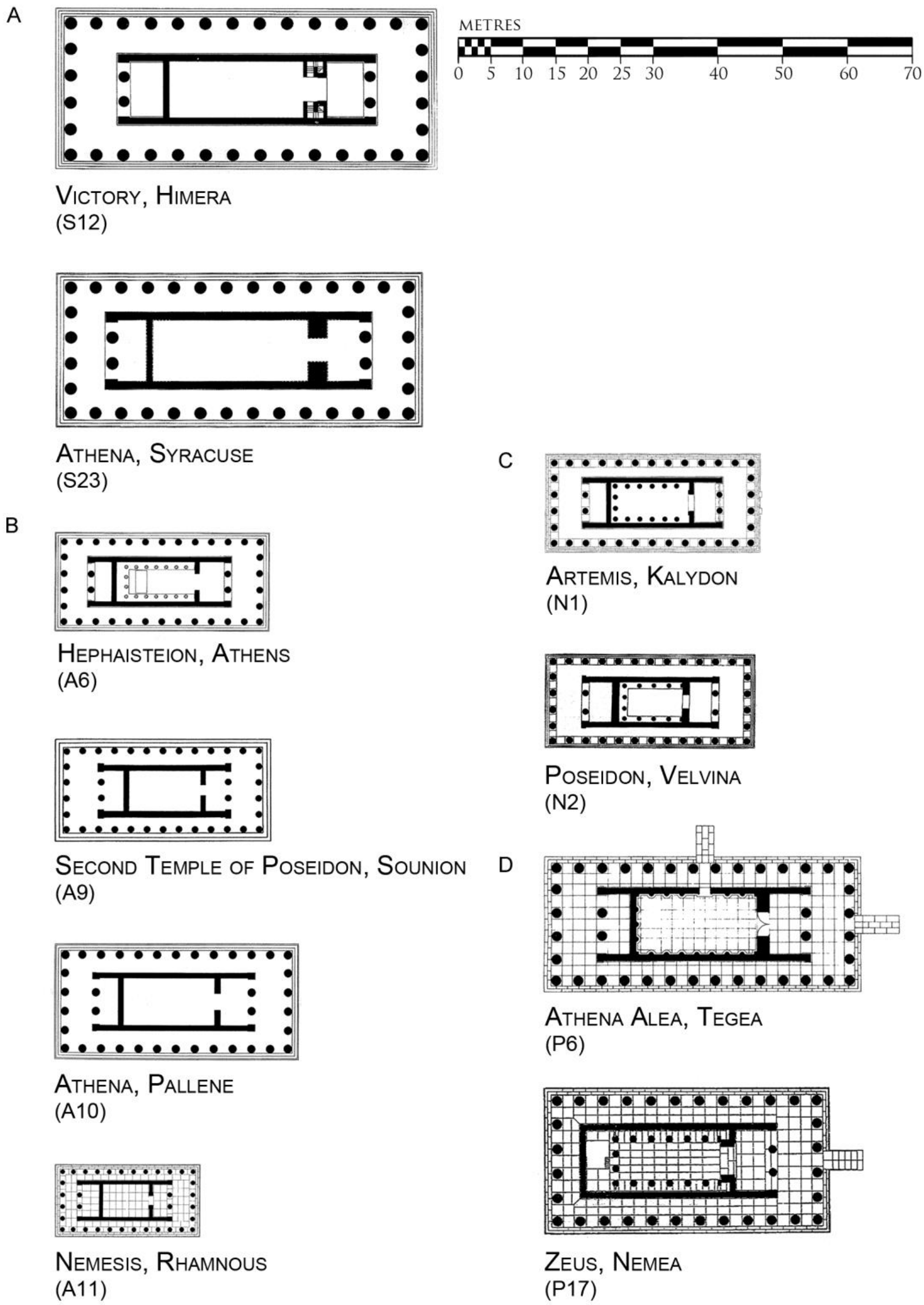

Figure 10 Plans of temples ascribed to the same unknown architects by proponents of the evolution model. Each group of temples is thought to be designed by a single architect, for example, the temples of group B are purported to have been designed by the 'Theseum' architect (*After* Dyggve 1948: Tafel XXXIV; Dinsmoor 1950: Figure 5; Boersma 1970: 196; Mertens 1984: Beilage 26; Norman 1984: 183; Miles 1989: 143; Spawforth 2006: 161, 173; Barringer 2008: 116).

Along with the overall evolution model, the idea of the all-powerful architect has dominated archaic and classical temple studies. However, with the growing difficulties in applying the evolution model to the physical remains, a number of scholars have begun to suggest that on certain projects other individuals had an input, or were at least present, during the design process. Holloway (1969) has suggested that the architect did not have full control of the temple's design until the late sixth/early fifth century, which, as discussed above, coincides with the supposed period of 'standardisation' in Doric temple design. Indeed, Holloway (1969: 289) argued that in the first decades of monumental stone architecture the architect worked alongside a master engineer but by the classical period, if not before, the architect became entirely responsible for a temple's design.

Despite the confident assertions regarding the role of the architect in temple building and his usefulness to the dissemination of Doric design, in instances where Pausanias has provided the name of an architect it has proved difficult to reconcile this information with what is known about that individual from ancient sources and the architect's role required by the evolution model. For example, Pausanias (8.45.5) states that the architect of the Temple of Athena Alea at Tegea (P6) was the famous sculptor, Skopas of Paros, but, as discussed by Stewart (1977: 80-81), it is very difficult to relate the information known about Skopas' career with the dates of the temple architecture, that is presuming that Skopas performed all the roles assigned to the evolution model architect. To this end, Stewart (1977: 80-81) suggested that multiple architects must have been present during a temple project; in which case, Skopas was the 'planning' architect for the temple, who designed the building and all its individual elements, before going abroad to fulfil other commissions and leaving an 'assistant' architect in charge of the day-to-day running of the project.

In particular instances it has also been suggested that the project's client may have been involved in decisions relating to the temple's design, albeit normally in relation to the theme of the temple's sculpture. For example, Ashmole (1972: 12, 24) suggested that the choice of the Twelve Labours of Herakles as the subject of the porch metopes on the Temple of Zeus at Olympia (P20) must have been made by the patron before Libon began to design the temple, as it was designed to have twelve metopes above the porches. The knowledge of local history utilised in the subjects of the pediments means that the client must have chosen, or at least approved, the subjects. Similarly, the sculptural themes of the temples of Selinous, the Temple of Artemis at Korkyra (N23) and the Temple of Athena at Assos (O1), have all been suggested to be the choice of their respective clients by various scholars (Marconi 2007: 12; Østby 2009: 166; Wescoat 2012: 5).

A number of scholars have gone further, proposing that the architect was present on temple projects primarily in an advisory role to a commission of overseers appointed by the client (Bundgaard 1957: 97; Kostof 1977: 23; Burford 1996: 374). Indeed, Martin (1967: 43) argued that the architect's design input was minimal, suggesting that the architect was not only restricted by finances but also by local traditions, religion, previous buildings and available materials, as well as the conservative nature of Greek architecture. Martin (1967) further argued that the architect's prime responsibility was the receipt of materials, whilst the high standards of construction were attributable to the skill of the workmen as opposed to that of the architect.

A brief review of the evidence relating to the role of the ancient architect indicates that their role in the commissioning process was not as straightforward as the 'Theseum architect' scholars have postulated (Dinsmoor 1950: 181-182; Plommer 1950; Meiggs 1963: 39; Hodge and Tomlinson 1969; Winter 1978: 156). Naturally, due to the scant nature of the evidence, any argument for the role of the architect relies on support from multiple periods and locations. In a discussion of the inter-period nature of evidence relating to the temple architect, Coulton (1996: 410) notes that, since there was no major change in the character of architecture between the archaic and classical periods, it is likely that much the same system was used, although this system probably changed significantly in the Hellenistic period; as the Roman architect Vitruvius assumed that the ancient Greek architects used plans and elevations, for which there is no evidence in earlier periods. To this end, it is interesting to note that the role of the architect, as suggested by scholars of the evolution model, is largely based upon various readings of Vitruvius, who published *De Architectura*, almost 500 years after the Persian invasions of Greece, during the second decade of the first century (Tavernor 2009: XIV; for a recent summary of studies of Vitruvius see Barletta (2011: 628-629)). According to Vitruvius (1.1), the architect was a 'jack of all trades' with knowledge of mathematics, astronomy, perspective, lighting, history, natural philosophy, acoustics and property law, whilst also being able to design and oversee the construction of a number of building types (temples (Vitruvius Book 4), houses (6), farms (6.6), forums (5.1), theatres (5.3-8), baths (5.10), prisons (5.2), Palaestrae (5.11) and harbours (5.12)), as well as siege machinery (10.9-16) and water machines (10.1-8; Clarke 1963: 9; Jenkins 2006: 30). Interpreting Vitruvius to mean that a single individual had mastered all these elements has resulted in the idea that the architect was responsible for almost every process of temple design and construction, an interpretation clearly contradicted by Vitruvius (1.1.12) himself, who doubted Pytheos' claim that an architect should have a better knowledge of each subject than a specialist in it. Furthermore, although most of Vitruvius' detailed information on temples, particularly the Ionic buildings, comes from Hellenistic Greek sources, his approach to architecture is largely based upon his own experiences (Tavernor 2009: XVI). For example, Holland (1917: 138) suggested that Vitruvius' models for the origin of the Doric order were mainly based upon wooden Etruscan temples. Indeed, both Coulton (1975: 62; 1977: 15; 1996: 410) and Snodgrass (2007: 22) have subsequently warned about the dangers of applying the evidence from Vitruvius back to the archaic and classical periods and consequently, conclusions drawn from Roman sources have to be regarded with a significant amount of caution.

Despite the importance ascribed to the architect by scholars such as Barletta (2005: 95; 2009a: 80; 2011: 628) and Tomlinson (2006: 161), there are a remarkably small number of architects' names in ancient sources and inscriptions, while the names of sculptors in the same sources are abundant (Kostof 1977: 16; Miles 1989: 240). Most of the architects' names that we associate with ancient temple projects come from the second-century A.D. travel writer, Pausanias, an individual most interested in the art of the past and the attachment of names to inventions and new developments (Arafat 2004: 46). Indeed, as explained by Arafat (2004: 46), Pausanias' attribution of particular techniques to individuals is unlikely to be accurate, as there was "a perceived necessity for a specific named inventor".

Occasionally other sources relay the names of ancient architects, such as Vitruvius' (preface to 7.15) reference to Antistates, Callaeschros, Antimachides and Porinos being the architects of the Olympieion in Athens (A2), but, as the most abundant source for such names, Pausanias' attributions have tended to attract the most attention amongst scholars who argue for an all-powerful architect, often despite a lack of additional evidence for their careers. For example, Pausanias (2.17.3) states that a local architect named Eupolemos was responsible for the fourth-century Temple of Hera in the Argive Heraion (P2), but nothing else is known about him and no other source even mentions him (Pfaff 2003a: 196). Whether the architects named by Pausanias existed or not, Pausanias' desire to name an individual as the architect of a temple project or a particular development, effectively reduces the impact of other individuals in the temple commissioning process and forefronts the contribution of the architect.

One inscription contains an architect's name (albeit hidden in the lines of text), not mentioned by Pausanias (2.27.2). In his description of the Temple of Asklepios at Epidauros, the monumental inscription at Epidauros contained the fourth-century construction contracts for a number of buildings in the sanctuary. Amongst all the other payments that are listed in the inscription, it is recorded that Theodotos, architect of the

Temple of Asklepios (P9), received 353 drachma per year, which was little more than the wage of a labourer. In contrast to the small amount of pay received by Theodotos, Hektoridas receives 1,400 drachmas for the "sculptures in the other pediment" (Burford 1969: 141; *IG* IV^2 1.102 AI 7; *IG* IV^2 1.102 AI 51; *IG* IV^2 1.102 AI 109). As discussed by Schultz (2009: 75-76) in relation to the different payments made to the two sculptors of the temple's akroteria and pediments, the wage differences are directly relatable to the artists' skill and reputation, indicating that considerably less money was spent acquiring an architect than was spent on the sculpture. The small amount of pay received by the architect on this project is at odds with the massive amount of responsibility assigned to him by the evolution model, a problem for which many scholars have found hard to account (Coulton 1977: 28; Kostof 1977: 22; Tomlinson 1989: 26). For example, Coulton (1977: 28) argued that losing employment on a temple project would mean the end to "arduous responsibility rather than of desirable employment and wages" and that "architecture could not normally be regarded as a lifetimes profession".

Indeed, the word '*architekton'* is also found in relation to individuals who are not associated with building design. Plato (*The Statesman* 259e-260a; Clarke 1963: 9) makes it clear that the architect's position is a ruler of workmen and that he is not a workman himself, but, Plato does not suggest that it is the architect's position to design anything. Strabo (14.1.24) uses the word '*architekton*' for the people employed to narrow the mouth of a harbour. Herodotus (3.60; 4.87) refers to Eupalinos, who constructed a tunnel in Samos as an architect and likewise Mandrocles, who was the architect of Darius' bridge. Vitruvius (10.16.3) discusses the architects Diognetus and Callias, both of whom design siege equipment and city defences, and an architect in Polybius (*Histories* 13.4) repairs city walls. Apollodorus (*Library* 3.1.4) uses the word architect to describe an individual who constructs a wooden cow on wheels. The term '*architekton*' could also be used for shipwrights (Burford 1963: 26). In fact, in inscribed building accounts the word '*architekton*' suggests the modern equivalent of contractor, overseer, master mason, or sanctuary factotum, rather than designer (McCredie 1979). At Delos, an individual called Phaneas was originally employed as a workman before being identified as the architect (*IG* X^1 161A.43-46; Clarke 1963: 9). Consequently, it is argued that the 'architect' of a temple project did not have as much responsibility for the building as has been postulated. This is not to say that architects were not vital individuals on temple projects, rather they were not powerful wandering artisans who were solely responsible for a building's design.

The surviving building contracts from Epidauros further indicate that a building committee of influential individuals was elected to oversee the temple project, including the building's design and construction, while it was the role of the architect to provide technical information to the commission (Burford 1969; *IG* IV^2 1.102). References also survive for the building commissions elected to oversee the design and construction of the Artamition, the Epidoteion and the theatre at Epidauros (Burford 1969: 134). Indeed, similar committees are also referred to in relation to the temple projects on the fifth-century Athenian Akropolis (Burford 1969: 128; *IG* I^2 372; *IG* I^2 88; *IG* I^2 24). The report completed in 409 on the state of the Erechtheion details the members of that year's committee and indicates the presence of an architect alongside the other committee members:

> The commissioners of the temples on the Akropolis in which is the ancient image – Brysonides of Kephisia, Chariades of Agryle, Diondes of Kephisia, architect Philokles of Archanai,[11] secretary Etarchos of Kydathenaion recorded as follows the state of the work on the temple, in obedience to the decree of the people proposed by Epigenes, according as they found it complete or incomplete (*IG* I^2 372; Burford 1969: 128).

The inscription clearly shows that the committee (*epistatai*), alongside the architect, had an active interest in the state of the temple. Indeed, an inscription relating to the Temple of Athena Nike (*IG* I^2 88) indicates that it was the responsibility of the *epistatai* to choose the best design for the temple's doorway. It was also the responsibility of the *epistatai* to create a detailed design of the building and provide it to the Boule (*IG* I^2 24). These inscriptions pose an interesting question regarding the relative roles of the architect and the committee on a temple project. Obviously, given the scant amount of evidence for the commissioning process, it is difficult to speculate on the exact roles given to each individual on a project and it is likely that each project took a slightly different approach. However, a number of pieces of evidence, referred to as *syngraphe, anagrapheus*, and *paradeigma,* provide tantalising insights into the relationship between the various interested parties and the process behind a temple's design (Coulton 1996: 409).

During the archaic and classical periods there is no real evidence that drawings or scale models were used in temple construction (Coulton 1983: 456). Indeed, as discussed by Bundgaard (1957: 93-132), the highly conservative nature of ancient Greek architecture means that drawings were not needed, suggesting instead that the individual artists or

[11] The names of two architects are preserved in the building inscriptions relating to the second phase of construction on the Erechtheion, Shear (1963: 422 n.317) suggested that these were 'supervising' architects, as opposed to the 'designing' architect who Shear believed to be Kallikrates. Likewise, on the fourth-century Temple of Apollo at Delphi (N15), the expense accounts indicate that the architect, Spintharus, was succeeded by other architects, such as Xenodorus and Agathon (Dinsmoor 1950: 217).

craftsmen would learn the appropriate forms along with their craft. As such, the presence of *syngraphai* has proved to be particularly confusing. *Syngraphai*, of which the most famous examples are the Arsenal and Prostoon inscriptions from Piraeus and Eleusis respectively (*IG* II^2 1668; *IG* II^2 1666), appear to contain text based instructions for the construction of specific buildings (Bundgaard 1957: 93-132; Coulton 1977: 54-55). Although Coulton (1983: 457) argued that, due to the use of marble, the Arsenal stele was an official acceptance of the design by the Athenian people, rather than instructions on how to construct the building, the inscription indicates that the building was broken down into uniform sections (Bundgaard 1957: 124; Senseney 2011: 32). This coincides with the idea that the ancient Greeks understood buildings as assemblages of clearly defined repeated parts, rather than as unified conceptions reducible to small scale representations, such as plans and scale models (Senseney 2011: 32). Indeed, the Doric peripteral temple, with its repeated units of two Doric columns, topped by a single architrave block, as well as two triglyphs and metopes, is the very embodiment of construction through simple repeated parts (Bundgaard 1957: 96; Fehr 1996: 167). The simple form of the Doric peripteral temple allowed these parts, particularly the decorative elements of the Doric order, to be altered with little affect upon the rest of the building. Consequently, it is the simple, repeatable, nature of Doric temple architecture that allowed the architect and the commission to work together to design the building (Figure 11). As such, it is argued that it was the responsibility of the committee, including the architect, to make decisions regarding the overall design of the temple and to choose the designs of the individual elements, such as the capital shapes and the pedimental decoration.

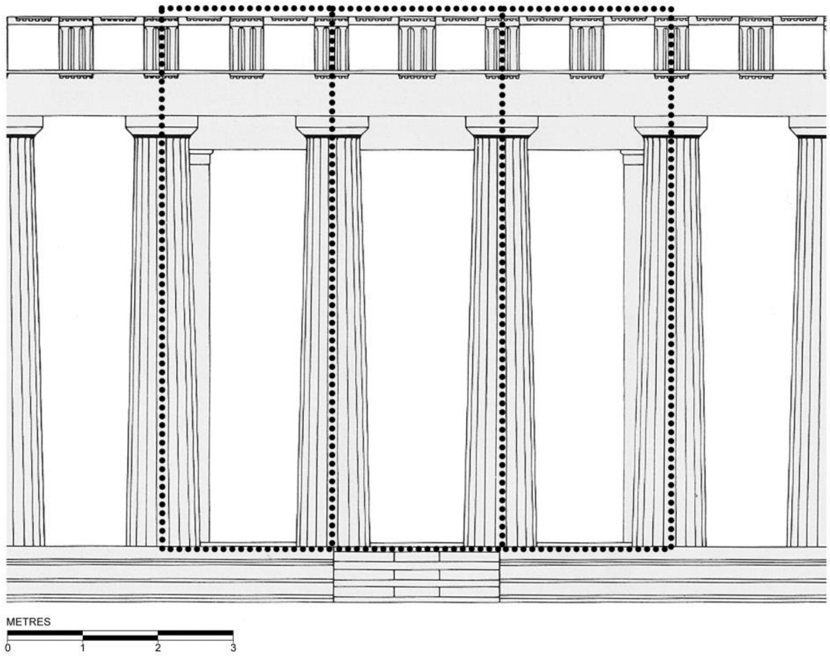

Figure 11 The Doric peristyle composed of repeatable elements of two columns, architrave block, two full metopes, one full triglyph and two half-triglyphs (*After* Tomlinson 1983: 58).

Indeed, the *syngraphai* inscriptions suggest that details of a temple's design would be presented to the committee separately, in the form of *paradeigma* and *anagrapheus*, thus enabling any non-specialist members of the committee to visualise and choose preferred designs.[12] For example, the Prostoon inscription from Eleusis (*IG* II^2 1666A.34, 48, 82 and B2) indicates that the architect is responsible for supplying an *anagrapheus* for the metopes, capitals and cornices of a new porch (Coulton 1976b: 302; 1983: 455). Examples of preserved *paradeigmata* and *anagrapheis* include: the thin lead sheet bearing a moulding profile discovered in 1965 on Korkyra (Travlos and Smithson 1982),[13] the marble capital belonging to the Tholos at Epidauros, found buried away from the building (Holloway 1969: 289; Coulton 1983: 456), the (now lost) 'tile standard' piece from the Temple of Apollo at Assos (O1), used to help create standardised tiles for the temple's roof (Coulton 1977: 56). Likewise, Dinsmoor (1961: 203-204) listed various other examples as 'Membra Rejecta' due to his belief that these were buried in order to avoid embarrassment, such as, the anta capital and Ionic capital from the Temple of Apollo Epikourios at Bassai (P4), with slightly different profiles to those used on the final

[12] Despite Seki's (1984: 77) assertion that Herodotus' (5.62) mention of a *paradeigma* at the sixth-century Temple of Apollo at Delphi (N16) could refer to a building plan, it is generally considered that *paradeigmata* were full-scale models of specific elements of the building, such as a capital, whereas *anagrapheis* were simpler, two dimensional templates of particular elements, such as the profile of a particular moulding (Coulton 1976b: 303; 1977: 56, 57; Stewart 1977: 80; Fehr 1996: 172; Senseney 2011: 32).
[13] Although Travlos and Smithson (1982) refer to this as an example of a *paradeigma*, it much more closely matches Coulton's (1976b; 1977: 55) clearly defined description of an *anagrapheus*.

building and a raking geison block from the Hekatompedon on the Athenian Akropolis (Akropolis Museum 4567), which lacked the customary ornament and inscribed twice with ΑΠΑΓΟΡΕΥΟ ("I forbid").[14]

Indeed, it may be argued that the architect crafted the models himself, but the evidence from the Epidauros and Erechtheion inscriptions indicates that multiple individuals would have provided them. For example, although Theodotos was the architect for the Temple of Asklepios at Epidauros (P9), Apollodoros provided a model for the metal grilles, which were subsequently constructed by Pasthemis (Burford 1969: 132; *IG* IV^2 1.102 BIII 295; *IG* IV^2 1.102 BI 105-6). Likewise, the Erechtheion accounts show payments to the sculptor Agathanor, who made a wax model for the acanthus of the coffer lids of the ceiling and to the wood carver Neseus for the rosettes of the ceiling (Kostof 1977: 15). These models would subsequently be submitted to the committee, including the architect, for approval before they were handed to the craftsmen. Indeed, not only did these models help the committee to envisage the final design of the temple and make any desired alterations, they also helped the various craftsmen and sculptors ensure that the repeated elements, such as the triglyphs and capitals, retained roughly the same design (Coulton 1976b).

The etchings on the walls of the late fourth-century Temple of Apollo at Didyma provide further evidence that the design of particular elements underwent a series of consultations before their final approval and inclusion within the building (Haselberger 1985). In fact, each layer of krepidoma at Didyma had a full-scale plan inscribed upon it, demonstrating that elements of the plan were changed from layer to layer (Haselberger 1985: 121). A similar process may also be interpreted from the chalk markings drawn to full scale on the sixth-century foundations of Temple D in the Heraion on Samos (Senseney 2011: 34). Etching out the details of particular elements, as with a model, would help the individuals on the committee to visualise the appearance of the final building and to make any desired changes. The use of models and etchings could be reduced through the process of design 'transmission' or the copying and adaptation of designs from previous buildings; thus, the designs of individual elements could travel independently around the Greek world.

[14] The relative lack of preserved *paradeigmata* is probably due to their eventual incorporation into the finished building (Coulton 1983: 456) or their creation in perishable materials, such as wood or wax (Kostof 1977: 15).

Although there is evidence for some travelling architects, such as Skopas of Paros who performed the role of architect on the Temple of Athena Alea at Tegea (Pausanias 8.45.5), most ancient references indicate that a local architect worked on the project. The architect for the Temple of Zeus at Olympia (P20) was "a local man called Libon" (Pausanias 5.10.3) and the architect of the Temple of Hera in the Argive Heraion (P2) was Eupolemos of Argos (Pausanias 2.17.3). In fact many ideas did not have to travel that far, for instance, the architect of the Square Peristyle in the Athenian Agora used the Stoa of Zeus Eleutherios, on the other side of the Agora, as the model for the axial space designs (Townsend 2004: 317-318). Indeed, as discussed by Coulton (1977: 57; 1983: 454) there is no evidence that architects from other areas would impose their native style upon a client; for example, there is nothing Parian about Skopas' temple at Tegea. It has also been suggested that the craftsmen, rather than the architect, may have helped diffuse the design of particular details, such as specific forms of clamps or mouldings (Coulton 1983: 454; Mertens 1996: 330). For example, Pfaff (2003a: 196) suggested that the 'Athenian' moulding profiles on the Temple of Hera in the Argive Heraion (P2), thought to have been built by a local architect (Pausanias 2.17.3), may have been due to the presence of craftsmen who had previously worked in Attica and brought their designs with them.

Another proposed method of design transference, rather than the direct movement of artisans, is the impact that trade routes had upon the specific designs that were absorbed into a city's architecture (Barletta 1983: 349; Cherstich 2006: 25). For example, although Marconi (2007: 83) suggested that it may just be coincidence, the presence of a large amount of coins from Aigina in Selinous around the same time as the construction of Temple M at Selinous (570-560), a building with close stylistic similarities to the first Temple of Aphaia on Aigina, may indicate the role of trade in the transference of (and willingness to adopt) ideas. Likewise, Mertens (1996: 326-7) has noticed design similarities between Temple Y at Selinous and the first Temple of Aphaia on Aigina.

It has also been argued that Panhellenic sanctuaries at Delphi and Olympia may have acted as 'conduits' of design diffusion (Miles 1998: 54). Indeed, Skele (2002: 42) argued that the architect of the Temple of Hera II (Poseidon) at Poseidonia (I11) had the opportunity to visit Olympia and copy the design of the Temple of Zeus (P20) when the 78th Olympiad was won by a Poseidonian named Parmenides (Diodorus Siculus 11.65.1).[15] Likewise, Østby (2000: 260-261) suggested that the sixth-century Temple of

[15] As discussed above, Mertens (1996: 332) believes that the Temple of Hera II may have inspired the Temple of Zeus at Olympia, rather than the more traditional interpretation accepted by Skele (2002). However, the relatively wide date range for the Temple of Hera II (I11) makes any

Apollo at Delphi (N16) served as an important source of inspiration with regard to the transition between archaic and classical rules of design and its effect can be seen in the design of the Temple of Apollo Epikourios at Bassai (P4) and the temple on Agios Elias (P3).

Another important method of design diffusion was the architectural treatises written after a large project had been completed, such as those of Rhoikos and Theodorus on the Samian Heraion (Vitruvius, preface to 7.12). These treatises appear to have contained technical problems and rules of proportion for those wanting to recreate a given building's appearance. Indeed, the cuttings on the architrave of Temple F and G at Selinous (S19 and S20) indicate that Chersiphron's solution for moving the large blocks of the Temple of Artemis at Ephesos was able to be effectively transmitted by his architectural treatises (Coulton 1983: 462). Evidence for the treatises' usefulness in distributing architectural design is demonstrated by Coulton's (1979; 1983: 462) capital groups. For example, near the head of the two best defined capital groups, the 'Periklean' group and the 'Fourth' century group, stands a building about which Vitruvius (preface to 7.12) mentions the existence of a treatises: Iktinos and the Parthenon and Theodorus and Delphi. However, Coulton (1983: 464) suggests that the transmitted designs were not always directly copied, for instance, the overall design of the Temple of Hera II (Poseidon) at Poseidonia (I11) is very similar to the Temple of Zeus at Olympia (P20), but, the temple also incorporates elements that maintain a link to the previous buildings in the polis, such as the shape of the triglyph tops. Likewise, the capitals on the Temple of Hera II reflect more closely the capitals belonging to the Temple of Athena at Poseidonia (I8) than those belonging to the Temple of Zeus at Olympia (Coulton 1983: 464-466). Although Coulton (1983: 466) suggested that this is due to a confusion of conventions, there is no reason to believe that the separate elements were not independently selected or modified by the committee in the manner discussed above. Indeed, it is likely that all these various methods of 'transference' played a role in the dissemination of designs. Likewise, given the local nature of the building committee, it may also be assumed that they (as well as the architect) had a good understanding of architecture in surrounding poleis and the designs that were utilised there.

Therefore, in contrast to the evolution model architect, who worked alone to design temple projects and whose sole aim was to improve upon the design of the previous project, no matter what its location in the Greek world, it is argued that the architect had to work alongside the building committee, who represented the client. Consequently, the

confident assertions impossible (see Appendix III.1). In fact, Symeonoglou (1985a) has argued that there are more differences between these two temples than has previously been acknowledged.

temple’s design was subject to more local concerns. Whether the designs of particular elements were directly copied or adapted from elsewhere or not, the decision to include them was not solely reliant upon the whim of a traveling architect, but a conscious decision by the committee, who worked in conjunction with the local architect to create the temple design. Indeed, even Vitruvius (6.8.10), whose books form the backbone of the all-powerful architect argument, states that things turn out well if “the architect allows himself to accept advice from both workmen and laymen”.

By way of a summary to the preceding arguments a brief case study considering Iktinos, perhaps the most famous ancient Greek architect, further demonstrates that the architect did not decide upon a temple’s design alone. Instead local influences, such as the building committee, played a more significant role in temple design than has been previously purported.

Iktinos is credited with the construction of the Telesterion at Eleusis (c.449), the Parthenon in Athens (A8; 447-432), and the Temple of Apollo Epikourios at Bassai (P4; 429-400; Pausanias 8.41.7-9; Plutarch *Perikles* 13; Strabo 9.1.12; Vitruvius, preface to 7.16-17). However, not all the ancient sources agree on whether Iktinos was solely responsible for each project. For example, Plutarch (*Perikles* 13.4) names Iktinos and Kallikrates as the architects of the Parthenon, while Vitruvius (preface to 7.12) remarks that Iktinos and Karpion wrote a treatises on the Parthenon. Despite these differences, it is usually assumed by modern scholars that Iktinos led the Parthenon project (Holloway 1969: 289; Carpenter 1970: 46; Ashmole 1972: 92; Barletta 2005: 89). Indeed, Strabo (9.1.12; 9.1.16) and Pausanias (8.41.9) mention only Iktinos in their references to construction of the Parthenon.[16]

The attribution of both the Parthenon (A8) and the Temple of Apollo Epikourios at Bassai (P4) to a single architect has required scholars of the evolution model to identify design similarities in order to support the idea that architects can be identified through such similarities and that architects led the design process. However, the temples do not share many physical characteristics (Figure 12), especially when compared to the similarities in

[16] In defence of Kallikrates’ role on the Parthenon, Shear (1963: 376 n.7) highlights that Pausanias’ mention of Iktinos is in relation to the Temple of Apollo Epikourios at Bassai and as Kallikrates did not work at Bassai, it is not necessarily significant that he was not mentioned; likewise, if Kallikrates was not involved in writing the treatises, there is no reason for Vitruvius to mention him either. Consequently, Shear (1963) and Rhodes (1995: 74) have argued that both Iktinos and Kallikrates were the architects of the Parthenon, whilst Lattimore (2006: 468) attributes the presence of Ionic elements on the Parthenon to the presence of Kallikrates as a designer.

the designs of the fifth-century Attic temples that Dinsmoor (1950) suggested were designed by the Theseum Architect (Figure 10B).

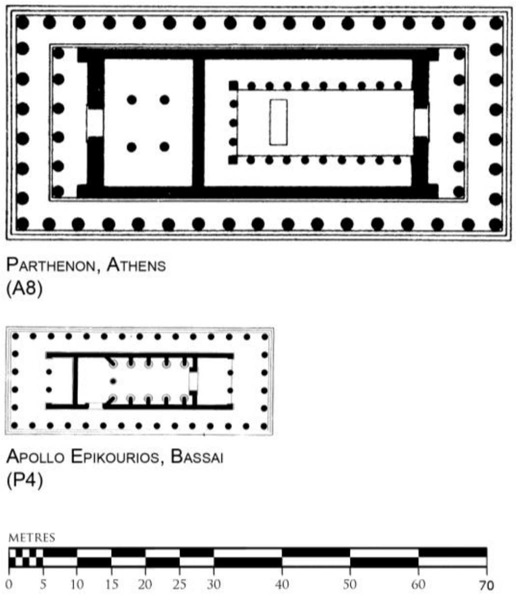

Figure 12 The plans of Iktinos' Doric peripteral temples, the Parthenon (A8) in Athens and the Temple of Apollo Epikourios at Bassai (P4; *After* Pedley 2005: 69; Martin 2003: 80).

To this end, scholars have had to formulate solutions as to why the only known instance whereby a single architect is assigned by the ancient sources to two Doric temples also happens to be the exception to the rule of the same architect equals the same design. Barletta (2005: 90) believes that the interior of the Temple of Apollo Epikourios at Bassai (P4) does demonstrate a clear development of ideas from the Parthenon (A8), as both have three sides of columns in the cella, while the possible frieze on the inside of the pronaos on the Parthenon would be the closest parallel to the internal frieze at Bassai. Other scholars have suggested that the differences demonstrate the remarkable versatility of Iktinos (Dinsmoor 1950: 154; McCredie 1979: 73; Cooper 1996a: 370; Lattimore 2006: 471). Martin (1976 cited in Barletta 2005: 91) explains the differences in the temple designs as arising from an initial stage of construction on the Temple of Apollo by a Peloponnesian architect, with later transformations by Iktinos. The issue of design differences between the two buildings became such a problem to the continued utilisation of the evolution model that Winter (1980) believed Iktinos could not have been the architect of the Temple of Apollo Epikourios at Bassai. Cooper (1996a: 369, 370) has suggested, however, that assessing authorship through comparing and contrasting stylistic and typological details represents a flawed methodology, believing that Pausanias' (8.41.9) attribution of the temples to Iktinos is clear and as such he must have been the architect.

Therefore, if the architect is to be identified through stylistic and typological details, the textual and the archaeological evidence do not appear to agree. However, as discussed above, the evidence suggests that the architect did not have as much design influence as has previously been suggested by proponents of the evolution model and consequently, it is argued that Iktinos could be viewed as the architect of both temples.

Although the two temples do not share design characteristics with each other, they do share many features with their predecessors. The design of the Parthenon takes into account the foundations and the column dimensions of the unfinished Old Parthenon (A5), as well as the inclusion of the 'Parthenon' back room, which had already been started on the site (Martin 1967: 43; Korres 1988: 1786; 2000: 58; Rhodes 1995: 86; Hurwit 2004: 116; Figure 13). Pheidias was appointed general manager and supervisor of the Periklean building programme and he oversaw the work of Iktinos on the Parthenon (Plutarch *Perikles* 13). However, the specific role of Pheidias in the design of the Parthenon has been widely debated (Burford 1963: 25; Martin 1967: 43; McCredie 1979: 73; Barletta 2005: 73) and indeed, Rhodes (1995: 87-88) argued that the only reason the plan of the Parthenon is different from the Old Parthenon is because it was designed around Pheidias' Athena Parthenos statue. There was also an annually appointed board of five *epistatai* who controlled the overall project and were responsible to the Athenian people for its success (Burford 1963: 27). The Parthenon and the Periklean Propylaia have many features in common, even though they are assigned to different architects, Iktinos and Mnesikles (Plutarch *Perikles* 13.4; 13.7; Bundgaard 1957: 96; Coulton 1977: 57; Jenkins 2006: 29).[17] This implies that the *epistatai*, local individuals who oversaw the Akropolis projects, had a greater influence upon design decisions relating to the Parthenon than Iktinos. Therefore, Iktinos was not free to design the Parthenon solely according to Panhellenic trends, but was required to utilise elements from the Old Parthenon whilst satisfying the demands of both Pheidias and the *epistatai*.

[17] Likewise, buildings other than Doric peripteral temples, that have the same architect do not share a design, for example, Mnesikles' worked on the Propylaia, the Erechtheion and the Temple of Athena Nike on the Akropolis but utilise different designs. Despite the design differences between these three buildings, Mare (2008) has argued that the hand of a single architect should not be sought in these buildings as a 'blemishing' was used so that the buildings would not distract from the Parthenon. However, this argument is based on the assumption that these buildings were only of "second tier" importance when compared to the Parthenon, which is a very difficult judgement to make, especially with regard to the Erechtheion's role in Athenian religion. Similarly, Paeonius was the architect of two temples with very different appearances – the Temple of Artemis at Ephesos and Apollo at Didyma (Clarke 1963: 12 n.27).

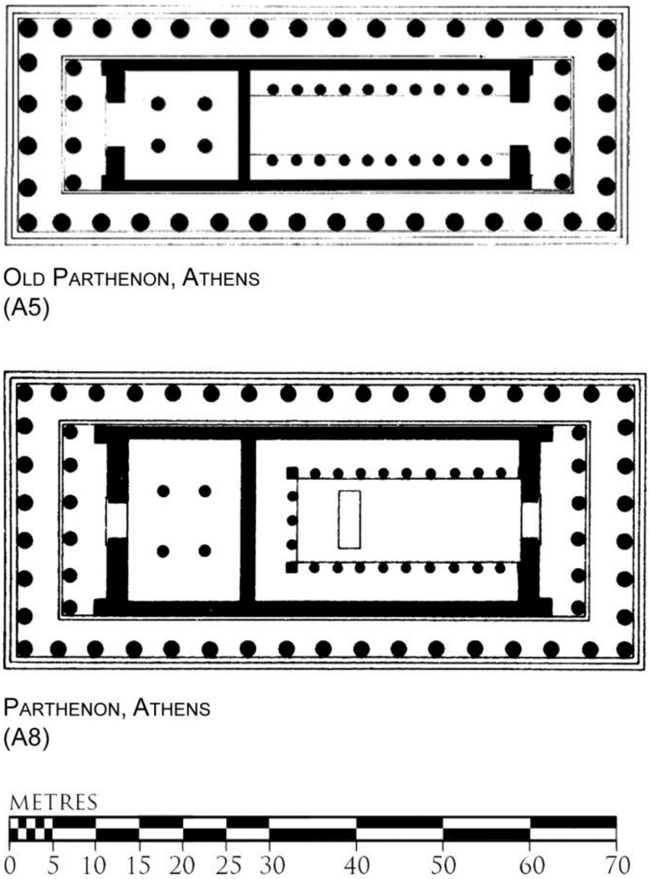

Figure 13 Plans of the Old Parthenon (A5) and the Parthenon (A8), showing the correspondences between the two plans (*After* Travlos 1971: 446; Pedley 2005: 69). Although the Old Parthenon is very poorly preserved, it is generally agreed that the two buildings shared a similar plan (Dinsmoor 1950: 150; Osborne 1996: 264; Hurwit 1999: 132).

Similarly at Bassai, Iktinos was unable to design solely according to the rules of a contemporary Panhellenic fashion, as it would appear that the temple had to be an almost exact copy of its archaic predecessor. The arrangement of rooms in the classical temple is identical to those in the archaic temple located to the south (Kelly 1995: 263; Figure 14). Not only are the rooms almost identically sized, but also they share the same north-south axis. The classical temple even reproduces the drop in floor level of the adyton demonstrated in the archaic temple and the marble roof revetment of the classical temple was a faithful copy of the terracotta tiles from the archaic temple (Cooper 1989: 116). Kelly (1995: 244) also restores the archaic temple of Apollo with engaged internal columns, similar to those of the classical temple. Although there is not the same amount of literary evidence for a building committee for the Temple of Apollo Epikourios at Bassai (P4), the similarities to the earlier temple suggest that local influences also had significant input into temple design.[18] It is therefore arguable that not even Iktinos was able to design buildings according to the rules of a Panhellenic trend in temple design. Instead, both the Parthenon and the Temple of Apollo Epikourios incorporate local elements, in the form of previous buildings, and most likely respond to the requirements of the local building committees. Even if Iktinos was not the architect of one or both of the temples, the evidence still suggests that the architects of both buildings were controlled by the demands of the building committees and not by Panhellenic 'fashion'.

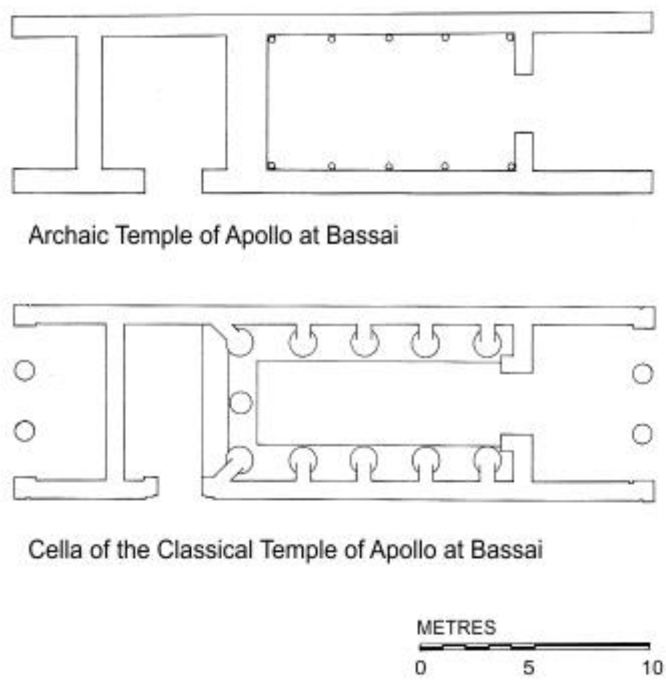

Figure 14 The plan of the archaic temple and the cella of the classical Temple of Apollo Epikourios at Bassai (P4; *After* Kelly 1995: 228).

Conclusion

In conclusion, this chapter has demonstrated that a review of the traditional evolution paradigm of temple architecture is required and that, in order to understand their meaning, the differences in the temple designs need to be analysed on a regional as well as Panhellenic level. The first half of the chapter demonstrated the underlying problems that have been encountered whilst trying to apply the Panhellenic evolution model to the architectural remains. Indeed, recent studies have demonstrated that there is no single evolutionary line and that the differences in temples' designs may be connected to the portrayal of meaning in the ancient world. For example, Østby's (1991; 1995b; 2000; 2005) analysis of the 'Arcadian' tradition of Doric architecture demonstrated that

[18] The influence of previous buildings upon the design of later temples is also evident on the Temples of Apollo at Delphi (N15 and N16) and the Temple of Hera at Olympia (P18, Scully 1979; Miles 1989: 241).

studying the buildings on a regional level indicated the existence of regional trends in Doric peripteral temple design. The existence of regional design trends provided Østby with the opportunity to analyse any intended meaning behind the differences, rather than simply ascribing them to date. However, Østby's study was limited both geographically and chronologically by the overarching demands of the evolution model and his belief that the Arcadian tradition was a 'tangent' to the predominant single line of evolution. Therefore, it is argued that in order to understand the reasons behind the differences in the designs of the Doric peripteral temples, the architectural similarities and differences must be analysed on a regional scale; however, this cannot be completed until any overarching trends connecting design and date have been identified.

The discussion of the architect and the committee in the second half of the chapter further demonstrated the importance of analysing architectural differences at a regional rather than Panhellenic scale. The gathered evidence indicated that instead of an all-powerful wandering master-designer, the ancient architect worked alongside a building committee to decide upon the design of the temple. The presence of a local committee suggests that if the differences were designed to bear meaning, they should be analysed on a regional and local scale. Indeed, as discussed by Smith (2002) in relation to ancient sculpture, it is no longer prudent to view the ancient artist as separate and above the society in which they worked, creating monuments according to a Panhellenic ideal of perfection, rather, their work should be analysed as reflecting contemporary social and political concerns.

Therefore, in order to analyse the meaning of the differences in the temple designs, a review of the differences and similarities must first be completed on the Panhellenic level so that any connection between date and design can be identified. Subsequently, a regional study, building upon the work of Østby (1991; 1995b; 2000; 2005) and Nielsen (2002), which focuses upon the meaning of the differences, can be undertaken. To this end, the next chapter discusses how the temple architecture is analysed in order to systematically investigate the architectural differences and similarities on both the Panhellenic and regional scales.

Chapter 3: The Temple Exterior: Size, Shape and Decoration

> The style of workmanship of the temple is Doric, with a pillared portico around it; it is made of local stone. Its height up to the pediment is sixty-eight feet, its width is ninety-five, and its length is two hundred and thirty; the architect was a local man called Libon. The roof-tiles are not terracotta, but Pentelic stone worked like tiles; they say this was invented by a Naxian called Byzes (Pausanias 5.10.2-3).

Pausanias' description of the Temple of Zeus at Olympia (above) demonstrates a number of issues that were addressed in the previous chapter, especially with relation to Pausanias' desire to ascribe names to important inventions. As discussed in the previous chapter, the evolution model, which was largely built upon a pre-conceived idea of the all-powerful 'architect' from ancient sources such as Pausanias, made a connection between the differences in the temple designs and their dates of construction. However, recent studies, such as those by Østby (1991; 1995b; 2000; 2005) and Nielsen (2002), have highlighted the existence of regional 'tangents' to the single evolutionary line. Østby's and Nielsen's studies have demonstrated that when the temple designs are analysed on a regional scale, the meaning behind the differences in their designs can then be analysed. Unfortunately, Østby's investigation was ultimately limited by the general acceptance of the Panhellenic evolution argument.[19] The retention of the evolution paradigm meant that the majority of temples' designs were thought to belong to a Panhellenic design trend, and thus, could simultaneously be designed according to regional traditions. Work by other scholars, notably Barletta (1990) and Marconi (2007), have suggested that influences upon temple design may be more regional than previously felt, and it is upon these studies that this project builds.

The second half of the previous chapter demonstrated that certain assumptions regarding the role of the architect, who performed a fundamental role in the evolution model, were not supported by the evidence. Consequently, the analysis of the role of the architect further indicated that a review of the connection between the differences in temple design

[19] See Chapter 2, Østby (2000; 2005) limited his study geographically to Arcadia and chronologically to the sixth century, deliberately to avoid the 'mainstream' Dorism.

and date is required. Therefore, before a wider-ranging analysis of the regional 'tangents', and the regional influence upon temple design more-generally, can be completed, the connection between the design differences and the construction dates of the temples needs to be analysed.

In order to systematically analyse the designs of all the Doric peripteral temples in the data-set, in relation to both Panhellenic and regional trends, the gathered data relating to the temples' designs needs to be both measurable and consistent. As such, it is important to discuss how the designs of the temples are catalogued in order for them to be compared systematically. To this end, the first half of this chapter discusses the reasons for focusing upon the size, shape and decoration of the temples' exterior elements. Studying the size, shape and decoration of the individual elements allows for the temples' designs to be systematically recorded and compared, whilst focusing upon the exterior of the temple means that the data-set is limited to the parts of the building which would have attracted the worshippers' attention. The second half of the chapter introduces the 104 temples that are included in the data-set and the criteria that have been applied to the cataloguing of their dates and locations in order to aid the Panhellenic and regional analyses conducted in Chapters 5 and 6.

External Focus

From the outset, the exterior of the temple was designed to be the most visible part of the building; as discussed in Chapter 1, the addition of the costly peristyle columns were primarily due to their visual properties. The next section further analyses the importance of the temple exterior, demonstrating that in order to understand the differences in the designs of the Doric peripteral temples it is necessary to focus upon the appearance of their external elements.

A number of previous studies have demonstrated that the ancient Greek temple served no direct religious function, with worship being conducted outside around the altar rather than inside the building (Coldstream 1985: 68; Bremmer 1994: 27). Sacrifice was the central ritual of Greek religion, fundamental to every religious festival and sacrifice required an altar (Burkert 1988: 37; Bremmer 1994: 27; Osborne 2007: 249). Commonly, the altar is found close to the east end of the temple. Thus, when the worshippers stood around the altar, the temple would provide a backdrop for the sacrifice (Burkert 1988: 37; Garland 1994: 52; Whitley 2001: 136; Osborne 2007: 249). For example, in the Sanctuary of Aphaia on Aigina the altar is directly opposite the east end of the temple, thus, the temple's façade overlooks the altar and the groups that would be gathered for the sacrifice

(Figure 15). Therefore, during religious activity, the temple would have been viewed from the outside rather than the inside.

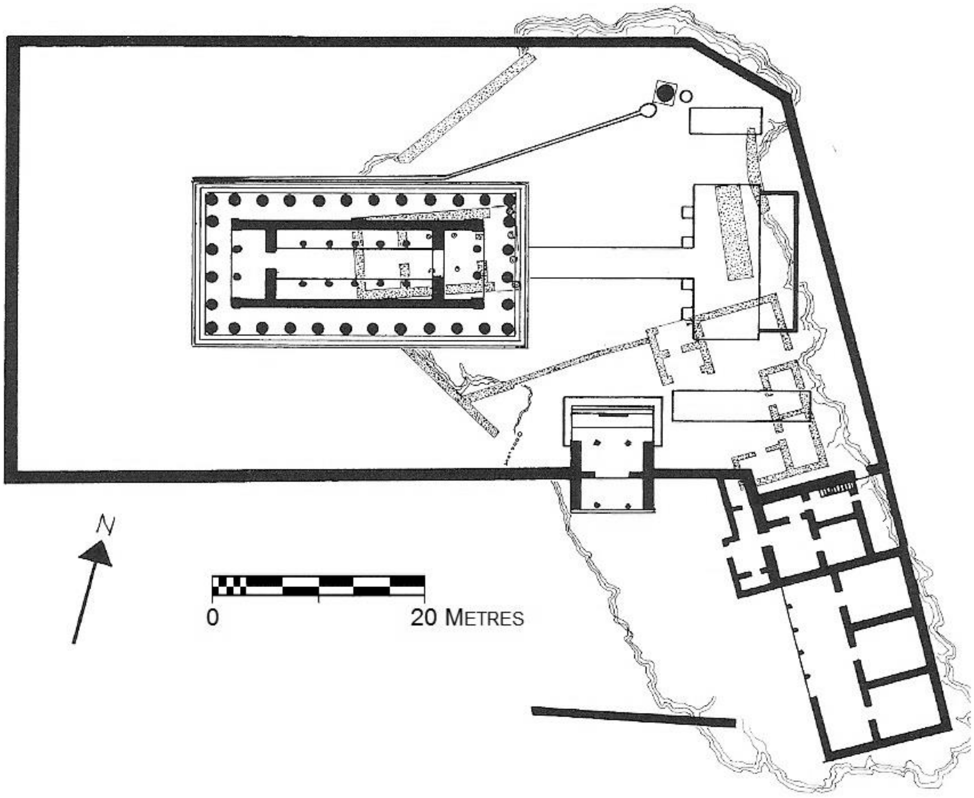

Figure 15 The Sanctuary of Aphaia on Aigina showing the location of the altar opposite the east end of the temple (*After* Goette 2001: 342).

In fact, the temple was only opened infrequently in order to view the cult statue that was placed inside the building (Burkert 1988: 38; Garland 1994: 54; Tanner 2006: 45). For example, Pausanias (8.41.5-7) was unable to view the statue of Eurynome in Phigalia as the temple was closed on the day of his visit, and he recounts that at the Sanctuary of Aphrodite in Sikyon, worshippers had to stand outside the temple even when it was open (Pausanias 2.10.4-5). However, there was probably no 'universal rule' with regard to temple access and it is likely that other sanctuaries offered more frequent contact with the cult statue than these examples (Stevenson 2001: 48-51). Nevertheless, it is generally accepted amongst scholars of Greek religion that the inside of the temple was of little importance during the sacrifice, when the sanctuary would have been at its busiest (Bremmer 1994: 28; Garland 1994: 54). The importance of the inside of the temple to the conduct of ancient Greek religion is further questioned by the evidence that some temples appear to have served primarily as repositories, treasuries and museums (*IG* I^2 393; Jeffery 1990: 72; Morgan 2003: 147; Shaya 2005). Indeed, with regard to previous studies of the designs of Doric peripteral temples, most scholars agree that little attention was paid to the design of the interior elements until the construction of the Parthenon

(A8), which was designed to accommodate Pheidias' grand chryselephantine statue of Athena Parthenos (Scranton 1946: 43; Rhodes 1995: 84, 85). Consequently, the inside of the temple appears to have been relatively unimportant to the conduct of ancient religion, especially in comparison to the altar (Sourvinou-Inwood 1993: 10; Bremmer 1994: 27). Thus, with the exception of the Parthenon, the Doric temples' interior was likely to be a secondary concern when considering a building's design.

Although, in terms of cult, the temple was not the most important component of the sanctuary, it often formed the most visible part (Bergquist 1967: 128; Fehr 1996: 177; Stevenson 2001: 88). For example, when looking for the Sanctuary of Hera during the battle of Plataia, the general Pausanias used the temple as an indicator of the sanctuary's location (Herodotus 9.61). To increase a temple's visibility and prominence, a peristyle of columns could be added. The purpose of the peristyle in the early wooden temples, such as the archaic Temple of Poseidon at Isthmia (first half of the seventh century), has been debated (see Chapter 1); however, once the cella walls came to be constructed in stone, the colonnade's primary function appears to have been to distinguish the temple from the surrounding buildings and thus increase its visibility. Indeed, Vitruvius (3.9) states that:

> The placement of columns around a temple was devised particularly so that its appearance would be imposing.

Such was the high level of visibility afforded by a temple's peristyle that smaller votives would be placed near to it in order for them to benefit from the prominence of the peristyle. For example, when the Temple of Apollo at Kalapodi (N19) was excavated it was suggested that a number of discovered votive chariot wheels and Corinthian helmets were actually hung on the columns of the temple's peristyle (Whitley *et al.* 2006-2007: 42; Niemeier 2007-2008: 48). Furthermore, although the origins of the Doric order are widely debated, the application of the order to the stone peristyle suggests that they were added in order to embellish the appearance of the temple exteriors (Cook 1970). For example, although the entablature supported the roof, the same result could be achieved with plain blocks, not decorated with the repeating triglyphs and metopes that comprised the Doric frieze. Likewise, additional decoration, such as sculpture, was also used to accentuate the buildings' exterior; for example, the Temple of Athena at Assos (O1) had an abundance of sculpture on the eastern end, overlooking the altar, where the sanctuary visitors would have congregated to sacrifice (Maggidis 2009: 80-81).

Therefore, the architectural analysis in this thesis focuses upon the differences in the design of temple exteriors. To this end, a number of the internal elements of the temples' cellae, whose presence have been analysed and discussed in previous studies (Miles

1998/1999), have not been recorded in the data-set. Likewise, the identification, size and shape of the separate individual rooms (pronaos, naos and opisthodomos/adyton), analysed in a number of studies, have also been excluded from the analysis (Scranton 1946: 376; Robertson 1979: 39; Cooper 1996d: 398; Barletta 2009a: 77). Furthermore, the fact that this study focuses upon the external elements of the Doric peripteral temple precludes an analysis of the construction techniques that were used to build them.[20]

As demonstrated by the art-historical studies of scholars such as Dinsmoor (1950) and Larence (1996), the exterior designs of temples could differ dramatically from building to building. However, given the fact that the buildings are all of the same type (peripteral) and order (Doric), the three main points of difference between the buildings' designs are the size and shape of the individual elements, and the additional decoration, such as sculpture, that was applied to a number of buildings. Consequently, given their ability to be consistently catalogued and subsequently compared, these three aspects form the basis for the analysis of the differences in the designs of the peripteral temples. To this end, the next section discusses the importance of size and shape in the architecture of the ancient world, and how they affected the external appearance of the Doric temple. This is followed by a review of the methods used in order to analyse the additional decoration that was applied to particular temples.

External Size (Dimensions)

The overall size both of the temple and of the individual elements formed a key component in the comparison of temple architecture for the ancient Greeks. For example, Herodotus (3.60) justifies his extended study of Samos due to the island having "the biggest of all Greek temples known". Polybius (9.27), discussing the Temple of Zeus Olympios (Temple B) at Akragas (S8) states:

> The Temple of Zeus Olympias is still unfinished, but in its plan and dimensions it seems to be inferior to no temple whatever in all Greece.

Pausanias (8.45.5) suggests that the Temple of Athena Alea at Tegea (P6) was "by a long way first of all the temples in the Peloponnese for its size and its whole construction", whilst the Temple of Hera at Plataia (N5) was "worth seeing for its size and fine statues" (Pausanias 9.2.7). Pausanias (5.10.2-3, 5.16.1, 8.41.7-9) further mentions the height,

[20] A number of scholars have suggested that the techniques used to build a temple are linked to its date and architect (Dinsmoor 1950: 72 n.1; McAllister and Jameson 1969: 179-180, 183; Miles 1989: 239-242). However, multiple building techniques were used on different areas of the same temple to produce the same external appearance and vice versa. For example, the columns of the Temple of Aphaia on Aigina (A14) were both monolithic and drum built (Lawrence 1996: 100), thus, suggesting that the building techniques did not impact upon the temples' designs.

width and length of the Doric peripteral temples of Zeus (P20) and Hera (P18) at Olympia and the Temple of Apollo Epikourios at Bassai (P4). Indeed, for the Temple of Poseidon at Isthmia (P13), Pausanias (2.1.7) may have been directly comparing the size of the temple to another; however, the loss of a few words of the passage makes it impossible to guess which temple it is being compared to (Pearson 1960).

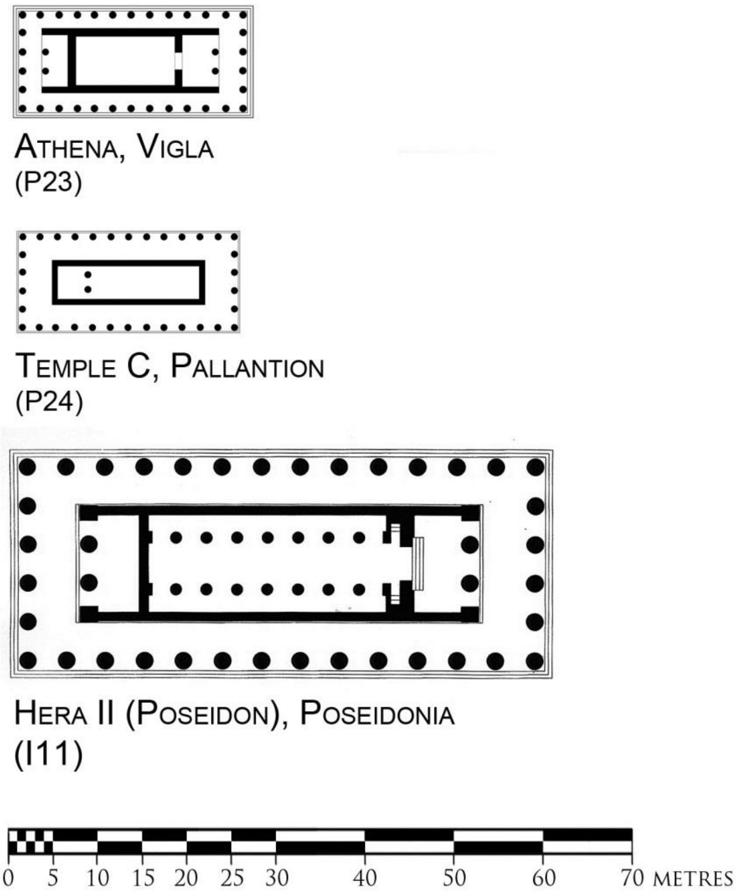

Figure 16 The similar sized temples of Athena at Vigla (P23) and C at Pallantion (P24) alongside the larger Temple of Hera II (Poseidon) at Poseidonia (I11; *After* Østby 1991: 45; 1995b: Figure 194; Martin 2003: 55).

Despite the importance ascribed to size by the ancient authors, comparisons of the size of the various elements were generally overlooked by proponents of the evolution model, instead preferring to compare the temples' proportions. However, the various elements of the archaic and classical Doric peripteral temples, that form the focus of this study, vary enormously in size. For example, the foundations of the Temple of Athena at Vigla (P23) measured 11.55m wide, whereas, those of the Temple of Hera II (Poseidon) at Poseidonia (I11) were over twice as wide, measuring 26.06m (Figure 16). Likewise, the column heights of Doric temples could be considerably different; for example, the columns on the Parthenon (A8) were over two times taller than those belonging to the Temple of Athena at Delphi (N17; Figure 17).[21] Despite this variation in sizes, Snodgrass (1986) has noted that a number of contemporary archaic temples, which were built near to each other, were of remarkably similar size. As discussed in the previous chapter he noted that Temple G at Selinous (S20) and the Temple of Zeus Olympios (Temple B) at Akragas (S8), despite their extra-ordinary size in relation to the other temples of the Greek world actually shared similar plan dimensions (Figure 27). This also appears to have been the case with smaller temples; for example, Østby (2005: 499) has observed that the widths of Temple C at Pallantion (P24) and the nearby Temple of Athena at Vigla (P23) are identical (Figure 16). The similarity in these specific temples' dimensions, despite the overall variety in the sizes of the temples on a Panhellenic scale (Figure 4), suggests that the size of the elements that comprised the Doric peripteral temple had significance in the archaic and classical Greek world. Consequently, size is considered to be an important attribute in the study and comparison of the exterior designs of Doric temples. To this end, the sizes of a range of selected elements are catalogued for each temple, and these are discussed further in the next chapter. As well as being a key factor in the comparison of temple design, cataloguing the dimensions of the various elements also forms the basis for the second line of enquiry, the study of the temples' overall, and the individual elements', proportions.

[21] The columns of the Parthenon (A8) measure 10.433m tall, whilst, the columns of the Temple of Athena at Delphi (N17) measure 4.6m.

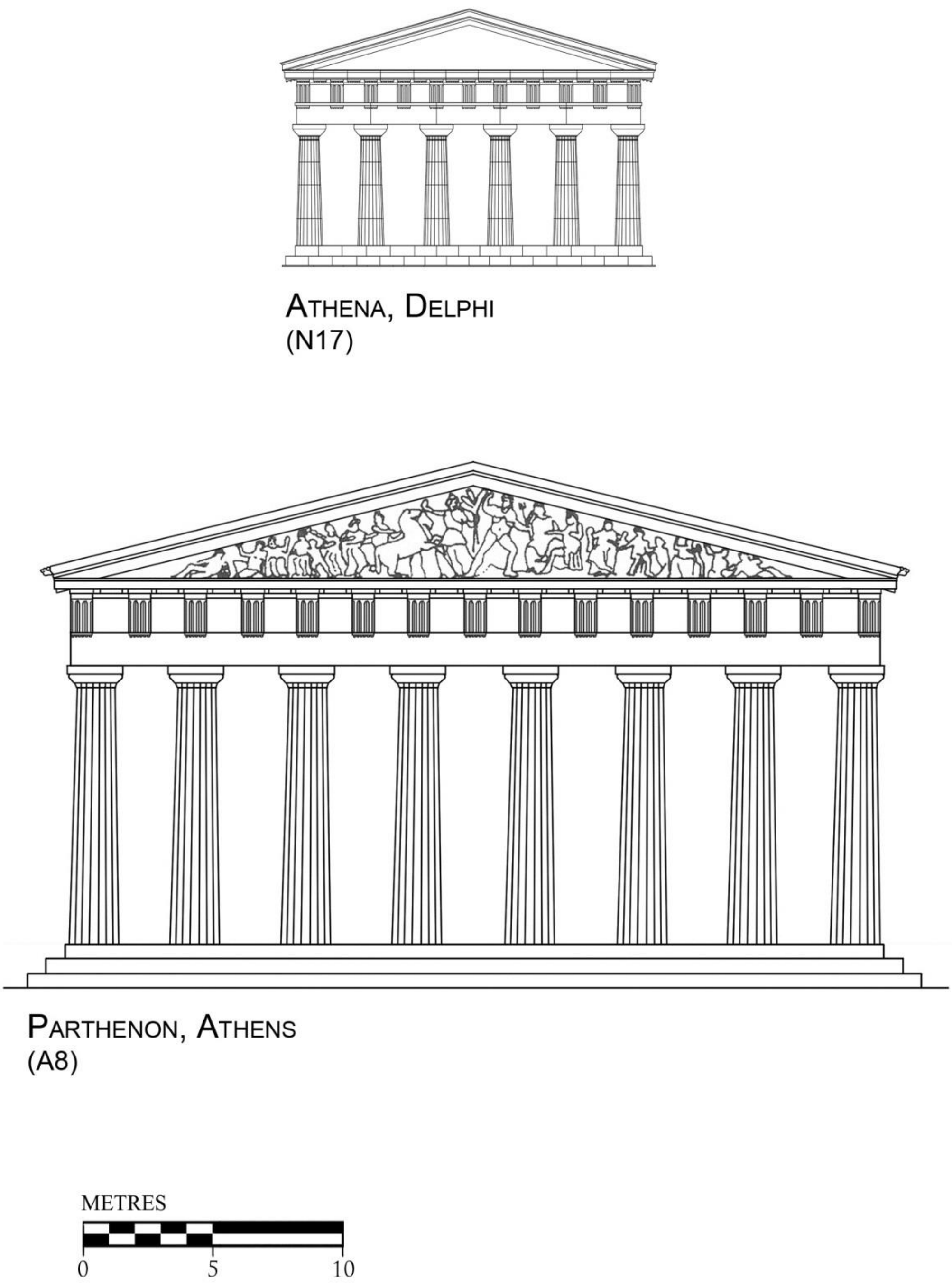

Figure 17 The façade elevations of the Temple of Athena at Delphi (N17) and the Parthenon (A8; *After* Demangel 1923: Plate 8; Coulton 1977: 113).

External Shape (Proportions)

As discussed in the previous chapter, the search for the 'perfect' proportion in temple design, and the preceding Panhellenic trend towards that point, was the focus of earlier studies (for example, Brown 1906; Dinsmoor 1950; Lawrence 1996). According to the evolution model, the differences in the temples' designs, and consequently the Panhellenic evolution in the elements' proportions, was motivated by the desire of the ancient architects to discover the 'perfect' temple through the application of mathematics and the 'ideal' proportion; thus, linking mathematics and proportion to ancient concepts of beauty (Tsakirgis 1996: 408; Spawforth 2006: 64). A number of scholars have suggested a link between the Pythagorean belief that numbers were the basis for the whole universe and temple design, thus promoting the idea of a connection between numbers and beauty (Spawforth 2006: 64; Prokkola 2011: 213). Indeed, the *Canon* written by the fifth-century Argive sculptor, Polykleitos linked harmonious proportions to ideal beauty (Stewart 1978: 124-127; Spivey 1996: 41).[22] Likewise, for Vitruvius, ideal architectural proportions were linked to modularity and the human body:

> Proportion is the commensurability of a predetermined component of a building to each and every other part of a given structure, and modularity is based upon this commensurability. For without modularity and proportion no temple can be designed rationally, that is, unless its elements have precisely calculated relationships like those of a well-proportioned man (3.1.1).
>
> Furthermore, they derived the system of mensuration clearly essential for all buildings from members of the body, such as the finger, palm, foot and cubit: they distributed them in a perfect number, called τέλεον by the Greeks (3.1.5).

Vitruvius' design for a Doric peripteral temple is similarly relayed in terms of the relationship between its various elements:

> Now the length of a temple is worked out so that its breadth is half the length, and the length of the cella itself a quarter greater than its width, including the wall in which the folding doors will be located (4.4.1).

For Pliny (*Natural History* 36.56) the proportions of the column defined the order:

> Those of which the diameter at the foot is one-sixth part of the height, are called Doric.[23] When the diameter is one-ninth, they are Ionic, and when it is one-seventh, Tuscan…In ancient times the rule was, that the columns should be one-third of the breadth of the temple in height.

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[22] Significant difficulties have been uncovered in attempts to discover Polykleitos' exact rules of beauty. Measuring the proportions of Roman copies of his statues suggests that it may have been Polykleitos' intention to give "the impression of life in his human figures by imposing subtle irregularity on the strict precision of his theoretical framework" (Rhodes 1995: 78-80), thus, making it virtually impossible to ratify his treaties.

[23] For Vitruvius (4.3.4) the diameter of Doric columns are one-seventh their height: "The diameter of the columns will be two modules and their height fourteen".

Therefore, there is a significant body of evidence that suggests that the ancient Greeks took an active interest in proportion; however, the different principles discussed above indicate that no single 'perfect' set of proportional rules appear to have dominated ancient thought. Furthermore, *Canon*s other than Polykleitos' are known to have existed; for example, around the time of Polykleitos' writings, Lysippos and Euphranor introduced their own variations of ideal proportions in statues (Roberts 2005: 594). Indeed, Vitruvius' (3.1.2-7) rules in relation to proportions are based upon the amalgamation of three separate *Canons* by un-named authors (Stewart 1978: 127). The lack of evidence that there was ever any one set of 'perfect' proportions indicates that multiple different Doric temple designs could have been considered 'perfect' in different places at different times. The indication that there was no single 'perfect' rule of proportions in Doric temple architecture is further borne out by the difficulty associated with trying to identify the use of a Panhellenic rule of design, even amongst the 'perfect' temples of the late fifth century (see discussion of temple design techniques in Chapter 2).

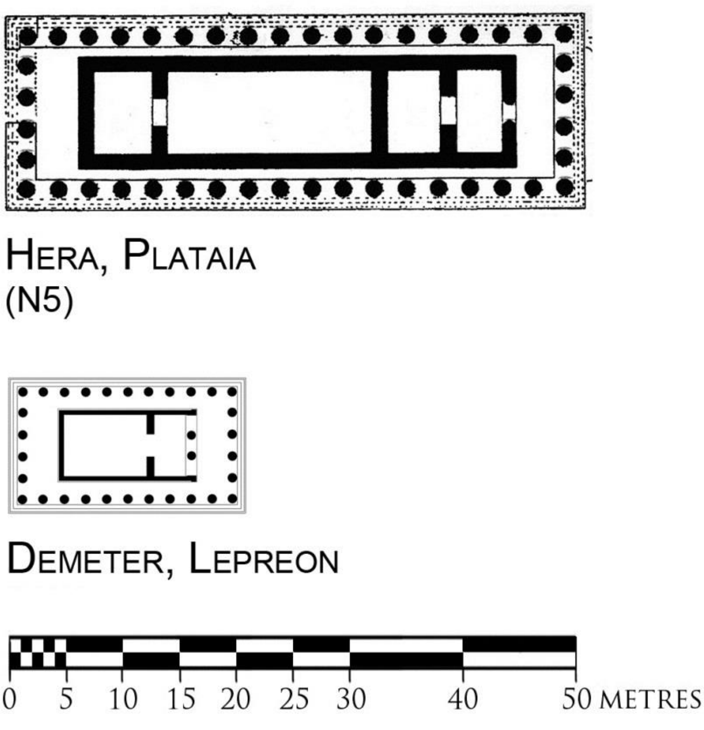


Figure 18 The plans of the Temple of Hera at Plataia (N5) and the Temple of Demeter at Lepreon (P15; *After* Waldstein and Washington 1891: Plate XX; Knell 1983b: 131).

Aside from analysing proportions to try and locate the progression towards 'perfection,' studying the ratios between the various elements allows for a systematic analysis and comparison of the temples' designs over multiple buildings, periods and regions. Indeed, the use of proportions to help date buildings, by scholars such as Brown (1906) and Arapogianni (2002), indicates that, on a Panhellenic scale, a wide range of different ratios were used between the different elements on a Doric temple. For example, whilst the

Temple of Demeter at Lepreon (P15) is less than twice as long as it is wide (ratio of foundation length to foundation width: 1.81), the length of the Temple of Hera at Plataia (N5) is almost three times its width (ratio of foundation length to foundation width: 2.99; Figure 18). Therefore, cataloguing the temple proportions and comparing them, alongside the information relating to the building sizes, allows for the overall designs of the temples to be systematically compared. Likewise, the designs of the elevations also utilise different proportions, which resulted in the production of buildings with different designs, albeit, still being constructed utilising the same order and building type (Figure 5). Thus, a study of the temple ratios is ideal for comparing the differences in Doric temple design. For example, the Temple of Zeus at Nemea (P17) is very tall in comparison with its width, having a ratio of stylobate width to column height of 1.95, in contrast to the wide and short Kardaki temple at Korkyra (N24), with a stylobate width to column height ratio of 4.00 (Figure 19). Indeed, as highlighted by Coulton (1977: 74-79), different elevation proportions could be used to distinguish temples that were constructed with the same sized ground plan. For example, the Temple of Hera II (Poseidon) at Poseidonia (I11), although having almost exactly the same size plan as the Temple of Hera I (I9), has a considerably 'less-squat' appearance achieved through the use of increased sizes on each of the columns rather than increasing their number (Figure 20). Therefore, the importance of the size and shape of the individual components in the ancient world, and the differences from project to project, indicate that these attributes form the best means to systematically analyse the temples' designs, in relation to both the existence of Panhellenic trends over time and the regional analysis of temple design.

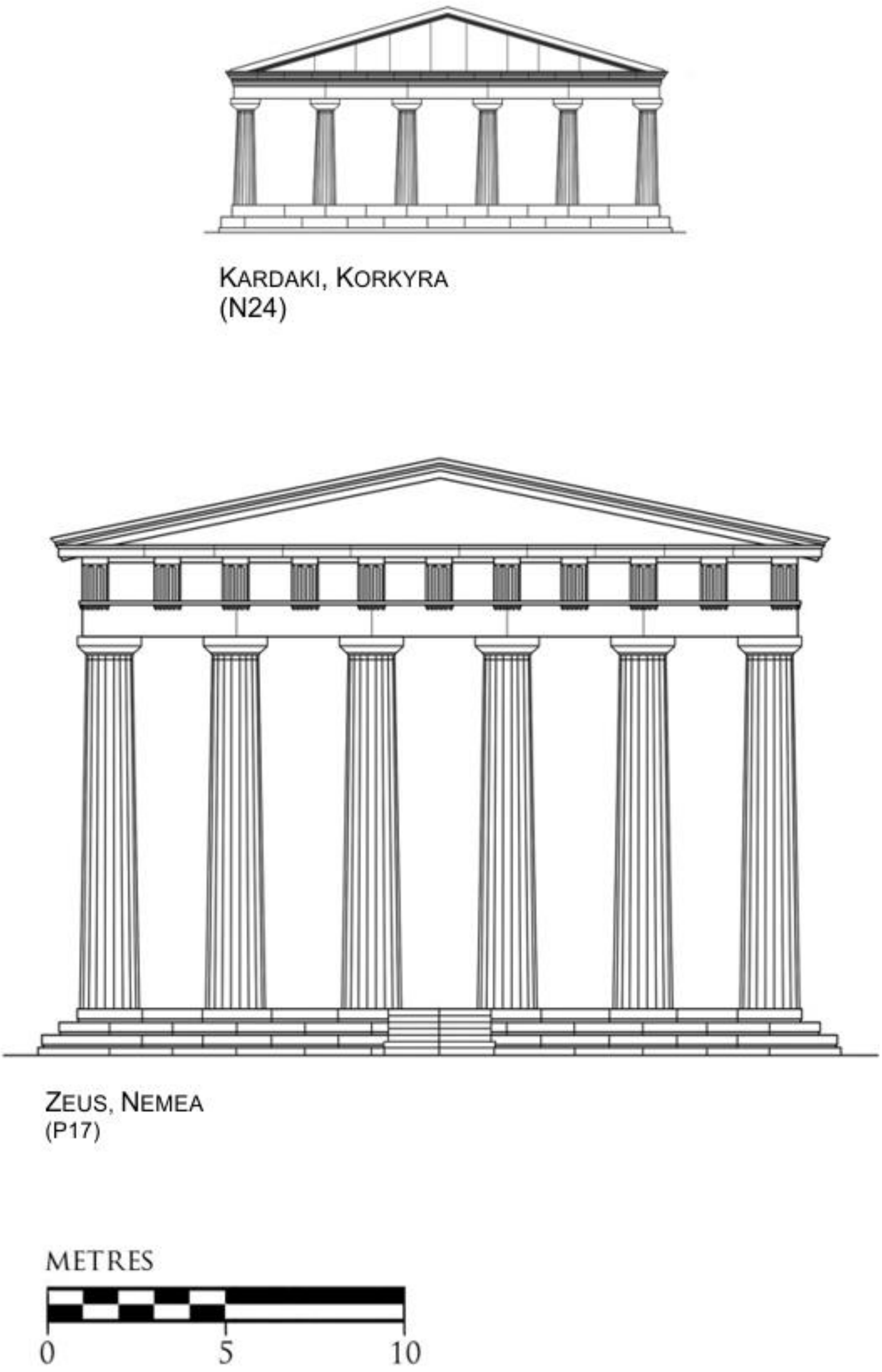


Figure 19 Facades of the Kardaki temple at Korkyra (N24) and the Temple of Zeus at Nemea (P17; *After* Dinsmoor Jr. 1973: 168; Miller 1990: 133).

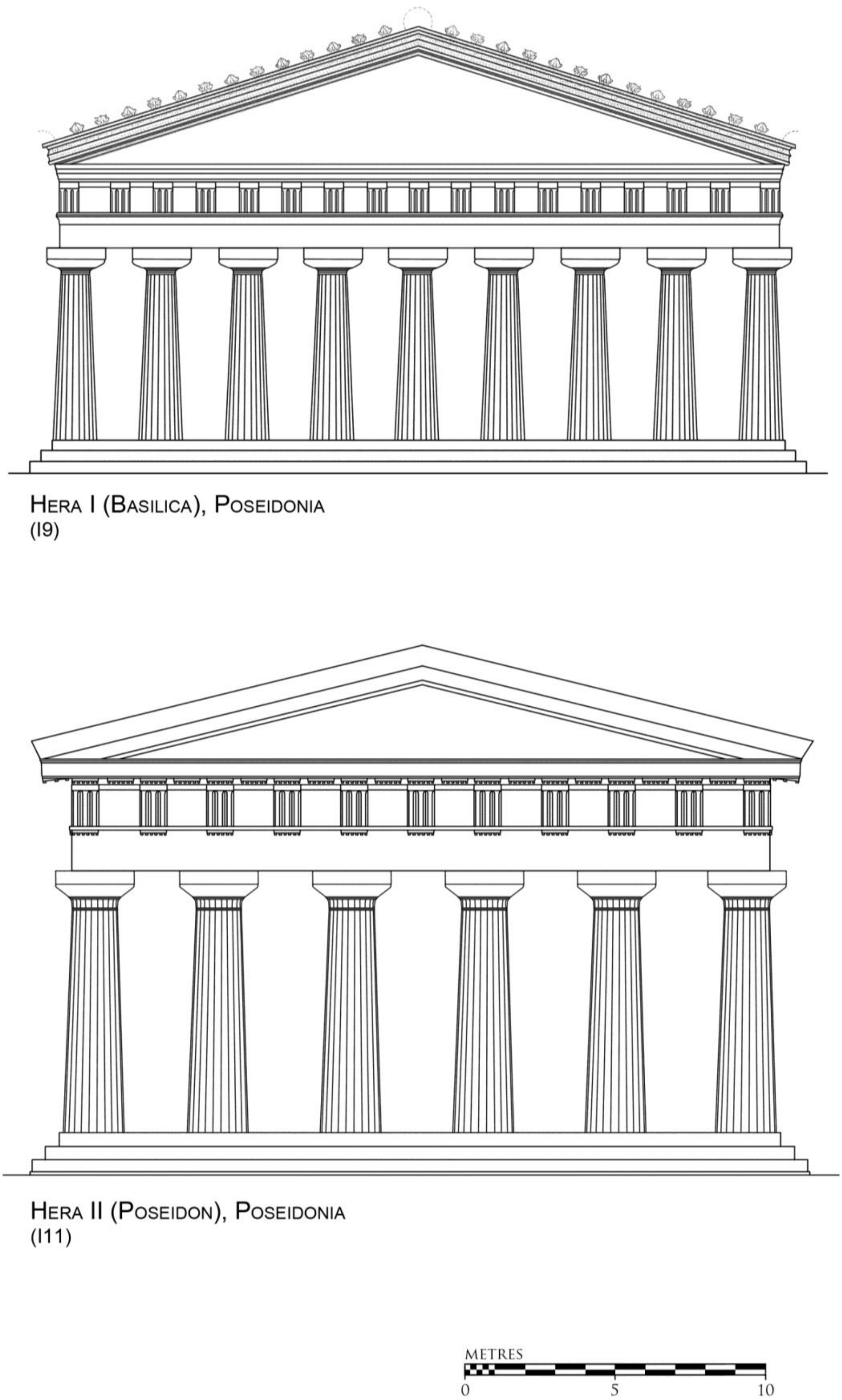


Figure 20 Facades of the Temple of Hera I (Basilica) and Hera II (Poseidon) at Poseidonia (*After* Coulton 1977: 76; Mertens 1984: Abb. 14).

External Decoration

There is, however, one element of some Doric peripteral temples' external appearances that cannot be systematically catalogued and analysed in relation to its size and shape: the additional decoration. Although, as discussed above, the entire Doric order could be considered to be decorative, in this study, decoration refers specifically to the additional elements that were added to the Doric order with the aim of elaborating particular temples. The following section discusses the reasons why information relating to particular decorative features has been included in the data-set, beginning with the elements that are not included in the analysis, such as paint, and culminates with an explanation of how the additional sculpture is recorded in order for it to be systematically studied.

Additional decoration was added in various positions and guises on different temples. The fact that most of this elaboration related to relatively minute details is testament to the fact that even such small points of difference between buildings bore significance in the ancient world. For instance, several moulding shapes were used in various positions on different temples (Figure 21). The geison soffit moulding on the Temple of Hera in the Argive Heraion (P2) is a simple offset cyma-reversa (Pfaff 2003a: 177), whereas on the Temple of Hera at Foce del Sele (I10) the moulding is much more complex, indeed, the absence of a soffit moulding from the Temple of Nemesis at Rhamnous indicates that soffit mouldings were not a strictly necessary part of the Doric order (Miles 1989: 202). As well as decoration in the form of mouldings, some temples also utilised sculpture, decorative roofing, inscriptions (Butz 2009), paint and 'refinements' in order to further elaborate the external appearance of the temple. Indeed, the mere presence of additional decoration, such as mouldings and sculpture, on some Doric temples has been taken as indication that the decoration was important in the ancient world, for if it was not important the building committee would not have gone to the trouble and the additional expense of adding such elaboration (Spivey 1996: 95). Furthermore, a number of studies have demonstrated the importance of additional decoration, particularly architectural sculpture, to the ancient Greeks (Holloway 1988; Marconi 2009; Hölscher 2011). For example, Marconi (2009), using a number of sources but mostly the presence of architecture on figured pottery, was able to highlight the power that architectural decoration had to generate emotional responses. Indeed, in one instance a figure on a cup gazes directly at a building's decorated metopes (Metropolitan Museum of Art 1989.281.62). Therefore, as with size and shape, the additional decoration that was applied to the temple exterior was also significant in the ancient world.

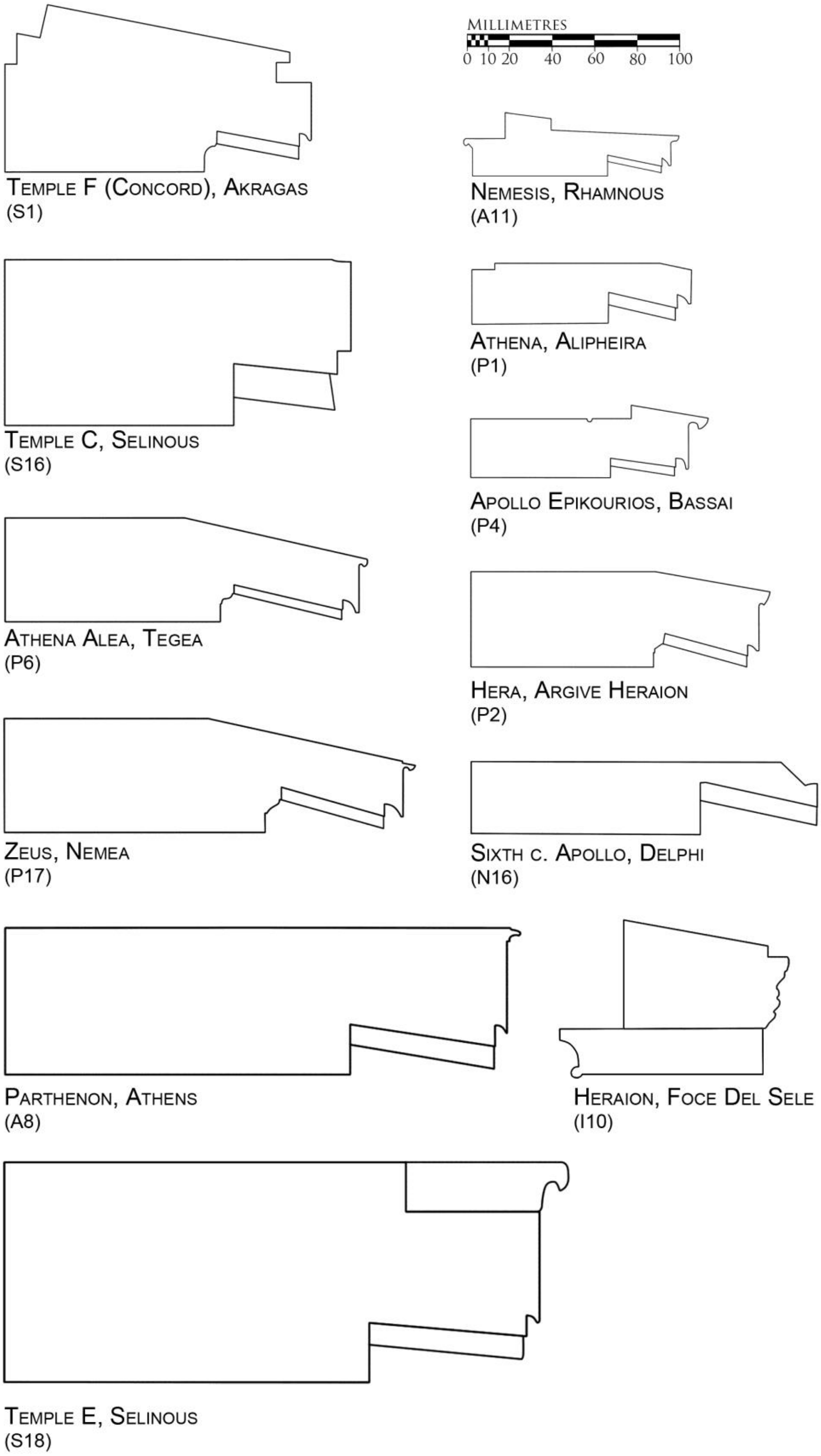


Figure 21 Different geison designs, showing the different shaped mouldings in various positions (*After* Koldewey and Puchstein 1899: Abb. 76, Abb. 113, Abb. 152; Dugas *et al.* 1924: Plate XXI-XXV; Courby 1927: Plate XI; Krauss 1951: XXX; Hill 1966: Plate XIII; Miles 1989: 197; Østby 1995b: Figure 204; Cooper 1996b: INV. 105; Pfaff 2003a: Figure 64; Haselberger 2005: 123).

Despite the widespread use of additional decoration on particular Doric temples, the various types of decorative elaboration, as well as the different positions in which it was applied to the temple, makes it particularly difficult to conduct a systematic study of all possible types and combinations of additional decoration. Furthermore, particular elements have to be excluded from the analysis as they are not widely published or included in the temple reports. For example, due to the traditional interest in using the architecture to help provide a date for the temple, certain decorative elements have tended to be included within temple publications, generally those with established typologies, whilst others have often been overlooked, such as the construction materials. Indeed, in almost all cases, the temples' materials are described as being either marble or limestone (Lawrence 1996: 79). Only in particular instances, such as the temples of fifth-century Athens, are suggestions made as to the building stones' provenance or even an attempt is made to describe the stone's colour (Korres 1988; Miles 1989: 145); thus, the differences in the temples' materials have had to be excluded from the analysis. Likewise, despite Pausanias' discussion of the roof tiles on both the Temple of Zeus at Olympia (5.10.1) and the Temple of Apollo Epikourios at Bassai (8.41.9), the relative disregard for roof tiles in the earlier temple studies and the large amount of analysis on the recently excavated tiles from a variety of non-temple sites (Winter 1990; 1993; Pfaff 2003a: 27; Barletta 2011: 622), suggests that it is beyond the scope of this thesis to productively investigate Doric temples' tiles.

Equally, the poor preservation of particular elements in the archaeological record means that they are discovered relatively infrequently, thus, making little information available for analysis and thus cannot be included in this study. For example, the small amount of available evidence suggests that it was common to paint the capitals and entablature of the Doric order (Dinsmoor 1950: 178; Jenkins 2006: 37). Paint on Doric architecture has largely been ignored in discussions of Greek architecture, this has been due to a general disgust at the 'garishness' of such actions (Guido 1967: 120) or the belief that all Doric temples would have been painted to the same scheme (Dinsmoor 1950: 178; Broneer 1971: 97). Although there is enough preserved paint to suggest that the Doric temples were painted, there is certainly not enough to make such sweeping generalisations. For example, fragments of paint on the triglyphs from the Parthenon (A8) indicate that they were painted blue (Jenkins 2006: 43); whereas, traces of red have been detected on the triglyphs of the Temple of Zeus at Olympia (P20, Lawrence 1996: 75). However, the lack of evidence for paint from most Doric peripteral temples precludes the inclusion of paint from a systematic analysis of temple architecture of the scale conducted in this thesis.

Moreover, in order to analyse the design differences across a wide number of buildings the elements need to be relatively consistent, in that the element being measured has been observed on a number of the buildings and reported in a style that is repeated in other publications. A 'decorative' element that has not been included in the analysis due to their inherent variety, both in application and publication, are the so-called Doric 'refinements' or 'optical corrections'. The refinements, including *entasis*, horizontal curvature of the stylobate and the inward inclination of the columns are found in varying numbers and to differing degrees on a select number of temples in the Greek world, most notably the Parthenon (A8, Haselberger 2005). Although the refinements on the Parthenon have been subject to multiple studies, the refinements on the other Doric temples have not been subject to anywhere near the same level of intense scrutiny; indeed, most studies consider stating that the temple might have had *entasis* is an adequate amount of inquiry (for example, see Miles 1989: 150). Furthermore, it is not entirely certain that the refinements were meant to be noticeable, it being argued they were intended to correct an optical illusion and therefore were included for the purpose of not being seen, or they may have served a routine engineering function rather than a 'decorative' role (Pedley 1990: 44; Rhodes 1995: 80; Thompson *et al* 2007). Accordingly, the application of various refinements to the temple architecture has not been recorded in the data-set.

There appear to be two elements of decoration that satisfy the above criteria for inclusion in a systematic analysis of additional decoration on Doric peripteral temples: the mouldings and the sculpture. Despite this, the mouldings have not been included in the study for a number of reasons. First, a systematic study of all the mouldings has been completed by Shoe (1936; 1952), in which the mouldings were compared visually, a methodology that has generally been retained into modern studies.[24] This makes a systematic comparison of the different temples' mouldings difficult, at least until the measurements of the mouldings begin to be routinely published in a standardised format. Furthermore, there are mouldings in too many positions and too many different shapes for a study of this length.

Ultimately, sculpture, due to its size, position on the building and cost, would have had a greater impact upon the exterior appearance of the temple, and consequently, the study of external decoration focuses upon the temple sculptures. Indeed, the sculptures were by far the largest elements of additional decoration on Doric peripteral temples and had a significant impact upon a temple's external appearance; one only has to consider Pausanias' (1.24.5; 5.10.6-8) famous descriptions of the pediment sculptures of the

[24] Indeed, as discussed by Childs (1994: 2) in relation to capitals, it is difficult to complete a typology of elements' designs based upon published drawings, due to their imprecision.

Parthenon (A8) and the Temple of Zeus at Olympia (P20) to realise the effect that sculpture had upon the viewer. The fact that some temples, such as the Temple of Athena at Vigla (P23, Morgan 2003: 159), utilised additional sculpture whilst others, such as the Temple of Hera II (Poseidon) at Poseidonia (I11) did not, demonstrates that sculpture was not seen as a fundamental element of the Doric order and its inclusion on particular projects, at additional cost, was significant.[25] The sculptures were almost always found fixed to the same positions on the building: the metopes, pediments or above the cella and thereby, aiding in a systematic analysis of their addition to particular projects. Furthermore, the positions of the sculpture could be utilised in various combinations. For example, some temples, such as Temple F at Selinous (S19) had sculpted metopes above the peristyle but no sculpted pediment; on the contrary, the Temple of Asklepios at Epidauros (P9) had sculpted pediments and not metopes; indeed, some temples, such as the Parthenon (A8) had sculpted metopes and pediments. Therefore, the position of the sculpture on the temples' exterior has been recorded in the data-set and forms part of the analysis of temple design.

As discussed in the previous chapter, a number of studies have sought to discover the sculptures' themes and their meaning (for example, Holloway 1988; Hölscher 1998; Marconi 2007; Barringer 2008); however in a study of this length, focusing upon the overall appearance of the temple, it is impossible to include all the various ascribed themes and to systematically analyse their importance. Consequently, the issue of sculptural themes is only raised in the final chapter, which contains a number of polis-based case studies. However, as highlighted above, although there a limited number of positions in which sculpture was placed, there is a significant difference in the utilisation of these positions and this had an impact upon the buildings' external appearance; as such, the position of the sculpture upon the temple is recorded in the data-set (a discussion of the instances in which sculpture has been recorded in the data-set can be found in Chapter 4).[26]

[25] As mentioned in Chapter 2, the sculptors of the Temple of Asklepios at Epidauros (P9) were paid significantly more than the architects.

[26] A number of studies have included counts of the number of sculptures in a temple's pediments (Nakasēs 2004: 282; Schultz 2009). Indeed, Nakasēs (2004: 282) has suggested that the number of sculptures in a temple's pediment is indicative of its date. However, the poor state of preservation of most temples' pedimental sculpture makes a systematic investigation of this attribute impossible in a study of this length.

Introduction to the Doric Peripteral Temples Included in the Study

Therefore, in order to analyse the differences in the temple designs, the thesis focuses upon the size, shape and decoration of the external appearance of the temples. These aspects of the design allow for measurable and consistent comparisons to be made between the buildings, on both the Panhellenic and regional scales. In order to conduct a Panhellenic and regional analysis of these differences and similarities it is important to include as many temples from as wider geographical range as possible. As such, the data-set encompasses 104 Doric peripteral temples (Table 2), which encompasses all the temples that had sufficient available data to be included in this study (Appendix II.2). The temples in the study cover a wide geographical area, from Selinous in the west, to Assos in the east and Passaron in the north, to Cyrene in the south (Figure 22). Furthermore, the data-set comprises temples covering the entire period that forms the focus of this study, ranging in date from the early sixth century, such as the Temple of Hera at Olympia (P18), to the late fourth-century Temple of Zeus at Nemea (P17).[27]

[27] See Chapter 1 for a discussion of the chronological limits of this study and Appendix II for a list of Doric peripteral temples that are excluded for being built beyond those limits.

Figure 22 Map showing the location of the Doric peripteral temples included in the data-set.

Table 2 presents the basic information relating to all 104 temples included in the data-set. The catalogue number in column one is composed of a letter, relating to the region in which the temple is constructed (see below), and an arbitrary number. This catalogue number remains the same throughout the study and also relates to the order of the catalogue in Appendix V. The second column records the most widely utilised name for the building, although in instances where the temple is known by multiple names, both are included; for example, Temple D (Hera Lacinia) at Akragas (S5). The third column contains the name of the polis in which the temple was constructed.

For an analysis of the temples on a regional level, the buildings are divided into five regions (column four); Attica and the Saronic Gulf, Italy, Northern Greece, the Peloponnese and Sicily. There is also a sixth ‘region’ entitled ‘Other’, which is a label attached to temples from outside of the predominant Doric temple building regions and come from locations with so few temples that there was no value in ascribing them their own independent regions; for example, this includes the Temple of Athena from Assos in Turkey (O1) and the Temple of Zeus from Cyrene in North Africa (O11). Fifteen temples are assigned to Attica and the Saronic Gulf, 13 in Italy, 22 in Northern Greece, 25 in the Peloponnese, 24 in Sicily, and five temples belong to ‘other’ locations. In the first instance, temples were ascribed to particular regions based upon Spawforth’s (2006: 108-227) catalogue of Greek temple architecture. The regions could have been further divided into their respective areas, for example, the ‘Northern Greece’ region could be divided into; Euboia, Boiotia, Phokis, Aitolia, Thessaly, and Macedonia. However, in most cases this would have resulted in each category containing very few temples, making it difficult to draw conclusions with relation to a comparison of the buildings. For example, Aitolia contains only two Doric peripteral temples from the archaic and classical periods, the Temple of Artemis at Kalydon (N1) and the Temple of Poseidon at Velvina (N2). Likewise, the poor state of preservation of most of the temples means that the fewer buildings in a region, the more likely that only one of them will preserve their elevations, further inhibiting a comparison of the temples’ designs. Consequently, the regions have been maintained at the broadest level in order to capture as much available evidence for comparison as possible.

Table 2: Temples included in the data-set

Cat No.	Name	Location	Region	Earliest Date	Latest Date	Date Group
A2	Olympieion	Athens	Attica	530	510	2
A3	Athena Polias	Athens	Attica	510	500	2
A4	First Temple of Poseidon	Sounion	Attica	490	480	3

Table 2: Temples included in the data-set						
Cat No.	Name	Location	Region	Earliest Date	Latest Date	Date Group
A5	Old Parthenon	Athens	Attica	490	480	3
A6	Hephaisteion	Athens	Attica	450	440	4
A7	Apollo Delphinios	Athens	Attica	450	440	4
A8	Parthenon	Athens	Attica	447	432	4
A9	Second Temple of Poseidon	Sounion	Attica	450	430	4
A10	Athena	Pallene	Attica	440	420	4
A11	Nemesis	Rhamnous	Attica	430	420	4
A12	Artemis	Loutsa	Attica	400	300	6
A13	Apollo	Aigina	Attica	520	510	2
A14	Aphaia	Aigina	Attica	480	470	3
A15	Athena	Megara	Attica	599	500	2
A16	Athena	Karthaia (Keos)	Attica	520	500	2
I1	Unknown	Hipponion	Italy	525	500	2
I2	Unknown	Kaulonia	Italy	430	420	4
I3	Hera	Kroton	Italy	475	450	3
I4	Casa Marafioti	Locri Epizephyrioi	Italy	540	530	2
I5	Hera	Tavole Palatine	Italy	520	510	2
I6	Temple Aii (Apollo Lykeios)	Metaponto	Italy	540	520	2
I7	Temple Bii	Metaponto	Italy	530	520	2
I8	Athena	Poseidonia	Italy	520	500	2
I9	Hera I (Basilica)	Poseidonia	Italy	550	520	2
I10	Heraion	Foce del Sele	Italy	540	500	2
I11	Hera II (Poseidon)	Poseidonia	Italy	470	430	4
I12	Unknown	Taranto	Italy	600	550	1
I13	Minerva	Pompeii	Italy	525	500	2
N1	Artemis	Kalydon	N. Greece	400	350	5
N2	Poseidon	Velvina (Molykreion)	N. Greece	400	300	6
N3	Apollo Ismenios	Thebes	N. Greece	400	350	5
N5	Hera	Plataia	N. Greece	550	500	2
N6	Apollo Daphnephoros	Eretria	N. Greece	530	490	2
N7	Dionysos	Eretria	N. Greece	350	350	5
N9	Zeus Ammon	Aphytis (Kallithea)	N. Greece	350	300	6
N10	Apollo	Ambrakia (Arta)	N. Greece	500	500	3
N12	Unknown	Kassope	N. Greece	400	300	6
N13	Zeus	Stratos	N. Greece	320	300	6
N14	Zeus	Passaron	N. Greece	325	300	6
N15	Fourth c. Apollo	Delphi	N. Greece	370	325	6
N16	Sixth c. Apollo	Delphi	N. Greece	530	520	2
N17	Athena	Delphi	N. Greece	550	500	2
N18	Athena Kranaia	Elateia	N. Greece	500	475	3

Table 2: Temples included in the data-set						
Cat No.	Name	Location	Region	Earliest Date	Latest Date	Date Group
N19	Apollo	Kalapodi (Hyampolis)	N. Greece	600	500	2
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	N. Greece	425	395	4
N21	Apollo	Metropolis	N. Greece	560	540	2
N22	Unknown	Pherai	N. Greece	300	300	6
N23	Artemis	Korkyra	N. Greece	580	570	1
N24	Kardaki	Korkyra	N. Greece	525	500	2
N25	Hera (Mon Repos)	Korkyra	N. Greece	400	400	5
O1	Athena	Assos	Other	540	500	2
O8	Apollo	Delos	Other	478	450	3
O11	Zeus	Cyrene	Other	500	480	3
O12	Apollo	Cyrene	Other	550	500	2
O13	Unknown	Apollonia	Other	300	300	6
P1	Athena	Alipheira	Peloponnese	500	480	3
P2	Hera	Argive Heraion	Peloponnese	423	410	4
P3	Unknown	Agios Elias	Peloponnese	500	490	3
P4	Apollo Epikourios	Bassai	Peloponnese	429	400	4
P5	Unknown	Orchomenos	Peloponnese	530	500	2
P6	Athena Alea	Tegea	Peloponnese	350	335	6
P7	Apollo	Corinth	Peloponnese	570	540	1
P8	Apollo	Sikyon	Peloponnese	303	300	6
P9	Asklepios	Epidauros	Peloponnese	400	366	5
P10	Asklepios	Gortys	Peloponnese	400	350	5
P11	Akropolis Temple	Gortys	Peloponnese	425	375	5
P12	Poseidon	Hermione	Peloponnese	525	480	2
P13	Poseidon	Isthmia	Peloponnese	470	460	3
P14	Poseidon	Kalaureia (Poros)	Peloponnese	525	500	2
P15	Demeter	Lepreon	Peloponnese	400	370	5
P16	Athena	Makiston	Peloponnese	500	490	3
P17	Zeus	Nemea	Peloponnese	340	320	6
P18	Hera	Olympia	Peloponnese	600	590	1
P19	Metroon	Olympia	Peloponnese	410	388	5
P20	Zeus	Olympia	Peloponnese	472	456	3
P21	Athena	Prasidaki	Peloponnese	500	480	3
P22	Unknown	Troizen	Peloponnese	350	300	6
P23	Athena	Vigla	Peloponnese	520	510	2
P24	Temple C	Pallantion	Peloponnese	500	500	3
P25	Unknown	Kalavryta	Peloponnese	525	500	2
S1	Temple F (Concord)	Akragas	Sicily	450	420	4
S2	Temple G (Hephaisteion)	Akragas	Sicily	433	406	4
S3	Temple I (Dioskouroi)	Akragas	Sicily	450	406	4
S4	Temple A (Herakles)	Akragas	Sicily	525	480	2

Table 2: Temples included in the data-set						
Cat No.	Name	Location	Region	Earliest Date	Latest Date	Date Group
S5	Temple D (Hera Lacinia)	Akragas	Sicily	470	420	4
S6	Temple E (Athena)	Akragas	Sicily	500	450	3
S7	Temple L	Akragas	Sicily	450	400	4
S8	Temple B (Zeus Olympios)	Akragas	Sicily	520	480	3
S9	Aphrodite	Akrai	Sicily	525	500	2
S10	Temple B (Athena)	Gela	Sicily	600	550	1
S11	Temple C	Gela	Sicily	500	475	3
S12	Victory	Himera	Sicily	480	480	3
S13	Unknown	Segesta	Sicily	426	409	4
S15	Temple A	Selinous	Sicily	490	450	3
S16	Temple C	Selinous	Sicily	550	520	2
S17	Temple D	Selinous	Sicily	490	490	3
S18	Temple E	Selinous	Sicily	500	450	3
S19	Temple F	Selinous	Sicily	490	480	3
S20	Temple G	Selinous	Sicily	520	470	3
S21	Temple O	Selinous	Sicily	490	450	3
S22	Apollo	Syracuse	Sicily	590	580	1
S23	Athena	Syracuse	Sicily	478	475	3
S24	Zeus	Syracuse	Sicily	580	555	1
S25	Temple A	Megara Hyblaia	Sicily	600	500	2

Table 2 Basic information relating to each temple in the data-set, including name, location, assigned region, earliest date, latest date and assigned date group. For further information about each temple consult the catalogue in Appendix V.

In order to analyse the Panhellenic relationship between date and design, the temples have been assigned to date groups (column seven). As discussed in Chapter 2, stylistic criteria have often been used to assign date, such as the shape of the capital. This methodology has encountered a number of problems, such as the supposed ‘provincialism’ of the western temples discussed in Chapter 2, and it has recently become viewed with increased scepticism (Coulton 1979; Pfaff 2003b). The use of stylistic dating criteria is based upon the assumption that temple design evolved at a constant linear rate, thus making it possible to date a temple within a ten year period based upon the temple’s proportions. However, Coulton’s (1979) study of Doric capitals demonstrated that the shape of the capital does not change at a constant rate over time; rather, there are only a few basic shapes, which remain in use for significantly longer periods of time, thus highlighting a considerable flaw in the use of stylistic criteria to date temples. Furthermore, stylistic criteria are so subjective that many scholars disagree on the exact 10 year period that a temple would belong to. For example, different scholars date the

Temple of Hera in the Argive Heraion (P2) in various increments between 423 and 400 (Shoe 1936: 110; Dinsmoor 1950: 183; Pfaff 2003a: 191-193; Spawforth 2006: 164), depending upon the privileged element and their interpretation of the rate of evolution. Although this is not as wider range as for some other temples (see Table 2), it is the assurity with which each of the scholars assigns the date, using their various methods. For example, Shoe (1936: 110) believed that the mouldings suggested a date of construction around 410, whilst Dinsmoor (1950: 183) preferred a more precise date of 416. Thus, dating temples using stylistic criteria is not a precise science and is based upon the element that the individual scholar considers most important. Indeed, Biers (1992: 34) suggests that in situations where stylistic dating is used, it should only be used to provide dates within about half a century and only as long as "the examples one is trying to fit into the scheme clearly belong to a single, obvious line of development, and there are no problems of geography, quality and material", which, as discussed in Chapter 2, is not necessarily the case with Doric peripteral temple architecture. Therefore, the assignment of temples to a date within a ten year period is to be regarded with caution. As such, the temples have been placed into broader date groups, in order to introduce a margin of error and to facilitate comparisons between temples of similar date.

The date group column in Table 2 assigns each building to a period, identified as 1-6, with each group representing a 50 year period (Table 3). Date group 1 (600-551) relates to the earliest period of stone Doric peripteral temples; whilst, date group 6 (350-300) relates to the final years of the classical period, the chronological end to the study. The temples have each been placed into the group in which the range of dates ascribed to the temple falls. For example, the Temple of Zeus at Passaron (N14) is commonly placed between 325 and 300 and so the temple is placed in date group 6.

Date Group	**Earliest Date**	**Latest Date**	**Number of Temples**
1	600	551	7
2	550	501	32
3	500	451	26
4	450	401	17
5	400	351	9
6	350	300	13

Table 3 The date groups, the range of dates and the number of temples placed in each group.

The use of date groups is still reliant upon the dates ascribed through stylistic analysis. Indeed, given the lack of additional dating evidence, it would be difficult for any study of temple architecture not to be. However, using date groups allows for a certain amount of margin to be incorporated, with regard to the variety of different dates being ascribed to the same building, often based upon the different interpretations of the rate of evolution. Therefore, when scholars disagree on precise dates they often agree on date ranges. For example, the temple at Segesta (S13) is dated to the late fifth century by Mertens (1996: 336), around 420 by Spawforth (2006: 132) and 426-409 by Dinsmoor (1950: 112), while Lawrence (1996: 136) suggests that the temple could have been constructed at any point in the last quarter of the fifth century. Although the various scholars disagree on the exact date of construction for the temple at Segesta, the commentators agree upon a general time frame of the late fifth century. Likewise, placing each temple into a date group allows for particular types of dating evidence to be privileged in instances where there is significant controversy. For example, some temples were systematically excavated and painted pottery has been discovered in the foundations, contradicting the date assigned based upon architectural proportions, such as the Temple of Aphaia on Aigina (A14, see Appendix III.5, with further discussions of all controversial dates in the same appendix). In these instances, the sculpture and painted pottery provide an additional external dating source that is not linked to the concept of stylistic evolution in Doric architecture. Obviously, no method of grouping temples into date ranges could be without flaws. For example, there is no was of differentiating between temples that belong to the start or end of a period. However, so long as the criteria are applied consistently, then the benefits of grouping temples by date in a study of this type outweight the negatives. Therefore, placing the temples into broader 50 year date groups avoids the problems associated with dating the temple architecture based upon differing opinions of the rate of stylistic evolution.

Where very little evidence for the date of a temple survives and the preserved architecture is assigned a broad range of dates covering multiple date groups, the temple is placed in the date group that current scholarly opinion considers most probable. For example, the Temple of Apollo at Corinth (P7) has traditionally been dated around 540 (Dinsmoor 1950: 89 n.2), yet a recent re-analysis has placed the commencement of construction in the mid-560's (Pfaff 2003b: 112) and so as the most recent study, the temple is placed in date group 1 and this date has been used in the data-set. Therefore, the median date, the balance of scholarly opinion, and the relative strength of the dating technique, especially if an external dating source is available, are used to place a temple within a date group.

It is also worth highlighting that the focus of this thesis is upon the initial decision to build a peripteral temple. This is a particularly important point with regard to the few temples that have peristyles that were constructed at a later date to the cella. In these instances, it is the date of the peristyle that will be used to assign the temple's date group, as it is the external appearance of peripteral temples that are the focus of this thesis. For example, the cella of the Temple of Apollo at Cyrene (O12) was constructed in the middle of the sixth century, while the peristyle columns and pedimental sculpture were added in the final quarter of that century and consequently, the temple is placed in date group 2.

The temples listed in Table 2 are all preserved to varying degrees and for this reason some temples feature in more areas of the analysis than others. For example, the Temple of Athena (I8) and the Temples of Hera I and II (I9 and I11) at Poseidonia, the Temple of Apollo Epikourios at Bassai (P4), the Temple of Zeus at Nemea (P17), the Temple of Aphaia on Aigina (A14), the Hephaisteion (A6), and the Parthenon (A8) all have standing peristyle columns, indicating their remarkable state of preservation. On the contrary, the poor state of preservation of the Temple of Apollo Delphinios (A7) in Athens, the Temple of Athena in Megara (A15), the Temples of Poseidon at Hermione (P12) and Kalaureia (P14), the temple at Hipponion (I1), Temple O at Selinous (S21) and Temple B (Athena) at Gela (S10), means that only their foundations are preserved.

In many cases, the poorly preserved temples are hypothetically restored by archaeologists utilising ratios borrowed from ‘similar’ temples (Pakkanen 2009: 3). For example, McAllister and Jameson’s (1969) reconstruction of the elevation belonging to the Temple of Poseidon at Hermione (P12), for which only the foundations remain, utilises the ratios belonging to the Temple of Athena at Delphi (N17), the Temple of Athena Polias on the Athenian Akropolis (A3) and the Temple of Aphaia on Aigina (A14), based on the belief that temples of similar date used the same proportions, as analogies to help restore the (now missing) elements of the elevation (Figure 23). The fact that this thesis analyses the differences in the temples’ designs means that it is important that a consistent approach towards such restorations, which are often applied to the temple remains, is retained. Over time these reconstructions have become widely accepted. For example, most of the superstructure belonging to the Temple of Poseidon at Isthmia (P13) has not been preserved and only the foundations survive, in the form of shallow trenches cut into the rock (Broneer 1971; Tomlinson 1976: 95). However, in his overview of Greek temple sanctuaries, Tomlinson (1976: 95) goes on to confidently assert that the temple was built “in a conventional mid-fifth-century Doric style, [with] six by thirteen columns” and Spawforth (2006: 162) states that “it had a colonnade of 6 by 13 Doric columns, porches and a shrine”. Hypothetical elevation restorations, such as those of the Temples of Poseidon at Hermione and Isthmia are excluded from this study for two reasons.

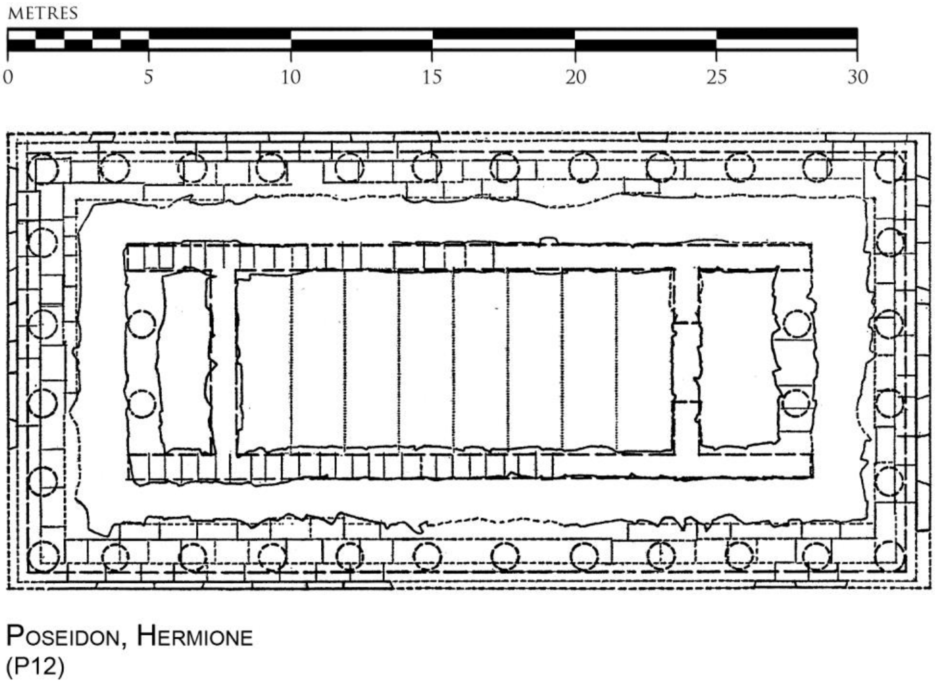


Figure 23 McAllister and Jameson's (1969) proposed reconstruction of the Temple of Poseidon at Hermione (P12), of which only the foundations are preserved. The above reconstruction was largely based upon presumed similarities with the Temple of Athena at Delphi (N17), the Temple of Athena Polias on the Athenian Akropolis (A3) and the Temple of Aphaia on Aigina (A14; *After* McAllister and Jameson 1969: 173).

First, the inclusion of restorations would skew the results of any analysis of variation as they often reuse ratios from other temples. Restorations from temples that are deemed to be similar are often based on the assumption that contemporary temples would utilise similar ratios.[28] As discussed in Chapter 2, using ratios from preserved temples to help restore less well-preserved examples relies on unfounded pre-judgements regarding the identification of 'similar' temples, based on the belief that they were constructed at a comparable date and would therefore utilise the same underlying designs. This results in the production of quasi-circular arguments. For example, Seki (1984: 77) restores the column height of the Old Parthenon (A5) based upon the ratios of the more complete Temple of Zeus at Olympia (P20), as "the proportion between the lower diameter and axial spacing of the external columns is the same in both temples". Seki (1984) obviously was not aware of, or at least was not concerned by, the fact that Hill's (1912) restoration of the axial spacing of the Old Parthenon's columns was based upon the "standards of the time". Although Hill (1912) does not state explicitly which temples were included in this group, it is a safe assumption that the Temple of Zeus at Olympia, being one of the most complete temples of the same date, was a key component in Hill's comparison.

[28] Lawrence (1996: 77) is similarly sceptical about restorations based on the assumption that similar date equates to similar ratios.

Therefore, uncritical acceptance of the measurements derived from these restorations would result in a false standardisation of the figures, thereby obscuring any underlying variance in the data-set.

Second, these restorations are not uniformly accepted and are occasionally later re-analysed. For example, Temple Aii (Apollo Lykeios) at Metaponto (I6) has been restored with a variety of column numbers (Figure 24): 9 by 18 (Dinsmoor 1950: 97), 6 or 8 by 17 (Mertens 1973: 210, Tavola XLVI; Spawforth 2006: 119), 6 by 17 (Osborne 1996: 263) and 6 by 18 (Gruben 2001: 280). Thus, without new evidence, it would be difficult to justify utilising the results of one restoration over another, further demonstrating that the restorations are not as tangible as they sometimes claim to be. Therefore, as far as possible, criteria have been formulated in order to exclude measurements that were derived from restorations and have been applied when selecting the measurements that are included in the data-set, and these are discussed in the proceeding chapter.

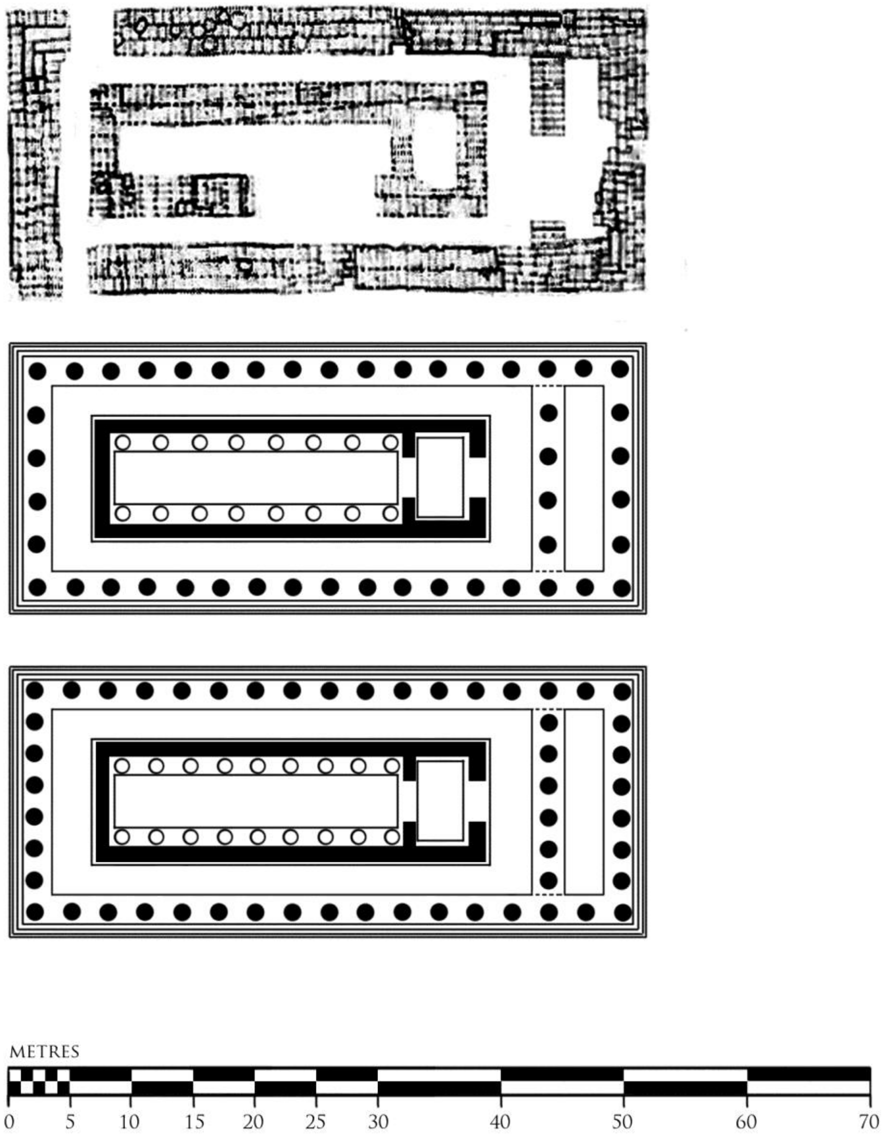


Figure 24 An actual state and two possible restored plans of Temple Aii (Apollo Lykeios) at Metaponto (*After* Mertens 1973: Tavola XLVI; Adamesteanu 1976: 153).

Conclusion

Therefore, in order to analyse the differences in the Doric peripteral temple designs on a Panhellenic and regional scale, the study focuses upon the size, shape and decoration of the buildings' exterior elements. Ancient Greek worship was conducted outside the temple, around the altar, and this placed greater emphasis upon the exterior design of the temple. In order to alter the outward appearance of the temple, the size and shape of the individual elements that comprised the Doric order were manipulated, which resulted in the creation of buildings of the same type and order, but with different appearances, as seen on the two temple elevations from Poseidonia (Figure 20). In order to complete the Panhellenic and regional analysis of the size, shape and decoration of the archaic and classical Doric temples, the data-set contains 104 Doric temples from a wide geographical area and temples that range in date between the early sixth century and the late fourth century. Given the multiple analyses for which this data is gathered, it is important that the approach towards data recording is as consistent and systematic as possible. To this end, the temples have each been assigned to six, 50 year, date groups that allow for a certain amount of leeway in the seemingly improbably-accurate, and often controversial dates, which were assigned based upon the Panhellenic rate of temple design. Furthermore, the assignment of date groups facilitates the Panhellenic comparison of temples of similar date. The reasons for the exclusion of restored elements' measurements from the data-set, due to their reliance on the ratios of other Doric temples, their inherent subjectivity and the different restorations proposed by various scholars. Building upon these conclusions, the next chapter discusses which elements' measurements are included in the data-set and the criteria that have been applied in order to retain a consistent approach to the exclusion of restored dimensions.

Chapter 4: Issues of Size and Restoration: The Doric Peripteral Temples of the Archaic and Classical Periods

> Of special importance in the facilitating of architectural studies during the last decades has been the scientific reconstruction of ancient buildings for the purpose of replacing fallen stones in their original places and thus reconstituting the ancient appearance of the monuments, so far as the material is preserved (Dinsmoor 1950: xxiii).

The above quotation from Dinsmoor demonstrates the importance of building restorations in temple architectural studies. However, as discussed in the previous chapter, in order to complete a consistent and systematic analysis of the external design of the 104 Doric peripteral temples included in this study, the analysed data-set must be based, as far as possible, upon surviving architectural remains rather than hypothetical reconstructions. Furthermore, the previous chapter discussed the importance of the size, shape and decoration of the temple exteriors both in the ancient world and in order to complete a systematic analysis of their design. Consequently, this chapter addresses the individual elements that comprised the external appearance of the Doric peripteral temple, addressing the reasons for their inclusion within the analysis, the formulated criteria regarding the addition of particular elements' measurements. The chapter also presents the data that is used to analyse the temple architecture in the proceeding chapters as well as demonstrating the wide range of elements sizes that were used.

Where possible, the data for the study was collected from the most complete architectural reports of the current preservation of the temple; for instance, the information from the Temple of Hera in the Argive Heraion was in the first instance collected from Pfaff's 2003 publication: *The Argive Heraion: The Architecture of the Classical Temple of Hera*, rather than Waldstein's 1902-1905 publication on the temple, or the various summary publications, such as Dinsmoor's (1950: 183). On a number of occasions it has proved necessary to utilise additional resources, such as the yearly *Archaeological Reports* in order to gain access to information about the less well-published temples, for example, the temple at Kassope (N12). In a few cases the temples have only recently been discovered, as with the archaic Temple of Apollo at Metropolis (N21, Intzesiloglou 2002), and in these instances only the preliminary reports are available, thus not all the measurements are fully published and are unavailable for inclusion within the study.

Pakkanen (1994: 144) has discussed the problems associated with measuring temples and suggests that presenting a set of reliable measurements is as hard as taking them. Given the length and scope of this project, the gathered data must necessarily rely upon the measurements reported in the various temple reports. To this end, where measurements in different reports disagree significantly, the reasons for including a particular report's dimensions over another's are discussed in the individual catalogue entries in Appendix V (for example, see A6).[29] Indeed, as Pakkanen (1994: 146) argues, it is impossible to determine the level of accuracy of reported measurements and, as such, generalised rules regarding the inclusion of measurements of centimetre or millimetre accuracy cannot be applied; thus, the measurements that are reported in the temple reports, whether reported to centimetre or millimetre accuracy, have been included in the data-set.[30]

In addition, measurements are only included within the data-set if they are contemporary with the original structure. The purpose of this study is to identify why Doric peripteral temples were built with a variety of different designs and for this reason only the 'original' peripteral construction is of primary concern. While it would be of interest to identify and analyse later adaptations to the buildings, it is not possible within the scope of this study. As such, later additions to the temples are excluded from the data-set.[31] For example, when the axial spacing walls were built into the fabric of the structure, such as those on the Temple of Hera at Foce del Sele (I10, Krauss 1951: 92) and Temple Bii at Metaponto (I7, Mertens 1985: 658) they are included in the analysis, while walls that were added after the initial period of construction and are not bonded with the core structure, as on Temple F at Selinous (S19), are excluded (Hodge 1964: 179).

Plan

The presentation and discussion of the data-set within this chapter is split into two sections, plan and elevation. Table 4 presents the measurements that have been included within the data-set relating to the plan elements. The same catalogue codes, names, locations and date groups are carried over from Table 2 in the previous chapter. The rest

[29] Full catalogue entries for each temple, including the identification of the deity, the assignment of a building's date, a brief description of the remains and their key measurements can be found in Appendix V.

[30] Whether the reported measurements are of centimetre or millimetre accuracy they are all recorded in metre format, so 1cm equals 0.01m.

[31] As stated in Chapter 1, temples that received a peristyle after the initial phase of construction are included in the analysis, but subsequent alterations are excluded.

of the columns contain the measurements and numbers of the various elements when they are included within the data-set; an empty cell indicates a measurement that has either not been preserved or reliable information relating to that measurement was not accessible at the time of writing. Each of the constituent elements, such as the foundations and stylobate, are then discussed, highlighting the criteria that were applied in relation to the inclusion of measurements based upon different levels of preservation. The measurements that are presented in Table 4 form the basis for the subsequent analysis of temple plan design in Chapters 5 and 6.

Table 4: Plan Dimensions

Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL	KrSt	CeW	CeL	FC	FlC	FS	FlS	Rmp	DF
A2	Olympieion	Athens	2													
A3	Athena Polias	Athens	2	21.85	43.95	21.3	43.15	1	13.45	34.7	6	12	4.042	3.834		
A4	First Temple of Poseidon	Sounion	3													
A5	Old Parthenon	Athens	3					3								
A6	Hephaisteion	Athens	4	15.42	33.48	13.708	31.769	3	7.948	22.559	6	13	2.583	2.581		
A7	Apollo Delphinios	Athens	4	15.26	33.08											
A8	Parthenon	Athens	4	33.69	72.32	30.88	69.503	3	22.34	59.06	8	17	4.2965	4.2915		
A9	Second Temple of Poseidon	Sounion	4	15.2	32.8	13.47	31.124	3	8.32	21.2	6	13	2.522	2.522		
A10	Athena	Pallene	4	16.32	32.25											
A11	Nemesis	Rhamnous	4	11.58	22.76	9.96	21.431	3	6.5	15.045	6	12	1.904	1.904		
A12	Artemis	Loutsa	6	14.11	21.16	12.56	19.6	3	7.23	12.87						
A13	Apollo	Aigina	2	18.872	34.325											
A14	Aphaia	Aigina	3	15.5	30.5	13.77	28.815	3	8.01	22.54	6	12	2.618	2.5605	TRUE	
A15	Athena	Megara	2	14.5	35.5											
A16	Athena	Karthaia (Keos)	2	12.76	23.58	11.98	23.19	2	6.66	15.98	6	11	2.24	2.25		
I1	Unknown	Hipponion	2	20.5	37.45											
I2	Unknown	Kaulonia	4	18.2	41.2											
I3	Hera	Kroton	3													TRUE
I4	Casa Marafioti	Locri Epizephyrioi	2	20.1												TRUE

Table 4: Plan Dimensions

Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL	KrSt	CeW	CeL	FC	FlC	FS	FlS	Rmp	DF
I5	Hera	Tavole Palatine	2	18.46	35.69	16.06	33.3	3	8.02	23.26	6	12	2.948	2.908		
I6	Temple Aii (Apollo Lykeios)	Metaponto	2	22.21	51.15				10.375	32.5						
I7	Temple Bii	Metaponto	2	19.85	41.6				10.5	25.5						TRUE
I8	Athena	Poseidonia	2	16.127	34.52	14.53	32.883	3	7.814	23.627	6	13	2.629	2.625	TRUE	
I9	Hera I (Basilica)	Poseidonia	2	25.983	55.722	24.49	54.258	3	13.37	42.95	9	18	2.871	3.102		
I10	Heraion	Foce del Sele	2	18.615	38.95				6.14	14.92					TRUE	
I11	Hera II (Poseidon)	Poseidonia	4	26.06	61.7	24.316	59.961	3	13.485	46	6	14	4.471	4.503		
I12	Unknown	Taranto	1													
I13	Minerva	Pompeii	2	20.39	29.69	17.2	27.24	4	6.4	15.88						
N1	Artemis	Kalydon	5	14.85	32.29	13.28	30.63	3	7.5	21.55						
N2	Poseidon	Velvina (Molykreion)	6	14.254	31.416	12.87	30.032	3	7.9	20.825						
N3	Apollo Ismenios	Thebes	5	22.82	46.25				9.3	21.6						
N5	Hera	Plataia	2	16.7	49.9				9.5							
N6	Apollo Daphnephoros	Eretria	2	20.55	47.8				9.6	26.1						
N7	Dionysos	Eretria	5	12.45	23.05				6	14.9						
N9	Zeus Ammon	Aphytis (Kallithea)	6	12.38	23.33											
N10	Apollo	Ambrakia (Arta)	3	20.75	44				8.2							
N12	Unknown	Kassope	6													

Table 4: Plan Dimensions																
Cat No.	**Name**	**Location**	**Date Group**	**FoW**	**FoL**	**SW**	**SL**	**KrSt**	**CeW**	**CeL**	**FC**	**FlC**	**FS**	**FlS**	**Rmp**	**DF**
N13	Zeus	Stratos	6	18.32	34.12	16.64	32.44	3	9.59	20.49	6	11	3.16	3.16		
N14	Zeus	Passaron	6													
N15	Fourth c. Apollo	Delphi	6	23.82	60.32	21.68	58.18	3	13.34	44.14	6	15	4.138	4.083	TRUE	
N16	Sixth c. Apollo	Delphi	2	23.8	59.5				13.34	44.14						
N17	Athena	Delphi	2	14.25	28.45	13.25	27.464	2	7.71	20.57	6	12	2.485	2.421		
N18	Athena Kranaia	Elateia	3	11.5	27.5	11.5	27.5	1			6	13	2.25	2.25		
N19	Apollo	Kalapodi (Hyampolis)	2	14.12	26.88	13.6	26.3	1							TRUE	
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4	19.26	46.12				10.14	31.7						
N21	Apollo	Metropolis	2	13.75		13.75		1	8.2	23.8	5					
N22	Unknown	Pherai	6	16.4												
N23	Artemis	Korkyra	1	23.45	48.96	22.41	47.89	2	9.81	34.96						
N24	Kardaki	Korkyra	2	12.64		11.91		2	7.38		6		2.264	2.264		
N25	Hera (Mon Repos)	Korkyra	5	20.6												
O1	Athena	Assos	2	14.59	30.875	14.03	30.31	2	7.97	22.33	6	13	2.56	2.447		
O8	Apollo	Delos	3	13.72	29.78	12.47	28.53	3	7.2	20.55	6	13	2.2905	2.2905		
O11	Zeus	Cyrene	3	31.766	69.681	30.58	68.39	3	17.3	51.25	8	17	4.197	4.197		
O12	Apollo	Cyrene	2					2								
O13	Unknown	Apollonia	6	17.3	31.93											
P1	Athena	Alipheira	3	10.65	29.58	10.37	29.3	1	5.2	23.1						
P2	Hera	Argive Heraion	4	20.1	39.75				9.05	26.74					TRUE	

Table 4: Plan Dimensions

Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL	KrSt	CeW	CeL	FC	FlC	FS	FlS	Rmp	DF
P3	Unknown	Agios Elias	3	15.3	32.64	12.04	29.51	4	6.92	22.47						
P4	Apollo Epikourios	Bassai	4	15.84	39.57	14.548	38.342	3	8.653	28.084	6	15	2.714	2.673		
P5	Unknown	Orchomenos	2	13.33		13.33		1	5.93	26.5	6		2.358			
P6	Athena Alea	Tegea	6	21.04	49.4				11.92	35.08					TRUE	
P7	Apollo	Corinth	1	22.79	55.7	21.58	53.8	4	12.26	42	6	15	4.028	3.744		
P8	Apollo	Sikyon	6	11.4	37.6	11.4	37.6	1	6.25							
P9	Asklepios	Epidauros	5	13.2	24.45	12.03	23.28	3	6.81	16.45	6	11	2.26	2.26	TRUE	
P10	Asklepios	Gortys	5	13.25	23.6				7.15	15.75						
P11	Akropolis Temple	Gortys	5	13.55	27.09											
P12	Poseidon	Hermione	2	16.25	32.98				8.39	24.35						
P13	Poseidon	Isthmia	3	22.05	55.65				15							
P14	Poseidon	Kalaureia (Poros)	2	14.4	27.5											
P15	Demeter	Lepreon	5	11.98	21.69	10.445	20.226	3	6.32	12.72	6	11	1.956	1.956		
P16	Athena	Makiston	3	15.79	34.55	14.18	32.94	3	8.19	23.07	6	13	2.68	2.68		
P17	Zeus	Nemea	6	21.957	44.421	20.085	42.549	3	11.6	31.1	6	12	3.75	3.746	TRUE	
P18	Hera	Olympia	1	20.15	51.11	18.75	50.01	2	10.72	40.62	6	16	3.56	3.26		
P19	Metroon	Olympia	5	11.88	21.93	10.62	20.67	3	7.12	13.8	6	11	2.01	2.01		
P20	Zeus	Olympia	3	30.2	66.64	27.68	64.12	3	16.03	48.68	6	13	5.2265	5.221	TRUE	
P21	Athena	Prasidaki	3	15.85	35.3	14.7	33.3	2	8.65	24.08	6	13	2.74	2.74		
P22	Unknown	Troizen	6	17.365	31.783				9.59	20.59						
P23	Athena	Vigla	2	11.55	24.33											

Table 4: Plan Dimensions

Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL	KrSt	CeW	CeL	FC	FlC	FS	FlS	Rmp	DF
P24	Temple C	Pallantion	3	11.4	25				5.2	17.68						
P25	Unknown	Kalavryta	2	13.9	34.75											
S1	Temple F (Concord)	Akragas	4	19.57	41.98	16.92	39.44	4	9.665	29.41	6	13	3.195	3.206		
S2	Temple G (Hephaisteion)	Akragas	4	19.955	42.138	17.25	39.43	4	10.38	29.06	6	13	3.162	3.162		
S3	Temple I (Dioskouroi)	Akragas	4	16.63	34.59				9.52	23.65						
S4	Temple A (Herakles)	Akragas	2	27.77	69.065	25.33	67.005	3	13.9	47.675	6	15	4.614	4.614		
S5	Temple D (Hera Lacinia)	Akragas	4	19.74	40.895	16.93	38.13	4	9.883	28.545	6	13	3.118	3.064		
S6	Temple E (Athena)	Akragas	3					3								
S7	Temple L	Akragas	4	21.2	44.6											
S8	Zeus Olympios (Temple B)	Akragas	3	56.3	113.45	52.74	110.095	4	44.01	101.16	7	14	8.042	8.185		
S9	Aphrodite	Akrai	2	18.3	39.5				8.2							TRUE
S10	Temple B (Athena)	Gela	1	17.75	35.22											
S11	Temple C	Gela	3													
S12	Victory	Himera	3	25.09	58.61	22.455	55.955	4	11.176	39.718	6	14	4.175	4.198		
S13	Unknown	Segesta	4	26.26	61.17	23.12	58.035	3			6	14	4.334	4.3595		
S15	Temple A	Selinous	3	18.063	42.109	16.133	40.31	4	8.8	28.7	6	14	2.997	2.9975		

Table 4: Plan Dimensions																
Cat No.	**Name**	**Location**	**Date Group**	**FoW**	**FoL**	**SW**	**SL**	**KrSt**	**CeW**	**CeL**	**FC**	**FlC**	**FS**	**FlS**	**Rmp**	**DF**
S16	Temple C	Selinous	2	26.357	71.15	23.937	63.72	4	10.48	41.63	6	17	4.399	3.86		TRUE
S17	Temple D	Selinous	3	28.096	59.879	23.626	55.679	5	9.87	39.28	6	13	4.368	4.491		
S18	Temple E	Selinous	3	27.582	69.979	25.308	67.749	3	14.234		6	15	4.712	4.712		
S19	Temple F	Selinous	3	28.39	65.9	24.37	61.88	4	9.2		6	14	4.468	4.604		TRUE
S20	Temple G	Selinous	3	53.31	113.36	50.07	110.12	3			8	17	6.61	6.61		
S21	Temple O	Selinous	3													
S22	Apollo	Syracuse	1	24.46	58.32	21.5	54.9	4	11.77	37.2	6	17	3.772	3.331		TRUE
S23	Athena	Syracuse	3	24.308	57.533	22.2	55.455	3	12.37		6	14	4.15	4.165		
S24	Zeus	Syracuse	1	25.4	65.05	22.4	62.05	3			6	17	4.08	3.753		TRUE
S25	Temple A	Megara Hyblaia	2	17.55	41.4				7.75	28.4						

Table 4 The measurements relating to the plan elements of all 104 temples in the data-set. The measurements presented include: the foundation width (FoW) and length (FoL), the stylobate width (SW) and length (SL), the number of krepidoma steps (KrSt), the cella width (CeW) and length (CeL), the number of façade (FC) and flank (FlC) columns, the façade (FS) and flank (FlS) axial spacing, as well as, the presence or absence of ramps (Rmp) and double fronts (DF; references for the individual measurements can be found in the individual temples' entries in Appendix V).

Plan: Foundations (Table 4: FoW and FoL)

Since foundations form the support for the krepidoma and consequently the peristyle, they create the basis for understanding the size and shape of a building's plan. For most temples the foundations are broken into two clear groups: those relating to the krepidoma and those relating to the central cella building, which may include further foundations for internal elements, such as colonnades, as demonstrated by the remains of the Temple of Hera in the Argive Heraion (P2, Figure 25).

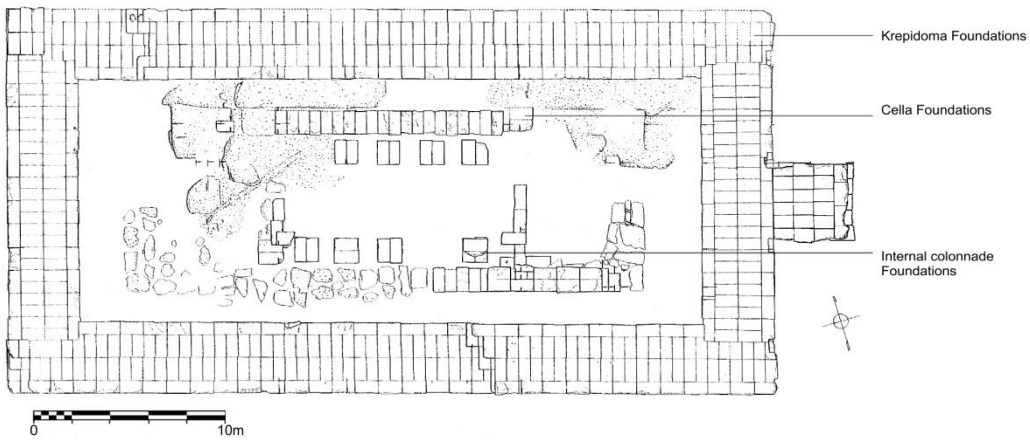


Figure 25 Labelled plan of the foundations of the Temple of Hera in the Argive Heraion (P2; *After* Pfaff 2003a: Figure 17).

In order to analyse the temples' foundations size and shape, both the width (FoW) and length (FoL) of the temple's krepidoma foundations have been recorded. These measurements are only included within the data-set when the width and length of the foundations are preserved in their entirety on at least one side. For example, the length of the foundations of the Casa Marafioti Temple at Locri Epizephyrioi (I4) are not included in the data-set as the Marafioti house was built over the east end of the temple, making it impossible to establish the temple's exact length (Østby 1978: 25). Where it is specified in the available reports, the foundations are measured at the level of the euthynteria, the top block of the foundations, as this is the level that connects the deep foundations with the superstructure and is a point that is present on every temple, which often have varying levels of deep foundations (Figure 26). For example, on the Temple of Hera in the Argive Heraion (P2) the depth of the foundations vary considerably, with one northern section being only a single course deep and one western section containing ten courses, yet the euthynteria is present on all four sides (Pfaff 2003a: 46). However, when each individual layer of the foundations are not identified in the publication, usually due to the foundation blocks having been removed, the width and length of the foundation trenches are recorded, which would correspond to the euthynteria measurements.

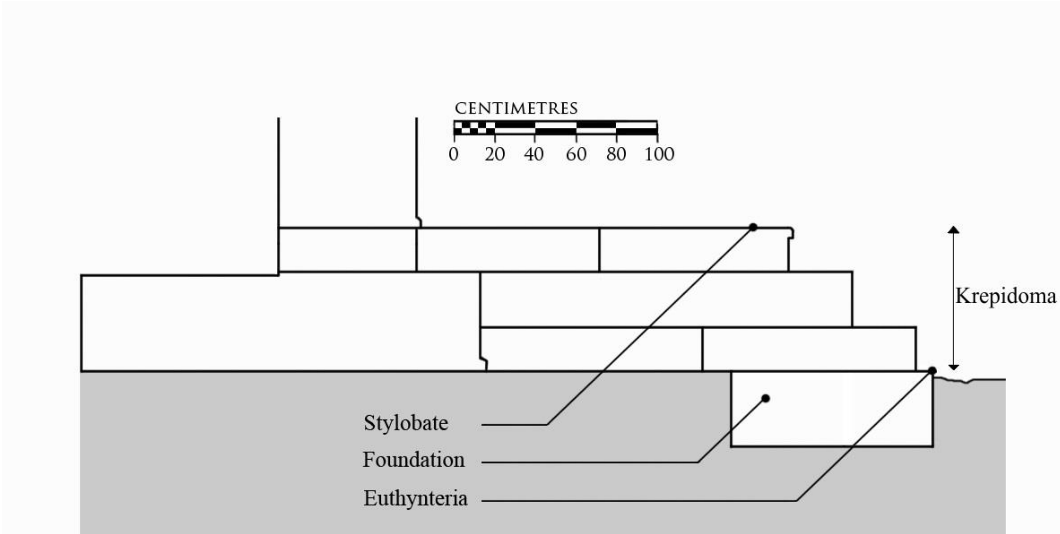


Figure 26 Cross-section of the foundations and krepidoma of the Temple of Athena at Vigla (P23). Although these elements of the Temple of Athena at Vigla are restored, as the temple is not well preserved, the image clearly shows the relationship of the top step (stylobate) and the foundations, the top block of the foundations (euthynteria) being visible beyond the krepidoma steps. This image also demonstrates how, if the blocks have been removed, the foundation cut would more accurately reflect the euthynteria dimensions, rather than those of the bottom krepidoma step (*After* Østby 1995b: Figure 194).

This has resulted in foundation widths being recorded for 93 temples and foundation lengths for 87. The foundation widths range between 10.65m on the Temple of Athena at Alipheira (P1) and 56.3m on the Temple of Zeus Olympios (Temple B) at Akragas (S8, Figure 27). Likewise, the temples' foundation lengths have a wide range of 92.79m. The temple with the shortest foundations is the date group 6 Temple of Artemis at Loutsa (A12), with a length of 21.16m; whilst the longest foundations belong to the Temple of Zeus Olympios (Temple B) at Akragas (113.45m). Therefore, when analysed on a Panhellenic scale, the temples' foundation sizes demonstrate a significant amount of variety.

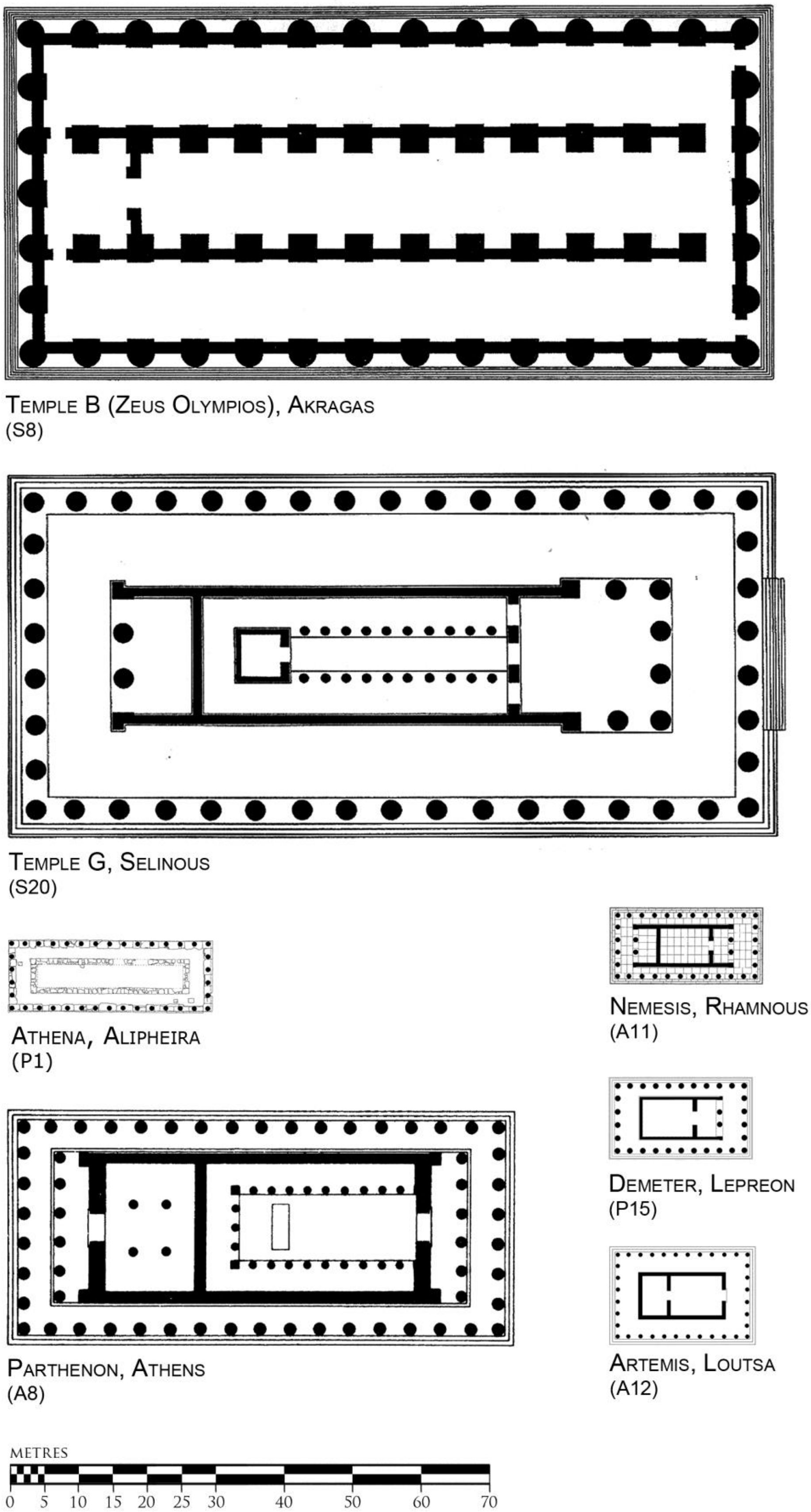


Figure 27 Plans of temples with different foundation and stylobate dimensions (Knell 1983b: 131; 1983c: 41; Mertens 1984: 164; Miles 1989: 143; Østby 1995b: Figure 200; Pedley 2005: 69).

Plan: Stylobate and Krepidoma Steps (Table 4: SW, SL and KrSt)

The krepidoma is the first element of the temple architecture above ground and forms the physical connection between the foundations and peristyle. The krepidoma is formed of varying numbers of steps that enable access to the temple's top step known as the stylobate. As with the foundations, the stylobate affords the opportunity to analyse the changeable size and shape of another element of the various building plans. The relationship between the foundations and the stylobate could be altered by varying the number of steps in the krepidoma. Consequently, the number of steps in a temple's krepidoma could be used to create a stylobate with a different relationship to the foundations.

The difference between the size and shape of the foundations and stylobate can be further emphasised through variation in the width and height of the steps, thus allowing for an amount of independence between the size of the stylobate, the foundations and the number of krepidoma steps. Consequently, in order to understand the role of the krepidoma in the creation of temples with different designs, the width (SW) and length (SL) of the stylobate and the number of krepidoma steps (KrSt) are included in the analysis. The inclusion of these measurements in the data-set allows for the analysis of the different shapes that were created using these elements, as well as allowing for an analysis of the relative differences between different temple designs. However, the stylobate measurements have only been included in the data-set when the foundations are preserved to the full width and length and the numbers of krepidoma steps are preserved in at least one section. As a result, 56 temples' stylobate widths, 53 stylobate lengths and 59 temples' krepidoma steps have been recorded in the data-set. The narrowest stylobate is found on the Temple of Nemesis at Rhamnous (A11; 9.96m); whilst, the widest belongs to the Temple of Zeus Olympios (Temple B) at Akragas (S8; 52.74m), making the largest temple over five times wider than the smallest. The buildings in the data-set also demonstrate a large amount of difference in their lengths. The shortest stylobate measures 19.6m (A12, The Temple of Artemis at Loutsa), whilst the longest measures 110.12m (S20, Temple G at Selinous), a range of 90.52m. Therefore, as with the foundations, a wide variety of different stylobate sizes were utilised in the construction of Doric peripteral temples.

It is important that the krepidoma steps are preserved to their full height in order to ensure that the krepidoma is restored with the correct amount and depth of stairs, thus resulting in an accurate restoration of the stylobate from the foundations. This is significant as the number of krepidoma steps varies between buildings and their relative depth is also subject to change. Despite this, most temple restorations assume that three krepidoma steps were used. For example, Mertens' (1973: 209) reconstruction of the stylobate size for Temple Aii (Apollo Lykeios) at Metaponto (I6) and Marconi's (1933: 82) reconstruction of the stylobate on Temple I (Dioskouroi) at Akragas (S3) are based upon the assumption of three krepidoma steps. Although three krepidoma steps were used more often than not (52.5%), the fact that 47.5% of temples used other amounts indicates that the existence of a three step krepidoma cannot be presumed. For example, the stylobate of the temple at Orchomenos (P5) is constructed straight onto the euthynteria, while the stylobate of Temple D at Selinous (S17) is placed upon a five-step krepidoma. As such, the inclusion of stylobate measurements, without a surviving section of the stylobate, which is placed upon a preserved flight of krepidoma steps, would require a reconstruction based purely upon speculative figures, and thus cannot be included in the data-set. For the purpose of this project, the accuracy that can be attained when only a section of stylobate remains is more than suitable as it provides solid evidence for the height and dimensions of the stylobate in relation to the foundations.

Two examples, from the Temple of Apollo at Corinth (P7) and the Kardaki temple at Korkyra (N24), demonstrate how the criteria discussed above relating to the stylobate measurements have been applied to the temples in the data-set. The criteria allow for the inclusion of both the length and width of the stylobate for the Temple of Apollo at Corinth, despite large sections of the plan only being preserved in the rock-cut foundation trenches (Dinsmoor 1950: 89). This is because the seven remaining columns stand on a preserved section of the four step krepidoma (Stillwell 1932: 115-116). Therefore, it is possible to extrapolate accurately the stylobate measurements, resulting in stylobate dimensions of 21.48m by 53.824m. However, in other instances, the formulated criteria have only allowed for the inclusion of one of the two elements' measurements. For example, the stylobate length of the Kardaki temple at Korkyra (N24) can not be included due to the fact that the eastern end of the temple had fallen into the sea before it could be measured. However, the western end of the temple is preserved, including a number of monolithic column sections remaining *in situ* on the stylobate, allowing for the stylobate width to be included in the data-set (Johnson 1936: 46; Dinsmoor Jr. 1973: 166).

Plan: Cella (Table 4: CeW and CeL)

In this thesis, the word 'cella' refers to the entire central building within the peristyle, rather than just the large principal room, the naos. Consequently, the cella refers to the physical block within the peristyle, comprising the pronaos, naos and rear room. Although the cella is not an external feature its size and shape, especially when viewed through the peristyle, affected the exterior appearance of the temple. Indeed, different temples' cellae had different relationships with the stylobate. Some temples have a wide, spacious pteroma, resulting in a less congested plan and façade than those with a narrow pteroma; for example, compare the widths of the flank pteroma on the Temple of Minerva at Pompeii (I13) and the temple at Orchomenos (P5, Figure 28). Likewise, the fact that the interior buildings were different shapes, some being long and narrow, such as the cella belonging Temple F at Selinous (S19), whereas others, like the Parthenon in Athens (A4), were much broader in proportion to their length, creates a further visual difference between the buildings. The religious importance of the cella and its design is debated (Scranton 1946: 39; Plommer 1950: 109), however, the fact that the size and shape of the cella would have had a visual effect upon the external appearance of the temple, particularly in relation to the surrounding peristyle, means that that the principal dimensions of the buildings' width (CeW) and length (CeL) are included in the data-set.

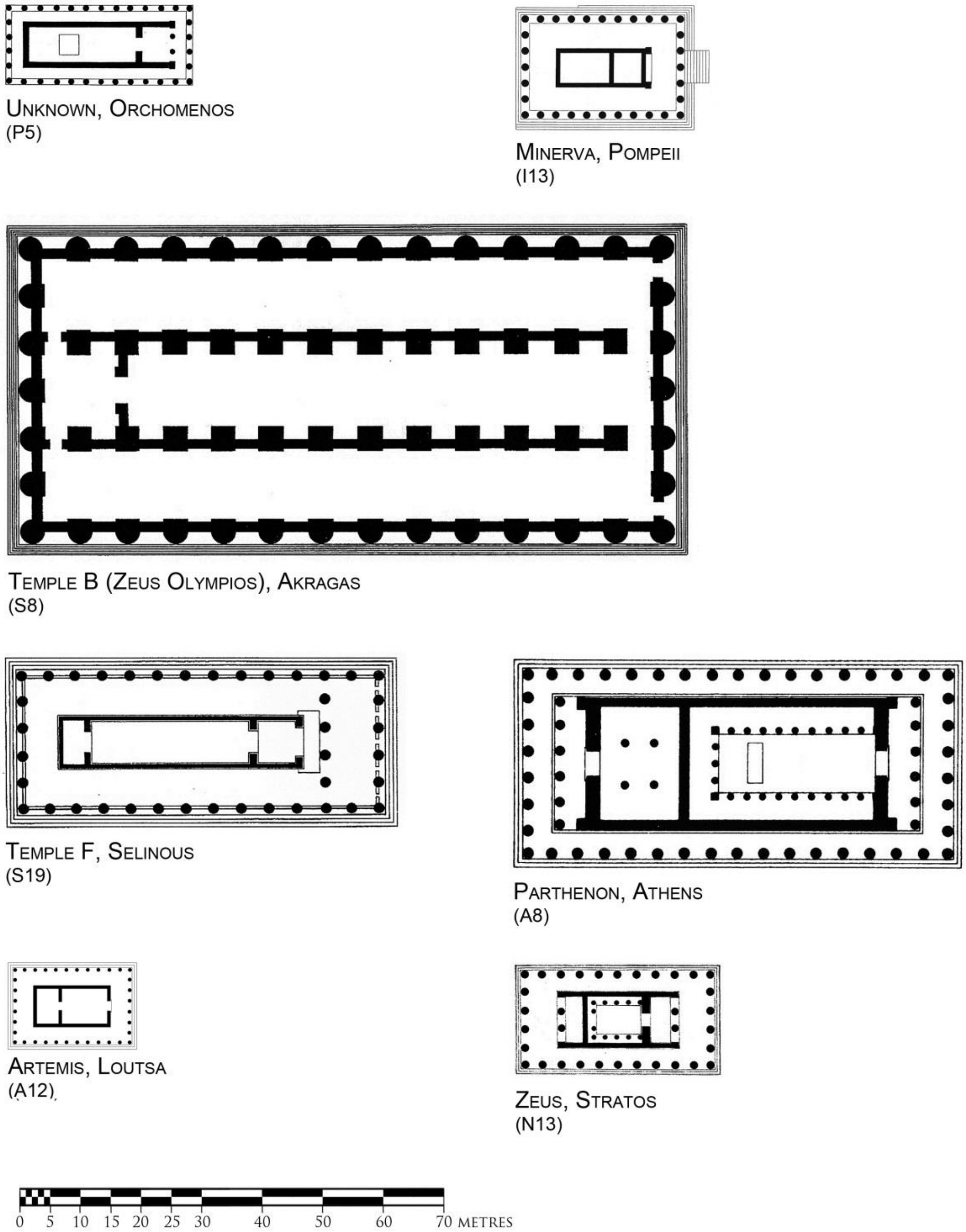


Figure 28 Temples with cellae of different, sizes, shapes and relationships to the surrounding elements (*After* Knell 1983c: 41; Mertens 1984: 164; De Waele 1994: 109; Pedley 2005: 69; Spawforth 2006: 160, 175).

As with the foundations, the dimensions of the cella are only included if there is surviving evidence preserving their full extent on at least one side. The application of this criteria results in 71 widths and 62 lengths being recorded in the data-set. In many reports it is not made clear whether the described measurements are taken from the cella walls or the toichobate, the top foundation block of the cella. Where both measures are stipulated the dimensions of the toichobate are used, as these are the measurements that would be recoverable in instances where only the foundations are preserved. In reality, the difference between the measurements of the walls and the toichobate are very minor. For example, on the Temple of Apollo Epikourios at Bassai (P4), the toichobate is only .095

wide (Cooper 1996c: Plate 11), making it small enough as to have little effect upon any conclusions drawn in an analysis conducted on this scale. The cella measurements range in width from 5.2m on the Temple of Athena at Alipheira (P1) and Temple C at Pallantion (P24), to 44.01m on the Temple of Zeus Olympios (Temple B) at Akragas (S8). The lengths range between 12.72m on the Temple of Demeter at Lepreon (P15) and 101.16m on the Temple of Zeus Olympios (Temple B) at Akragas, thus making a Panhellenic range of 88.44m.

Plan: Columns and Axial Spacing (Table 4: FC, FlC, FS and FlS)

The columns of the peristyle form the most visible and distinguishing element of the Doric peripteral temple. Although it has been suggested that the columns performed a purely structural role (Townsend 2004: 310), the use of columns, as opposed to a solid wall to hold up the entablature, suggests that they had meaning in the ancient world. Furthermore, as discussed in Chapter 1, the existence of the non-peripteral type of temple, the ‘upgrading’ of various temples with the addition of a peristyle, and the significant costs and man-power needed to create the columns, suggest that the peristyle had significant importance in the ancient world. In order to understand the overall effect of the peristyle, the numbers of columns in the peristyle, both façade (FC) and flank (FlC), as well as the façade (FS) and flank axial spacing (FlS) are included in the data-set.

Despite being the defining feature of the Greek peripteral temple, there are only a few examples of Doric peripteral temples that preserve the location of all the columns on the stylobate, as can still be seen on the Temple of Hera II (Poseidon) at Poseidonia (I11). The majority of temples, such as the Temple of Asklepios at Epidauros (P9), retain none of their peristyle columns *in situ*. Consequently, reconstructing the number of façade and flank columns (and subsequently the façade and flank axial spacing) on a temple is often the main aim of hypothetical restorations and these figures often get mistaken for fact in later publications. For example, the Temple of Artemis at Korkyra (N23) is often described as having 8 by 17 Doric columns (for example, Barletta 2009a: 79), although this is only one possible reconstruction (Dinsmoor 1950: 73 n.3). Therefore, it is necessary for a temple to retain certain elements before a reconstruction of the number of columns can be included within the data-set.

The amount of façade and flank columns are only included in the analysis when the stylobate measurements, a lower column diameter and the frieze distribution are preserved. The dimensions of the stylobate are essential, otherwise it is impossible to know the size of the available area for the columns to rest upon, let alone their proportional size in relation to the stylobate. Dinsmoor’s (1949) study of the architrave block belonging to the so-called 'Great Temple' at Corinth (P8) demonstrates the difficulty in determining the number of peristyle columns without having a preserved stylobate. Although an architrave block, which preserves the axial spacing of the columns, survives, without knowing the exact length of the stylobate it is impossible to determine how many axial spaces, and subsequently how many columns, there were in the peristyle. Therefore, in order for the number of columns to be included in the data-set, the stylobate dimensions are required because without drawing heavily upon analogies from other buildings, it is impossible to guess at the exact length of the frieze, which is used to help to determine the column spacing.

The preservation of the frieze distribution is an important indicator of column spacing, as a triglyph is usually placed over each column and axial spacing (Lawrence 1996: 71). This is extremely useful as the frieze distribution can be determined from a number of sources, such as the regulae of the architrave and mutules of the geison, which share the same distribution and width as the triglyphs. Therefore, it is possible to restore the axial spacing of the columns using the architrave, frieze or geison providing they are well preserved. Therefore, the preservation of the architrave, frieze or geison is also necessary for the number of columns to be included within the data-set if no standing columns remain.

Despite most temples demonstrating a correlation between regulae, triglyph and mutule width and distribution, there are exceptions, such as the Temple of Apollo at Syracuse (S22), where the regulae distribution does not coincide with the column spacing and no elements of the frieze or geison are preserved (Barletta 1983: 74; Marconi 2007: 41; Figure 29).[32] Furthermore, some Doric temples utilised two triglyphs per axial spacing, as on the Temple of Apollo at Sikyon (P8, Krystalli-Votsi and Østby 2010), meaning that frieze distribution and the stylobate dimensions together cannot be presumed to entirely accurate in relation to the number of columns in the peristyle. Consequently, in order to add an extra check, an additional element was required before the amount of columns could be reliably extrapolated and included in the data-set. To this end, a preserved lower column diameter is essential, as it gives an indication of the actual size of the columns, providing further evidence for the relationship between the various elements and suggesting that there is enough evidence for the restoration to be included in the data-set. Thus, the lack of a remaining lower column drum means that the numbers of columns belonging to the Temple of Artemis at Korkyra (N23) are not included within the data-set

[32] Cultrera (1951: 821) suggested that two preserved triglyph fasciae may belong to the Temple of Apollo; however, it is now felt that these probably belonged to an altar, decorated with a Doric frieze, as can be found in the Sanctuary of Artemis in Korkyra (Marconi 2007: 40).

despite the stylobate and frieze dimensions being preserved. The exception to these criteria is when a number of columns are preserved *in situ*, thus allowing for the column distribution to be directly restored, as is the case with the Temple of Athena at Karthaia (A16, Østby 1980: 190).

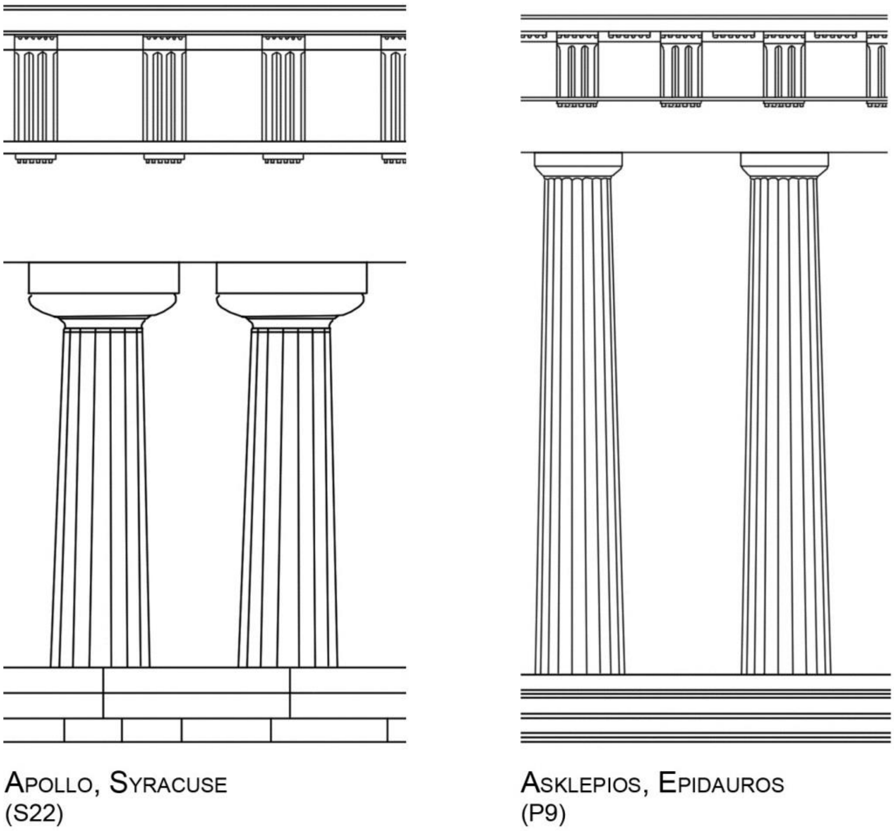


Figure 29 Elevations of the Temple of Asklepios at Epidauros (P9; right) and the Temple of Apollo at Syracuse (S22; left). The Temple of Asklepios at Epidauros demonstrates the regularity of the relationship between the columns and frieze elements a feature which is not present on the Temple of Apollo (*After* Cultrera 1951: 827; Tomlinson 1983: 58).

It is possible to select stricter rules with regard to the necessary state of preservation of the column numbers before they are included in the data-set. For example, the temple builders adopt various solutions in order to solve the problems associated with placing a triglyph over the corner column (Robertson 1979: 110-112) and this occasionally involves the movement of one or two of the end columns in the peristyle, known as single or double contraction. Single contraction is used on the second Temple of Poseidon at Sounion (A9, Dinsmoor 1950: 338), whilst double contraction is used on the Temple of Hera II (Poseidon) at Poseidonia (I11). Indeed, some temples have uniform spacing on all sides of the peristyle, as on the Temple of Athena at Poseidonia (I8, Dinsmoor 1950: 93; Symeonoglou 1985a: 57). However, any refinements of this nature do not require great alterations to the distribution of the columns upon the peristyle; for example, on the Temple of Hera II (Poseidon) at Poseidonia the difference in distribution between the majority of flank columns and that on the corner is less than 0.2m. Therefore, the varying degrees of contraction are unlikely to alter the number of columns on the peristyle. Furthermore, given the amount of elements required before a temple's columns are included in this study's data-set, the lack of preserved evidence for each temple's solution to the problem of angle-contraction is not an issue in a project of this nature.

Therefore, in the absence of a peristyle of *in situ* columns, the preservation of the three identified elements (stylobate measurements, entablature distribution, and lower column diameter) provides strong evidence for the original appearance of the building. Applying the above criteria results in 47 temples within the data-set preserving their number of façade columns and 44 preserving the number of flank columns. The number of façade columns varies between five on the Temple of Apollo at Metropolis (N21) and nine on the Temple of Hera I (Basilica) at Poseidonia (I9), whilst the flank columns vary between 11 on the Temple of Zeus at Stratos (N13), the Temple of Athena at Karthaia (A16), the Metroon at Olympia (P19), the Temple of Demeter at Lepreon (P15) and on the Temple of Asklepios at Epidauros (P9) to 18 on the Temple of Hera I (Basilica) at Poseidonia (Figure 30). Consequently, 46 temples in the data-set include their façade axial spacing and 45 preserve their flank axial spacing.[33]

[33] 46 façade axial spacings are included as opposed to 47 examples of column numbers, as the preliminary report for the Temple of Apollo at Metropolis (N21) does not contain the axial measurements. Furthermore, 45 flank axial spacings are included as opposed to 44 column numbers, as the eastern end of the Kardaki temple at Korkyra (N24) has fallen into the sea, meaning that the exact amount of flank columns cannot be known, but the remaining columns on the peristyle allow for the flank axial spacing to be analysed.

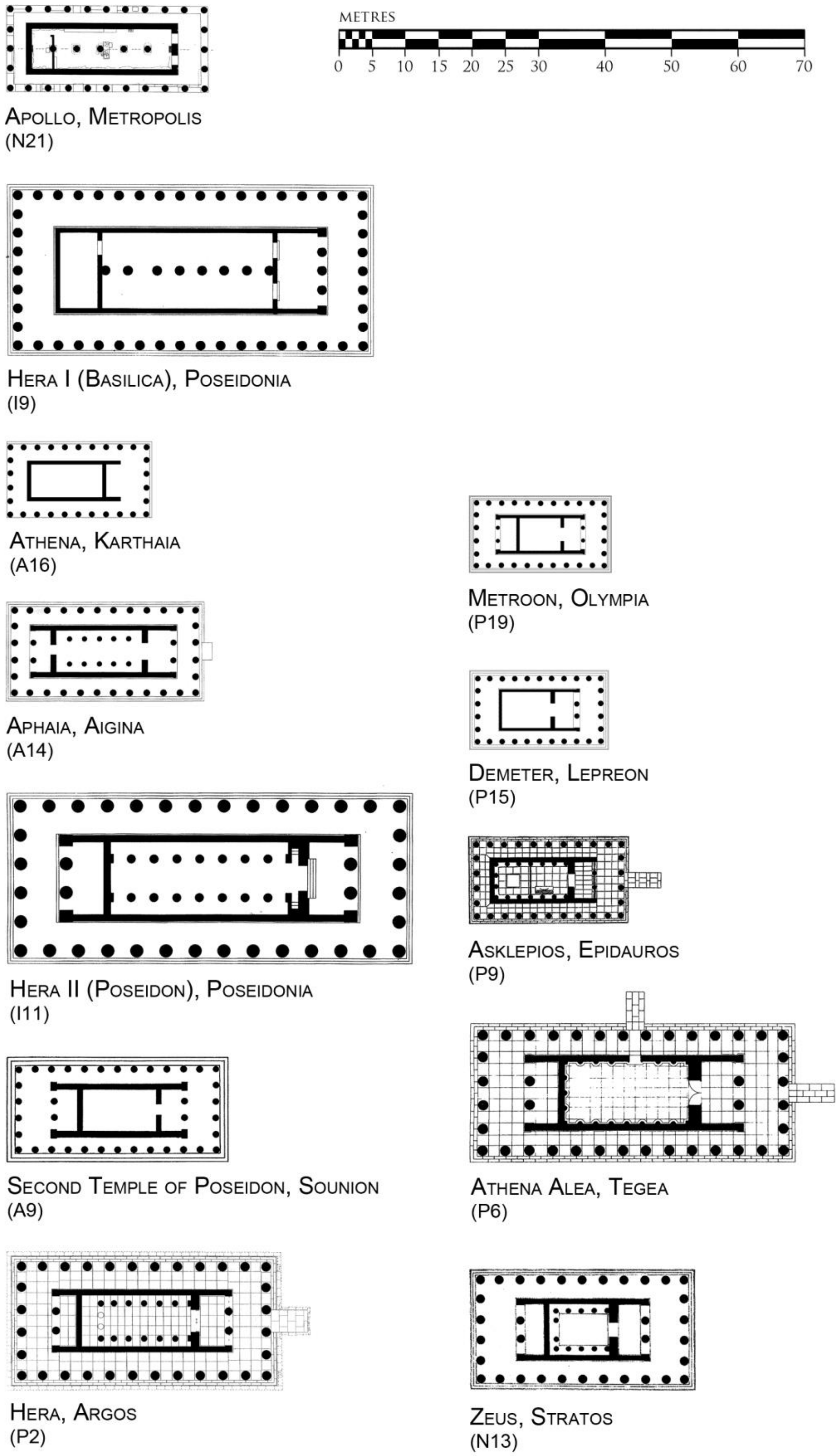


Figure 30 Temples with different numbers of façade and flank columns presented in chronological order (*After* Boersma 1970: 196; Wurster 1974: 107; Auberson 1976: Plate 7; Østby 1980: 192; Knell 1983b: 131; Norman 1984: 183; Intzesiloglou 2002: 114; Martin 2003: 38, 55; Pfaff 2003a: Figure 53; Spawforth 2006: 165, 175).

Plan: Other (Table 4: Rmp and DF)

A number of temples have plan designs that incorporate double colonnades (DF) and ramps (Rmp) at the east end. As a large element in the frontal appearance of the temple, the presence of ramps and double fronts on some temples, such as the Temple of Asklepios at Epidauros (P9) and Temple of Apollo at Syracuse (S22, Figure 31), and not others, suggests that ramps were a deliberate addition to specific temples. These plan elements are identified in the data-set using a presence/absence classification (the presence of the element results in a TRUE statement in the associated column in Table 4). The presence of these elements is rare with only ten temples having ramps and only eight having double fronts. The presence/absence classification has been used in order to aid comparisons between the sites, thereby monitoring the distribution of similar phenomena, whilst avoiding the complications of adding further detail. For example, some temples have ramps that are bonded to the krepidoma, such as that on the Temple of Hera in the Argive Heraion (P2), while on others, such as the Temple of Aphaia on Aigina (A14), the ramp is separate from the krepidoma. Some temples, such as the Temple of Athena Alea at Tegea (P6) have multiple ramps. However, the focus of this thesis is upon the external view of the temple taken as a whole, thus, all the above examples share the same basic form and it is beyond the scope of this thesis to analyse the meaning behind such differences. Therefore, due to the similarity in appearance between the ramps, despite the various construction methods employed, they are analysed under a single heading.

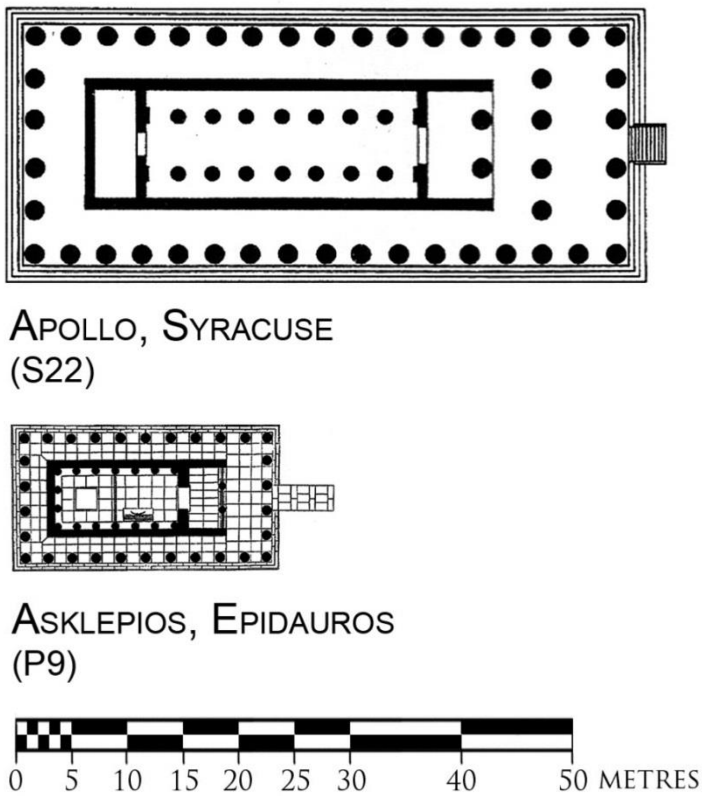


Figure 31 The plans of the Temple of Apollo at Syracuse (S22) and the Temple of Asklepios at Epidauros (P9; *After* Mertens 1984: 164; Spawforth 2006: 165).

Elevation

The second section of the data-presentation relates to the elevation elements, notably the columns, the capitals, the entablature and the decoration. The measurements belonging to the columns, capitals and entablature are presented in Table 5, whereas, those relating to the decoration are recorded in Table 7. As with the data presented in Table 4, a blank cell indicates that there was not enough information for this measurement to be included. The data that is presented in relation to the elevation elements forms the basis for the analysis of the elevation designs in Chapters 5 and 6.

Table 5: Measurements of the Elevation Elements														
Cat No.	**Name**	**Location**	**Date Group**	**LD**	**CH**	**UD**	**AbH**	**AbW**	**EH**	**NH**	**ArH**	**FrH**	**MW**	**TW**
A2	Olympieion	Athens	2											
A3	Athena Polias	Athens	2	1.55							1.275	1.338	1.167	0.753
A4	First Temple of Poseidon	Sounion	3										0.74	0.52
A5	Old Parthenon	Athens	3	1.903										
A6	Hephaisteion	Athens	4	1.018	5.712	0.79	0.2	1.141	0.154	0.149	0.836	0.828	0.775	0.515
A7	Apollo Delphinios	Athens	4											
A8	Parthenon	Athens	4	1.922	10.433	1.513	0.345	2.01	0.285	0.225	1.348	1.306	1.284	0.845
A9	Second Temple of Poseidon	Sounion	4	1.02	6.14	0.779	0.198	1.108	0.158	0.133	0.834	0.829	0.737	0.521
A10	Athena	Pallene	4									0.838		0.555
A11	Nemesis	Rhamnous	4	0.714	4.101	0.551	0.13	0.754	0.1	0.083	0.567	0.5765	0.5725	0.377
A12	Artemis	Loutsa	6											
A13	Apollo	Aigina	2									0.938	0.938	
A14	Aphaia	Aigina	3	0.989	5.272	0.736	0.19	1.22	0.227	0.158	0.84	0.82	0.8	0.505
A15	Athena	Megara	2											
A16	Athena	Karthaia (Keos)	2	0.91		0.7	0.2	1.17	0.23	0.155				
I1	Unknown	Hipponion	2											
I2	Unknown	Kaulonia	4			0.902	0.264	1.424	0.253	0.167	1.01			0.61
I3	Hera	Kroton	3	1.779	8.299	1.326	0.422	2.222	0.38	0.273				
I4	Casa Marafioti	Locri Epizephyrioi	2	0.915		0.735	0.235		0.184			1.32	1.11	0.97

Table 5: Measurements of the Elevation Elements														
Cat No.	**Name**	**Location**	**Date Group**	**LD**	**CH**	**UD**	**AbH**	**AbW**	**EH**	**NH**	**ArH**	**FrH**	**MW**	**TW**
I5	Hera	Tavole Palatine	2	1.068	5.21	0.785	0.26	1.49	0.226	0.126				
I6	Temple Aii (Apollo Lykeios)	Metaponto	2	1.44		1.09	0.46	1.91	0.3	0.17	1.2			0.66
I7	Temple Bii	Metaponto	2				0.318	1.48	0.22					0.61
I8	Athena	Poseidonia	2	1.262	6.122	0.841	0.289	1.769	0.297	0.195	1.036	0.92	0.7625	0.55
I9	Hera I (Basilica)	Poseidonia	2	1.45	6.454	0.982	0.43	2	0.285		1.17			
I10	Heraion	Foce del Sele	2	1.047		0.694	0.286	1.394	0.22	0.144	1.031	0.864	0.614	
I11	Hera II (Poseidon)	Poseidonia	4	2.052	8.88	1.493	0.495	2.602	0.427	0.306	1.488	1.433	1.325	0.918
I12	Unknown	Taranto	1	1.9	8.47	1.55	0.51	2.7	0.418	0.292				
I13	Minerva	Pompeii	2				0.32	1.5	0.2					
N1	Artemis	Kalydon	5				0.185				0.768			0.498
N2	Poseidon	Velvina (Molykreion)	6											
N3	Apollo Ismenios	Thebes	5											
N5	Hera	Plataia	2											
N6	Apollo Daphnephoros	Eretria	2				0.26	1.6	0.24					0.645
N7	Dionysos	Eretria	5									0.6		0.45
N9	Zeus Ammon	Aphytis (Kallithea)	6			0.87	0.148	0.99	0.115	0.123				
N10	Apollo	Ambrakia (Arta)	3					0.8						
N12	Unknown	Kassope	6											

Table 5: Measurements of the Elevation Elements

Cat No.	Name	Location	Date Group	LD	CH	UD	AbH	AbW	EH	NH	ArH	FrH	MW	TW
N13	Zeus	Stratos	6	1.29	7.905	1.01	0.202	1.36	0.136	0.167	0.825	0.946	0.955	0.625
N14	Zeus	Passaron	6											
N15	Fourth c. Apollo	Delphi	6	1.791	10.59	1.384	0.31	1.91	0.173	0.242		1.405	1.22	0.82
N16	Sixth c. Apollo	Delphi	2	1.8		1.324	0.374	2.203	0.395	0.253	1.415	1.372	1.21	0.822
N17	Athena	Delphi	2	0.975	4.6	0.746	0.202	1.228	0.238	0.165				0.511
N18	Athena Kranaia	Elateia	3	0.75		0.545	0.15		0.13					0.5
N19	Apollo	Kalapodi (Hyampolis)	2											
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4			1	0.2165	1.35						
N21	Apollo	Metropolis	2											
N22	Unknown	Pherai	6										0.81	0.54
N23	Artemis	Korkyra	1			0.962	0.309	1.685	0.217	0.13		1.093	0.922	0.615
N24	Kardaki	Korkyra	2	0.61	2.975	0.457	0.146	0.819	0.148	0.101	0.46			
N25	Hera (Mon Repos)	Korkyra	5											
O1	Athena	Assos	2	0.914	4.57	0.624	0.201	1.184	0.199	0.106	0.82	0.777	0.796	0.52
O8	Apollo	Delos	3	0.945	5.2	0.72	0.201	1.113	0.181	0.148	0.77	0.745	0.67	0.48
O11	Zeus	Cyrene	3	1.94	8.94	1.45	0.43	2.7	0.55	0.34	1.85	1.48		
O12	Apollo	Cyrene	2	1.1		0.85			0.23			1.09	0.78	0.6
O13	Unknown	Apollonia	6			0.96	0.188	1.35	0.155					
P1	Athena	Alipheira	3			0.535	0.148	0.905	0.157	0.13	0.68	0.682	0.575	0.43
P2	Hera	Argive Heraion	4	1.308		1.016	0.232	1.36	0.169	0.159		1.065	0.981	0.645

Table 5: Measurements of the Elevation Elements

Cat No.	Name	Location	Date Group	LD	CH	UD	AbH	AbW	EH	NH	ArH	FrH	MW	TW
P3	Unknown	Agios Elias	3	0.66		0.485	0.138	0.815	0.149	0.091		0.574		0.42
P4	Apollo Epikourios	Bassai	4	1.112	5.959	0.889	0.191	1.172	0.153	0.105	0.835	0.835	0.802	0.535
P5	Unknown	Orchomenos	2			0.652	0.184	1.18	0.187	0.115				
P6	Athena Alea	Tegea	6	1.55	9.544	1.21	0.248	1.616	0.158	0.184	0.968	1.088	1.081	0.71
P7	Apollo	Corinth	1	1.645	7.24	1.232	0.31	2.18	0.36	0.233	1.34			0.83
P8	Apollo	Sikyon	6			0.44		0.57						0.31
P9	Asklepios	Epidauros	5	0.92		0.606	0.122	0.811	0.083	0.099	0.61	0.688	0.688	0.441
P10	Asklepios	Gortys	5											
P11	Akropolis Temple	Gortys	5											
P12	Poseidon	Hermione	2											
P13	Poseidon	Isthmia	3			1.476								
P14	Poseidon	Kalaureia (Poros)	2											
P15	Demeter	Lepreon	5	0.83		0.64	0.14	0.837	0.112	0.123	0.58	0.595	0.59	0.38
P16	Athena	Makiston	3	0.966		0.739	0.205	1.229	0.233	0.152		0.903	0.816	0.54
P17	Zeus	Nemea	6	1.628	10.325	1.3065	0.25	1.76	0.1675	0.2075	1.03	1.1505	1.142	0.7301
P18	Hera	Olympia	1	1.25	5.22	0.995	0.21	1.712	0.248	0.062				
P19	Metroon	Olympia	5	0.85		0.65	0.14	0.89	0.096	0.108	0.628	0.66	0.585	0.405
P20	Zeus	Olympia	3	2.21	10.43	1.68	0.424	2.65	0.418	0.387	1.767	1.74	1.55	1.06
P21	Athena	Prasidaki	3	1.1							0.84	0.8	0.78	0.6
P22	Unknown	Troizen	6											

Table 5: Measurements of the Elevation Elements														
Cat No.	Name	Location	Date Group	LD	CH	UD	AbH	AbW	EH	NH	ArH	FrH	MW	TW
P23	Athena	Vigla	2			0.54	0.125	0.96	0.117	0.063				0.447
P24	Temple C	Pallantion	3											
P25	Unknown	Kalavryta	2			0.55		1.02						
S1	Temple F (Concord)	Akragas	4	1.42	6.712	1.11	0.312	1.74	0.288	0.189	1.105	1.115	0.961	0.64
S2	Temple G (Hephaisteion)	Akragas	4	1.55										
S3	Temple I (Dioskouroi)	Akragas	4	1.22	5.83	0.97	0.276	1.51	0.255	0.161	0.927	0.928	0.764	0.51
S4	Temple A (Herakles)	Akragas	2	2.085	10.07	1.468	0.449	2.68	0.452	0.298	1.6	1.515	1.31	1
S5	Temple D (Hera Lacinia)	Akragas	4	1.375	6.322	1.07	0.328	1.72	0.287	0.231	1.133	1.02	0.921	0.614
S6	Temple E (Athena)	Akragas	3	1.41									0.88	0.52
S7	Temple L	Akragas	4	1.405	6.589	1.06	0.328	1.77	0.309	0.213	1.217			
S8	Zeus Olympios (Temple B)	Akragas	3	4.3		3.1	0.88	4.8	1.01	0.67	3.36	3.1	2.28	1.79
S9	Aphrodite	Akrai	2			0.98								0.59
S10	Temple B (Athena)	Gela	1											
S11	Temple C	Gela	3	1.7										
S12	Victory	Himera	3	1.91			0.415	2.336	0.41	0.27	1.457		1.255	0.842
S13	Unknown	Segesta	4	1.935	9.338	1.551	0.388	2.312	0.326	0.271	1.449	1.448	1.308	0.873

Table 5: Measurements of the Elevation Elements														
Cat No.	**Name**	**Location**	**Date Group**	**LD**	**CH**	**UD**	**AbH**	**AbW**	**EH**	**NH**	**ArH**	**FrH**	**MW**	**TW**
S15	Temple A	Selinous	3	1.398		1.02	0.268	1.628	0.263	0.27	1.1	1.056	0.868	0.629
S16	Temple C	Selinous	2	1.94	8.62	1.5	0.386	2.522	0.324	0.326	1.765	1.46	1.04	0.975
S17	Temple D	Selinous	3	1.67	8.35	1.19	0.35	2.28	0.316	0.296	1.585	1.489	1.2	1.05
S18	Temple E	Selinous	3	2.24	10.335	1.76	0.545	2.765	0.445	0.385	1.785	1.716	1.384	0.95
S19	Temple F	Selinous	3	1.82	9.11	1.245	0.33	2.42	0.305	0.205	1.52	1.49	1.26	1.03
S20	Temple G	Selinous	3	2.97		1.92	0.55	3.91	0.57	0.33	3.33	2.31	1.96	1.34
S21	Temple O	Selinous	3											
S22	Apollo	Syracuse	1	1.85	7.98	1.5	0.6	2.86	0.46	0.3	2.425			
S23	Athena	Syracuse	3	1.978	8.783	1.485	0.452	2.47	0.439	0.309	1.485	1.4	1.253	0.831
S24	Zeus	Syracuse	1	1.85		1.42								
S25	Temple A	Megara Hyblaia	2											

Table 5 The measurements relating to the elevation elements of all 104 temples in the data-set; including the column height (CH), the column's lower (LD) and upper (UD) diameter, the height (AbH) and width (AbW) of the abacus, the height of the echinus (EH) and necking (NH), and the measurements relating to the entablature, such as the architrave (ArH) and frieze (FrH) heights, as well as the widths of the metopes (MW) and triglyphs (TW; references for the individual measurements can be found in the individual temples' entries in Appendix V).

Elevation: Columns (Table 5: LD, CH and UD)

As discussed in the preceding section regarding the inclusion of the number of columns in the data-set, the peristyle columns were one of the most significant visual elements of the Doric peripteral temple. To this end, as well as analysing the distribution and number of columns on the peristyle, their elevation size and shape are also examined. Indeed, the fact that some temples had narrow, widely spaced columns, whereas others had wide closely spaced columns, which had a particularly striking visual effect. For example, on the two facades of Temple G at Selinous (S20), which appear to have been completed separately, the two facades utilise different column shapes, as can be seen in Figure 32, the wider columns of the west façade creating the effect of a more cramped peristyle and ‘heavier’ entablature.

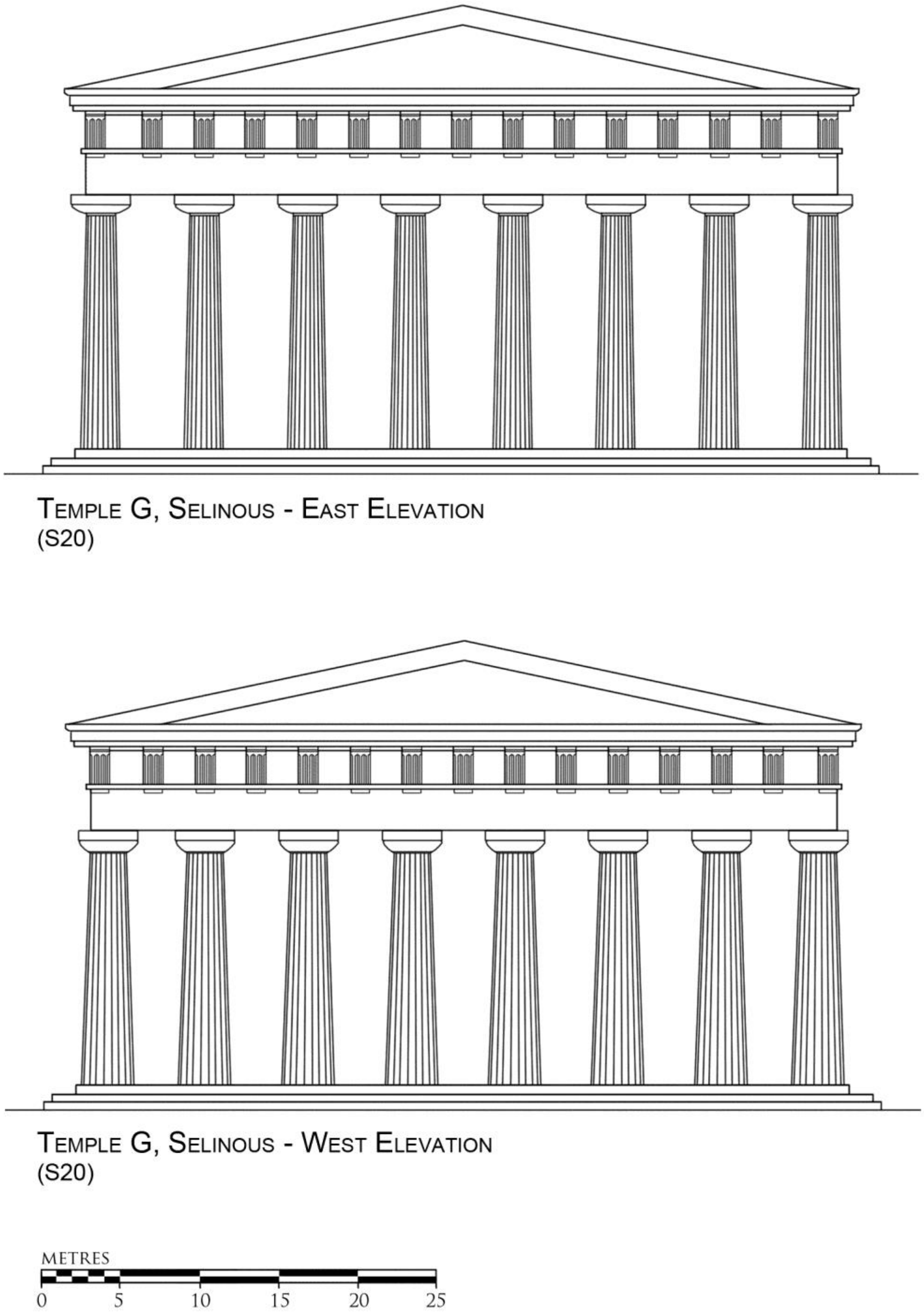


Figure 32 The dissimilar east and west facades of Temple G at Selinous (S20; *After* Prokkola 2011: 156).

The columns' elevation size and shape are analysed using three measurements: the height (including capital, CH), the lower (LD) and the upper (UD) diameters of the column. These three measurements were recorded as they can be used to analyse the shape of a temple's peristyle columns and they are also the most widely accessible measurements relating to the columns. Thirty-six column heights are preserved adequately enough to be included in the data-set, ranging in height between 2.975m on the Kardaki temple at

Korkyra (N24) and 10.59m on the fourth-century Temple of Apollo at Delphi (N15, Figure 33). In the different temple reports, the requirements for the restoration of the column heights vary from building to building; for example, Seki (1984) restores the column height of the Old Parthenon (A5) based upon comparisons with the Temple of Zeus at Olympia (discussed in Chapter 3); however, other studies, most notably by Mustonen and Pakkanen (1998; 2004), have stressed the need for a thorough survey and statistical analysis of all the temple's preserved column drums before a restoration can be attempted.

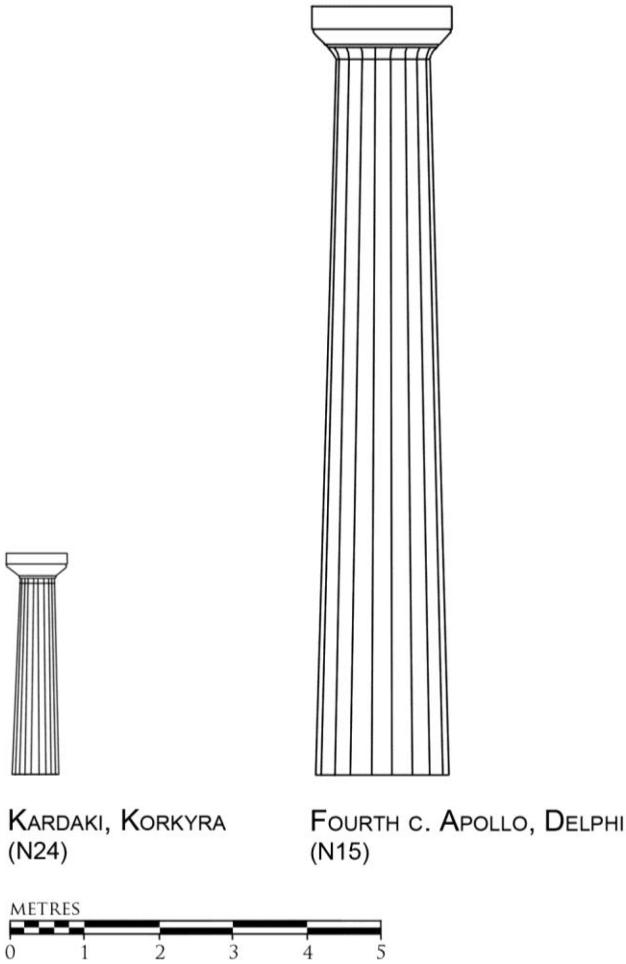


Figure 33 Comparison of the columns from the Kardaki temple at Korkyra (N24) and the fourth-century Temple of Apollo at Delphi (N15; *After* Courby 1927: Plate VI; Dinsmoor Jr. 1973: 168).

Naturally, given the aims, scope and length of this study, a compromise between these two positions must be utilised. The column height is included when a peristyle column is retained to full height (including the capital), as on the Temple of Hera I (Basilica) at Poseidonia (I9), when columns that have fallen in place retaining the order of their drums, as happened at the Temple of Nemesis at Rhamnous (A11, Miles 1989: 158 n.48) and Temple C at Selinous (S16, Guidoboni *et al.* 2002: 2966-2967), or when a drum belonging to each position in the column is preserved, as for Temple A (Herakles) at

Akragas (S4). However, in instances where sections of the column height are completely missing, the restored heights are not included within the data-set. This is primarily because the missing section is often restored using an average column drum height or based on analogy with contemporary architecture elsewhere. As highlighted in Chapter 3, restorations of the type utilised by Seki (1984) would alter the analysis of shape, resulting in two temples having the same shape when there is in fact little evidence to support the restoration.

The lower diameter of the column is recorded for 60 temples, with the smallest measuring 0.61m on the Kardaki temple at Korkyra (N24) and the widest on the Temple of Zeus Olympios (S8) measuring 4.3m. The lower diameter is measured at the lowest point of the bottom drum, around the arrises. In a number of cases the lower drums are occasionally preserved *in situ* on the stylobate, as on the Hephaisteion in Athens (A6) and the Temple of Athena at Karthaia (A16, Østby 1980: 190). A bottom drum is also sometimes identifiable because it is the only drum to be fluted, as on the Temple of Nemesis at Rhamnous (A11), or occasionally there is an un-fluted band left at the bottom of the column, as on the Temples of Apollo (S22) and Zeus (S24) at Syracuse (Dinsmoor 1950: 77).

In a number of instances the temple designers utilised a number of different lower diameters on a single building (Table 6). For example, the façade columns on the Temple of Hera II (Poseidon) at Poseidonia (I11) measured 2.096m in diameter, whereas the flank columns had a slightly smaller diameter, measuring 2.052m (Mertens 1984: 56). In the few instances where this occurs the measurements relating to the flank columns have been presented in Table 5 and it is these, rather than those in Table 6 that are used in the analysis of the columns' size and shape. The dimensions of the flank columns have been used in Table 5 as these are the most numerous on any temple design, most temples only having 6 façade columns. Indeed, the small amount of difference between the two measurements, in the case of the Temple of Hera II (Poseidon) at Poseidonia being 0.044m, are small enough to have little effect upon the conclusions of an analysis conducted on this scale.

Cat No.	Name	Location	Date Group	LD	CH	UD	Notes
A14	Aphaia	Aigina	3	0.989	5.272	0.736	
A14a	**Aphaia**	**Aigina**	**3**	**1.01**	**5.272**	**0.736**	**Corners**
A3	Athena Polias	Athens	2	1.55			
A3a	**Athena Polias**	**Athens**	**2**	**1.63**			**Façade**
A8	Parthenon	Athens	4	1.922	10.433	1.513	

Cat No.	Name	Location	Date Group	LD	CH	UD	Notes
A8a	**Parthenon**	**Athens**	**4**	**1.933**	**10.433**	**1.51**	**Corners**
I11	Hera II	Poseidonia	4	2.052	8.88	1.493	
I11a	**Hera II (Poseidon)**	**Poseidonia**	**4**	**2.096**	**8.88**	**1.551**	**Façade**
N17	Athena	Delphi	2	0.975	4.6	0.746	
N17a	**Athena**	**Delphi**	**2**	**1.01**	**4.6**	**0.746**	**Façade**
P4	Apollo Epikourios	Bassai	4	1.112	5.959	0.889	
P4a	**Apollo Epikourios**	**Bassai**	**4**	**1.142**	**5.959**	**0.927**	**Façade**
P5	Unknown	Orchomenos	2			0.652	
P5a	**Unknown**	**Orchomenos**	**2**			**0.606**	**Alternative A**
P5b	**Unknown**	**Orchomenos**	**2**			**0.547**	**Alternative B**

Table 6 Temples with varying column lower and upper diameters, alternative measurements not used in the data-set are in bold (references for the measurements can be found in the temples' individual catalogue entries in Appendix V).

Sixty-five upper diameters are recorded in the data-set, ranging in size between 0.44m on the Temple of Apollo at Sikyon (P8) and 3.1m on the Temple of Zeus Olympios (Temple B) at Akragas (S8). The upper diameter of the column can be measured on the bottom of the capital or the upper diameter of the top column drum, which can sometimes be identified by a set of necking rings (hypotrachelium), as on the Temple of Artemis at Korkyra (N23, Schlief *et al.* 1940: 31). The same criteria, in relation to multiple different sizes on a single temple, have also been applied to the inclusion of the different sized upper diameters; for example, the reduction in size of the lower diameter on the Temple of Hera II (Poseidon) at Poseidonia (I11) also resulted in a reduction in size of the upper diameter, and consequently the upper diameter measurement of the flank columns has been included in the data-set.

Elevation: Capitals (Table 5: AbH, AbW, EH and NH)

As with many elements of the Doric order, the differing designs of the capital appear to indicate that there were differing ideas about the ideal capital shape. Indeed, the variations in the proportions of the capitals from different temples form the focus of the majority of capital studies (Figure 34), often suggesting that the shape of the building's capitals was linked to its date of construction (Pakkanen 1998: 31; Nakasēs 2004: 281; Østby 2005: 498).

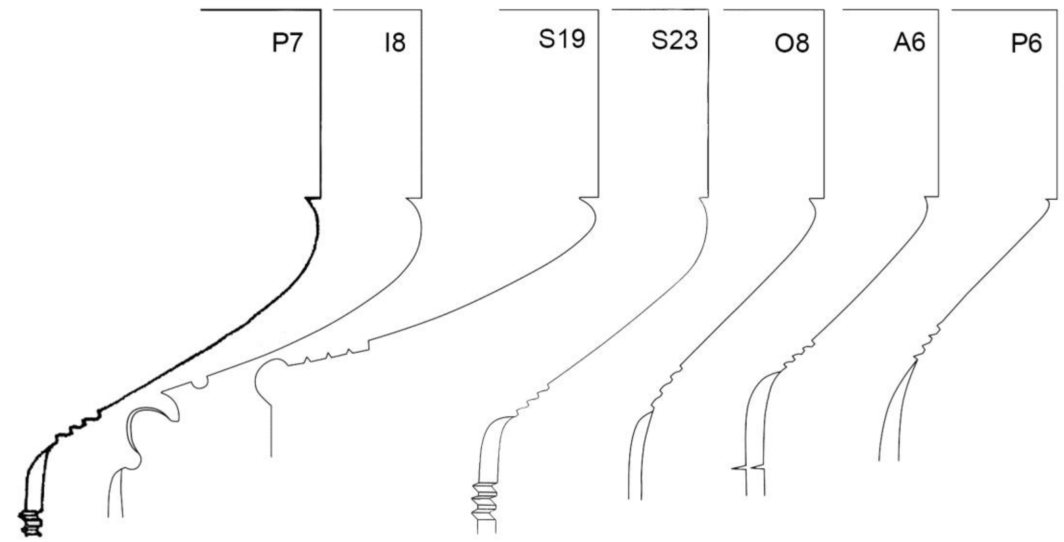


Figure 34 Various capital shapes scaled to a uniform abacus height, from: The Temple of Apollo at Corinth (P7), the Temple of Athena at Poseidonia (I8), Temple F at Selinous (S19), the Temple of Athena at Syracuse (S23), the Temple of Apollo on Delos (O8), the Hephaisteion (A6) and the Temple of Athena Alea at Tegea (P6; *After* Koldewey and Puchstein 1899: Abb. 96; Dugas *et al.* 1924: Plate XXXVIII; Courby 1931: Figure 23; Stillwell 1932: Plate VII; Krauss 1959: Tafel 18; Mertens 1984: Beilage 31).

Four measurements are taken from the capitals; the height (AbH) and width (AbW) of the abacus, the height of the echinus (EH) and the height of the necking (NH, Figure 35). The annulets are included in the necking height as this is where they are most commonly included in the temple publications.[34] As highlighted in Chapter 2, the shape of the capital is utilised to help determine the date of construction for a number of Doric peripteral temples and as such, it is important that the chosen measurements encompass as much information about the shape of the capital as possible. Therefore, along with the upper diameter of the column, the above measurements are generally considered to provide enough information in order to analyse the capital's shape.[35]

[34] The reported measurements were checked against the published capital drawings in order to ensure that the annulets were included in the necking height.

[35] The focus of the study upon the large external dimensions, shapes and decoration of the temple, means that a number of details of the capital's form, which have been suggested to be indicative of date, have been excluded from the study. For example, both the shape and number of the annulets, the projecting rings at the bottom of the capital, are commonly discussed in temple publications, with a number of commentators suggesting that the differences are connected to date (Williams 1984: 70; Nakasēs 2004: 280), although it is a far from universally agreed premise (Pfaff 2003a: 97 n.18). Indeed, Coulton (1977: 104) has argued that the shape and number of the annulets vary in a most irregular way, "not only with the date and region, but also with the size and importance of the capital".

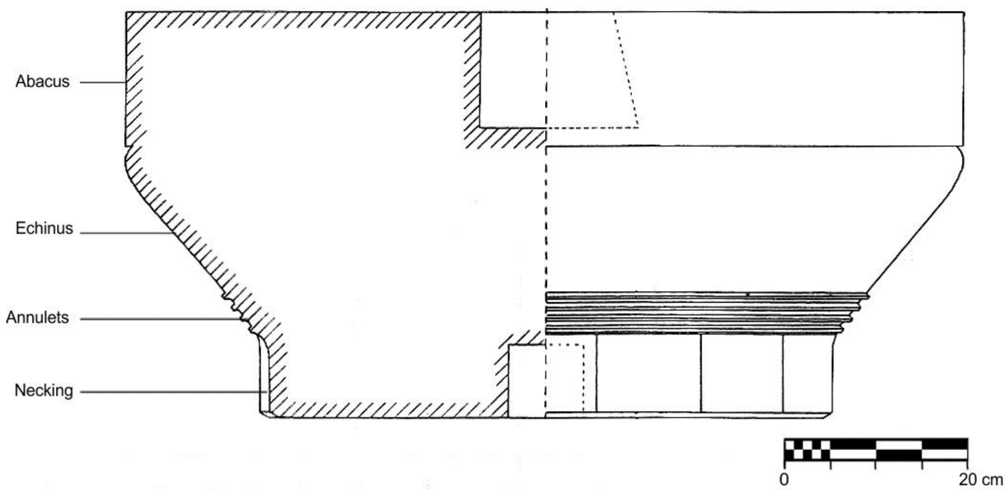


Figure 35 Labelled capital from the Temple of Athena at Alipheira (P1; *After* Østby 1995b: 370).

Due to the number of examples on each temple and the subsequent excellent survival rate of the capitals, their shape making them unsuitable for re-use in later buildings, 64 abacus heights and widths are preserved in the data-set; whilst 63 capitals preserve their echinus heights. The various measurements of the capitals are only included within the data-set if they are preserved to their full height. For example, on the capitals belonging to the Temple of Artemis at Kalydon (N1, Dyggve 1948: 91) only the abacus height and width are preserved and therefore only these measurements are included within the data-set; whilst no measurements are recorded for the capitals of the Temple of Aphrodite at Akrai (S9) as no elements of the capital are preserved to their full extent (Figure 36).

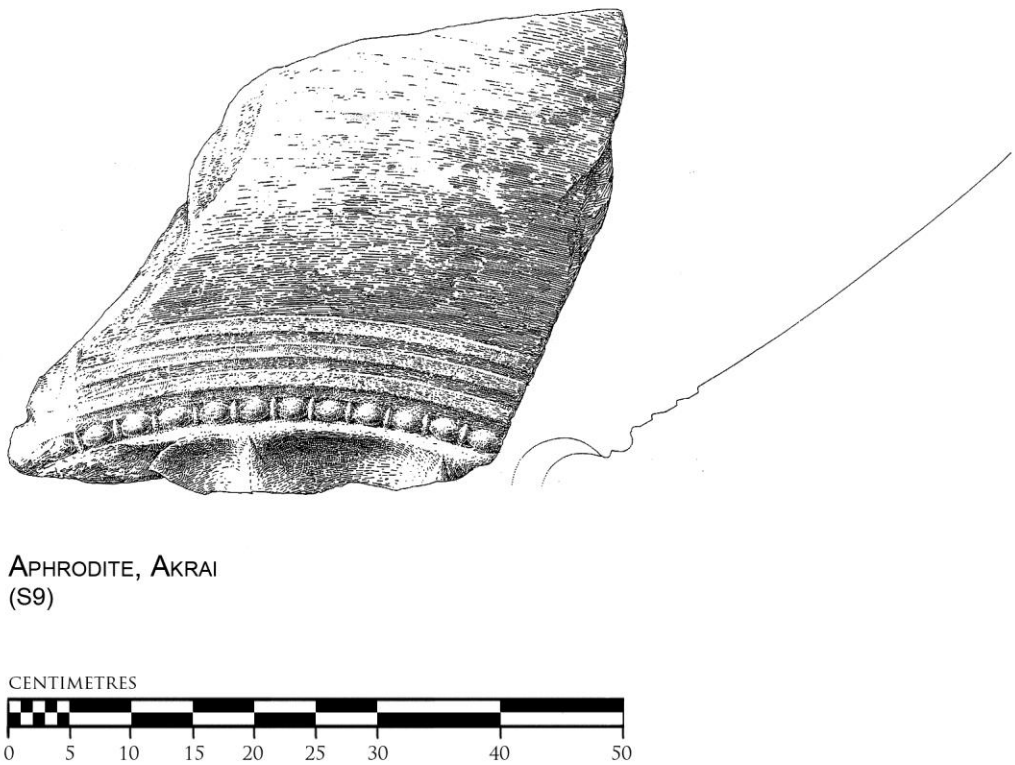


Figure 36 Poorly preserved capital from the Temple of Aphrodite at Akrai (S9), preserving only the height of the annulets and sections of the echinus and necking (*After* Brea 1986: 66).

Where various capital elements are preserved on different blocks from the same temple they are restored together, as is the standard practice in temple architecture studies. For example, the three fragments of the capitals from the Temple of Athena at Vigla (P23) are restored together to produce the measurements necessary for the analysis (Østby 1995b: 341, 348). However, this approach has been used only when there is no noticeable difference between the shapes of the fragments. On most temples, the various capitals have unintentionally slightly different measurements, and in these instances, the capital that is closest to the average is used (Pakkanen 1998: 34-38). However, in some cases, capital fragments from the same building can be noticeably different in shape, demonstrating that in several instances different capital styles were utilised in different areas of a single building (Wescoat 1987). For example, the eight surviving capitals belonging to the temple at Orchomenos (P5) utilise a variety of measurements for the various sections and in these instances all the surviving capital shapes have been analysed separately. This is also the case for the Temple of Hera at Olympia (P18), Temple G at Selinous (S20), and the Temple of Athena at Assos (O1). In these instances, where the temple has multiple distinct capital shapes, only one measurement is presented in Table 5, but, all the capitals are analysed in Chapter 5 and the other measurements can be found in the individual temples catalogue entries.

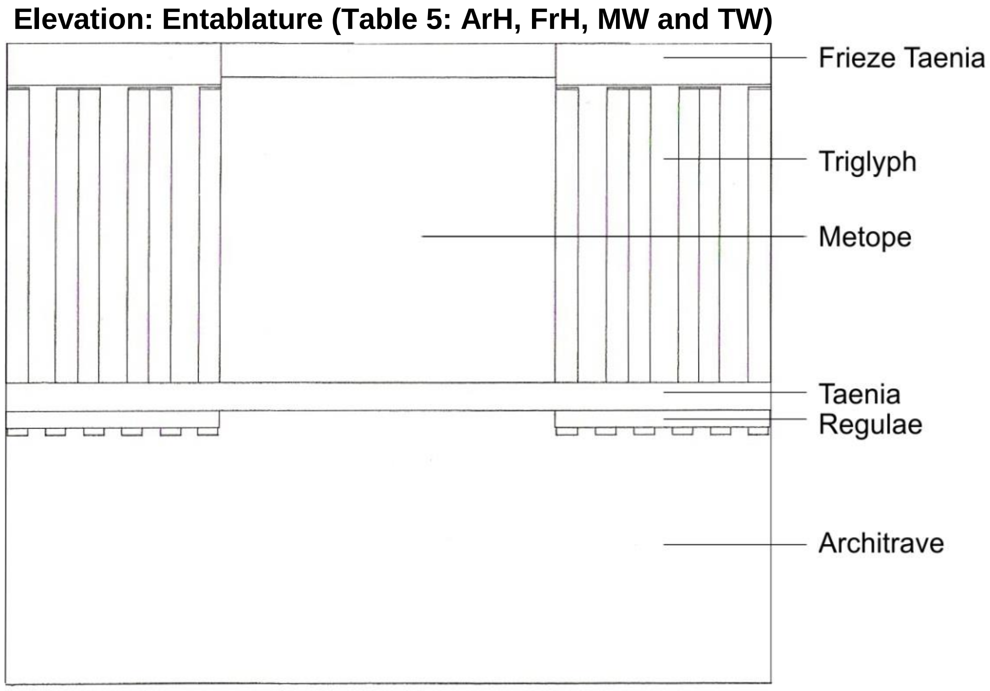


Figure 37 Labelled entablature, minus the geison, from the Temple of Zeus at Nemea (P17; *After* Hill 1966: Plate XIII).

The Doric entablature comprises the architrave, the frieze and the geison (Figure 37). The designs of the entablature elements on the stone temples are not functional and have been postulated to be indicative of the wooden origins of the Doric order (Vitruvius 4.2.2). Compared to the other elements of the Doric order, the architrave is relatively simple, the only distinguishing feature separating an architrave block from any other is the addition of the taenia and regulae across the top. In order to analyse the entablature's relative size and shape, the principal dimension, the architrave's height, is recorded in the data-set.[36] The frieze of the Doric peripteral temple comprises an alternating pattern of triglyphs and metopes. The triglyphs are vertical blocks, usually aligned over or between each column. They consist of two vertical grooves known as glyphs, bordered by two hemi-glyphs, hence the name triglyph.[37] The area between the triglyphs, which sometimes bears sculpture, is referred to as the metope. The frieze formed a vital component in the Doric order and has attracted considerable academic attention regarding its origins and how it is used to aid the angle contraction (Holland 1917; Robertson 1929; Wilson Jones 2002). As with other major standard elements of the Doric order, it is not the general appearance of

[36] Despite their use in various studies to help date buildings (Miles 1989: 169; Pfaff 2003a: 99-101), the dimensions of the taenia and the regulae are not included in the analysis. The taenia and regulae are excluded primarily due to different studies reporting different measurements; for example, some studies report the width of a temple's regulae, whereas others would only report the height, whilst others do not report any dimensions. Therefore, due to the inconsistent nature of the reported measurements, the taenia and regulae measurements are not included in this study.
[37] The one exception to this is the 'pentaglyph' of the Casa Marafioti Temple at Locri Epizephyrioi (I4), which has four glyphs and two hemi-glyphs (Figure 38).

the frieze that changes, but the size and shape of its elements (Figure 38). For example, the shape of the triglyph and metope unit, although always rectangular, commonly utilises various proportions, with some temples having particularly tall triglyphs and square metopes and others utilising almost square triglyphs and oblong metopes. As with the architrave, it is the overall dimensions, in this case height and width, of the triglyphs and metopes that are catalogued and analysed.[38] The third element of the Doric entablature is the geison. Unlike the architrave and frieze, the dimensions of the geison are not included in the analysis. In many instances, it is not stipulated in the reports where the measurements relating to the overall height of the geison, or indeed the various other elements that comprise the geison, are taken from. This is further complicated in relation to the geisons of some Sicilian and South Italian temples, which utilise terracotta moulded covers nailed onto the geison, as on Temple C at Selinous (S16). Consequently, it is difficult to include the measurements relating to the geison in a standardised way. However, focusing upon the two largest elements of the entablature, the architrave and frieze allows for a systematic analysis of the varying shapes of the entablature without becoming complicated by complexities of the relatively small component, the geison.

[38] In addition, the details of the triglyphs and metopes could vary between buildings; for example, the proportion of the projecting bar across the top of the two elements, to the overall height of the element could vary between projects. Likewise, the shape and number of the triglyph grooves are also subject to variation; indeed, Pfaff (2003a: 102; 2003b: 101) believes that the differences in the design of these particular elements may be linked to the date of the temple. However, as with the taenia and regulae, due to their dimensions and shapes not being uniformly reported and the usefulness of other dimensions in exploring the differences between the overall external appearances of the Doric temples, the details, such as the shape of the glyphs, have not been included in the analysis.

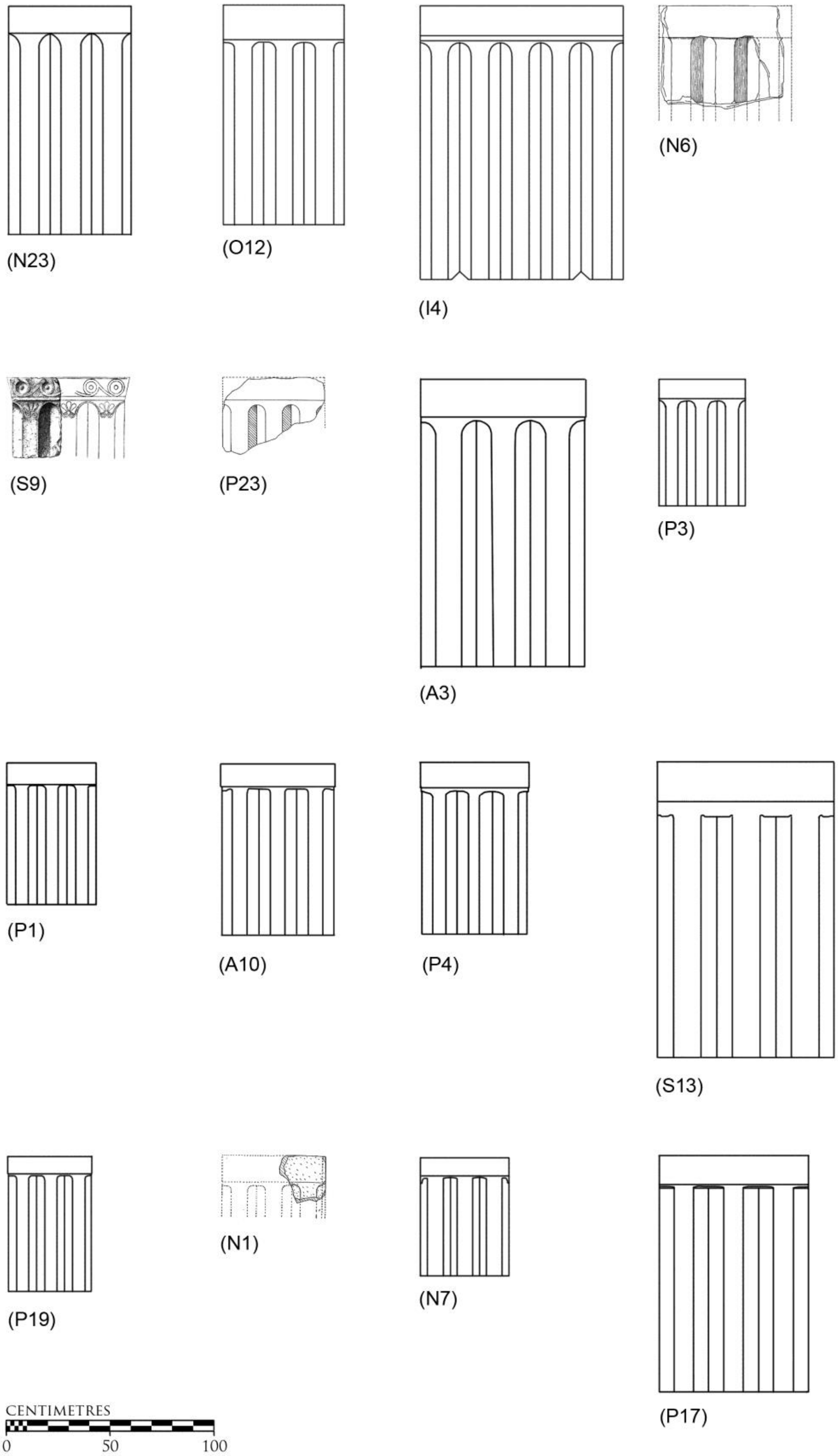


Figure 38 Various triglyph designs in various states of preservation, from Doric peripteral temples (*After* Adler *et al.* 1892: Tavola XXVI; Wiegand 1904: Abb. 118; Pernier 1935: Figure 40; Schlief *et al.* 1940: Abb. 17; Dyggve 1948: Tafel IX; McAllister 1959: 19; Hill 1966: Plate XIII; Auberson 1968: Plate VII; 1976: Plate 4; Østby 1978: Plate V; 1995: Figure 190, Figure 196, Figure 204; Mertens 1984: Beilage 18; Brea 1986: 70; Cooper 1996c: INV 59).

In all cases, the heights of the architrave and frieze have only been included where a block that retains the full height of the element is preserved. However, when the triglyph and metopes are not preserved, the width of the regulae on the architrave and mutule on the geison have been utilised, as they are constructed to the same size. For example, on the Temple of Athena at Delphi (N17), only small fragments of the triglyphs exist, surmounting to a small section of one glyph. However, the widths of the triglyphs belonging to the Temple of Athena at Delphi can be calculated from the surviving geison fragment. Therefore, despite the lack of a completely preserved triglyph belonging to the Temple of Athena at Delphi, the triglyph width is included in the analysis due to the preservation of a geison fragment.

Utilising the above criteria means that 45 architrave heights, 46 frieze heights, 46 metope widths and 58 triglyph widths are recorded in the data-set and subsequently utilised in the analysis. The architrave heights range between 0.46m on the Kardaki temple at Korkyra (N24) and 3.36m on the Temple of Zeus Olympios (Temple B) at Akragas (S8). Similarly, the tallest frieze is also found on the Temple of Zeus Olympios (Temple B) at Akragas (3.1m), whilst the shortest belongs to the temple on Agios Elias (P3; 0.574m). Likewise, the widest triglyphs and metopes can be found on the Temple of Zeus Olympios (Temple B) at Akragas (2.28m and 1.79m respectively); whereas, the narrowest triglyphs are found on the Temple of Apollo at Sikyon (P8; 0.31m) and narrowest metopes on the Temple of Nemesis at Rhamnous (A11; 0.5725m).

Elevation: Decoration

As discussed in the previous chapter, due to the level of preservation and the consistency of their publication, the analysis of the temples' decoration is limited to analysing the number of column flutes (Flts) and the presence of any external sculpture.[39] The symmetry of the column drums allows for the number of flutes to be counted even when only a few are preserved, thus, 70 temples in the data-set preserve the number of flutes of their peristyle columns (Table 7). The number of flutes on each column ranges between

[39] A smaller decorative element of the column that has been analysed elsewhere but is not included in this analysis, includes the number of column rings (hypotrachelium) that were used to separate the columns from the capitals and may have been affected by date and location of the temple. In some instances the band is found on the topmost column drum, whereas in others they are found on the capital necking, making it impossible to categorically confirm their existence and amount without a complete knowledge of the two elements (Dinsmoor 1933: 207; Dinsmoor Jr. 1973: 169; Cooper 1996d: 398; Pfaff 2003a: 95 n.34; Nakasēs 2004: 280). Similarly, the shape of the flutes have been excluded due to the variety in shapes on a single temple and the infrequency with which these elements are reported, particularly in the earlier temple publications (Pfaff 2003a: 95; Nakasēs 2004: 280).

16 on Temple C at Selinous (S16) and 24 on the Temple of Hera II (Poseidon) at Poseidonia (I11). However, the vast majority (78.6% or 55 of 70) utilise 20 flutes.

The presence of sculpture is identified in the data-set using a presence/absence classification (Table 7). A presence/absence classification has been used for a couple of reasons. First, the use of the presence/absence classification avoids the arguments surrounding the theme and meaning of various sculptural programmes, as discussed in Chapter 3. Second, as with the ramps discussed earlier in this chapter, it helps to enable comparisons between the buildings. The presence of sculpture on the temple has been further broken down into categories relating to the position of the sculpture, in order to add an additional level of detail to the analysis. These are: metopes (ScuM), pediments (ScuP), cella (ScuC) and other (ScuO). The cella sculpture (ScuC) relates to both Ionic friezes, as on the Temple of Athena Polias (A3) and the Parthenon (A8), as well as Doric friezes, as on the Temple of Apollo Epikourios at Bassai (P4). Furthermore, as highlighted by Østby (2009: 155), the pediment space with a medusa mask represents different treatment of the space to a fully sculpted pediment; consequently, these have been treated separately in the catalogue, but, under the same heading (M – Medusa mask pediment; S – Relief sculptured pediment). The data-set contains ten temples with sculpted metopes, 28 with pedimental sculpture, 13 with sculpture above the cella and only the Temple of Athena at Assos (O1) having sculpture identified as ‘other’, the architrave of the peristyle bearing a continuous frieze.

Table 7: Elevation: Decoration

Cat No.	Name	Location	Date Group	Flts	ScuM	ScuP	ScuC	ScuO
A2	Olympieion	Athens	2					
A3	Athena Polias	Athens	2	20		S	YES	
A4	First Temple of Poseidon	Sounion	3					
A5	Old Parthenon	Athens	3					
A6	Hephaisteion	Athens	4	20	YES	S	YES	
A7	Apollo Delphinios	Athens	4					
A8	Parthenon	Athens	4	20	YES	S	YES	
A9	Second Temple of Poseidon	Sounion	4	16		S	YES	
A10	Athena	Pallene	4	20			YES	
A11	Nemesis	Rhamnous	4	20				
A12	Artemis	Loutsa	6	16				
A13	Apollo	Aigina	2	20	YES	S		
A14	Aphaia	Aigina	3	20		S		
A15	Athena	Megara	2					

Table 7: Elevation: Decoration								
Cat No.	**Name**	**Location**	**Date Group**	**Flts**	**ScuM**	**ScuP**	**ScuC**	**ScuO**
A16	Athena	Karthaia (Keos)	2	20				
I1	Unknown	Hipponion	2					
I2	Unknown	Kaulonia	4	20				
I3	Hera	Kroton	3	20		S		
I4	Casa Marafioti	Locri Epizephyrioi	2	20				
I5	Hera	Tavole Palatine	2	20				
I6	Temple Aii (Apollo Lykeios)	Metaponto	2	20				
I7	Temple Bii	Metaponto	2					
I8	Athena	Poseidonia	2	20				
I9	Hera I (Basilica)	Poseidonia	2	20				
I10	Heraion	Foce del Sele	2	18	YES			
I11	Hera II (Poseidon)	Poseidonia	4	24				
I12	Unknown	Taranto	1	24				
I13	Minerva	Pompeii	2	18				
N1	Artemis	Kalydon	5	20			YES	
N2	Poseidon	Velvina (Molykreion)	6					
N3	Apollo Ismenios	Thebes	5					
N5	Hera	Plataia	2					
N6	Apollo Daphnephoros	Eretria	2			S		
N7	Dionysos	Eretria	5					
N9	Zeus Ammon	Aphytis (Kallithea)	6					
N10	Apollo	Ambrakia (Arta)	3	20				
N12	Unknown	Kassope	6					
N13	Zeus	Stratos	6	20				
N14	Zeus	Passaron	6					
N15	Fourth c. Apollo	Delphi	6	20		S		
N16	Sixth c. Apollo	Delphi	2	20		S		
N17	Athena	Delphi	2	20		S		
N18	Athena Kranaia	Elateia	3	20				
N19	Apollo	Kalapodi (Hyampolis)	2					
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4	20				
N21	Apollo	Metropolis	2					
N22	Unknown	Pherai	6					
N23	Artemis	Korkyra	1	24	YES	S	YES	
N24	Kardaki	Korkyra	2	20				
N25	Hera (Mon Repos)	Korkyra	5			S		
O1	Athena	Assos	2	16	YES			YES

Table 7: Elevation: Decoration								
Cat No.	Name	Location	Date Group	Flts	ScuM	ScuP	ScuC	ScuO
O8	Apollo	Delos	3	20				
O11	Zeus	Cyrene	3	24		S		
O12	Apollo	Cyrene	2	16		S		
O13	Unknown	Apollonia	6	20				
P1	Athena	Alipheira	3	16				
P2	Hera	Argive Heraion	4	20	YES	S	YES	
P3	Unknown	Agios Elias	3					
P4	Apollo Epikourios	Bassai	4	20			YES	
P5	Unknown	Orchomenos	2	20				
P6	Athena Alea	Tegea	6	20		S	YES	
P7	Apollo	Corinth	1	20			YES	
P8	Apollo	Sikyon	6					
P9	Asklepios	Epidauros	5	20		S		
P10	Asklepios	Gortys	5					
P11	Akropolis Temple	Gortys	5					
P12	Poseidon	Hermione	2					
P13	Poseidon	Isthmia	3	20				
P14	Poseidon	Kalaureia (Poros)	2					
P15	Demeter	Lepreon	5	20				
P16	Athena	Makiston	3	20				
P17	Zeus	Nemea	6	20				
P18	Hera	Olympia	1	20				
P19	Metroon	Olympia	5			S		
P20	Zeus	Olympia	3	20		S	YES	
P21	Athena	Prasidaki	3	20				
P22	Unknown	Troizen	6					
P23	Athena	Vigla	2	20		S		
P24	Temple C	Pallantion	3					
P25	Unknown	Kalavryta	2					
S1	Temple F (Concord)	Akragas	4	20				
S2	Temple G (Hephaisteion)	Akragas	4	20				
S3	Temple I (Dioskouroi)	Akragas	4	20				
S4	Temple A (Herakles)	Akragas	2	20		S		
S5	Temple D (Hera Lacinia)	Akragas	4	20				
S6	Temple E (Athena)	Akragas	3					
S7	Temple L	Akragas	4	20				
S8	Zeus Olympios (Temple B)	Akragas	3	18		S		
S9	Aphrodite	Akrai	2	20				
S10	Temple B (Athena)	Gela	1					

Table 7: Elevation: Decoration								
Cat No.	Name	Location	Date Group	Flts	ScuM	ScuP	ScuC	ScuO
S11	Temple C	Gela	3	20				
S12	Victory	Himera	3	20	YES	S		
S13	Unknown	Segesta	4					
S15	Temple A	Selinous	3	20				
S16	Temple C	Selinous	2	16	YES	M		
S17	Temple D	Selinous	3	20				
S18	Temple E	Selinous	3	20			YES	
S19	Temple F	Selinous	3	20	YES			
S20	Temple G	Selinous	3	20				
S21	Temple O	Selinous	3					
S22	Apollo	Syracuse	1	16		M		
S23	Athena	Syracuse	3	20		S		
S24	Zeus	Syracuse	1	16		M		
S25	Temple A	Megara Hyblaia	2					

Table 7 Information relating to the number of flutes (Flts) on the peristyle columns of each temple in the study and the presence/absence of sculptural adornment on the building. The presence/absence of sculpture is broken down into four positions on the building; the external metopes (ScuM), the pediments (ScuP), above the cella (ScuC) and other (ScuO).

Doric peripteral temples can have sculpted metopes in a number of different positions above the peristyle and this location changes from building to building. For example, the Parthenon (A8) has sculpted metopes on all four sides of the building, while the Hephaisteion (A6) only has sculpted metopes above the east façade. In some instances, as on the Temple of Hera in the Argive Heraion (P2), the exact positions of the metopes on the peristyle are debated (Dinsmoor 1950: 183; Pfaff 2003a: 102; Spawforth 2006: 164). However, these are all regarded as the same in the data-set because, as with the ramps, it is beyond the scope of this study to investigate the importance of these positional differences.

A number of temples have attracted controversy regarding the existence of sculptural decoration and it is difficult to apply a standard rule that applies to all cases. For example, although no evidence of sculpture remains on the site, it has been argued that the pediments of the Temple of Apollo Epikourios at Bassai (P4) bore sculpture. Analogies with the sculpted pediments on the Temple of Zeus at Olympia (P20) and the presence of unattributed Greek pediment sculpture in Rome, led Dinsmoor (1939) to suggest that the south pediment originally contained a scene of Niobe by Callimachus. However, in Pausanias's (8.41.7-8) discussion of the temple, he does not mention the pedimental sculpture. This would be an unusual omission as Pausanias commonly remarked upon the sculptural theme of a temple's pediment, as in his description of the Temple of Hera in the Argive Heraion (P2, Pausanias 2.17.3). Indeed, the lack of sculptural evidence on the site and the absence of cuttings for sculpture on the pediment floor suggest that the pediment did not bear sculpture (Cooper 1996a: 8). Therefore, the lack of positive evidence for sculpture on the Temple of Apollo Epikourios at Bassai, either through 'ghost' traces on the architecture or remains from the site (whereas the metope sculpture survives in relative abundance), must lead to the exclusion of possible pediment architecture belonging to this building from the study. Further information relating to the sculpture on individual temples and any resulting controversy can be found in the individual temple's entry in Appendix V, most notably, those relating to the Temple of Apollo at Syracuse (S22) and the Temple of Aphaia on Aigina (A14).

Conclusion

This chapter has demonstrated which elements of the temples' exterior are included in the data-set and the criteria that have been applied to the remains, in order to ensure a consistent approach to the restoration of non-preserved elements of the buildings has been maintained. The application of these criteria to the surviving building remains allows for a consistent approach to be maintained, as well as the exclusion of purely hypothetical temple restorations. The exclusion of the hypothetical restorations, but, the consistent application of criteria to the blocks, which no longer remain standing, allows for the inclusion of a large number of measurements for the analysis. For instance, only a few temples retain a complete peristyle of Doric columns, as on the Temple of Hera II (Poseidon) at Poseidonia (I11); however, the application of strict selection criteria across every temple means that 44 temples' flank columns can be analysed in this study. As outlined in the previous chapter, the data presented in this chapter is used in the subsequent chapters to analyse the buildings' size and shape on a Panhellenic and regional scale. The following chapter focuses upon the connection between the design of the temples and their date of construction, demonstrating that there is no single, linear direction in temple design.

Chapter 5: The Panhellenic Relationship between Proportions and Date

> The diameters of the Doric column at its base and top in relation to the height of the columns also provide useful evidence for dating (Miles 1989: 160).

The previous chapter introduced the data-set and the criteria that were applied in order to ensure that the analysed measurements are consistent in relation to reconstructions. Furthermore, the preceding chapter demonstrated the variety of the sizes of the elements used on the different temples. The above quote by Miles demonstrates the connection that some scholars place between the design and the date of the temples. Utilising the data-set that was discussed previously, this chapter analyses, on a Panhellenic scale, the relationships between the various element measurements and the dates of their erection. Thus, this chapter demonstrates that the temples were built with a wide variety of ratios and these differences, in their size and shape, are not directly linked to the date group in which the temple is placed.[40]

As discussed in Chapter 2, the predominant paradigm in Greek temple studies, the evolution model, links the differences in temple designs to their date of construction. It is subsequently argued that a temple's date can be determined through a study of its ratios. The relationship between date and design is based upon the assumption that temple design across the Greek world changed in constant way, resulting in the ratios between the various elements broadly increasing or decreasing with time (Brown 1906: 99; Dinsmoor 1950: 147; Tomlinson 1976: 36; Lawrence 1996: 58; Townsend 2004: 318-319). For example, the similarity of the ratios used on the temple at Orchomenos in the Peloponnese (P5) to those on the Temple of Athena at Assos in Turkey (O1, second half

[40] As discussed in the previous chapter, the presence of additional decorative elements, such as ramps and sculpture, are not analysed on a Panhellenic scale. The exclusion of additional decorative elements from this chapter is due to the fact that they are only present on particular temples and as discussed by Bookidis (1967: 505), Pfaff (2003a: 195), Marconi (2007: 217) and Østby (2009) the presence of these elements on particular temples are largely due to regional rather than chronological trends.

of the sixth century), allowed Plassart and Blum (1914: 84) to ascribe a late sixth century date to the temple at Orchomenos. This methodology has been applied to varying degrees for many years and still affects the dates ascribed to temples today: for example, in Waldstein's 1891 report of the Temple of Hera at Plataia (N5) the column ratio was employed as an indicator of date, whilst a similar methodology was used in Arapogianni's 2002 report to help date the Temple of Athena at Prasidaki (P21). However, as discussed in Chapter 2, recent studies have begun to demonstrate the existence of a number of regional 'tangents' to the single evolutionary line, particularly in the sixth century, where it is now felt that temple design went through a period of 'formalisation' before beginning to demonstrate Panhellenic trends in the late sixth/early fifth centuries (Østby 2000: 257; Barletta 2009a: 82; Wescoat 2012: 1-4).

The extent of these tangents and the study of their designs are limited by the overarching constraints of the evolution argument. In order to maintain the association between the temple design and date, the tangents are only believed to be brief excursions away from the 'fashionable' design at the time and are argued to be limited to particular sites at particular times; for example, the construction of the short Temple of Athena at Delphi (N17), which was built at a time when temples were supposed to be long, was due to its position "athwart a narrow terrace" (Dinsmoor 1950: 92). Despite the indications that not all temple designs are strictly connected to their date, the evolution model continues to be applied. Thus, the nature of the evolution argument precludes the study of other effects, such as location, upon the building designs, which, as demonstrated by Østby (2005) and Nielsen (2002) affected the designs of the Arcadian temples.

The role that the evolution argument plays in limiting the understanding of regional influences upon temple design, as well as the inherent contradictions in the argument discussed in Chapter 2, indicate that before the temple designs can be analysed at a regional scale, the evidence for the connection between design and date must first be re-assessed. As such, this chapter analyses the connection between the differences in temple designs and their date of construction. This study affords the opportunity to review the argument in light of new discoveries, recent reviews of particular temples' dates, and the publication of new measurements; for example, the recent re-dating of the Temple of Aphaia on Aigina (A14) on the basis of stratigraphic excavation, rather than the ratios between the temples various elements, has resulted in the temple being re-dated to post-480 (Gill 1988; 1993; see Appendix III.5). As demonstrated below, the results of the analysis conducted in this chapter suggest that there was no consistent, linear evolution in Doric peripteral temple design in the archaic or classical periods. Instead, the evidence indicates that multiple different ratios were used in each date group and the same ratios can be found in multiple periods, thus showing that there is not a straightforward connection between date and design.

An analysis of date against the proportions of the architectural elements could be seen as a circular argument: analysing the date against the architecture, when the architecture has been used to assign the date. Indeed, it is an inherent weakness of the evolution argument that the date of a particular temple forms the basis for the date of others. Consequently, if that temple is re-dated it subsequently also affects the other temples' assigned date. For example, Barletta (1983: 113) dated the Temple of Aphrodite at Akrai (S9) to the last third of the sixth century based upon the presence of similar capitals to those of Temple D at Selinous (S17), which was dated by Dinsmoor (1950: 98) to 535; however, as discussed in Appendix III.2, Østby (1995a) has suggested, based upon archaeological excavation, that Temple D dates to the early fifth century (490-480), which subsequently has (as yet, unaccounted for) repercussions for the date of the Temple of Aphrodite at Akrai. However, the results of the analysis conducted in this chapter do not suggest a correlation between ratio and date, indicating that the analysis is not limited by a circular argument. In fact only a few temples are assigned dates based solely using the discussed ratios, whilst the rest utilise a variety of dating means, making use of both historical and archaeological sources. Indeed, it is worth stressing that the aim of this chapter is not to re-date all the temples that have been dated using the evolution argument. Re-dating all the temples is beyond the scope of a study of this type and length. Rather, it is the aim of this chapter to demonstrate that the design differences are not directly the result of the temples' dates of construction; a conclusion which would suggest that factors other than date affected the decision to build temples utilising different designs.

To this end, this chapter is broken down into discussions of the size and shape of the individual elements, addressing specific ratios that have commonly been used to help date Doric peripteral temples. These analyses, as well as series of case studies, demonstrate that a variety of different element sizes and shapes were used, and when utilised together, these elements affected the overall external appearance of the temples. Furthermore, the analyses clearly indicate that there is no evidence for a single, Panhellenic, chronological trend in temple design, which subsequently means that the differences in temple designs are not affected by their dates of construction and allows for the analysis of regional influences upon temple design that is completed in the subsequent chapter.

Plan

The discussion of the various shapes of the temple elements is split into two halves: the first half discusses the shapes of the individual plan elements, such as the stylobate and the cella, and concludes with a case study, which demonstrates that when the different plan element shapes were used in conjunction, they created buildings with different designs, even when the buildings utilised the same size foundations. The second half follows the same layout as the first, but discusses the buildings' elevation designs. Starting with the plan elements that formed the base for the Doric peripteral temple (foundations, krepidoma and stylobate), this first half emphasises the wide variety of shapes that were utilised in the temple plans in order to create buildings that varied significantly in appearance (Figures 39-44; for a table containing all the plan ratios see Appendix IV.1). Furthermore, this section demonstrates that the shapes utilised in the designs of the temple plans were not connected to their dates of construction.

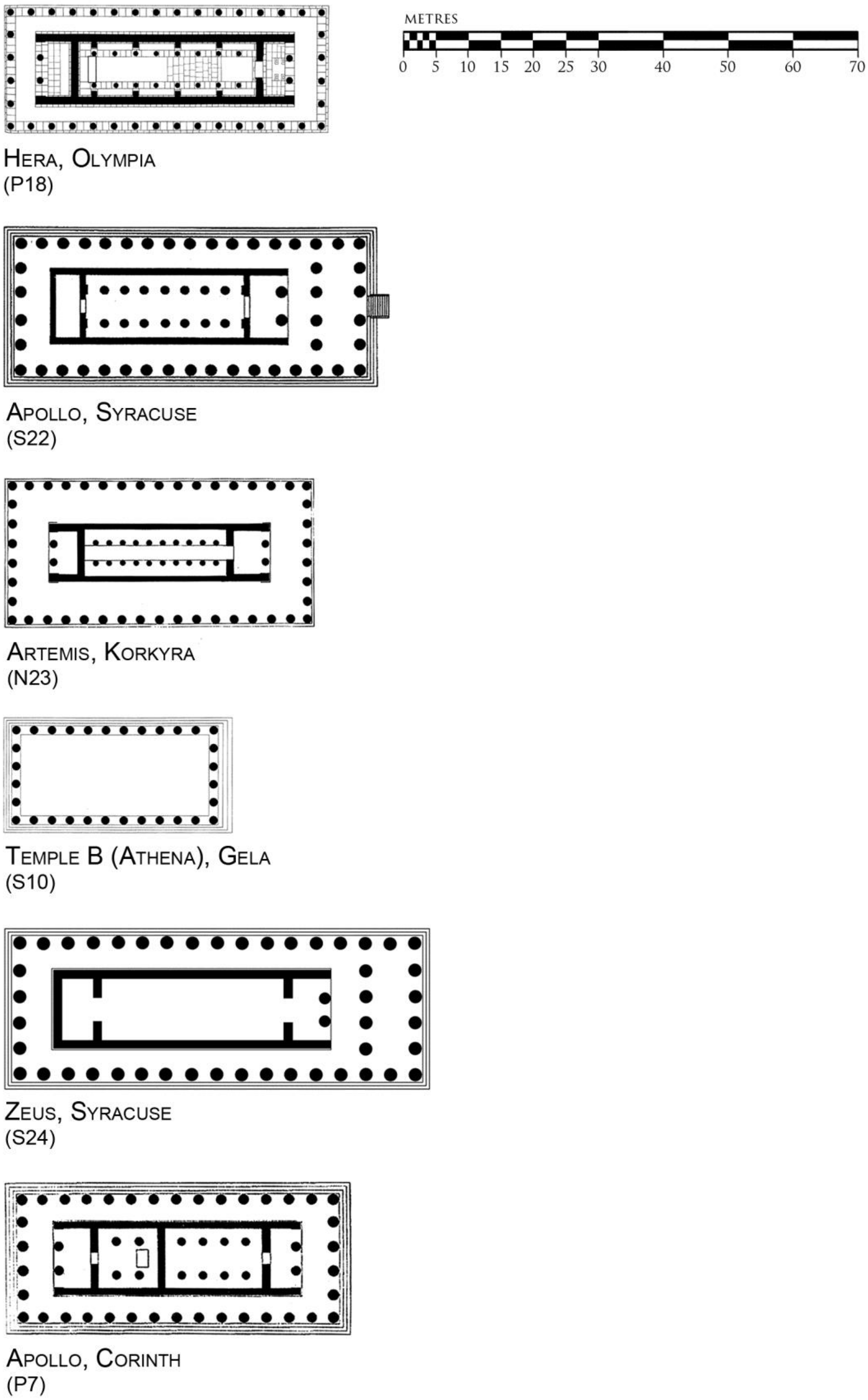


Figure 39 Temple plans of date group 1, included here to enable a comparison of the plan designs. A number of the plans contain hypothetically restored elements whose measurements are not included in the data-set (*After* Dinsmoor 1950: Figure 26; Brea 1952: 16; Mallwitz 1972: 81; Coulton 1977: 42; Mertens 1984: 164; Spawforth 2006: 162). A plan has not been published for the temple at Taranto (I12), and consequently the temple's plan has not been included in this figure.

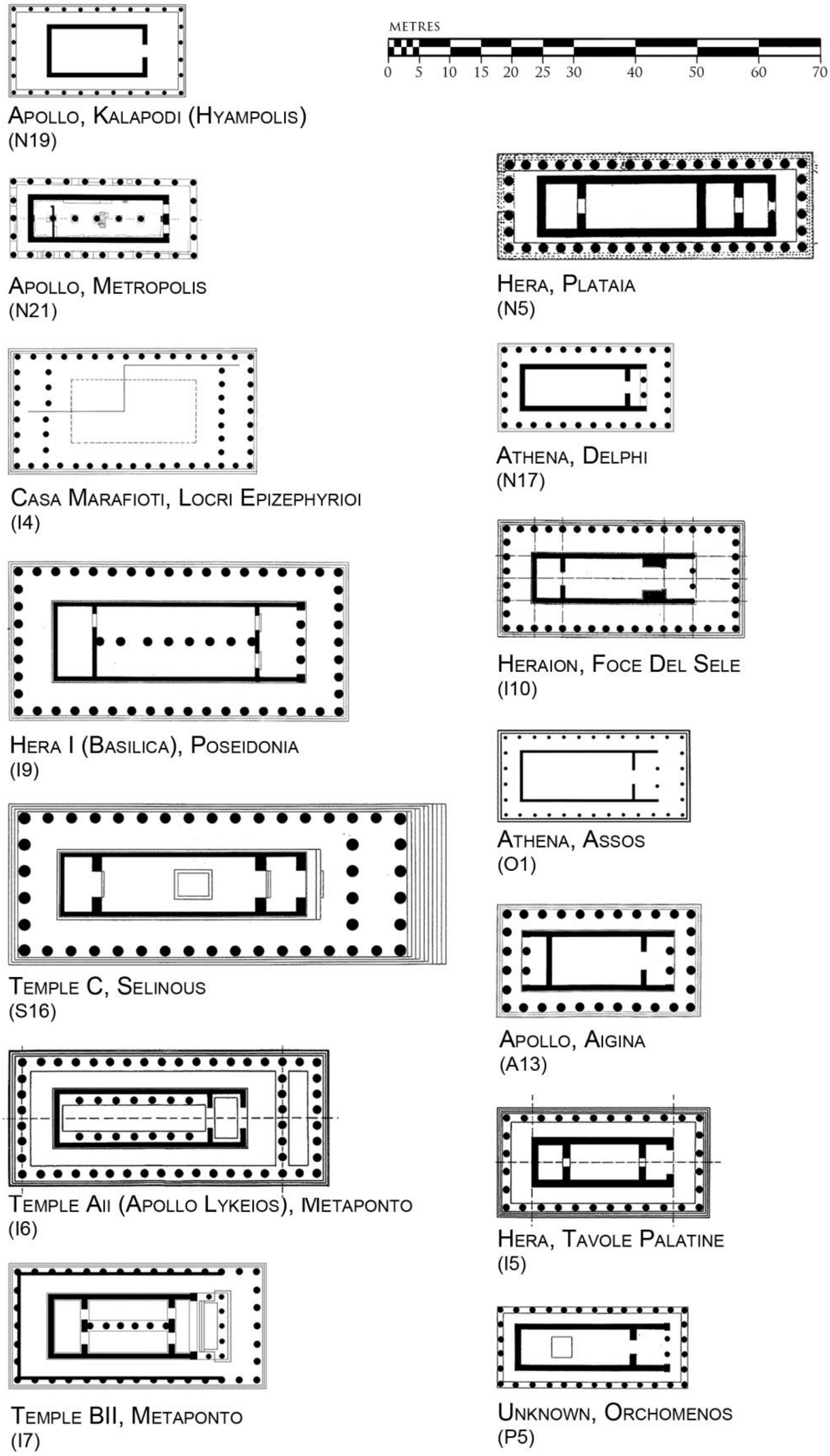


Figure 40a Temple plans belonging to date group 2. A number of them contain hypothetically restored elements whose measurements are not included in the data-set (*After* Waldstein and Washington 1891: Plate XX; Plassart and Blum 1914: 82; Demangel 1923: Plate 7; Mertens 1973: Tafel XLVI, XLVIII; 1984: Beilage 26; Wurster 1974: Tafel 34; Østby 1978: Plate VII; Barletta 1990: 57; Linders 1992: 35; Intzesiloglou 2002: 114; Martin 2003: 38; Spawforth 2006: 191).

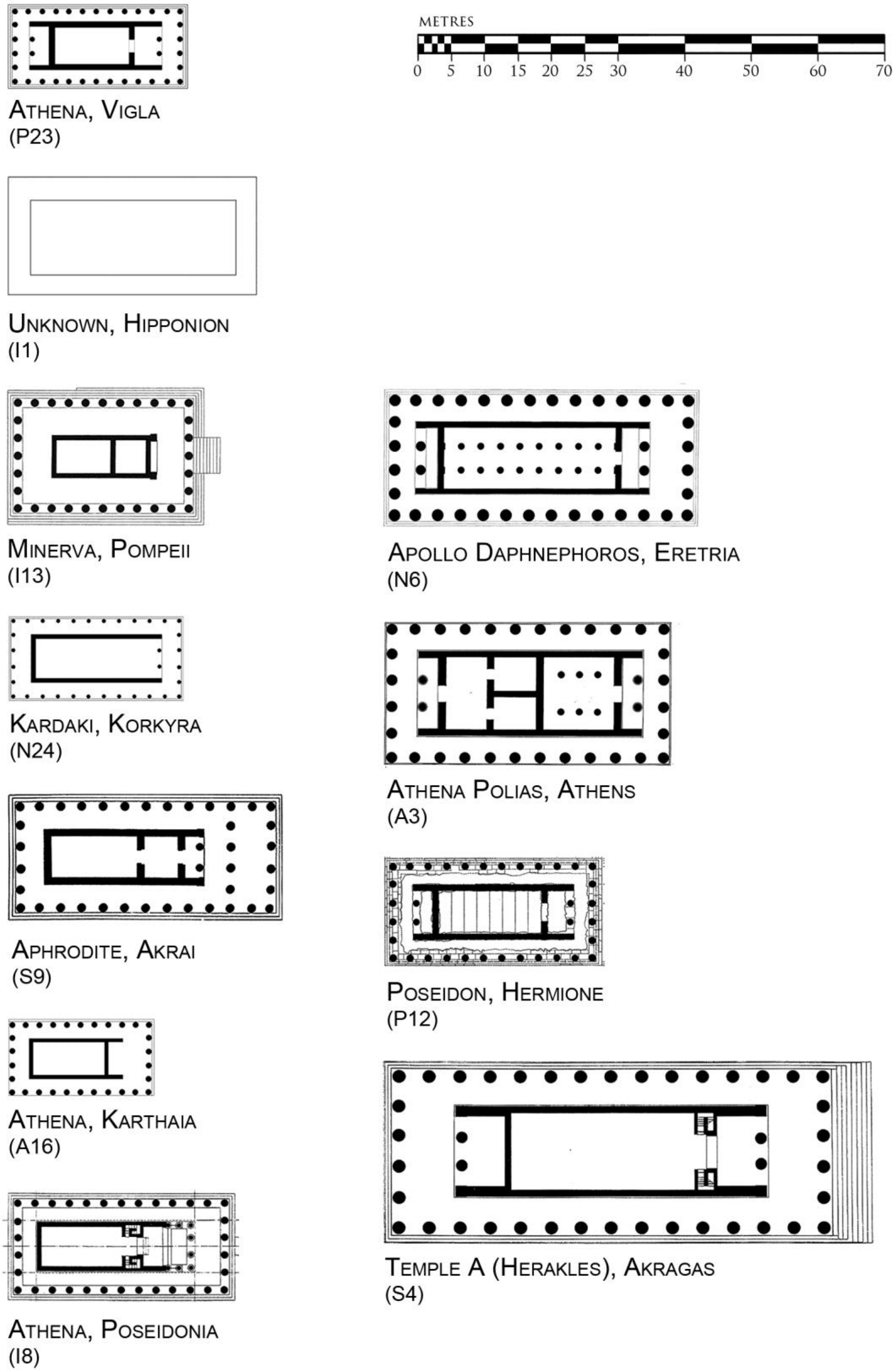


Figure 40b Temple plans belonging to date group 2 continued (*After* Auberson 1968: Plate V; McAllister and Jameson 1969: 173; Dinsmoor Jr. 1973: Plate 16; Østby 1980: 192; 1995: Figure 194; Mertens 1984: Beilage 16; De Waele 1994: Figure 4; Hurwit 1999: 122; Spawforth 2006: 124). The plans of the date group 2 temples, Temple A at Megara Hyblaia (S25), the Temple of Poseidon at Kalaureia (P14), the temple at Kalavyrta (P25), the Olympieion at Athens (A2), the Temple of Athena at Megara (A15), and the Temple of Apollo at Cyrene (O12) have not been included in the above figure due to the temples' states of preservation and the availablity of published plans.

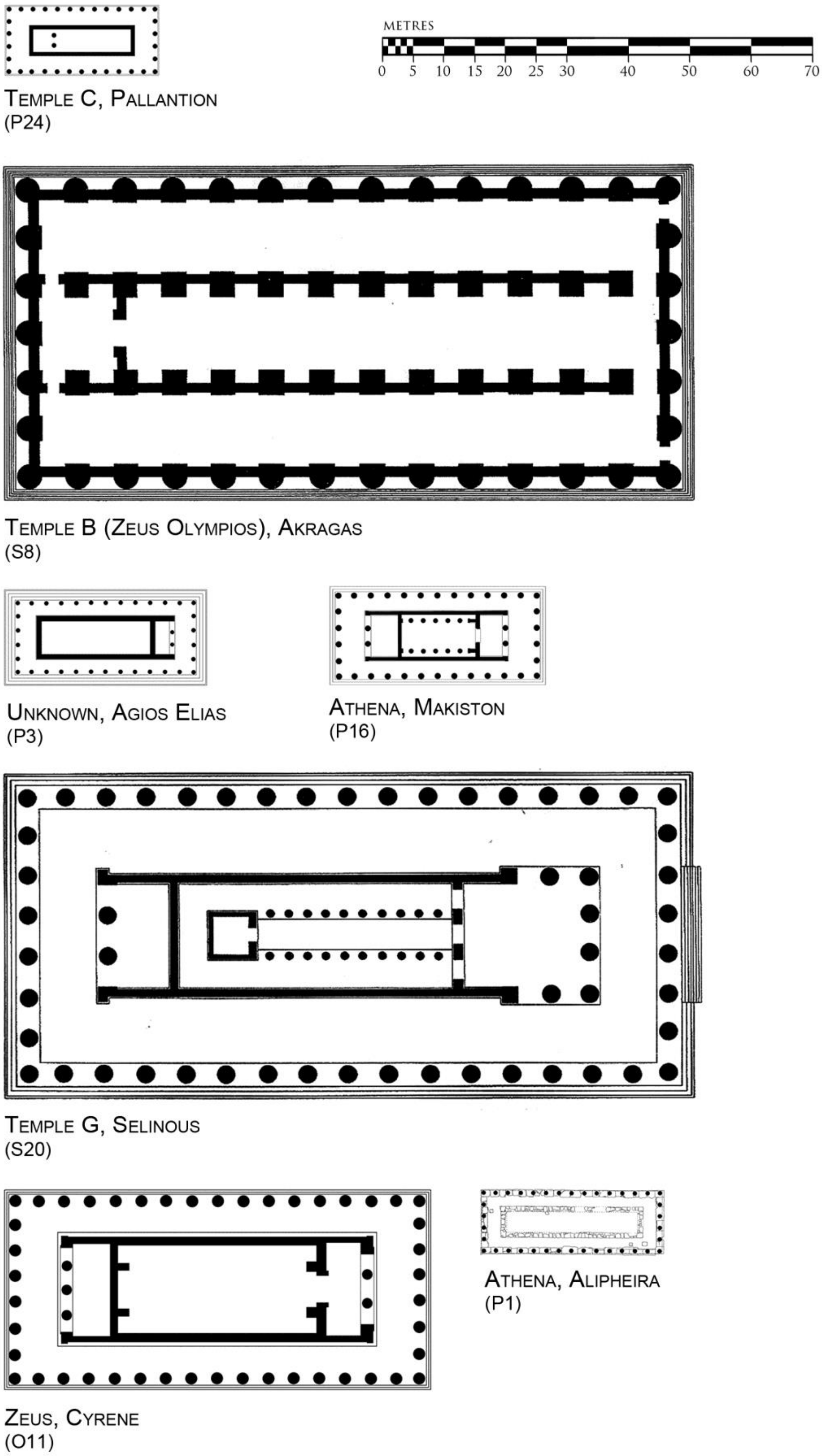


Figure 41a Temple plans belonging to date group 3. A number of the plans contain hypothetically restored elements whose measurements are not included in the data-set (*After* Mertens 1984: 164; Østby 1991: 45; 1995: Figure 195, Figure 200; Nakasēs 2004: 219; Spawforth 2006: 225).

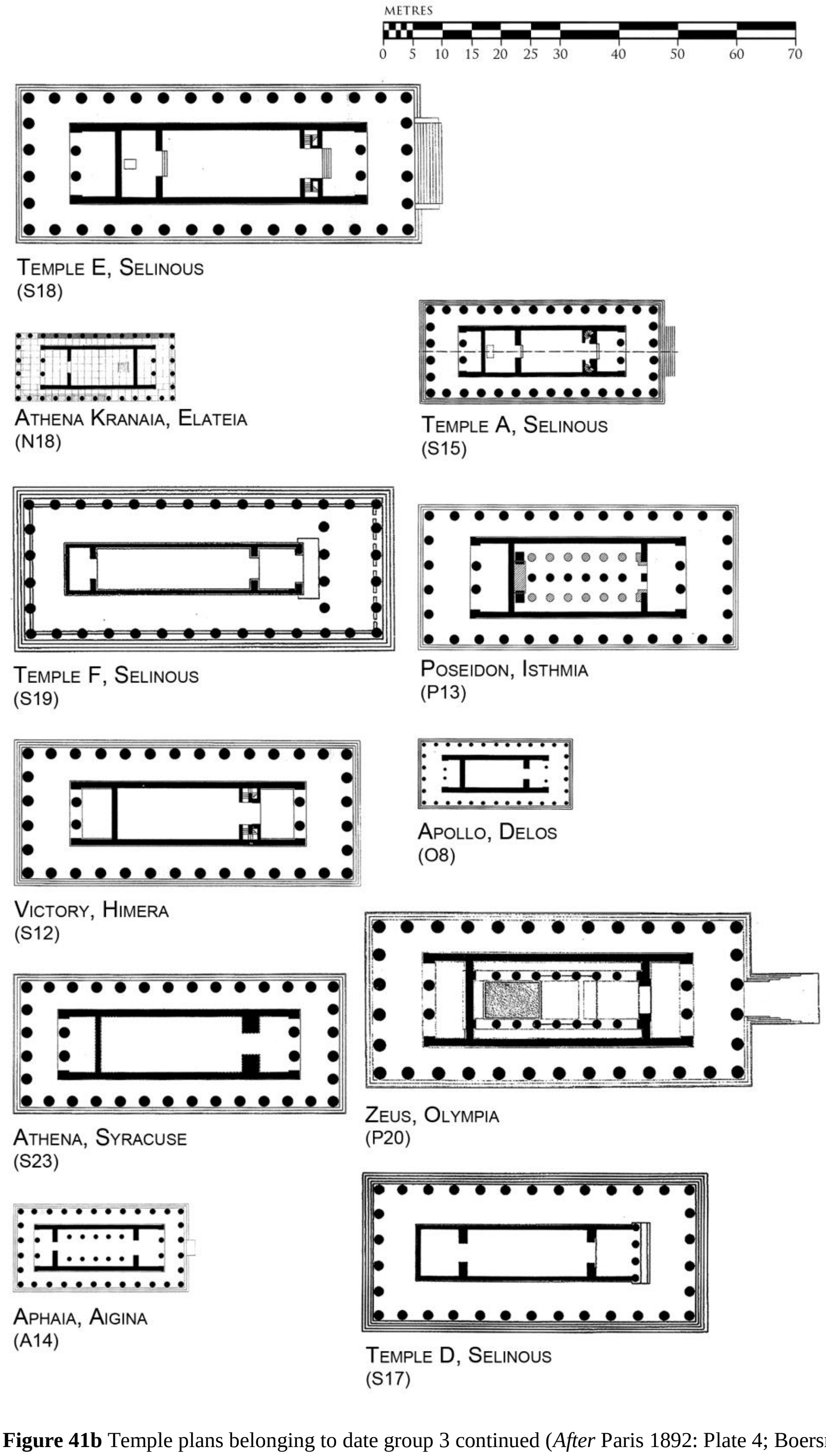


Figure 41b Temple plans belonging to date group 3 continued (*After* Paris 1892: Plate 4; Boersma 1970: 170; Broneer 1971: 66; Wurster 1974: 107; Mertens 1984: 164, Beilage 26; Spawforth 2006: 152). The plans of the date group 3 temples, the First Temple of Poseidon at Sounion (A4), the Old Parthenon (A5), the Temple of Hera at Kroton (I3), the Temple of Apollo at Ambrakia (N10), the Temple of Athena at Prasidaki (P21), Temple E (Athena) at Akragas (S6), Temple C at Gela (S11), and Temple O at Selinous have not been included in the above figure due to the temples' states of preservation and the availablity of published plans.

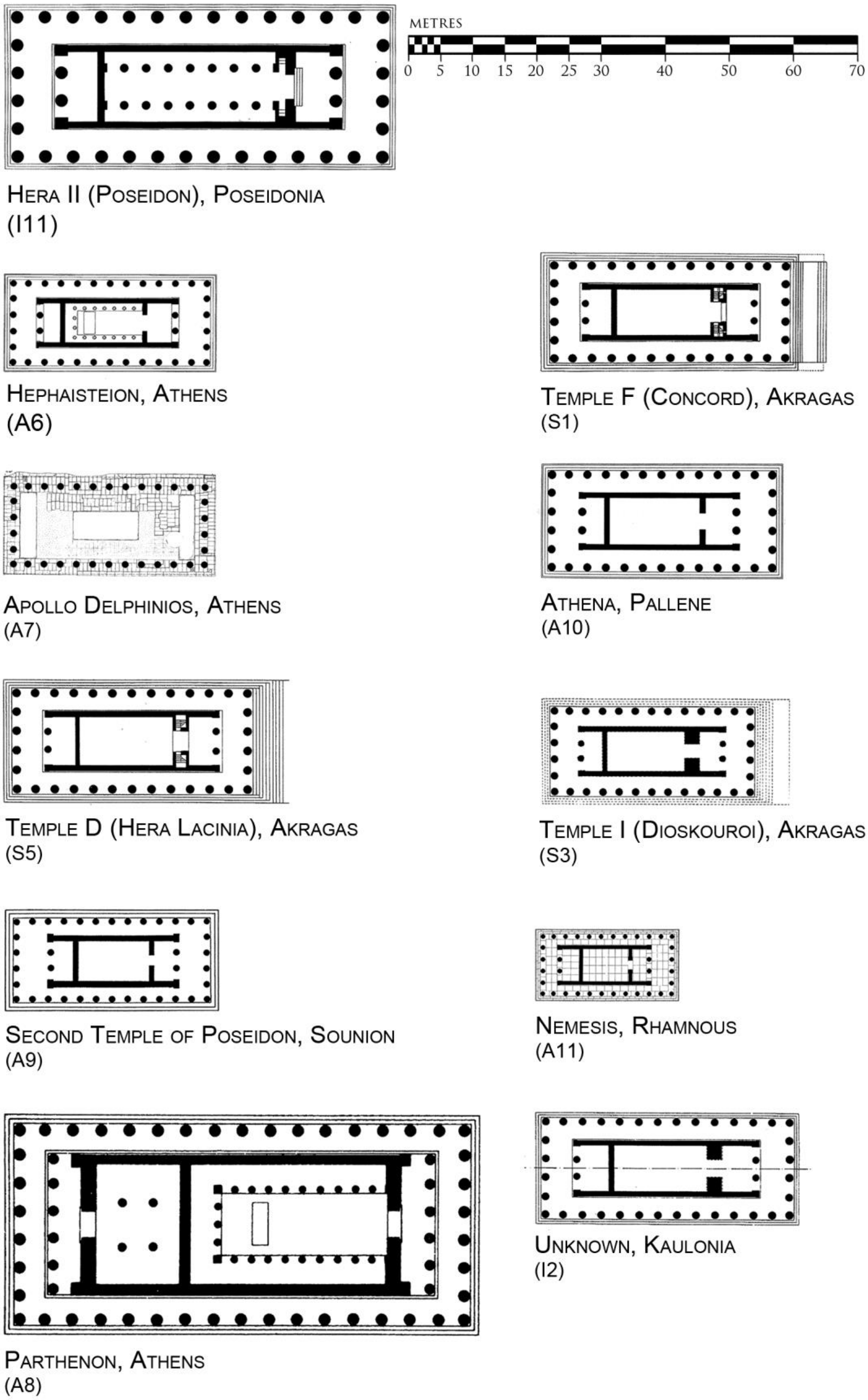
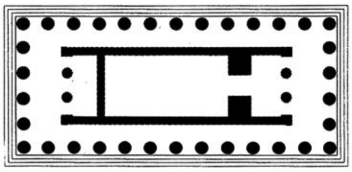
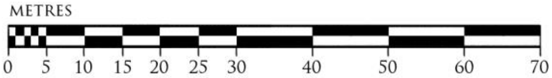
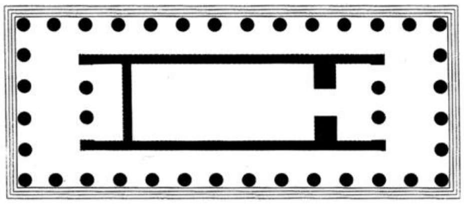


Figure 42a Temple plans belonging to date group 4 (*After* Dinsmoor 1950: Figure 5; Boersma 1970: 196; Travlos 1971: 84; Mertens 1984: Beilage 26; Miles 1989: 143; Martin 2003: 55; Pedley 2005: 69; Barringer 2008: 116).

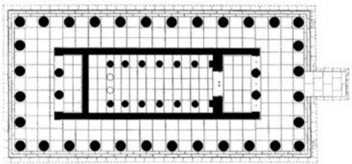




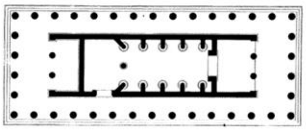
Temple G (Hephaisteion), Akragas
(S2)



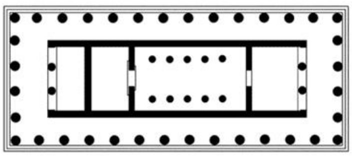
Unknown, Segesta
(S13)



Hera, Argos
(P2)



Apollo Epikourios, Bassai
(P4)



Artemis Elaphebolos, Kalapodi (Hyampolis)
(N20)

Figure 42b Temple plans belonging to date group 4 continued (*After* Mertens 1984: Beilage 26; Linders 1992: 35; Martin 2003: 80; Pfaff 2003a: Figure 53). A plan has not been published for Temple L at Akragas (S7), and consequently the temple's plan has not been included in this figure.

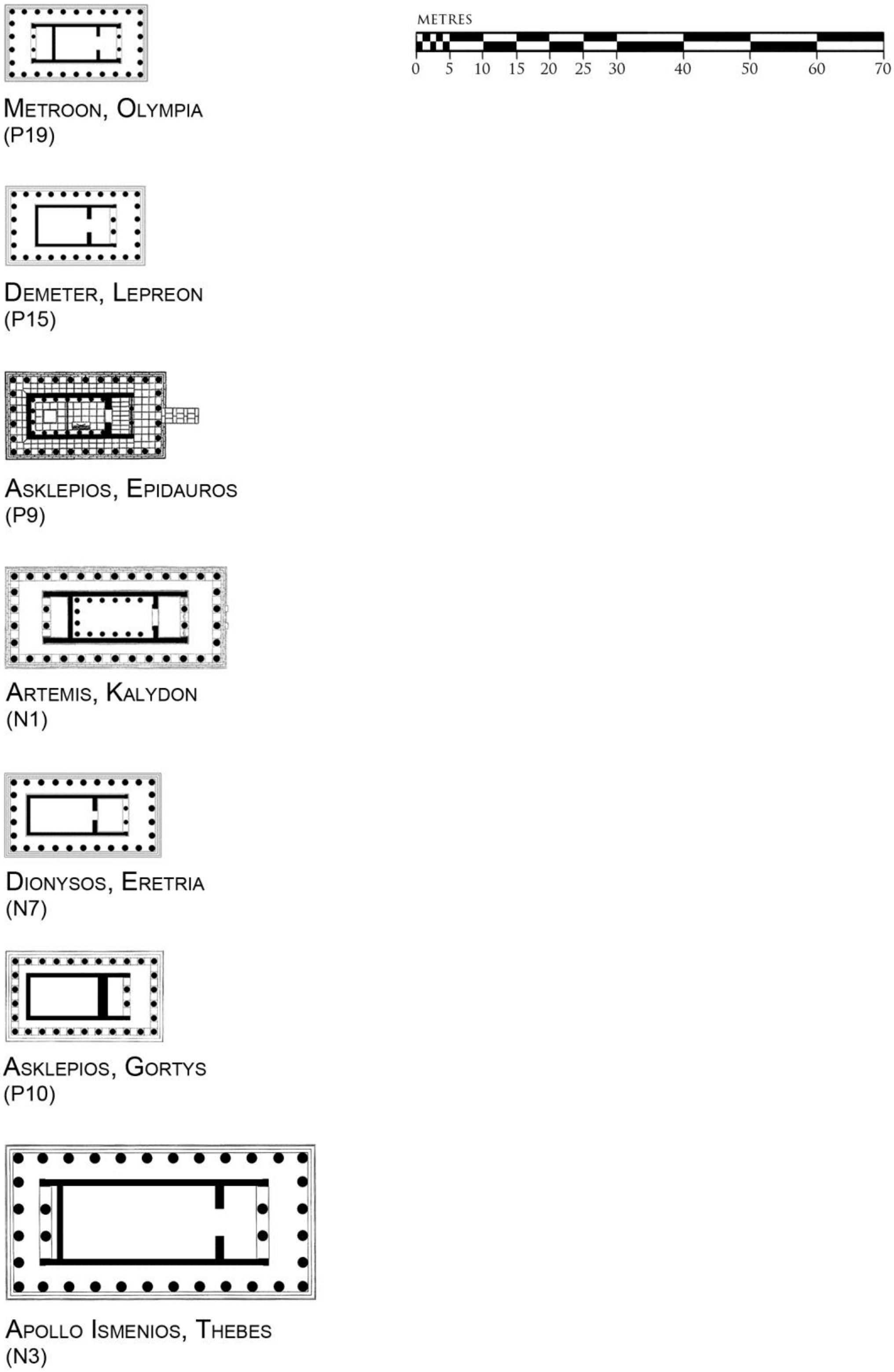


Figure 43 Temple plans of date group 5 (*After* Dyggve 1948: Tafel XXIV; Auberson 1976: Plate 7; Knell 1983a: Abb. 5, Abb. 8; 1983b: 131; Spawforth 2006: 165, 167, 173). The plans of the date group 5 temples, the Temple of Hera (Mon Repos) at Korkyra (N25) and the Akropolis Temple at Gortys (P11) have not been included in the above figure due to the temples' states of preservation and the availablity of published plans.

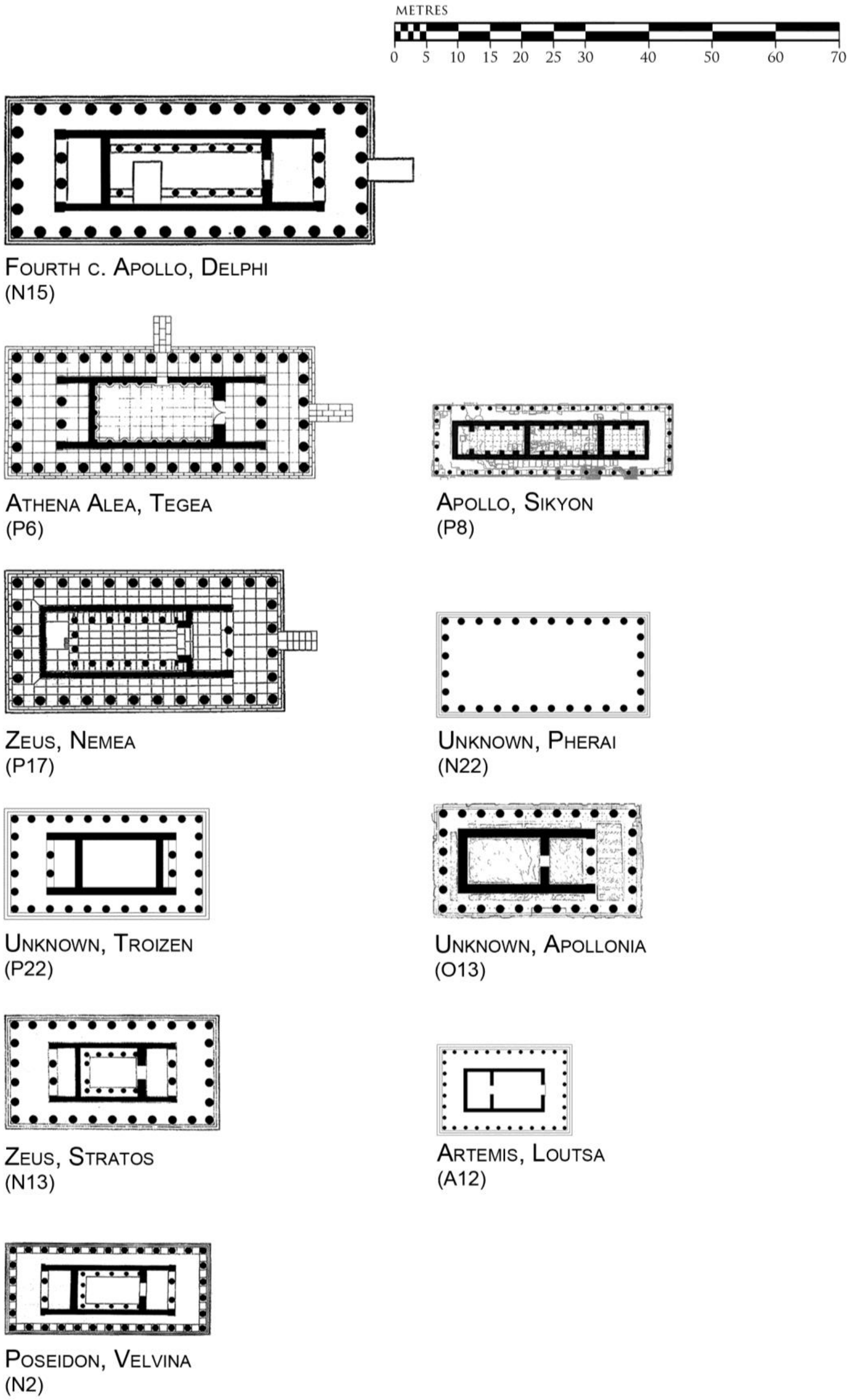


Figure 44 Temple plans of date group 6 (*After* Pedley 1967: Plate 48; Knell 1978: 399; 1983c: Abb. 5; Norman 1984: 183; Østby 1994a: 140; Spawforth 2006: 161, 171, 175; Krystalli-Votsi and Østby 2010: 55). The plans of the date group 6 temples, the Temple of Zeus Ammon at Aphytis (N9), the temple at Kassope (N12), and the Temple of Zeus at Passaron (N14), have not been included in the above figure due to the temples' states of preservation and the availablity of published plans.

Plan: Foundations

It is normally assumed that the ratio of length to width for Doric temple plans decreased with time, thus resulting in temples getting shorter, in comparison to their width, during the archaic and classical periods (Spawforth 2006: 161). As such, the ratio of length to width is used to help assign a date to any discovered remains of a temple's plan. For example, the Temple of Artemis Elaphebolos at Kalapodi (N20) has a foundation length to width ratio of 2.39 and the Temple of Dionysos at Eretria (N7) has a ratio of 1.84, and the temples are consequently assigned to the fifth and fourth centuries based upon these ratios (Felsch 1975: 15-17; Auberson 1976: 64). Likewise, Marconi (1931: 53) used the foundation length to width ratio (2.34) to help provide a date of around 480 for the beginning of construction of the Temple of Victory at Himera (S12, Figure 45). However, an analysis of the temple foundation dimensions at the Panhellenic level demonstrates the wide variety of ratios that were used in relation to the shape of the foundations and the lack of evidence for a single predominant ratio or trend over time. As discussed in the previous chapter, 93 temples preserve their foundation widths, which range in size between 10.65m and 56.3m; whilst, 87 preserve their foundation lengths ranging between 21.16m and 113.45m (Chapter 4, Table 4), and there is no indication that their size is linked to date (Figure 46). Consequently, 87 foundation widths and lengths, which vary considerably in size, are conserved and form the basis for the analysis of foundation shape.

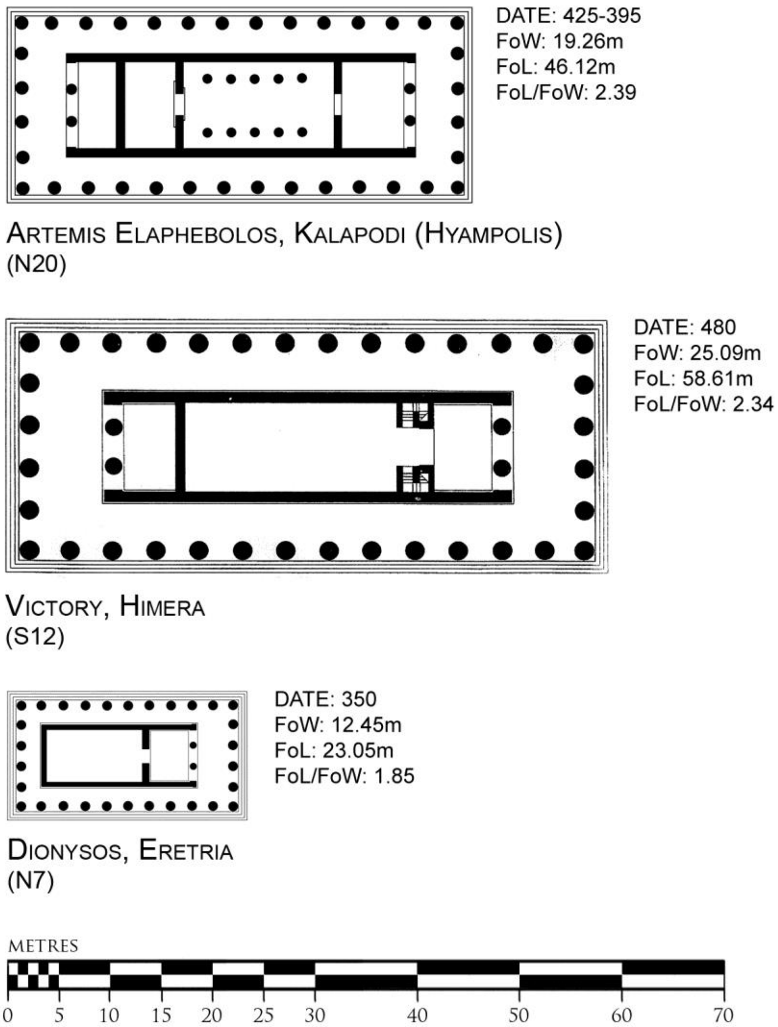


Figure 45 Plans of the Temple of Artemis Elaphebolos at Kalapodi (N20), the Temple of Victory at Himera (S12), and the Temple of Dionysos at Eretria (N7), demonstrating the various temple plan shapes that were used to help date their construction (*After* Mertens 1984: Beilage 26; Linders 1992: 35; Spawforth 2006: 167).

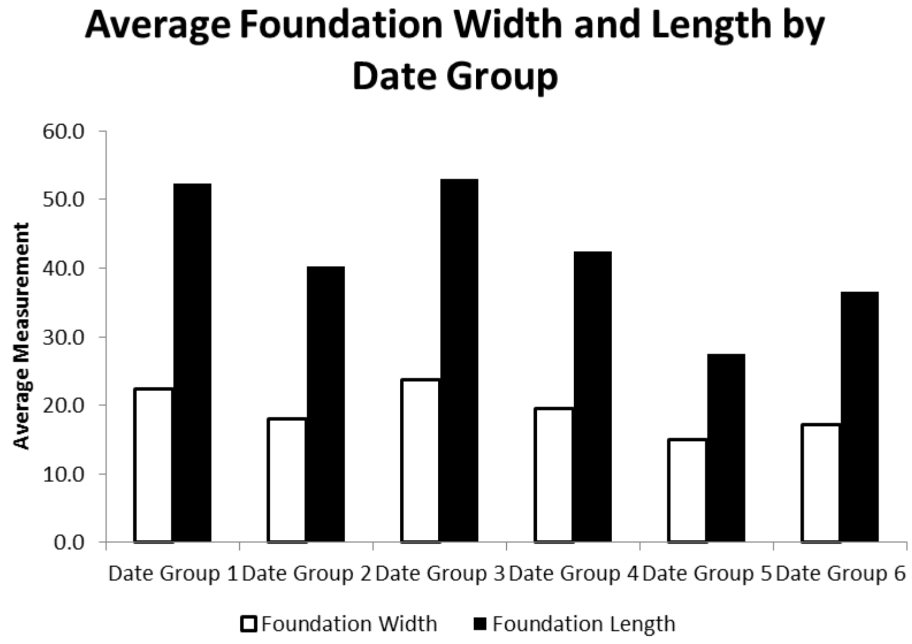


Figure 46 Column graph of the average foundation widths and lengths of the temples organised by their date groups, demonstrating that the size of the foundations are not connected to their date of construction.

The temple foundations are always rectangular, but, there is significant variation in the exact shape of the rectangle, with the shortest ratio of foundation length/foundation width being 1.46 on the Temple of Minerva in Pompeii (I13), resulting in a temple just under one and a half times as long as it is wide; whereas, the longest ratio, of 3.30 on the Temple of Apollo at Sikyon (P8), gives rise to a building that is over three times as long as it is wide (Figure 40b; Figure 44). Although the majority of temples appear to use a ratio of foundation length to width between 2 and 2.5 (52 of 87 examples (60%)), there is no evidence that a small selection of ratios are used repeatedly. Indeed, temples that have the same foundation width could utilise very different foundation lengths (Figure 47). For example, the temples with a foundation width measuring c.16m have foundation lengths that vary between 1.98 times their width, as on the Temple of Athena at Pallene (A10, FoW: 16.32m; FoL: 32.25m) to 2.99 times their width on the Temple of Hera at Plataia (N5, FoW: 16.7m; FoL: 49.9m), which would result in two temples of the same width, but the temple of Hera at Plataia would be a width longer than the Temple of Athena at Pallene. Thus, a temple's length was not determined by the temple's width; rather, so long as the building is rectangular, the two measurements were independent of one another. Consequently, on a Panhellenic scale, Doric peripteral temples' foundations were built utilising a number of different shapes.

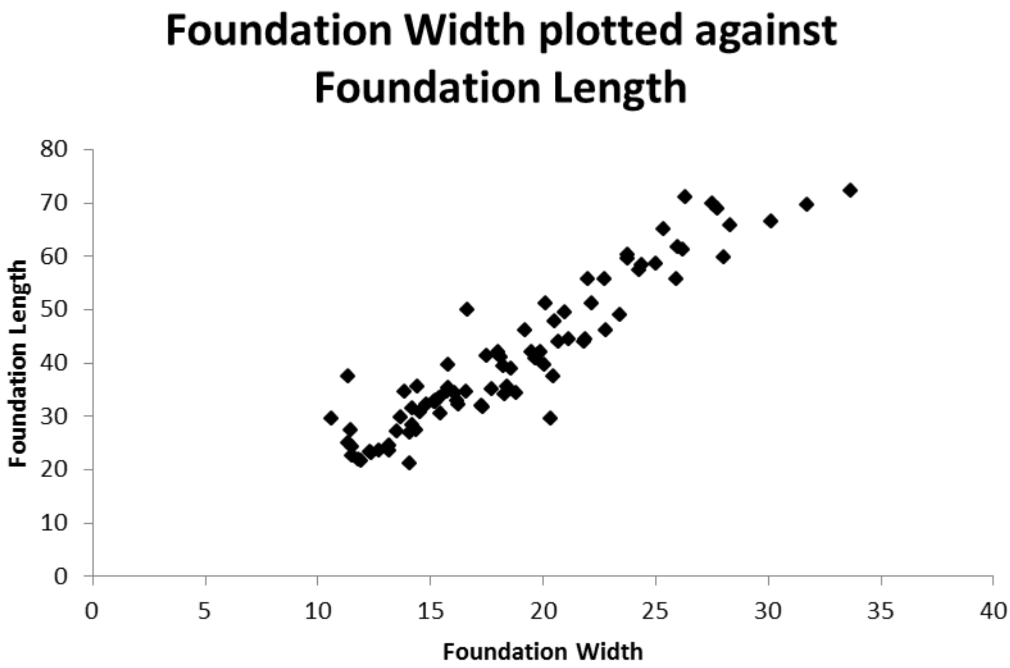


Figure 47 Scatter graph showing the ratio of foundation length to width (the two outliers, Temple B (Zeus Olympios) at Akragas (S8) and Temple G at Selinous (S20) have been removed to make reduce the scale of the graph and make it clearer). The relatively strong correlation between the length and width (as the width increases so does the length; correlation coefficient=0.96), is indicative of the fact that the temples were always rectangular, however, the graph also demonstrates that different lengths were used on temples of the same width; for example, Temple I (Dioskouroi) at Akragas (S3) and the Temple of Hera at Plataia (N5) have similar foundation widths of 16.63m and 16.7m respectively, but lengths of 34.59m and 49.9m, suggesting that, so long as the temple plan was rectangular, there was a certain amount of independence between the two measurements.

As discussed above, the assumption that the ratio of foundation length to width decreases with time has resulted in this ratio being used to help date a number of temples. If this were the case, the graph produced by plotting the ratio of the temples' foundation lengths to widths against their date group should produce clusters of temples with little overlap between the different date groups and an overall decreasing trend. However, the ratio of foundation length to width does not demonstrate any evidence for a decreasing trend over time, with a large amount of overlap between all six date groups (Figure 48). In terms of the largest and smallest ratios the opposite is true; date group 6 contains the longest ratio, on the Temple of Apollo at Sikyon (P8), whilst date group 2 contains the shortest, the Temple of Minerva at Pompeii (I13). At first glance, it could be argued that the decreasing ranges of ratios in date groups 2 to 5 are indicative of a Panhellenic process of proportion 'standardisation'. However, the range of 'core' ratios (the band between c.1.75 and 2.5, which contains the majority of temples) remains very consistent, particularly during the first four groups. The subsequent drop in date group 5 is countered by the wide range of ratios utilised in date group 6, suggesting that drop in ratios in date group 5 is not significant. Indeed, this analysis has shown that it is not possible to place a temple in a specific period using only the foundation ratio. For example, the Akropolis Temple at Gortys (P11) has a foundation length that is double its width and is assigned to date group 5 based upon the shape of the mouldings (Martin and Metzger 1940: 280); however, a temple with a similar ratio of foundation length to width can be found in all six periods, such as on the date group 2 Temple of Athena Polias on the Athenian Akropolis (A3) and the date group 6 Temple of Zeus at Nemea (P17).

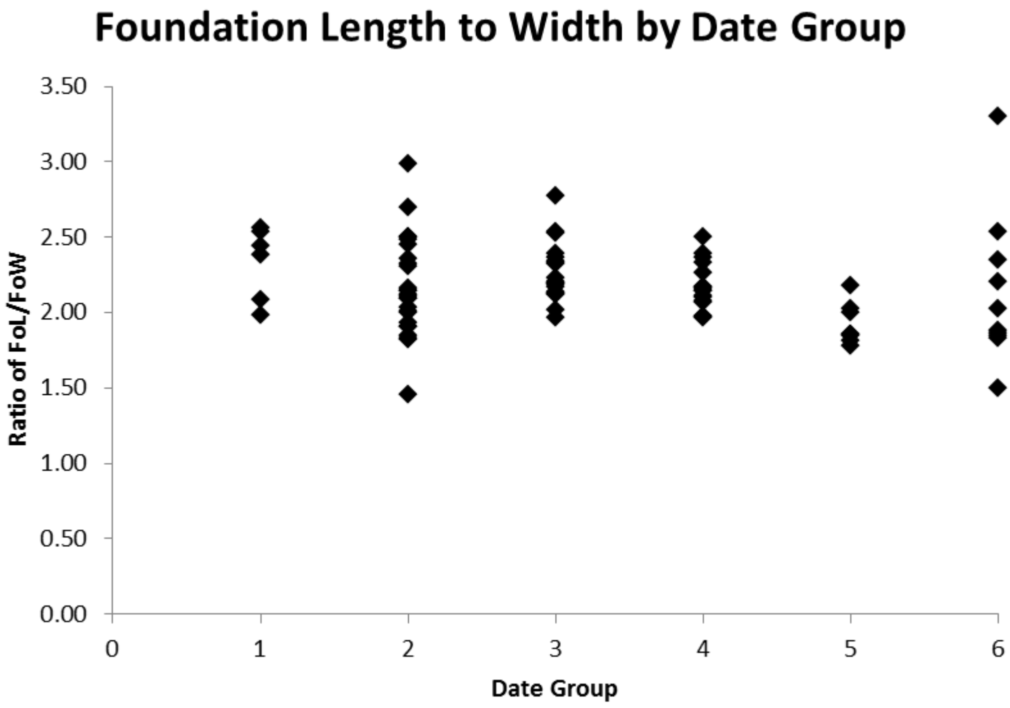


Figure 48 Ratios of foundation length to width organised by date group, demonstrating that the different date groups contain a wide range of ratios and the same ratios can be found in the different date groups. Thus, there is no clear link between the ratio of foundation length to width and date group.

The implications of these results would be that, whilst Doric peripteral temples' foundations were always rectangular in shape, there is no clear evidence for a preferred ratio or series of ratios. Indeed, the most striking result is the enormous variety in the amount of different shapes that were utilised. Furthermore, there is no evidence that the shape of the foundations followed a contemporary Panhellenic 'fashion', with multiple ratios being used in a single date group and the same ratio being used across multiple groups.

Plan: Stylobate and Krepidoma Steps

As with the analysis of the temple foundations, the analysis of the stylobate dimensions demonstrates that, although there appears to have been a number of generally accepted 'rules' relating to the overall shape of the stylobate, there is, in fact, enormous variety in the ratios used on the individual temples, even on temples with the same foundation sizes.

Similar to the foundation shape, the stylobate shapes are not directly connected to the date of construction. As discussed in the previous chapter, the stylobate width and length are preserved on 53 buildings (Chapter 4, Table 4). There is significant variation in the widths and lengths of the different stylobates when analysed on a Panhellenic scale; the widths ranging between 9.96m and 52.74m and the lengths varying between 19.6m and 110.12m. As with the foundations, the stylobates are always rectangular and the positive correlation between their widths and lengths indicate that as the temples get wider they also get longer (Figure 49). However, the range of ratios between the two measurements indicates that the two measurements are not directly connected, which results in lengths that are 1.56 times the width on the Temple of Artemis at Loutsa (A12) to lengths that are 3.3 times their width on the Temple of Apollo at Sikyon (P8). Likewise, temples with the same width were built with different lengths; for instance, the Temple of Apollo at Sikyon and the Temple of Athena Kranaia at Elateia (N18), both had a stylobate width of 11.45, yet the Temple of Apollo at Sikyon has a significantly longer stylobate of 37.6m compared to 27.5m.

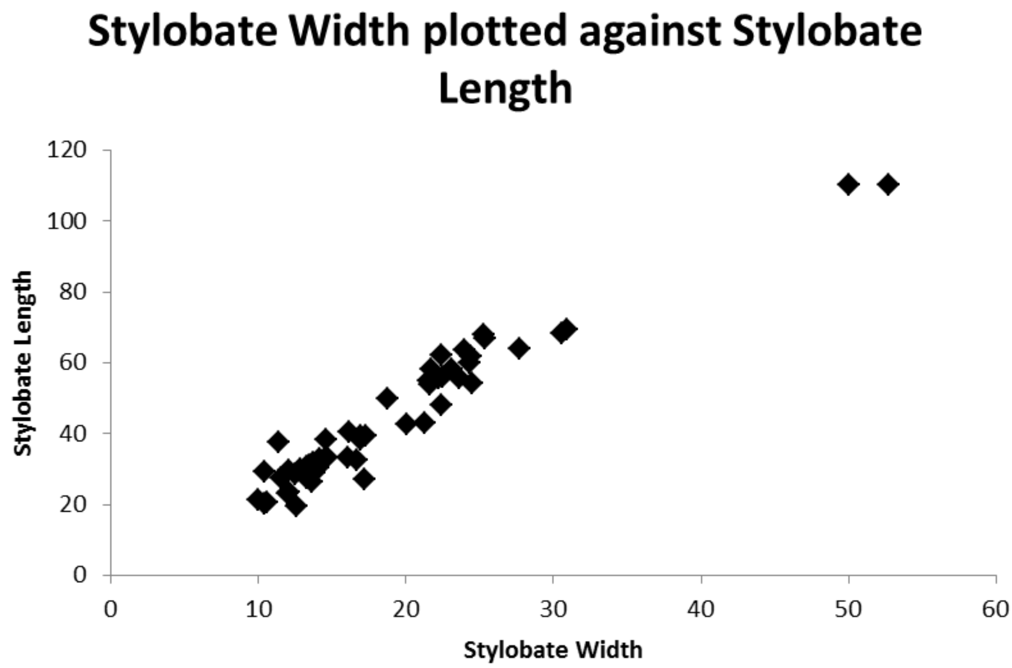


Figure 49 Stylobate width plotted against stylobate length, demonstrating the wide range of different sized stylobates and the varying relationships between their length and width (correlation coefficient = 0.96).

As discussed in the previous chapter, the shape of the krepidoma steps can vary between buildings, thus making it necessary to analyse both the foundation and stylobate sizes. It appears to be a generally accepted rule of temple design that the stylobate width is above 85% of the foundation width (53 of 56 examples or 94.6%) and that the stylobate length takes up more than 90% of the foundation length. Furthermore, it appears to be a general trend that stylobate length is greater in relation to the foundation length than the stylobate width to foundation width. For example, on the temple on Agios Elias (P3), the stylobate width takes up 79% of the foundation width, whilst, the stylobate length takes up 90% of the foundation length (Figure 41a). This would suggest that it was relatively standard for temples to have wider krepidoma steps (including euthynteria) on the flanks than on the facades. However, beyond these general rules, there is little evidence that a single ratio, or series of ratios, were used with relation to the foundation and stylobate size. In fact, it is interesting to note the wide range of ratios that were utilised. For example, on temples with foundation widths measuring c.26m (and utilising the same number of krepidoma steps) the stylobate width ranges from 88% of foundation width on the temple at Segesta (S13; SW: 23.12m; KrSt: 3), to 94% on the Temple of Hera I (Basilica) at Poseidonia (I9; SW: 24.51m; KrSt: 3), further demonstrating that the shape of the stylobate was not directly linked to the shape of the foundations (Figure 42a; Figure 42b). The differences in the relationships between the foundations and the stylobate shapes would have resulted in temples with similar foundations having different stylobate widths, which would ultimately allow for the creation of distinctive plans on temples that had the same foundation dimensions.

As with the foundations, if the differences in stylobate shapes were connected to their date of construction, and consequently provided a productive indicator of date, the graph produced by plotting the temples' stylobate ratios against their date group should produce clusters of cohesive ratios with little overlap between the different date groups and an overall decreasing trend. In contrast, Figure 50 demonstrates that a wide variety of stylobate lengths to width ratios were used in each date group, with no evidence for an overall trend.[41] For example, the temples of date group 6 vary in ratio between lengths that were 1.56 times their width as on the Temple of Artemis at Loutsa (A12) to 3.3 times their width as on the Temple of Apollo at Sikyon (P8), indicating that a very wide variety of ratios were used in the individual date groups.

[41] Unfortunately, the poor state of preservation and the smaller number of temples constructed in date group 5 means that this period is only represented by two ratios, therefore, it is difficult to draw any conclusions relating specifically to the architecture of date group 5.

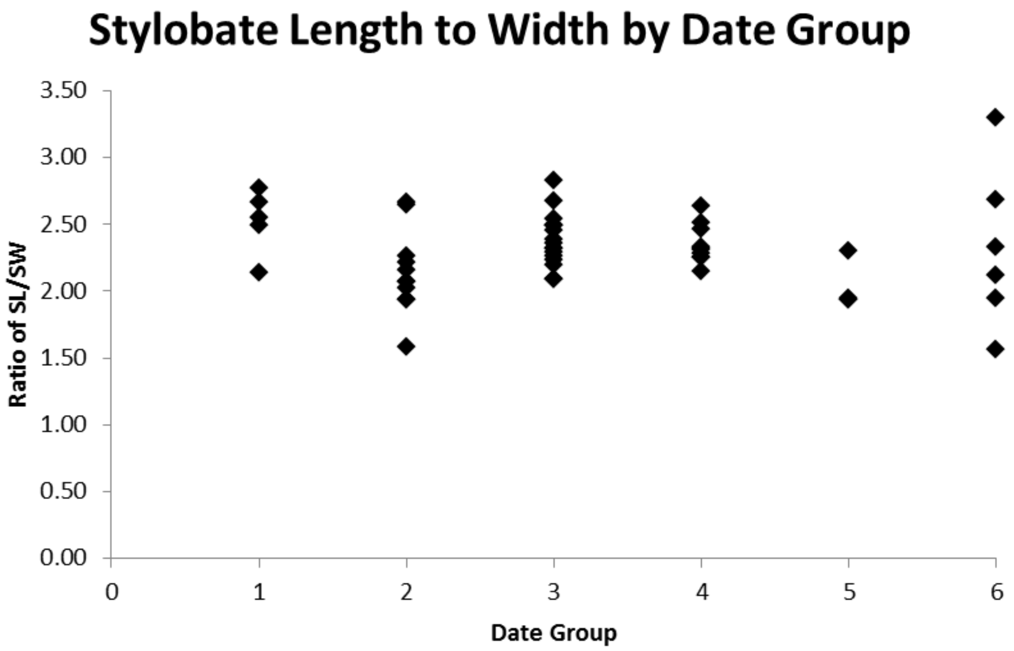


Figure 50 Ratio of stylobate length to stylobate width by date group on a Panhellenic scale, demonstrating that the same ratios were used in multiple periods and a wide range of ratios were used in each date group.

Furthermore, Figure 50 demonstrates that, contrary to the requirements of using ratios to help date temples, there is significant overlap between the individual periods (also see Figures 39-44). For example, the stylobate length to width ratios of the date group 4 temples range between 2.15 on the Temple of Nemesis at Rhamnous (A11) and 2.64 on the Temple of Apollo Epikourios at Bassai (P4), ratios that are also encompassed by the temples of date group 3, which have a range between 2.09 on the Temple of Aphaia on Aigina (A14) and 2.83 on the Temple of Athena at Alipheira (P1). Indeed, there is significant overlap between all six periods being studied, making it difficult to place a temple in any given period based solely upon the ratio of stylobate length to width.[42] For example, the Temple of Apollo at Corinth (P7), placed in date group 1 because of evidence provided by stratigraphy and pottery (Dinsmoor 1950: 89 n.2; Pfaff 2003b: 112), utilises a stylobate length to width ratio of 2.51, which actually falls into the range of ratios used in every date group with the exception of date group 5. The only slight anomaly to the generally standard range of ratios that are used in all periods appears to be those date group 2, the main body of which appear to be slightly lower than those of the other periods. Although there are a couple of temples with lower ratios, such as the Temple of Athena at Karthaia (A16; ratio of stylobate length to width: 1.94), it is the lack of longer ratios that is more significant, which is directly connected to the relative lack of

[42] Whilst there are no examples whereby the stylobate ratio is solely used to date a temple, it is often used in conjunction with other ratios to help assign a date, the analysis is completed here in order to further demonstrate the lack of correlation between stylobate shape and date.

Peloponnesian and Sicilian temples constructed in date group 2.[43] Therefore, there is a wide variety of stylobate shapes, which were not directly connected to the shape of the foundations or the temples' dates of construction. Furthermore, the indication that the differences in the designs of the temples' bases (foundations, krepidoma and stylobate) are not connected to their date of construction suggests that the differences were caused by other factors, such as location (analysed and discussed in the subsequent chapter).

Plan: Cella

The following plan elements all sat atop the base that was formed by the foundations, krepidoma and stylobate, and as such, are generally analysed in relation to the top of the base (the stylobate). Sixty-two temples in the data-set preserve both their cella widths and lengths, which range between widths of 5.2m and 44.01m and lengths of 12.72m to 101.16m. There appears to be no direct correlation between the width of the cella and the width of the stylobate. For example, the Temple of Minerva at Pompeii (I13) has a cella that only utilises 37% of the stylobate's total width; whereas, the Parthenon's cella (A8) utilises 72% of the stylobate width (Figure 40b; Figure 42a). Even for temples with similar stylobate widths, there is a variety in the size of the cella. For example, Temple F at Selinous (S19, Figure 41b) has a stylobate width of 24.37m with a cella width of 9.2m (38%), whereas, the Temple of Hera I (Basilica) at Poseidonia (I9, Figure 42a) has a similar stylobate width of 24.49m with a cella width of 13.37m (55%).

[43] Temples from the Peloponnese and Sicily have the seven longest ratios of the date group 3 temples and five longest ratios of date group 4. Furthermore, although this chapter is not investigating regional trends, the fact that longer ratios are predominant in particular regions is further indication that a region by region analysis of temple design needs to be completed.

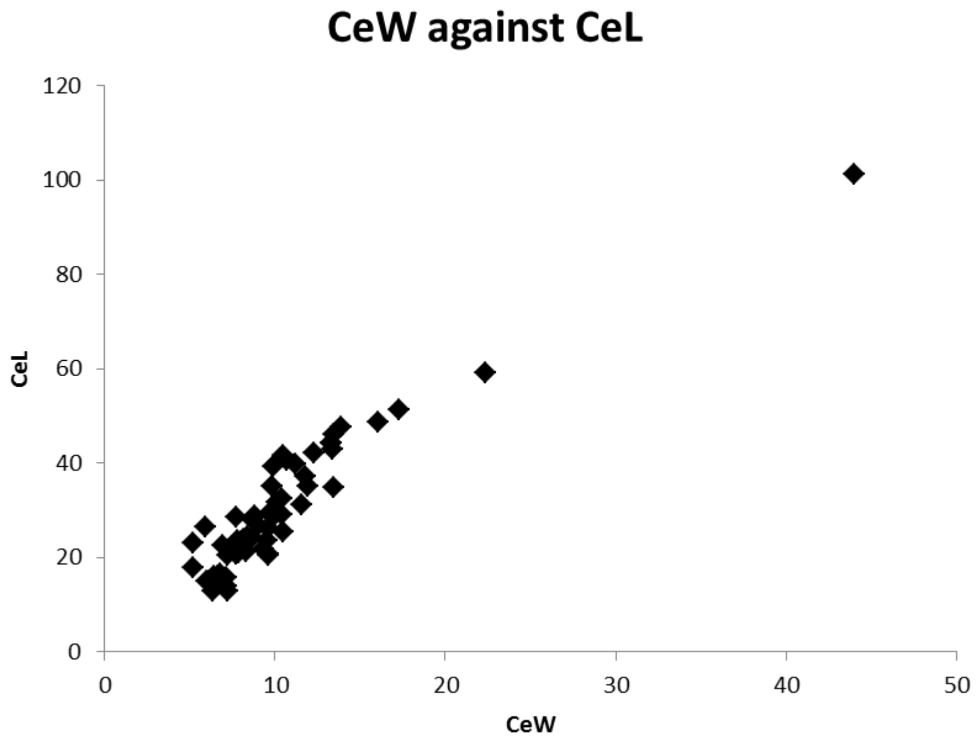


Figure 51 Cella width plotted against cella length, demonstrating that although there is positive correlation between the two measurements, indicative of the fact that cellae were always rectangular (correlation coefficient = 0.93),[44] the graph also demonstrates that cellae of the same width used different cella lengths.

In terms of their ratio of length to width, the cellae are always rectangular and the positive correlation between their widths and lengths indicate that as the cellae get wider they also get longer (Figure 51). However, no single ratio, or series of ratios, is used consistently. For example, on a Panhellenic scale, the ratios of length to width vary between the wide and short cella of the Temple of Artemis at Loutsa (A12; ratio of cella length to width: 1.78), to the narrow and long cella of the temple at Orchomenos (P5; ratio of cella length to width: 4.47). Therefore, as with the foundations and the stylobate, the temple cellae were constructed with a wide variety of different ratios. These differences would mean that the temples with wider cellae (in relation to the stylobate) had a narrower pteroma and consequently a more crowded plan, with less space between the various plan elements, an effect that could further be altered by the shape of the cella, which could leave a wide pteroma at the ends and narrow flanks, or vice versa (see Chapter 4, Figure 27). Therefore, the shape of the cella and its differing relation to the stylobate would have had a significant effect upon the overall external appearance of the temple.

[44] Excluding the cella measurements of the statistical outlier, the Temple of Zeus Olympios (Temple B) at Akragas (S8), the correlation drops to 0.9. Although the size of both the Temple of Zeus Olympios and Temple G at Selinous (S20) makes them significant outliers in terms of their foundation and stylobate dimensions, their removal from the correlation statistics in relation to foundations and stylobates (presented above) does not have as significant effect upon the correlation as with the cellae.

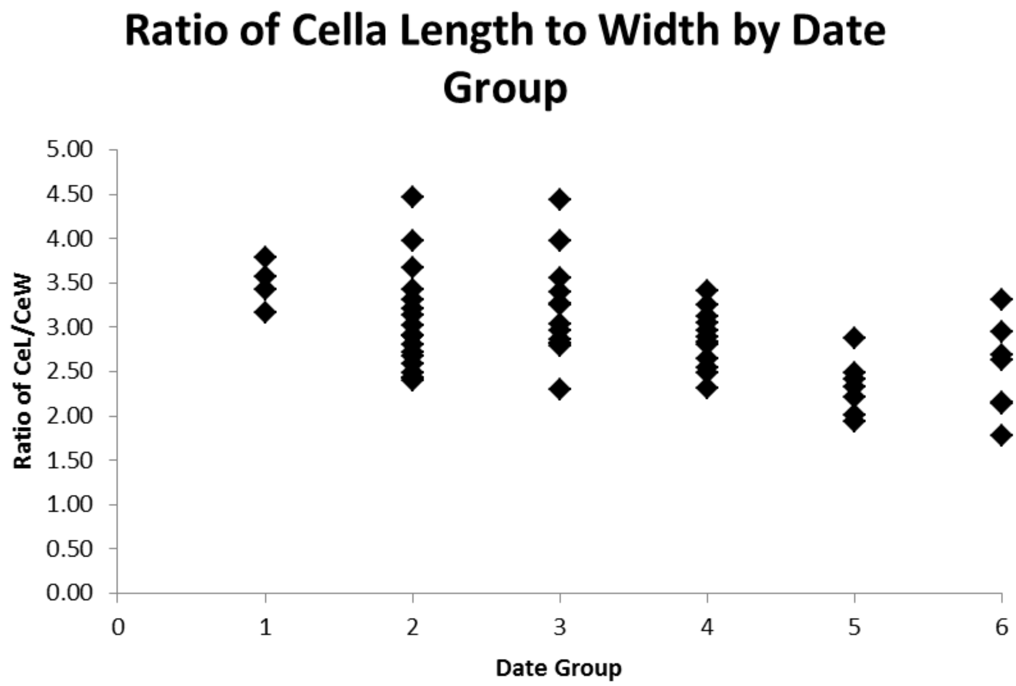


Figure 52 Graph of cella length plotted against cella width by date group, demonstrating that similar ratios were used in the different date groups.

As with the foundations and the stylobate, it has been suggested that the cella dimensions were linked to a temple's date of construction. For example, it is argued by Scranton (1946: 39) that there was a chronological progression from a narrow to a broad cella design. If this were the case, the ratio of cella length to width should demonstrate at least a general decreasing trend with time and the ratio of cella width to stylobate width should increase with time. Indeed, whilst some temples' cellas do go from broad to narrow and the average ratio of cella length to width does decrease with time (Table 8), this is not true in all instances. As demonstrated in Figure 52 there is not one date group that contains a series of ratios that cannot be found in any other and the ranges of utilised shapes are fairly consistent between the groups. For example, ratios that are used in date group 4 are also found in date group 2 and the cella length to width ratio of 3.16 on the date group 1 Temple of Apollo at Syracuse (S22) is similar to the 3.13 ratio found on the date group 4 Temple of Artemis Elaphebolos at Kalapodi (N20). Furthermore, the ratio of cella width to stylobate width demonstrates little evidence for a consistent change over time; rather, there appears to be a distinct increase between date groups 3 and 4, which appears to be connected to the cessation of Doric peripteral temple construction in Sicily and an increase in temple construction in Attica during date group 4 (Table 8).[45] Therefore, as with the foundations and the stylobate, the data-set demonstrates that a wide

[45] Six of the 7 lowest cella width to stylobate width ratios of date group 3 were found in Sicily and the 3 highest ratios of date group 4 were found in Attica.

variety of different shaped cellae were used and that their use was not directly connected to the shape of the stylobate or the construction date of the temples.

	CeL/CeW Avg.	CeW/SW Avg.	CeW/SW Avg. minus extreme outliers
Date Group 1	3.48	0.53	0.53
Date Group 2	3.02	0.53	0.55
Date Group 3	3.19	0.56	0.55
Date Group 4	2.86	0.61	0.59
Date Group 5	2.32	0.60	0.60
Date Group 6	2.52	0.58	0.58

Table 8 The average ratios of cella length to width and cella width to stylobate width by date group. The table demonstrates the decrease in the average ratio of length to width overtime and the relatively large change between date group 3 and 4 of the cella width to stylobate width ratio. Indeed, the large difference remains even with the removal of the extreme outliers.[46]

Plan: Columns and Axial Spacings

The final plan elements to be discussed are the number of columns in the peristyle and the façade and flank axial spacing. As with the other plan elements discussed above, the analysis demonstrates that there is no direct link between the number of columns and the other plan elements, nor is there a connection between the number of columns and date. The previous chapter showed that 47 temples preserve the number of façade columns and 46 preserve their façade axial spacings, whilst 44 preserve the number of flank columns and 45 preserve their flank axial spacings.

Number of Columns	Number of Temples	% of Total
6 by 11	5	11.4%
6 by 12	6	13.6%
6 by 13	13	29.5%
6 by 14	6	13.6%
6 by 15	5	11.4%
6 by 16	1	2.3%
6 by 17	3	6.8%
7 by 14	1	2.3%
8 by 17	3	6.8%
9 by 18	1	2.3%

Table 9 The number of temples by the number of flank and façade columns in their peristyle and the percentage of temples in the data-set that utilise the same number.

The number of façade columns ranges between 5 on the Temple of Apollo at Metropolis (N21)[47] and 9 on the Temple of Hera I (Basilica) at Poseidonia (I9), whilst the number of

[46] The extreme outliers of the cella width to stylobate width ratio are: the Temple of Zeus Olympios (Temple B) at Akragas (S8), the Parthenon (A8), the Temple of Minerva at Pompeii (I13), and Temple F at Selinous (S19, see Appendix IV.1).
[47] The Temple of Apollo at Metropolis (N21) with five façade columns does not appear in Table 9 as the number of flank columns are not preserved.

flank columns vary between 11 on the Temple of Zeus at Stratos (N13) and 18 on the Temple of Hera I (Basilica) at Poseidonia (I9). The fact that 87% of temples utilise 6 façade columns suggests that this number was particularly significant in Doric peripteral temple construction. Despite this, the differing shapes of the columns, stylobate widths and entablature designs (discussed below) would still have resulted in the temples with 6 façade columns having different appearances (see Chapter 1, Figure 5). The most frequently used number of flank columns appears to be 13 columns, although it is far from the only number utilised, as temples with 6 by 13 columns only account for 29.5% of variants used (Table 9). Indeed, 6 by 11, 12, 14 and 15 also appear to be frequently utilised with five, six, six and five examples respectively. Although 6 façade columns appear most frequently, there was a wide variety of column numbers that were utilised, with no evidence for a single standard design.

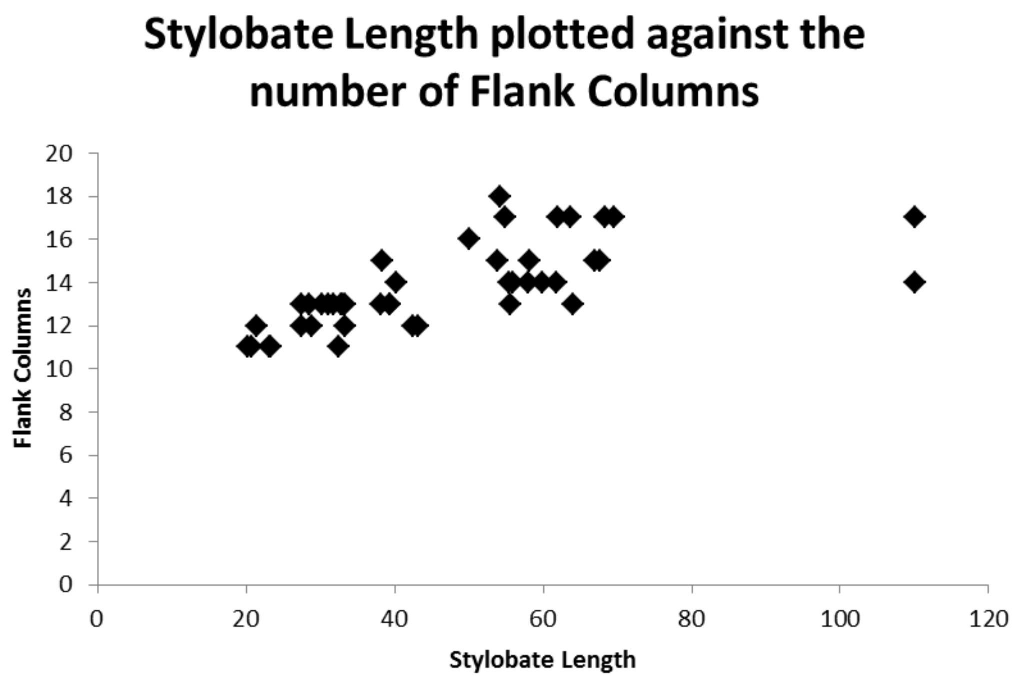


Figure 53 Scatter graph showing the individual temples' stylobate lengths against the number of flank columns, demonstrating the wide range of different stylobate lengths associated with each number of flank columns and vice versa.

As with the ratio of the stylobate and cella width discussed above, there is a degree of independence between the number of flank columns and the size of the stylobate, with temples of the same number of columns being constructed on stylobates of multiple sizes (Figure 53). For example, stylobate lengths of temples with 13 flank columns range between 27.5m on the Temple of Athena Kranaia at Elateia (N18) and 64.12m on the Temple of Zeus at Olympia (P20). Furthermore, Figure 53 demonstrates that temples with similar stylobate lengths can have differing numbers of flank columns; for example, temples in the data-set with stylobates measuring c.55m have: 13 flank columns on Temple D at Selinous (S17), 14 on the Temple of Athena at Syracuse (S23), 17 on the Temple of Apollo at Syracuse (S22) and 18 on the Temple of Hera I (Basilica) at Poseidonia (I9). Therefore, the size of the stylobate does not directly determine the number of columns on the peristyle. This conclusion is further reinforced through an analysis of the flank axial spacing, which demonstrates that a range of different axial spacing measurements are used on temples with the same length stylobate (Figure 54). Indeed, the use of different amounts of columns on temples of the same size would have had a large effect upon their external appearance. For example, on the temples measuring c.55m in length, the 13 columns on Temple D at Selinous (S17, Figure 40a), with an axial spacing of 4.491m compared to 3.102m on the Temple of Hera I (Basilica) at Poseidonia (I9, Figure 41b) with 18 flank columns would have produced a peristyle with significantly wider spaces between the columns, creating a peristyle that appeared less cramped and overcrowded.[48]

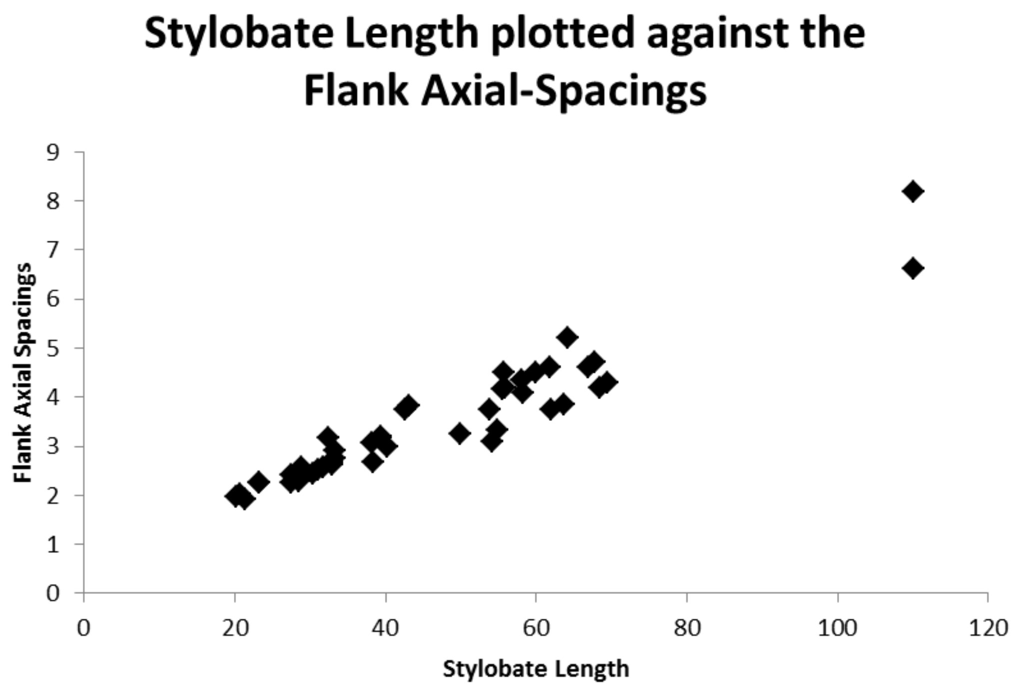


Figure 54 Scatter graph showing stylobate length against the flank axial column spacing, demonstrating that although there is positive correlation between the two measurements, temples with the same stylobate length utilise a wide range of different axial spacings.

Furthermore, despite the use of the number of peristyle columns to help date the Temple of Poseidon at Velvina (N2, Gavrili 1976) and particular scholars' suggestions that certain numbers of columns belong to particular dates (Winter 1978: 159; Pakkanen

[48] This effect is further influenced by the columns' dimensions that are discussed in the second half of this chapter.

1998: 9), there is no evidence that the number of columns in the peristyle and the temple's date of construction is directly connected. For example, 6 by 11 columns can be found on the date group 2 Temple of Athena at Karthaia (A16) and the date group 6 Temple of Zeus at Stratos (N13), thus demonstrating that temples with the same number of columns could be constructed almost 200 years apart. Likewise, there is no evidence that a particular number of flank columns become particularly popular for short periods of time, for example, a temple with 6 by 15 columns can be found in each date group except 5 (Figure 55).[49] The possible exceptions to this rule are the 6 by 13 and 14 designs, which seem to reach a peak of popularity in the fifth century and the 6 by 17 design which was only utilised in sixth-century Sicily.[50] Although in the case of 13 flank columns, there are two sixth century examples, the Temple of Athena at Poseidonia (I8) and the Temple of Athena at Assos (O1), indicating that the use of 13 flank columns was not limited to the fifth century, rather, it became more heavily utilised in this period. However, the wide range of designs, which are used in each period, and across multiple different periods (such as 6 by 15 discussed above) suggests that the number of columns in a temple's peristyle is not directly indicative of its date. Indeed, the analysis conducted in the first half of this chapter suggests that there was a certain amount of independence between the sizes of all the plan elements, which results in the wide range of different plans shown in Figures 39-44. Furthermore, there is no evidence that the differences in the plan shapes are directly determined by their date of construction, indicating that the different plan designs are influenced by factors other than date (discussed in following chapters).

[49] As discussed above, date group 5 is relatively poorly preserved in the data-set and consequently, it is not significant that date group 5 does not contain a temple with 15 flank columns.

[50] 17 flank columns are used again in the fifth century, only in these instances they are on temples with eight façade columns, the Parthenon in Athens (A8), and the Temple of Zeus at Cyrene (O11).

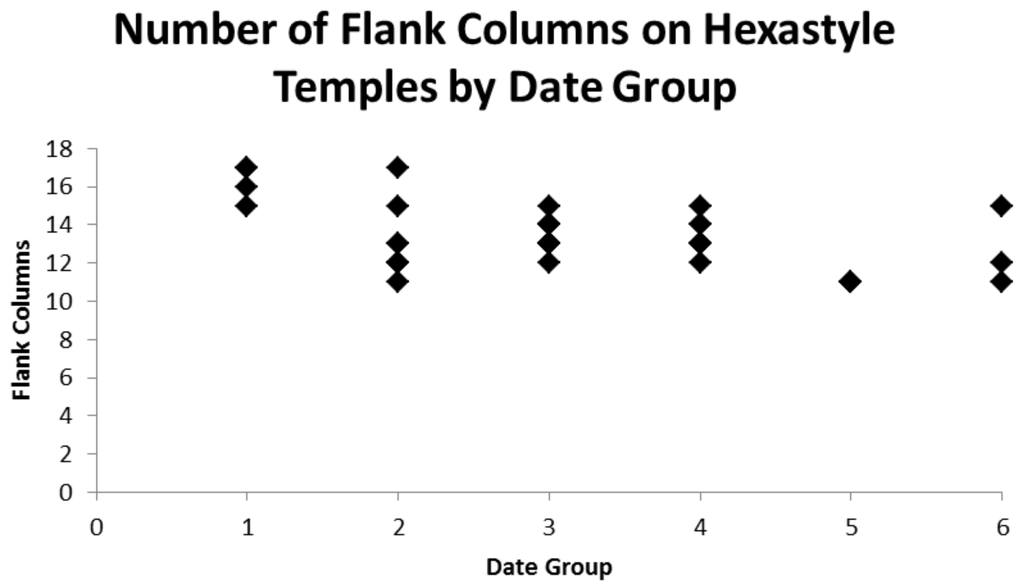


Figure 55 Number of flank columns on temples with 6 façade columns organised by date group, demonstrating that multiple column numbers were used in each date group and the same numbers of columns were used across multiple date groups.

Plan: Case Studies

A few brief case studies, bringing together all the different plan elements, demonstrate how the individual ratios contribute towards creating temples with very different plans, even when the buildings share similar foundation dimensions. Furthermore, an analysis of the plan of the Parthenon (A8) suggests that even when multiple ratios are used it is difficult to suggest an exact date for a temple.

The first case study focuses upon the plans of Temple C at Selinous (S16) and the Metroon at Olympia (P19). These two temples demonstrate the wide variety of distinctive plans that were created when all the individual design elements were brought together (Figure 56). As well as being very different in terms of their overall size, Temple C at Selinous (FoW: 26.357m; FoL: 71.15m) and the Metroon at Olympia (FoW: 11.88m; FoL: 21.93m) utilise dissimilar ratios, which result in two plans that would have had very distinct appearances even if they were scaled to the same foundation width. For example, the Metroon's plan is relatively more 'square' than that of Temple C, utilising a foundation length to width ratio of 1.85, making the temple less than twice as long as it is wide, compared to a ratio of 2.7 on Temple C, which indicates that the temple is almost three times as long. Also, both cellae have very different relationships to the rest of the plan. The cella of Temple C is very narrow (cella width to stylobate width ratio: 0.44) when compared to the Metroon (cella width to stylobate width: 0.67) and Temple C's cella is considerably more elongated than the stylobate (stylobate length to stylobate width: 2.66; cella length to cella width: 3.97), which is considerably different from the squarer cella of the Metroon (CeL/CW: 1.94, which appear to reflect the shape of the stylobate (SL/SW: 1.95)). Despite the differences in the temples' overall dimensions, both utilise six façade columns, but with a different number of flank columns (Temple C: 17; Metroon: 11). Consequently, regardless of their relative size to one another, the ratios that were employed between the various elements indicate that they were not designed to share the same appearance. Indeed, Temple C's plan results in a visually much longer temple, with a more spacious pteroma, than the relatively square plan of the Metroon. When the size differences and additional plan elements are taken into consideration, such as the double front on Temple C and the additional frontal stairs, the visual differences between the two buildings are emphasised even further.

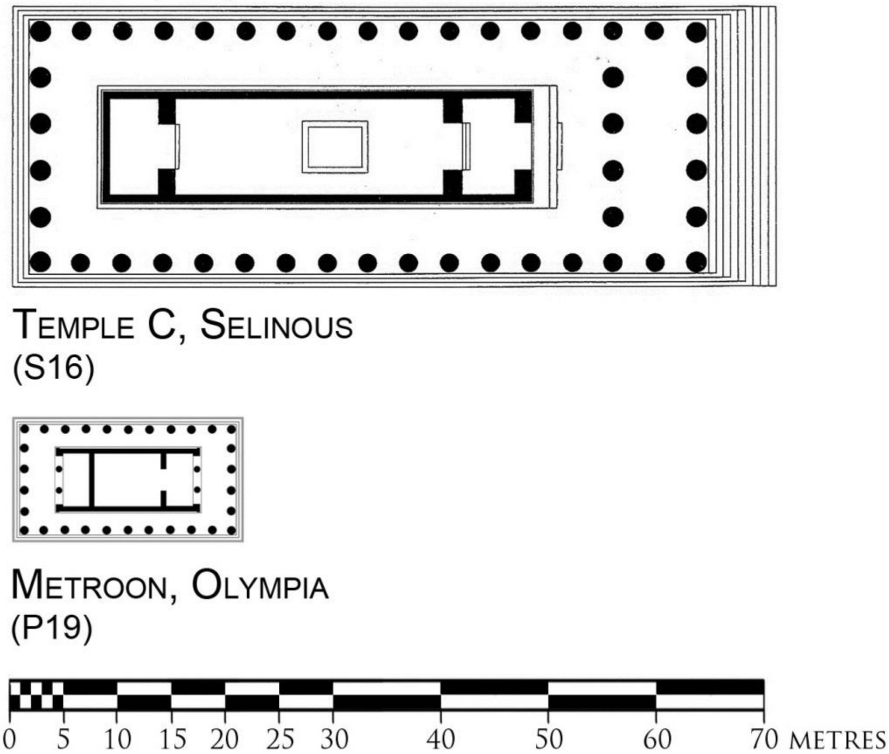


Figure 56 The plans of Temple C at Selinous (S16) and the Metroon at Olympia (P19, *After* Mallwitz 1972: 161; Mertens 1984: Beilage 26).

A further case study focusing upon the similar sized, date group 1 Temples of Apollo at Corinth (P7) and at Syracuse (S22) demonstrates that even on temples of the same size and date, different ratios were employed to create temples with different plans (Figure 57). Both temples utilise very similar stylobate dimensions (Corinth: SW: 21.58m, SL: 53.8m; Syracuse: SW: 21.5m, SL: 54.9m). However, the Temple of Apollo at Corinth has 15, more widely spaced, and narrower flank columns (flank axial spacings: 3.744m), whilst the Temple of Apollo at Syracuse has 17 narrowly spaced, wider columns (flank axial spacings: 3.331m). Furthermore, the Temple of Apollo at Corinth has a wider and longer cella (cella length to width ratio: 3.43), resulting in a more cramped pteroma than on the Temple of Apollo at Syracuse (CeL/CeW: 3.16), which also utilises a double colonnade across the front. The number of columns utilised in the peristyle of the Temple of Apollo at Syracuse, as well as their wider lower diameters, resulted in significantly narrower gaps between the columns, and consequently a worshipper would be faced with considerably more stonework than on the Temple of Apollo at Corinth, which gave the impression of a more 'crowded' peristyle. These differences would be further exaggerated by differences in the elevation designs, such as the height of the columns and the entablature that are discussed in the second half of this chapter. Therefore, different ratios were employed on temples of the same size in order to create buildings with varying appearances. Indeed, there are temples that utilise very similar plans to one another, and these are discussed further in later chapters; however, it is important to highlight at this point that the size of one element does not necessarily determine another, and that temples utilising different plan designs were built around the same time.

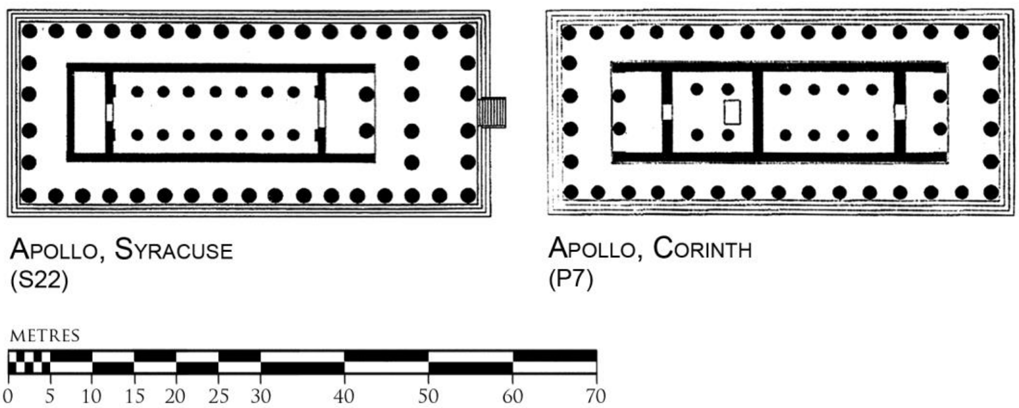


Figure 57 The plans of the Temple of Apollo at Syracuse (S22) and the Temple of Apollo at Corinth (P7, *After* Mertens 1984: 164; Spawforth 2006: 162).

The final case study, focusing upon the ratios of the plan elements of the Parthenon (A8), additionally demonstrates that a temple's plan design is not linked to its date, even when multiple ratios are taken into consideration. The Parthenon is placed into date group 4 based upon the surviving building accounts (Camp 2001: 74; Rhodes 2005: 62; Barringer 2008: 62). Interestingly, the Parthenon's plan ratios are found on much earlier and later temples. For example, a similar ratio of foundation length to width (Parthenon: 2.15) is also found on the date group 2 Temple of Hera I (Basilica) at Poseidonia (I9; 2.14) as well as the date group 4 Temple F (Concord) at Akragas (S1; 2.15; Figure 58). Likewise, the ratio of cella length to cella width (Parthenon: 2.64) is found on the date group 2 Temple of Athena at Delphi (N17; 2.67) and the date group 6 Temple of Poseidon at

Velvina (N2; 2.64).[51] Thus, the ratios employed in the Parthenon's plan are not only found in date group 4, making it difficult to place the temple in any specific date group based solely upon the shape of its elements, even when multiple ratios are taken into consideration.

[51] This is also the case with the ratio of stylobate width to foundation width, the Parthenon utilising similar ratios to the date group 2 Temple A (Herakles) at Akragas (S4) and the date group 6 Temple of Zeus at Nemea (P17).

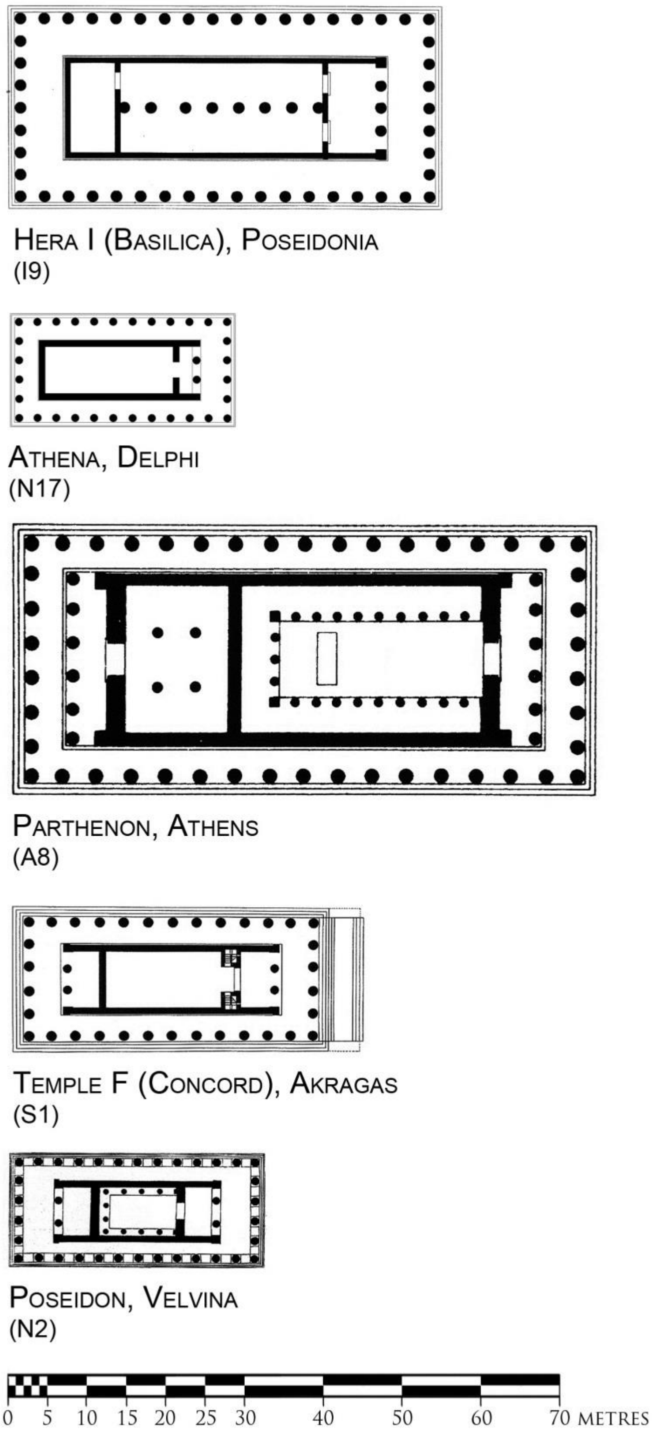


Figure 58 The plans of the Temple of Hera I (Basilica) at Poseidonia (I9), the Temple of Athena at Delphi (N17), the Parthenon (A8), Temple F (Concord) at Akragas (S1), and the Temple of Poseidon at Velvina (N2, *After* Demangel 1923: Plate 7; Mertens 1984: Beilage 26; Martin 2003: 38; Pedley 2005: 69; Spawforth 2006: 173).

Therefore, the differences in the ratios that were utilised in the temple plans are not connected to the construction date of the temple or the ratios of the other plan elements. Instead, the varying ratios were used to create visual differences between individual temple designs, even when the buildings were of the same size and date. This is not to say, of course, that the temples were designed from the ground up, rather, regardless of which design techniques were used (see discussion of proposed design techniques in Chapter 2), the designers were able to produce temple plans with different appearances, even when they had the same size plans. Furthermore, the use of similar ratios across multiple date groups indicates that that there was no single Panhellenic trend in plan design, suggesting that the differences in the temple plan designs was influenced by factors other than date (discussed in subsequent chapters).

Elevation

The second half of this chapter analyses the shape of the elevation elements, demonstrating that, as with the plan elements, the elevation ratios were used to create different designs, even on temples with the same size plan. Similarly, this section also indicates that the differences in the designs of the elevations are not linked to the temples' dates of construction (for a table containing all the elevation ratios see Appendix IV.2).

Elevation: Columns

As discussed in the previous chapter, a column's shape is analysed using three measurements: the column's height, its lower and its upper diameters. After the selection criteria were applied, 36 column heights, 60 lower diameters and 65 upper diameters were included in the data-set. In order to analyse whether their shape is directly linked to the shape of another element, the column shapes are analysed in relation to multiple different element's shapes. Therefore, the column shapes, and their relation to other elements, are analysed using a number of ratios, which ultimately demonstrate that the size of one element does not determine the size of another. Furthermore, despite various scholars suggesting that there is a direct connection (Brown 1906: 99; Miles 1989: 160; Cooper 1996d: 398; Pakkanen 1998: 72; 2004: 95), this analysis demonstrates that the column shapes are not directly connected to their date of erection.

The column shapes are analysed in terms of their 'squatness' (ratio of column height to lower diameter) and their taper (ratio of lower diameter to upper diameter), revealing that a wide range of different shapes were utilised in the design of peristyle columns (Figure 59; Figure 60). For example, the ratio of column height to lower diameter varies between the temples with 'squat' column heights that were 4.18 times their lower diameter, as on the Temple of Hera at Olympia (P18), to the 'tall' columns that were 6.34 times their lower diameter on the Temple of Zeus at Nemea (P17). Likewise, the tapers vary between straight columns with lower diameters that were 1.23 times the upper diameter, as on the temple at Taranto (I12), and those with wide lower diameters that were 1.55 times their upper diameter, as on the eastern (earlier) columns of Temple G at Selinous (S20).

Plotting the two ratios together demonstrates the wide range of different shapes that were used on a Panhellenic scale (Figure 60), from short columns with a strong taper, as on the Temple of Hera II (Poseidon) at Poseidonia (I11; CH/LD: 4.33; LD/UD: 1.37), to temples with straighter, taller and slimmer columns, as on the Temple of Zeus at Nemea (P17; CH/LD: 6.34; LD/UD: 1.25). Temples with a column height to lower diameter ratio below 5 appear to utilise a very wide range of lower diameter to upper diameter ratios, however, those above 5, and particularly 5.5, have ratios of lower diameter to upper diameters indicating that they had straighter columns. Figure 67, discussed in more detail later, indicates that this is a particular phenomenon of a few temples of date groups 5 and 6, but it is not indicative of a general trend over time. Indeed, the fact that different ratios of lower diameter to upper diameter were used on the columns with a column height to lower diameter ratio above 5.5 suggests that a standardised appearance was not intended. Therefore, as with the plan elements, a wide variety of column shapes were utilised in the designs of the various temples, particularly on those with a column height to lower diameter ratio below 5.5 (Figure 59).

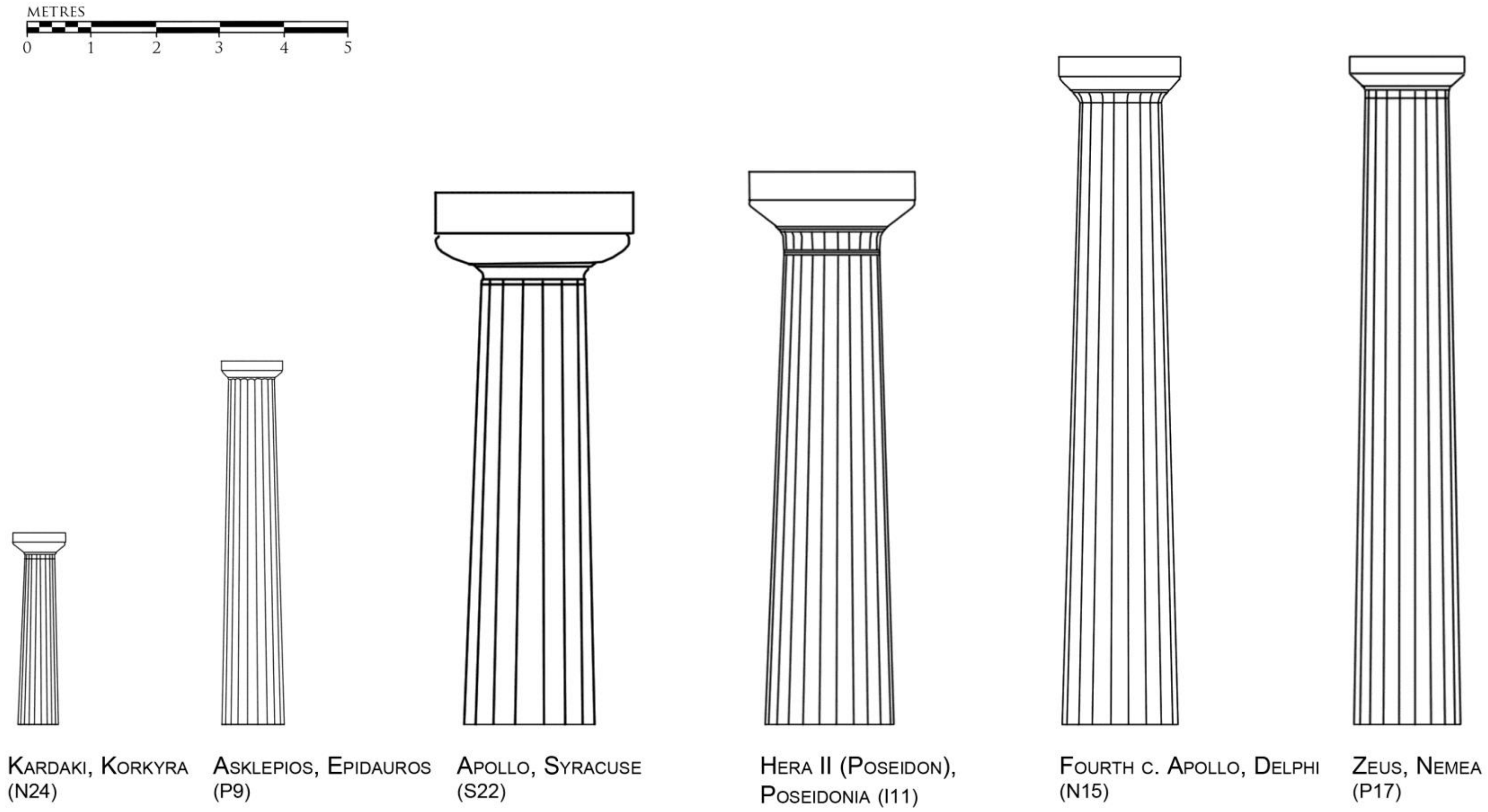


Figure 59 Columns with different ratios of column height to lower diameter and upper diameter to lower diameter. The figure demonstrates the visual effect that was achieved through the use of different ratios, even on columns with relatively similar heights, such as the Temple of Apollo at Syracuse (S22) and the Temple of Hera II at Poseidonia (I11; *After* Courby 1927: Plate VI; Cultrera 1951: 827; Dinsmoor Jr. 1973: 168; Tomlinson 1983: 58; Mertens 1984: Abb. 14; Miller 1990: 133).

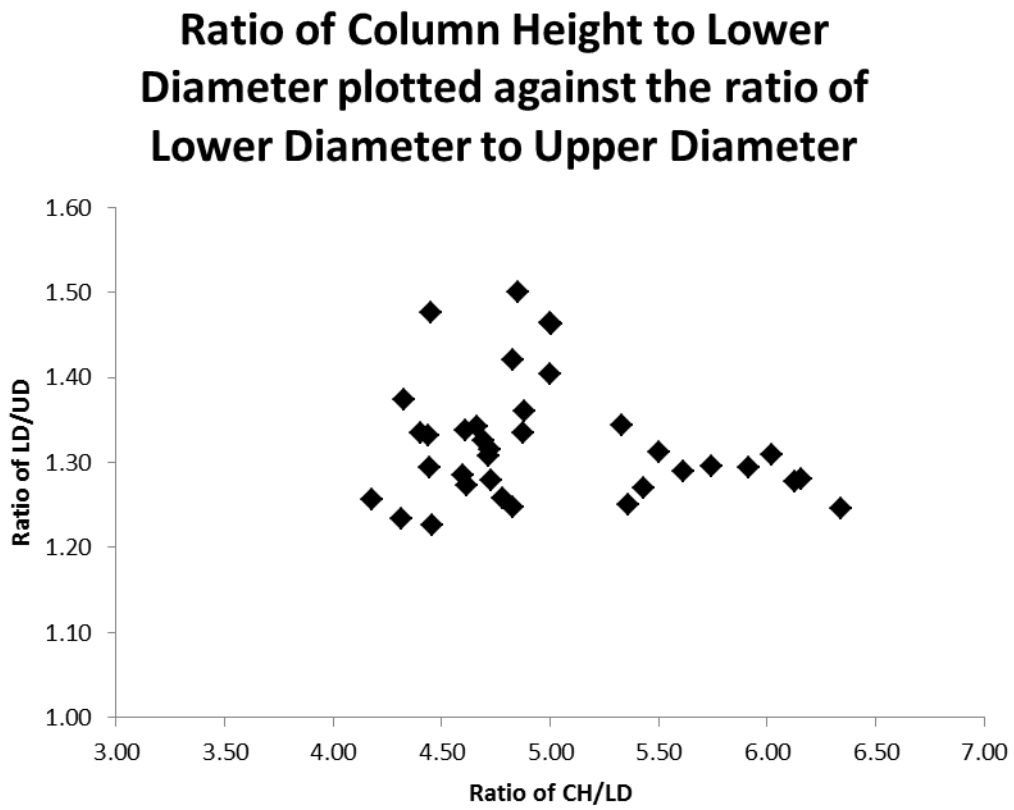


Figure 60 Scatter graph showing the ratio of column height to lower diameter against the ratio of lower diameter to upper diameter. Reading the graph from left to right, the temples on the left have shorter, wider, 'squatter' columns that those on the right, which have progressively slimmer and taller columns. Reading the graph from the top down, the temples at the top have columns with a greater amount of taper that those at the bottom, making those at the bottom, the most straight. The graph demonstrates that, particularly on temples with a low ratio of CH/LD, there is a significant variety in the extent of taper (LD/UD) that was applied; however, columns with a CH/LD ratio above 5 appear to use the lower ratios of LD/UD, albeit without reversion to a standard ratio.

Examining the column ratios in relation to the plan elements analysed above, further demonstrates that a particular column's shape is not directly connected to the size of other elements, a freedom which allowed temples of the same size to be built with different elevation designs. Plotting the temples' stylobate widths and lengths against their column heights demonstrates that a wide range of different ratios were used (Figure 62), resulting in some temples having narrow stylobates and tall columns, as on the fourth-century Temple of Apollo at Delphi (N15; SW/CH: 2.05), and others with relatively wide stylobates and short columns as on the Kardaki temple at Korkyra (N24; SW/CH: 4.00; Figure 61). Likewise, there was significant variation amongst the temples' flank designs, some temples having particularly long stylobates with short columns as on the Temple of Hera at Olympia (P18; SL/CH: 9.58), whereas, others, such as the Temple of Zeus at Stratos (N13; SL/CH: 4.10), had short stylobates and tall columns. Even on temples with the same stylobate width, different ratios of column height to stylobate width were used to create relatively taller and shorter temples. For example, the Temple of Aphaia on

Aigina (A14) has a stylobate width of 13.8m and the Hephaisteion in Athens (A6) has a similar stylobate width of 13.7m; however, the Hephaisteion utilises much taller columns, with a stylobate width to column height ratio of 2.4 compared to 2.61 on the Temple of Aphaia.

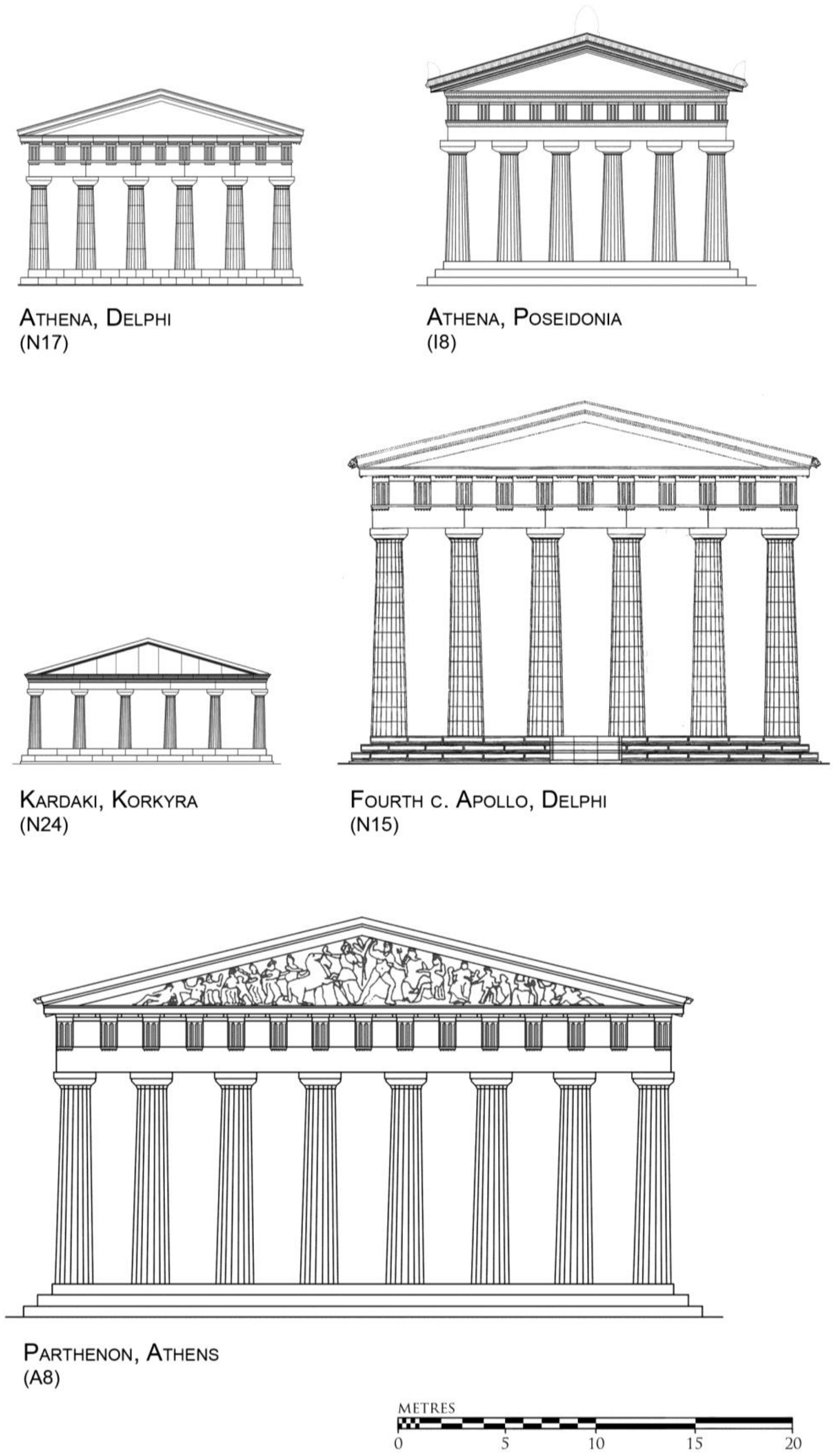


Figure 61 Different elevation designs, demonstrating not only the differences in size, but also the differences in shape. For example, the Kardaki temple at Korkyra (N24) is relatively wide and short when compared to the narrow and tall fourth-century Temple of Apollo at Delphi (N15). Indeed, the elevations of the Temple of Athena at Delphi (N17) and the Temple of Athena at Poseidonia (I8) demonstrate the distinctive elevation designs that could be achieved even on temples of the same width (*After* Demangel 1923: Plate 8; Courby 1927: Plate VI; Krauss 1959: Tafel 3; Dinsmoor Jr. 1973: 168; Coulton 1977: 113).

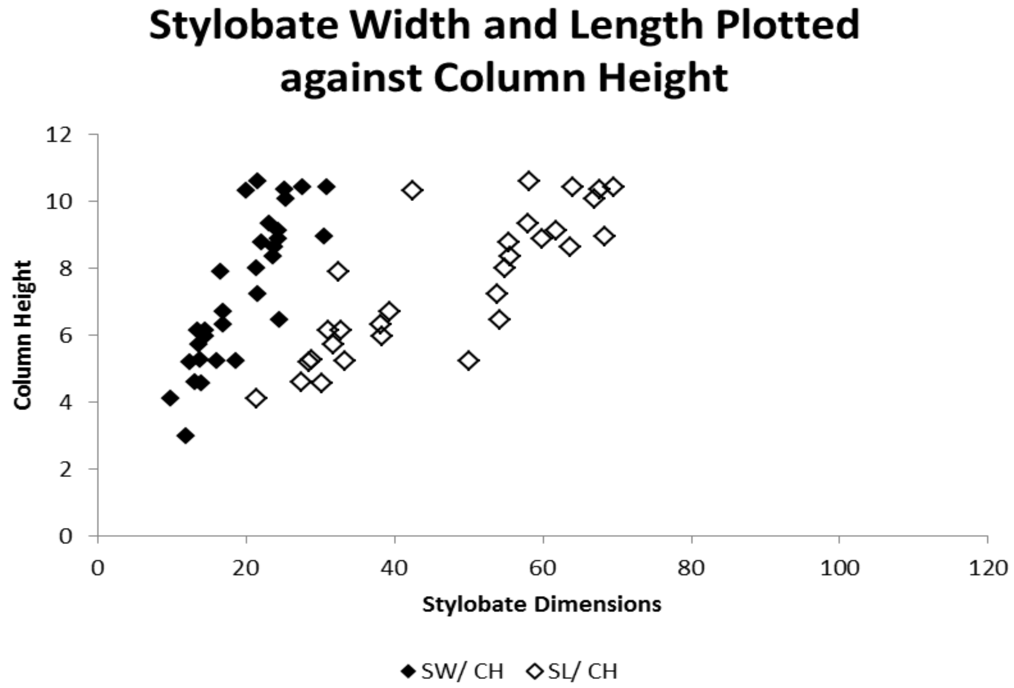


Figure 62 Scatter graph plotting stylobate dimensions against column height, demonstrating that a wide variety of different column heights were used on temples of the same stylobate width or length and vice versa.

Furthermore, a study of axial spacings and column height demonstrates that, as with the ratio of column height to stylobate width, a number of different ratios were used, even on temples with the same axial spacing (Figure 63). For example, both the Temple of Apollo at Corinth (P7) and the Temple of Zeus at Nemea (P17) utilise axial spacings of c.3.74m, however, the Temple of Apollo has columns that were 7.24m tall (column height/flank spacing: 1.93) in comparison with columns that were 10.325m tall on the Temple of Zeus (column height/flank spacing: 2.76).

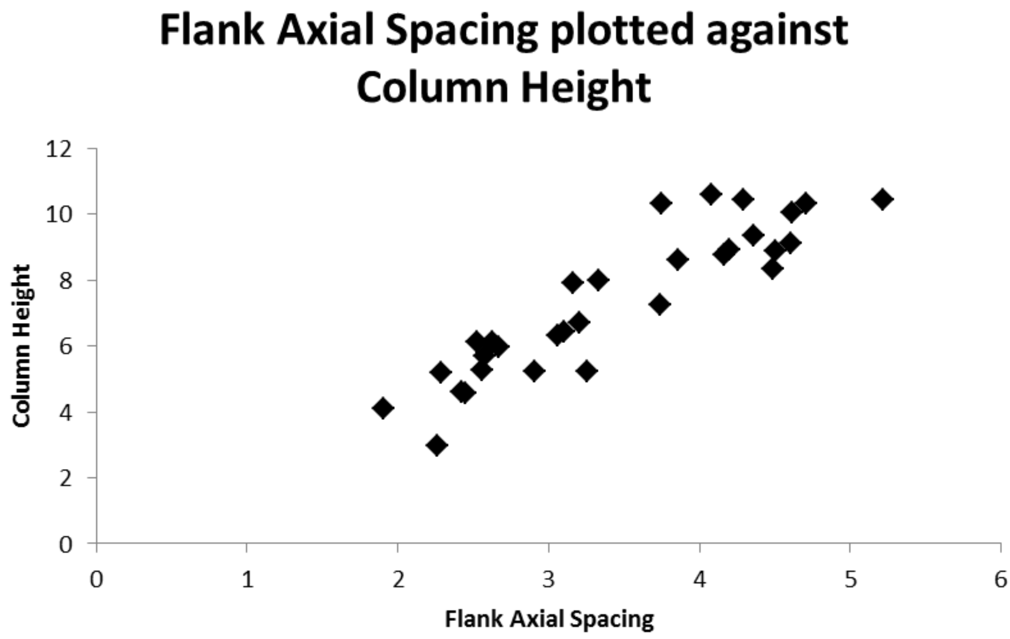


Figure 63 Scatter graph showing the ratio of column height to flank axial spacing, demonstrating that temples with the same column height can be associated with a variety of different axial spacings, for example, the Temple of Apollo on Delos (O8) has a column height of 5.2m and an axial space of 2.2905m, whereas, the Temple of Hera at Olympia (P18), with a similar column height of 5.22m has axial spacings of 3.26m.

The shape created by these two elements (column height and axial space) is further affected by the relationship between the lower diameter of the column and the axial spacing, which results in wider or narrower spacings between the columns. For example, the Temple of Apollo at Syracuse (S22) had particularly narrow gaps between the peristyle columns (ratio of flank axial spacing to lower diameter: 1.8), which would have obscured the cella and blocked access to the pteroma. In contrast, the Kardaki temple at Korkyra (N24) had very wide gaps (flank axial spacing/lower diameter: 3.71), which resulted in wide corridors between the columns and significantly more of the cella being visible through the peristyle (Figure 64).

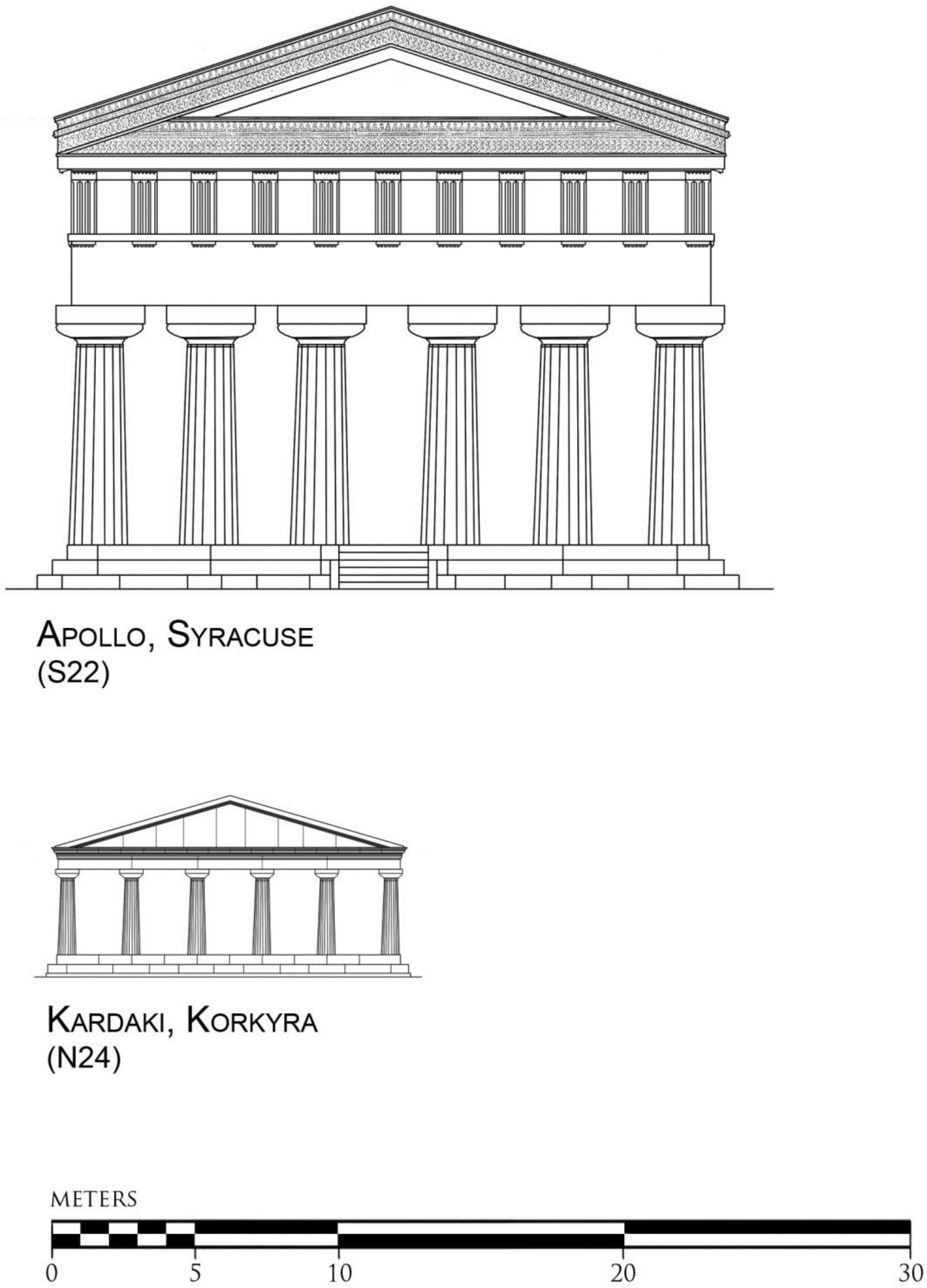


Figure 64 Elevations of the Temple of Apollo at Syracuse (S22) and the Kardaki temple at Korkyra (N24; *After* Cultrera 1951: 827; Dinsmoor Jr. 1973: 168).

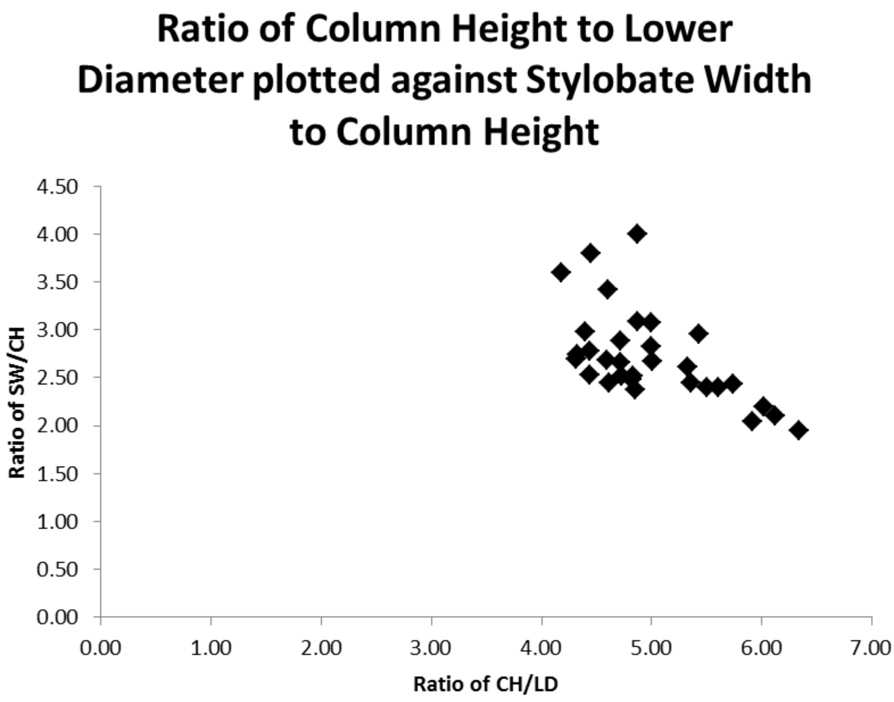


Figure 65 Scatter graph showing the ratio of column height to lower diameter plotted against the ratio of stylobate width to column height, demonstrating that the same shaped columns were used on temples with different sized stylobates and vice versa.

As discussed above, analysing column shapes and how they were used to create buildings with different appearances does not simply involve analysing one or two ratios. Therefore, in order to analyse the overall effect of the differences of the column dimensions on the external appearance of the temple it is necessary to compare a number of ratios together. Temples with a similar ratio of stylobate width to column height use different ratios of column height to lower diameter, creating temples with wider, more ‘flaring’ columns in the same overall space in order to create a different visual effect, with one temple utilising much more of the available space and the other having a much more ‘open’ peristyle (Figure 65). For example, the Temple of Athena at Poseidonia (I8) and the Temple of Apollo at Basssai (P4) have similar column height to stylobate width ratios of 2.37 and 2.44; however, the columns on the Temple of Athena are proportionally wider, with a ratio of column height to lower diameter of 4.85 as opposed to 5.36 on the Temple of Apollo, resulting in temples with the same height to width ratio, which utilise the space differently, with the peristyle on the Temple of Athena being relatively more cramped (Figure 66). Thus, the temples have distinct appearances, despite utilising the same ratio of stylobate width to column height, suggesting that the shape of one element does not automatically determine the shape of another (despite the fact that there is only limited space on the stylobate on which to place the columns).

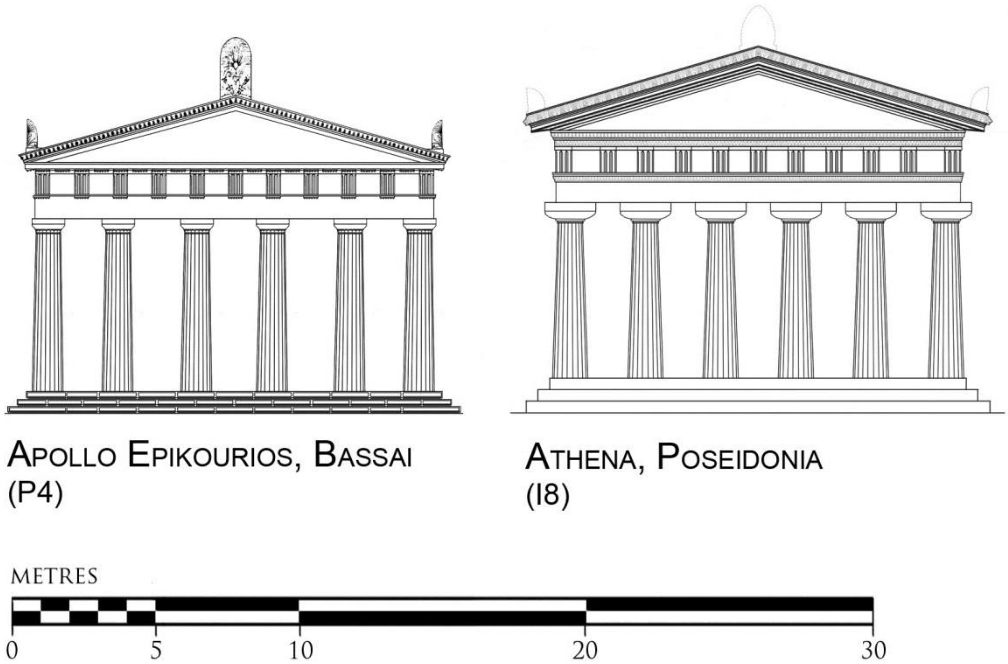


Figure 66 Elevations of the Temple of Athena at Poseidonia (I8) and the Temple of Apollo Epikourios at Bassai (P4; *After* Krauss 1959: Tafel 3; Cooper 1996c: Plate 19).

As with the plan elements, it has generally been argued that the differences in column designs were linked to a temple's date of construction (Brown 1906: 99; Miles 1989: 160; Lawrence 1996: 70). The assignment of a particular date is primarily based upon the belief that Doric columns evolved from squat to slim over a period of time (Cooper 1996d: 398; Pakkanen 1998: 72; 2004: 95; Pedley 2005: 69). For example, the 'squat' shape of the columns belonging to the Temple of Zeus at Syracuse (S24) helped Orsi (1903: 378) to date the structure to the early sixth century. Thus, it is generally expected that lower ratios of column height to lower diameter should be replaced by higher ratios over time. However, plotting the ratios of column height to lower diameter against their date groups demonstrates that the range of utilised ratios increases with time, resulting in both higher and lower ratios being used (Figure 67).[52] Thus, both taller, slimmer and shorter, squatter columns were introduced over time. For example, the ratios of date group 1 range between 4.18 on the Temple of Hera at Olympia (P18) and 4.46 on the temple at Taranto (I12); however, the ratios of date group 4 range between 4.33 on the Temple of Hera II (Poseidon) at Poseidonia (I11) and 6.02 on the second Temple of Poseidon at Sounion (A9), indicating the extent to which more column shapes were utilised, along with the continuing use of the same shapes from earlier periods. Indeed,

[52] No examples are preserved from date group 5 and only two in date group 6; thus, any results from these final two periods must be regarded with caution, given the lack of available samples.

most temples' columns ratios can find a parallel in a number of periods.[53] For example, the temple at Taranto (I12), placed in date group 1 because of the column's capital (Wuilleumier 1939: 253), uses a column height to lower diameter ratio of 4.46, which could place the temple at Taranto in any of the first four date groups. Indeed, the date group 2 Temple of Hera I (Basilica) at Poseidonia (I9), the date group 3 Temple of Athena at Syracuse (S23) and the date group 4 Temple D (Hera Lacinia) at Akragas (S5) all utilise similar ratios of column height to lower diameter.

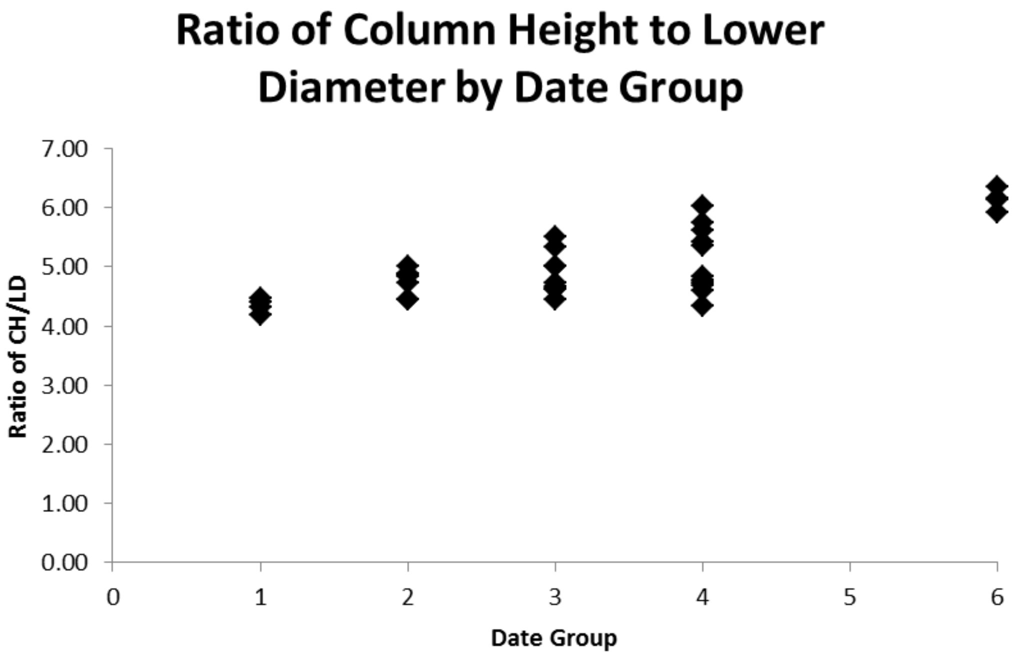


Figure 67 Ratio of column height to lower diameter organised by date group, demonstrating that the same ratios were used in each of the first four date groups and although taller ratios do become used over time, the same ratios that were found in the earlier periods continue to be used. Furthermore, the fact that ratios are not found in one period alone indicates that a temple could not be solely dated based upon the ratio of column height to lower diameter.

Furthermore, Coulton (1984) argued that the ratio of column height to axial spacing was connected to a temple's date of construction. As discussed above, the two measurements do not directly correlate, with temples constructed with the same column height using different axial spacings. In contrast to Coulton's conclusions, the graph of column height to flank spacings by date group (Figure 68) indicates that multiple ratios were used in each date group and the same ratios were used across the different periods; for example,

[53] It could be argued, based upon the evidence presented in Figure 67 that temples with a column height to lower diameter ratio above 6 belong to the fourth century, yet, it is very difficult to draw any firm conclusions based upon the two surviving samples from this period and it would be difficult to place any temples with a CH/LD ratio less than 6 to anything less than a 150 year period.

the date group 2 Temple of Hera I (Basilica) at Poseidonia (I9) utilises a column height to flank axial ratio of 2.08, whilst, the date group 4 Temple F (Concord) at Akragas (S1) was constructed with a similar ratio of 2.09. Therefore, the columns' shapes and their relations to the other architectural elements are not directly determined by the temples' dates of construction, nor are they determined by the shape of the other elements, suggesting that factors other than date affected the differences in the temples' columns designs (discussed in proceeding chapters).

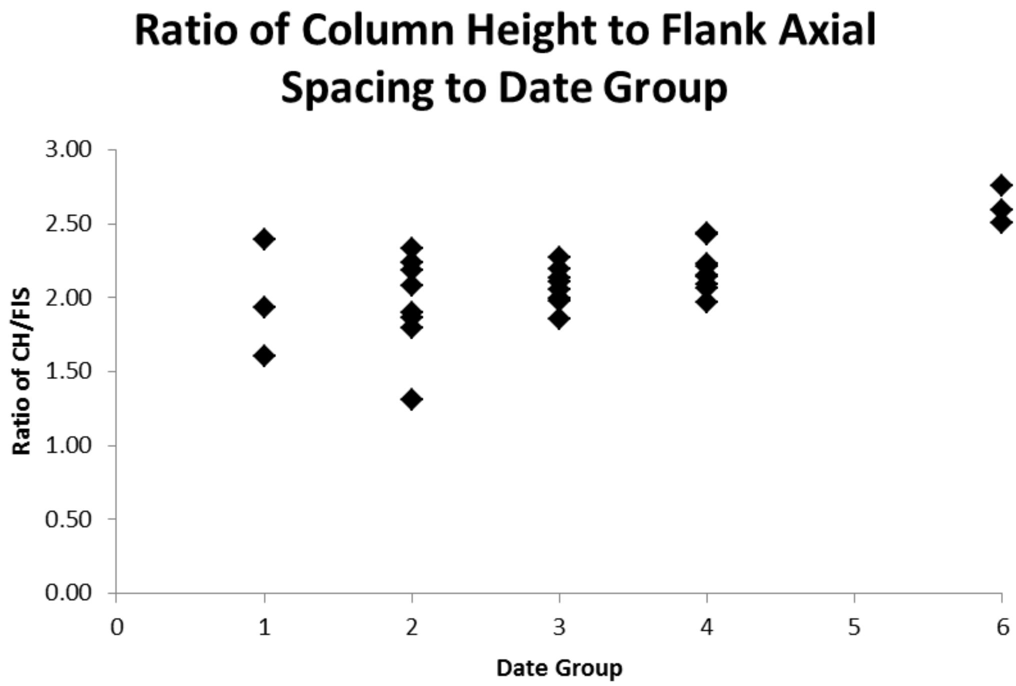


Figure 68 The ratio of column height to flank axial spacing against date group, demonstrating that a wide range of ratios were used in each date group and the same ratios were used in multiple periods. The ratio of column height to façade axial spacing also indicates the same trend with a wide range of ratios being used in each date group and the same ratios in multiple periods.

Elevation: Capitals

The shape of the capitals of the peristyle columns vary from building to building and, more than any other element of the Doric peripteral temple, the shape of the capital has been widely considered to be indicative of date. Traditionally, it is assumed that the relationship between the echinus and the abacus was subject to "experimentation and change over time" (Miles 1989: 160). For example, it is argued that the height of the echinus in relation to the abacus diminished with time (Johnson 1936: 48) and the capitals became less 'flaring', with the earlier capitals having a significantly wider abacus than those of later periods (Cooper 1996d: 398; Lawrence 1996: 68; Nakasēs 2004: 281).[54]

[54] Along with the width of the abacus, it is generally argued that the shape of the echinus changed; for example, Pedley (1990: 87) uses the echinus profile as an indicator of the date of the Temple of

The belief that the capital shapes changed at a constant linear rate meant that very accurate dates have been assigned to temples based upon the shape of the capitals (Pedley 1993: 155). For example, the capital profile for the Temple of Asklepios at Epidauros (P9) provides a date for the temple in the first third of the fourth century (Roux 1961: 93), the capital from Kaulonia (I2) helps to date the temple architecture to the period 430 - 420 (Mertens 1984: 125; Barello 1995: 91) and the shapes of the capitals found at Orchomenos date the temple to 530 (Østby 2005: 498; Figure 69). However, as discussed in Chapter 2, Coulton's (1979) study of capital shapes demonstrated that instead of a smooth, linear evolution over time, Doric capital shapes fall into a series of discrete style groups. The distinct changes happened periodically, but, there were marked regional variations in the adoption of a new style. Coulton's (1979) findings have been generally accepted amongst temple scholars (Pfaff 2003a). Indeed, Pakkanen's (1998: 35, 38-39) study of the capitals from the fourth-century Temple of Athena Alea at Tegea (P6) has further concluded that there are no linear trends in the development of capital proportions in the fourth century.

To this end, this section analyses the capital data gathered in this study, by grouping capitals with similar designs into 'Capital Groups'. Unlike the other areas of the temple designs that are analysed using a number of separate ratios, the capitals have been formed into groups due to their rather more complicated shape, as well as the tradition of analysing capitals in this way. Thus, this study builds upon the work of Coulton, whose work had to rely upon a number of presumptions, which ultimately meant that the capitals were primarily grouped based upon observation before their relative cohesion could be analysed, a problem that modern computer techniques can circumvent (See Appendix VI).

Hera II (Poseidon) at Poseidonia (I11) and Dinsmoor (1950: 90) utilises a similar technique for the capitals of the Temple of Athena Polias on the Akropolis (A3). However, it is generally considered that the best way to analyse the shape of the capitals is to compare the ratios between their various measurements rather than a visual comparison (Coulton 1979: 82). Indeed, Childs (1994: 2) has argued that the published drawings of capitals' echini shapes are not so precise that "one can draw absolute conclusions from them" and it is difficult to translate them into a relative series of absolute dates.

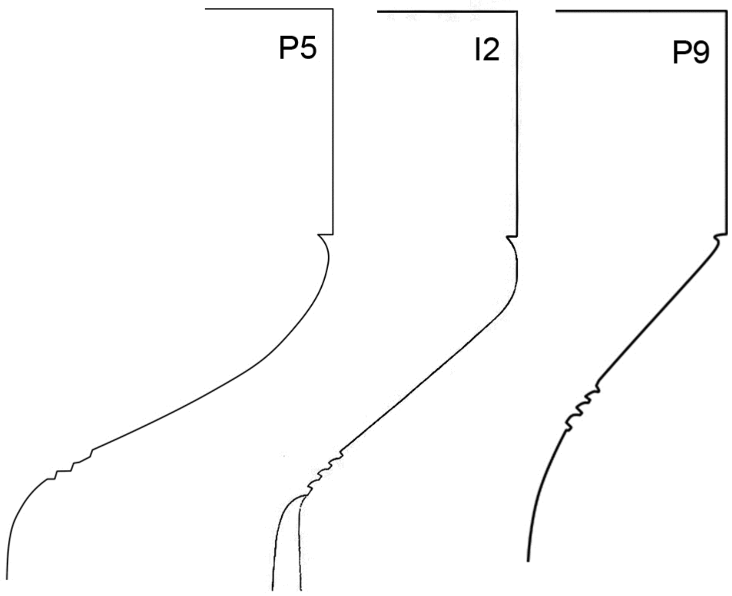


Figure 69 Examples of capitals used to date temple architecture. The above capitals are from: the date group 2 temple at Orchomenos (P5), the date group 4 temple at Kaulonia (I2) and the date group 5 Temple of Asklepios at Epidauros (P9, *After* Roux 1961: 92; Barello 1995: Tavola LII; Østby 1995b: Figure 185).

The utilised analysis techniques require that the analysed capitals preserve their upper diameters, echinus heights, abacus heights and abacus widths; thus, 63 capitals have been included in the analysis, based upon the preservation criteria outlined in Chapter 4. Using the ratios between the various measurements, geometric means and hierarchical cluster analysis, the capitals have been put into 16 groups. Naturally, groups based upon capital designs could be divided endlessly until each capital forms its own group, as it is extremely rare that two capitals are exactly the same (even on the same building; see Chapter 2); however, hierarchical cluster analysis is used to place the capitals into groups of cohesive designs that utilise distinct underlying design rules from the capitals of the other groups.

Geometric means analysis utilises all the capitals' measurements to provide a series of figures that relate to the relative shape of each capital, thereby allowing the capital shapes to be analysed and compared, regardless of any size differences. A hierarchical cluster analysis was then completed using the results of the geometric analysis in order to group each temple's capital with those of a similar shape. Hierarchical cluster analysis attempts to build a hierarchy of clusters, through the pairing of 'similar' observations and, subsequently, pairs of clusters are merged as one moves up the hierarchy. In this way, the capitals are placed into groups of capitals with similar shapes. In order to clarify these results, the same process is then completed utilising the ratios of abacus height to upper diameter, abacus width to upper diameter and echinus height to upper diameter instead of the capitals' geometric means. The two results are then cross referenced in order to identify which groups could be combined or sub-divided in order to achieve greater accuracy.

The process resulted in the creation of 16 groups (Table 10), eight of which appear to be particularly discrete (E, F, H, I, J, K, L, M),[55] in that they are assigned to the same groups by both methods of analysis and appear to be particularly cohesive when compared visually (Figures 71-76). The recognized groups appear to correlate well with similarities in capital designs that have been identified in previous studies. For example, Capital Group H (CGH) contains the capital from the temple on Agios Elias (P3) and the capital from the sixth-century Temple of Apollo at Delphi (N16), which were identified by Østby (2000) as being very alike in shape. Østby (1980: 199) also suggested that the capitals belonging to the Temple of Athena at Karthaia (A16), Aphaia on Aigina (A14) and Athena at Delphi (N17) also shared the same underlying design as the sixth-century Temple of Apollo at Delphi, all of which are also in CGH. Likewise, CGJ contains the capitals from the Temple of Apollo at Corinth (P7) and the Temple of Hera II (Poseidon) at Poseidonia (I11), which Stillwell (1932: 121) noted as being very similar. Furthermore, when the groups are compared with Coulton's groups, there is significant overlap between the groups, particularly with relation to Coulton's groups 4 and 5 (CGH and CGK) and groups 6 and 8 (CGE and CGF). Thus, the identified groups correlate well with the previously noted likenesses that were primarily based upon visually observed similarities in the capitals designs.

Table 10: Capital Groups

Capital Group	Cat No.	Name	Location	Date Group	AbH/UD	AbW/UD	EH/UD
CGA	P5a	Unknown	Orchomenos	2	0.31	1.91	0.30
	S17	Temple D	Selinous	3	0.29	1.92	0.27
	S19	Temple F	Selinous	3	0.27	1.94	0.24
CGB	O11	Zeus	Cyrene	3	0.30	1.86	0.38
CGC	O1	Athena	Assos	2	0.34	2.03	0.34
	S20	Temple G	Selinous	3	0.29	2.04	0.30
CGD	O1c	Athena	Assos	2	0.37	2.02	0.27
	I9	Hera I (Basilica)	Poseidonia	2	0.44	2.04	0.29
	I10	Heraion	Foce del Sele	2	0.41	2.01	0.32
CGE	P4	Apollo Epikourios	Bassai	4	0.21	1.32	0.17
	P15	Demeter	Lepreon	5	0.22	1.31	0.18
	P2	Hera	Argive Heraion	4	0.23	1.34	0.17

55 Groups B, G and N contain only one capital each.

Table 10: Capital Groups							
Capital Group	Cat No.	Name	Location	Date Group	AbH/UD	AbW/UD	EH/UD
	A8	Parthenon	Athens	4	0.23	1.33	0.19
	A11	Nemesis	Rhamnous	4	0.24	1.37	0.18
CGF	O13	Unknown	Apollonia	6	0.20	1.41	0.16
	N15	Fourth c. Apollo	Delphi	6	0.22	1.38	0.13
	P17	Zeus	Nemea	6	0.19	1.35	0.13
	P19	Metroon	Olympia	5	0.22	1.37	0.15
	N13	Zeus	Stratos	6	0.20	1.35	0.13
	P6	Athena Alea	Tegea	6	0.20	1.34	0.13
	P9	Asklepios	Epidauros	5	0.20	1.34	0.14
CGG	N9	Zeus Ammon	Aphytis (Kallithea)	6	0.17	1.14	0.13
CGH	S7	Temple L	Akragas	4	0.31	1.67	0.29
	A16	Athena	Karthaia (Keos)	2	0.29	1.67	0.33
	I3	Hera	Kroton	3	0.32	1.68	0.29
	I11a	Hera II (Poseidon)	Poseidonia	4	0.29	1.72	0.28
	P16	Athena	Makiston	3	0.28	1.66	0.32
	P3	Unknown	Agios Elias	3	0.28	1.68	0.31
	A14	Aphaia	Aigina	3	0.26	1.66	0.31
	P1	Athena	Alipheira	3	0.28	1.69	0.29
	N17	Athena	Delphi	2	0.27	1.65	0.32
	N16	Sixth c. Apollo	Delphi	2	0.28	1.66	0.30
	S23	Athena	Syracuse	3	0.30	1.66	0.30
CGI	O1b	Athena	Assos	2	0.36	1.98	0.31
	S22	Apollo	Syracuse	1	0.40	1.91	0.31
	I5	Hera	Tavole Palatine	2	0.33	1.90	0.29
CGJ	I12	Unknown	Taranto	1	0.33	1.74	0.27
	N23	Artemis	Korkyra	1	0.32	1.75	0.23
	P5	Unknown	Orchomenos	2	0.28	1.81	0.29
	N24	Kardaki	Korkyra	2	0.32	1.79	0.32
	P7	Apollo	Corinth	1	0.25	1.77	0.29
	S4	Temple A (Herakles)	Akragas	2	0.31	1.83	0.31
	S20a	Temple G	Selinous	3	0.26	1.75	0.30
	I11	Hera II (Poseidon)	Poseidonia	4	0.33	1.74	0.29
CGK	I2	Unknown	Kaulonia	4	0.29	1.58	0.28
	S3	Temple I (Dioskouroi)	Akragas	4	0.28	1.56	0.26
	O8	Apollo	Delos	3	0.28	1.55	0.25
	S8	Zeus Olympios (Temple B)	Akragas	3	0.28	1.55	0.33
	S1	Temple F (Concord)	Akragas	4	0.28	1.57	0.26
	S5	Temple D (Hera Lacinia)	Akragas	4	0.31	1.61	0.27

Table 10: Capital Groups							
Capital Group	**Cat No.**	**Name**	**Location**	**Date Group**	**AbH/UD**	**AbW/UD**	**EH/UD**
	S18	Temple E	Selinous	3	0.31	1.57	0.25
CGL	S13	Unknown	Segesta	4	0.25	1.49	0.21
	A6	Hephaisteion	Athens	4	0.25	1.44	0.19
	A9	Second Temple of Poseidon	Sounion	4	0.25	1.42	0.20
CGM	P23	Athena	Vigla	2	0.23	1.78	0.22
	P18	Hera	Olympia	1	0.21	1.72	0.25
	S16	Temple C	Selinous	2	0.26	1.68	0.22
CGN	I6	Temple Aii (Apollo Lykeios)	Metaponto	2	0.42	1.75	0.28
CGO	P18d	Hera	Olympia	1	0.20	1.56	0.23
	P20	Zeus	Olympia	3	0.25	1.58	0.25
	S15	Temple A	Selinous	3	0.26	1.60	0.26
CGP	P5b	Unknown	Orchomenos	2	0.32	2.17	0.34
	I8	Athena	Poseidonia	2	0.34	2.10	0.35

Table 10 Column capitals placed into groups based on the results of a hierarchical cluster analysis. The abbreviations used above include: the abacus height (AbH), the upper diameter (UD), the abacus width (AbW) and the echinus height (EH).

Capital group H (CGH) is the most populous group, containing capitals from 11 temples (Figure 73). The second most populous group, CGJ contains 8 capitals, which differ from the capitals of CGH primarily in their use of significantly wider abaci, resulting in capitals with a more ‘flaring’ echinus (Figure 70; Figure 74). CGE, CGF and CGK all contain five, seven, and seven temples respectively (Figure 72, Figure 74). CGE and CGF both utilise similar width abaci and have abaci that are taller than their echini, but, the echini of CGF are smaller than those on CGE (Figure 70). The capitals of CGK have wider abaci than those of CGE and CGF (though not as wide as CGJ) and their ratios of abacus height to upper diameter and echinus height to upper diameter are much higher, resulting in relatively taller echini and abaci than the capitals of CGE and CGF (Figure 70).

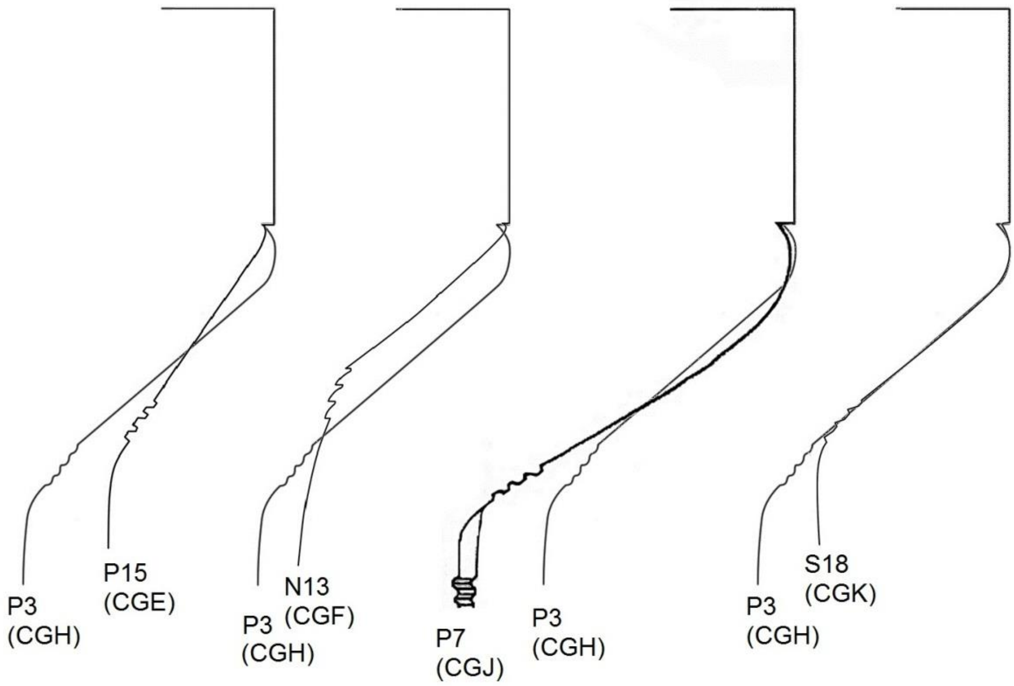


Figure 70 Capitals from CGE, CGF, CGJ and CGK all compared with the same capital from CGH (*After* Stillwell 1932: Plate VII; Knell 1983b: 124; Mertens 1984: Beilage 31; Østby 1995b: Figure 196).

The less discrete capital groups (A, C, D, O and P, Figure 71, Figure 76), combined, contain only 13 capitals. The fact that they were placed in different groups in each analysis simply indicates that the groups are more closely related to one another than the above capitals, not that the groups are composed of random capitals. For example, the capitals of CGA, CGC and CGD all have very wide abaci (even compared to the capitals of CGJ), which means that these are clearly separate to the other capitals, however, the fact that they all utilise such similar widths suggests that their designs are related. The major differences between the groups are the heights of the various elements; for example, the capitals of CGD all have significantly taller abaci than echini, whilst those of CGC have similar (or taller) echini than abaci (Figure 71). Thus, all the groups demonstrate a particular level of cohesion, however, in the case of the 13 capitals of A, C, D, O and P the groups are not as discrete as the 47 capitals of E, F, H, I, J, K, L, M. Therefore, similar to the conclusions of Coulton (1979), it is argued that the employed Doric capitals' designs form cohesive, discrete groups, rather than utilising a single standard shape, which evolved at a smooth, consistent, Panhellenic rate.

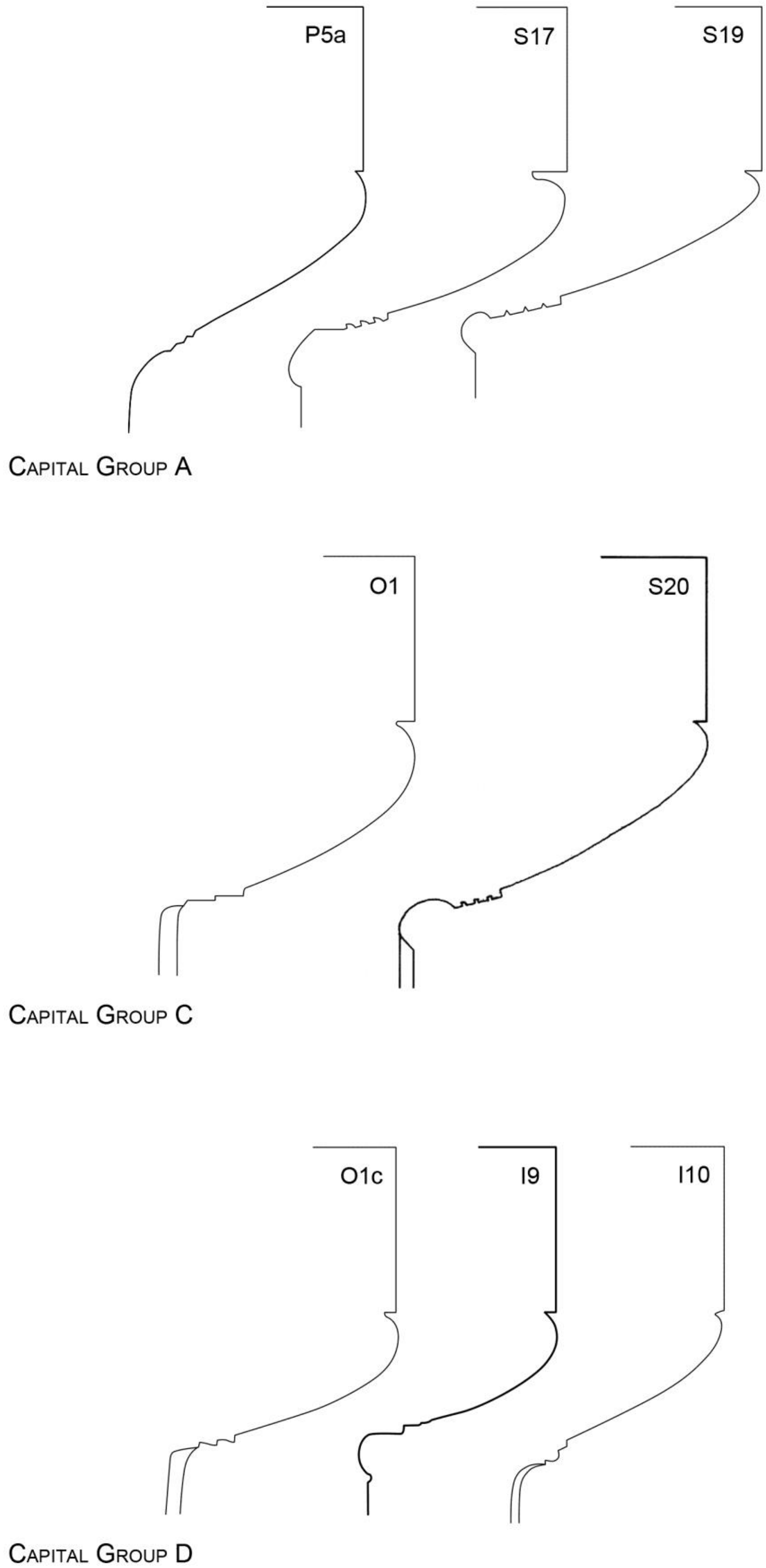


Figure 71 Capitals of groups CGA, CGC and CGD scaled to the same abacus height (*After* Koldewey and Puchstein 1899: Abb. 76, Abb. 84; Krauss 1951: Tafel XXII; Mertens 1973: Tafel L; Coulton 1977: 27; Wescoat 1987: 559, 562; Østby 1995b: Figure 185). No drawing of the capital shape from the Temple of Zeus at Cyrene (O11) was available for inclusion within this figure.

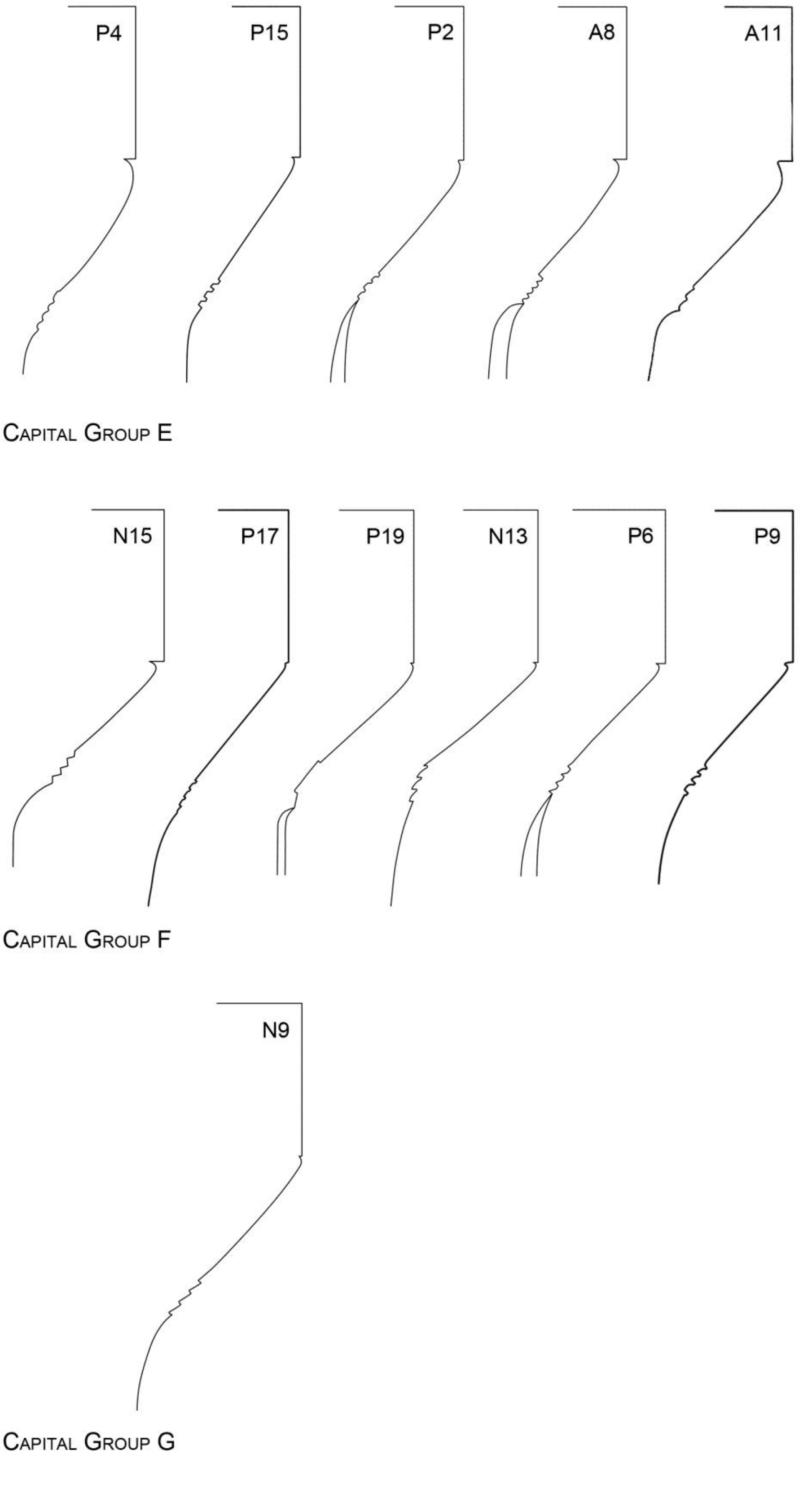
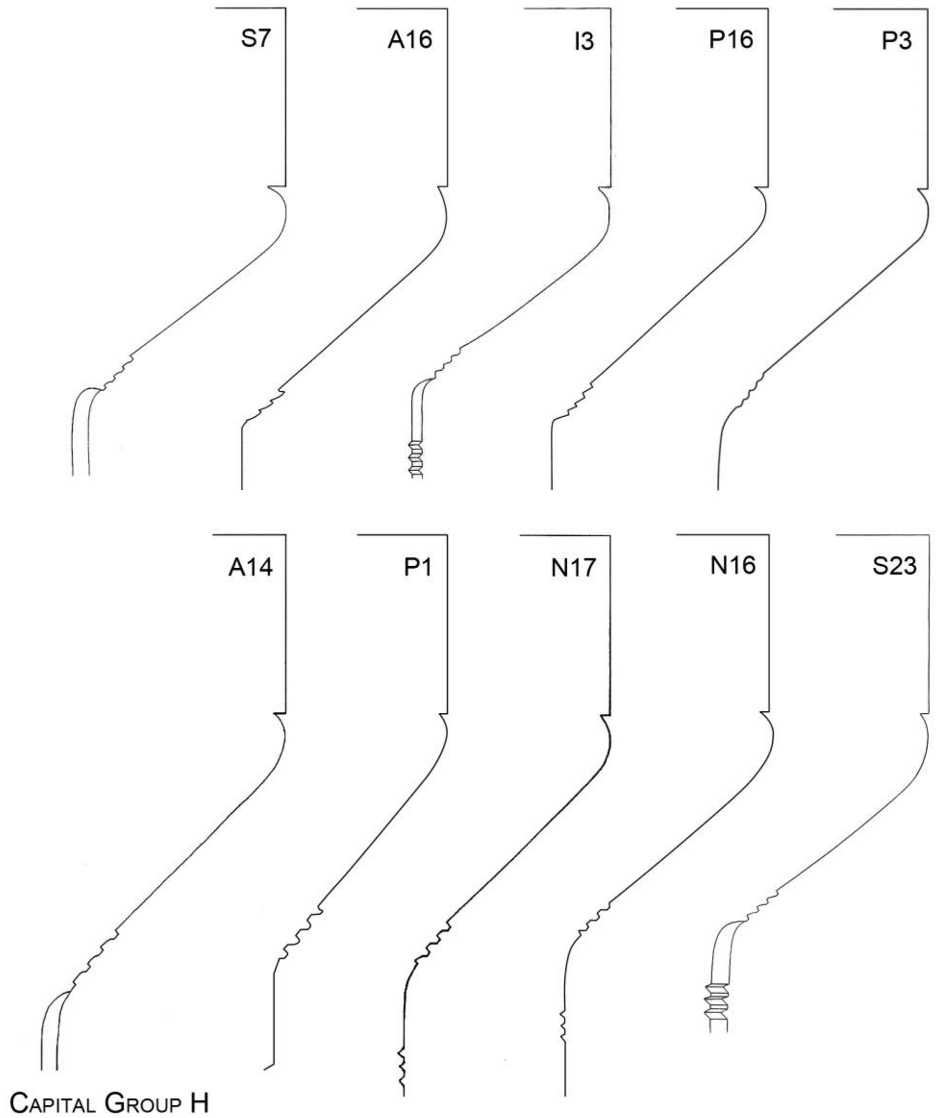
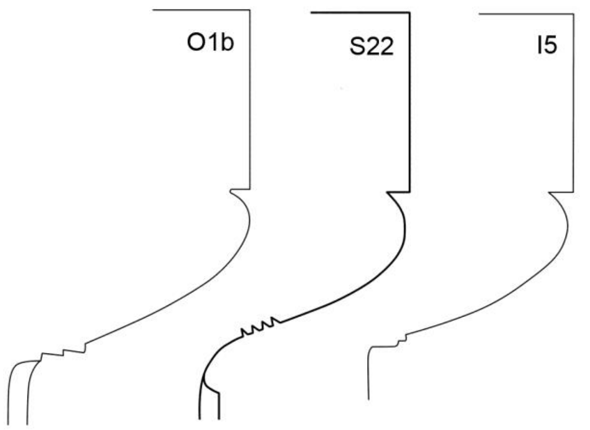


Figure 72 Capitals of groups CGE, CGF and CGG scaled to the same abacus height (*After* Adler *et al.* 1892: Tafel XXVI; Dugas *et al.* 1924: Plate XXXVII; Courby 1927: Plate V; Roux 1961: 92; Hill 1966: Figure 1; Juri 1976: Figure 9; Knell 1983b: 124; Mertens 1984: Beilage 31; Miles 1989: Figure 10; Cooper 1996c: Plate 40; Pfaff 2003a: Figure 59). No drawing of the capital shape from the temple at Apollonia (O13) was available for inclusion within this figure.



CAPITAL GROUP H



CAPITAL GROUP I

Figure 73 Capitals of groups CGH and CGI scaled to the same abacus height (*After* Demangel 1923: 33; Cultrera 1951: 820; Mertens 1973: Tafel L; Østby 1980: 198; 1995: Figure 196, Figure 206; Mertens 1984: Beilage 31; Wescoat 1987: 560; Nakasēs 2004: Plate 4).

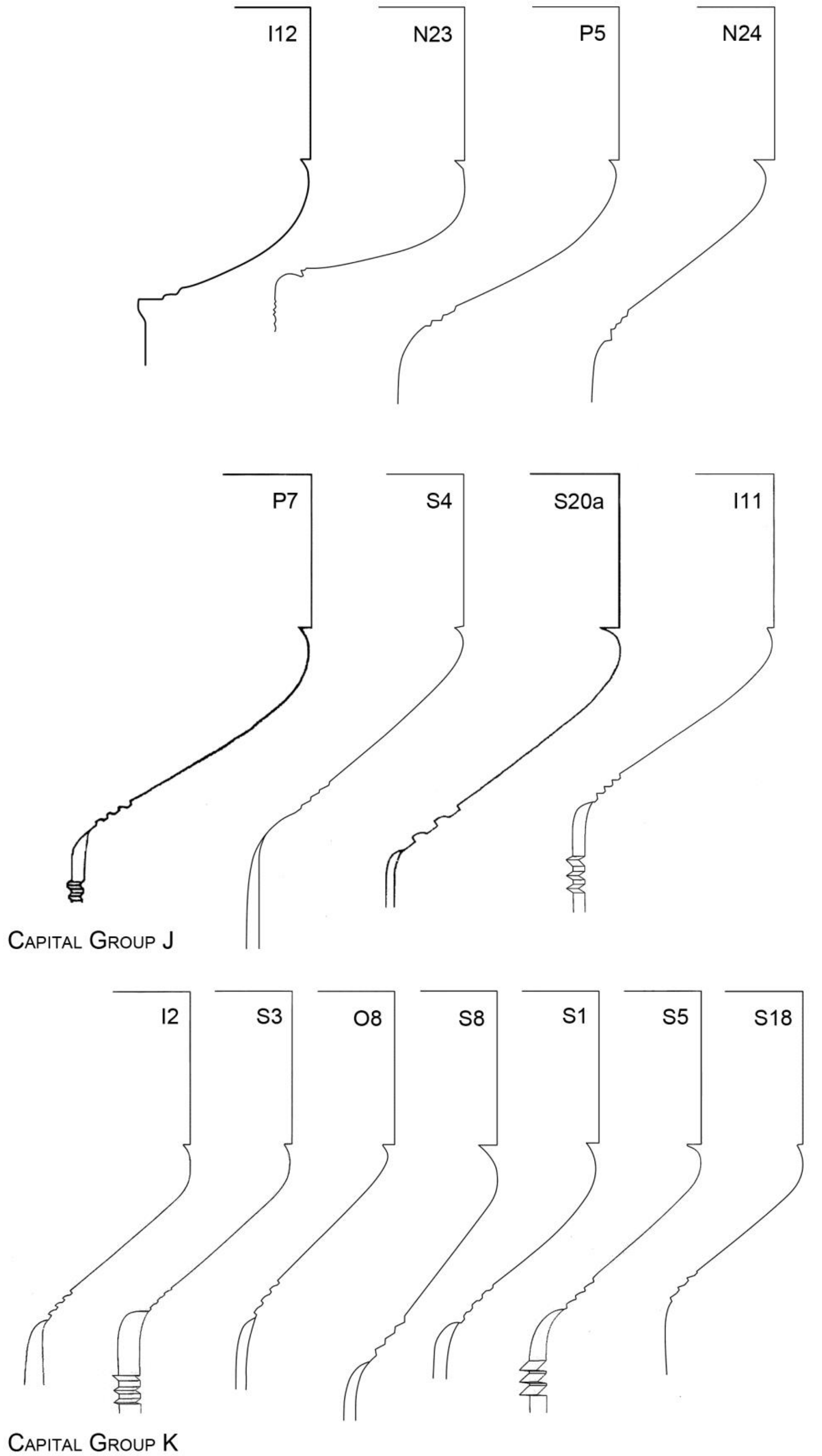
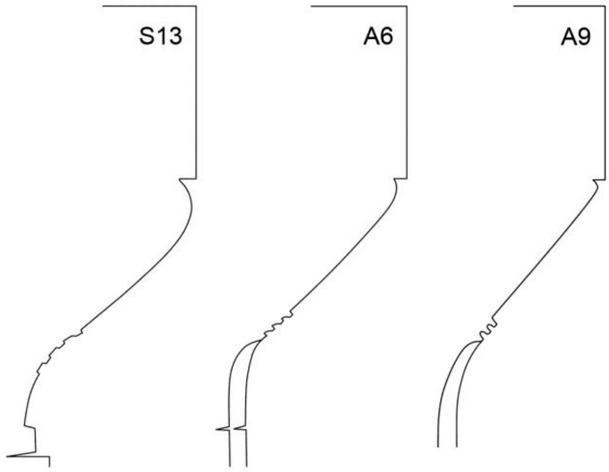
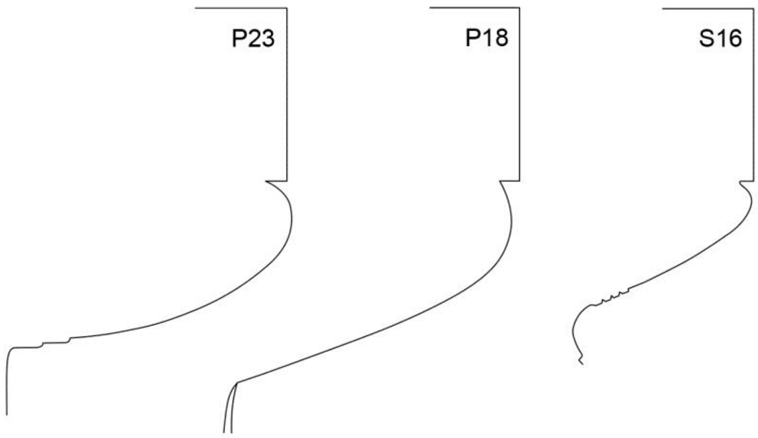


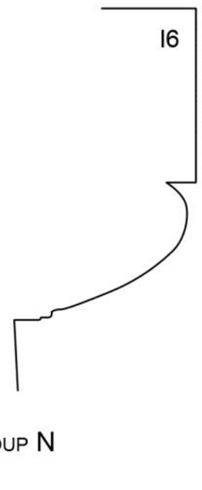
Figure 74 Capitals of groups CGJ and CGK scaled to the same abacus height (*After* Koldewey and Puchstein 1899: Abb. 148; Courby 1931: 21; Stillwell 1932: Plate VII; Schlief *et al.* 1940: Abb. 14; Dinsmoor Jr. 1973: 170; Mertens 1973: Tafel L; Coulton 1977: 27; 1984: Beilage 31; Barello 1995: Tafel LII; Østby 1995b: Figure 184).



Capital Group L



Capital Group M



Capital Group N

Figure 75 Capitals of capital groups CGL, CGM and CGN scaled to the same abacus height (*After* Doerpfeld 1884: Tafel XVI; Adler *et al.* 1892: XXII; Koldewey and Puchstein 1899: Abb. 76; Mertens 1973: Tafel L; 1984: Beilage 20, 31; Østby 1995b: Figure 193).

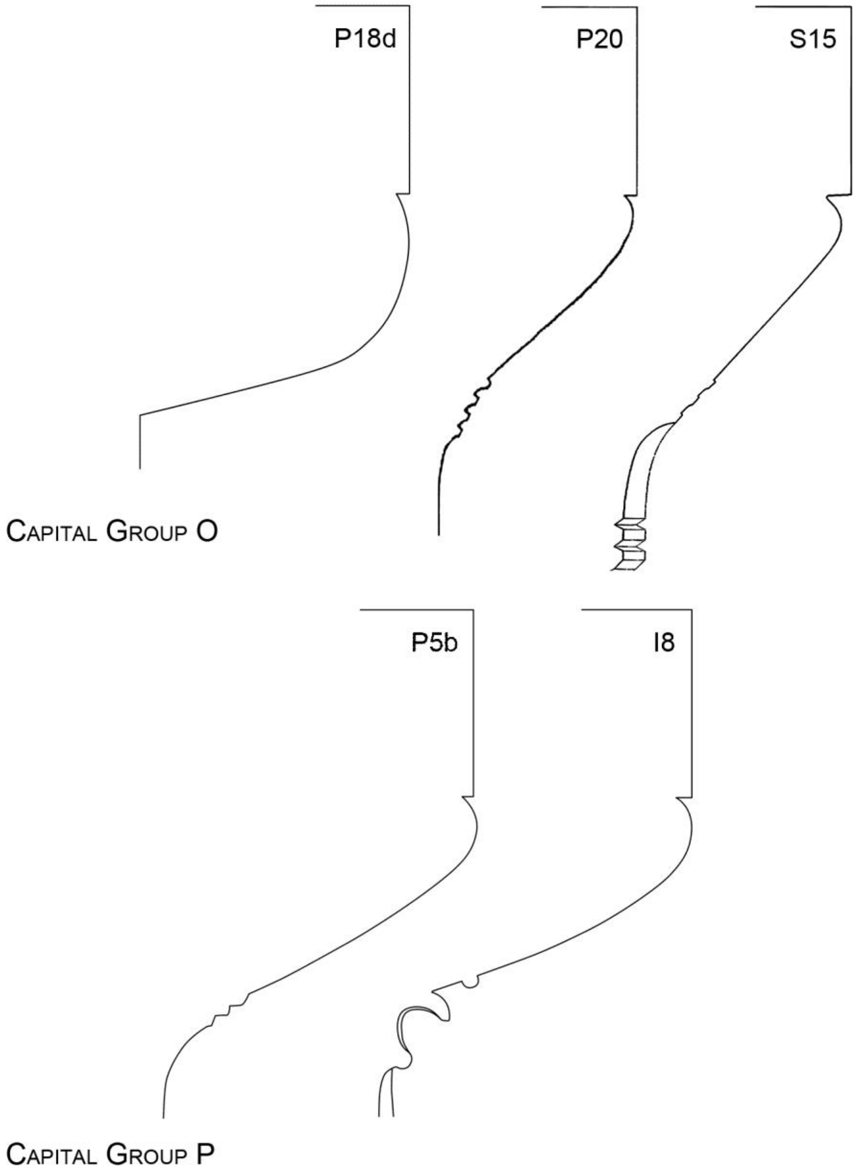


Figure 76 Capitals of groups CGO and CGP scaled to the same abacus height (*After* Adler *et al.* 1892: XXII; Krauss 1959: Tafel 18; Mertens 1984: Beilage 31; Østby 1995b: Figure 185).

As discussed above, capital shapes are traditionally used to date temples, based upon the assumption of a smooth linear evolution of their ratios. However, the above analysis demonstrated that the capitals' shapes can be formed into discrete groups, rather than a single flowing line. Further to this, it is argued that these groups are not connected with particular date groups, which suggests that, contrary to the requirement of using capitals to date temples, multiple capital shapes were used in each period and capital shapes were used for sustained periods of time (Figure 77). For example, CGJ was used for a period of 200 years, with temples ranging in date from the date group 1 Temple of Artemis at Korkyra (N23) to the date group 4 Temple of Hera II (Poseidon) at Poseidonia (I11). Likewise, single date groups contained temples with multiple different capital designs;

for example, date group 4 contains capitals from five different capital groups, such as the CGE Temple of Nemesis at Rhamnous (A11) and the CGK temple at Kaulonia (I2). Therefore, as with the other elements of the temples' design, the capitals' shapes are not directly connected with their date, rather, multiple designs were used at the same time and the same designs were used for protracted periods of time. Indeed, the fact that the designs appear to fall into a small number of overall shape groups suggests that the individual capital shapes are most likely to be interpretations of a number of widely available designs (see the discussion of 'architectural treatises' in Chapter 2, discussed further in Chapter 7).

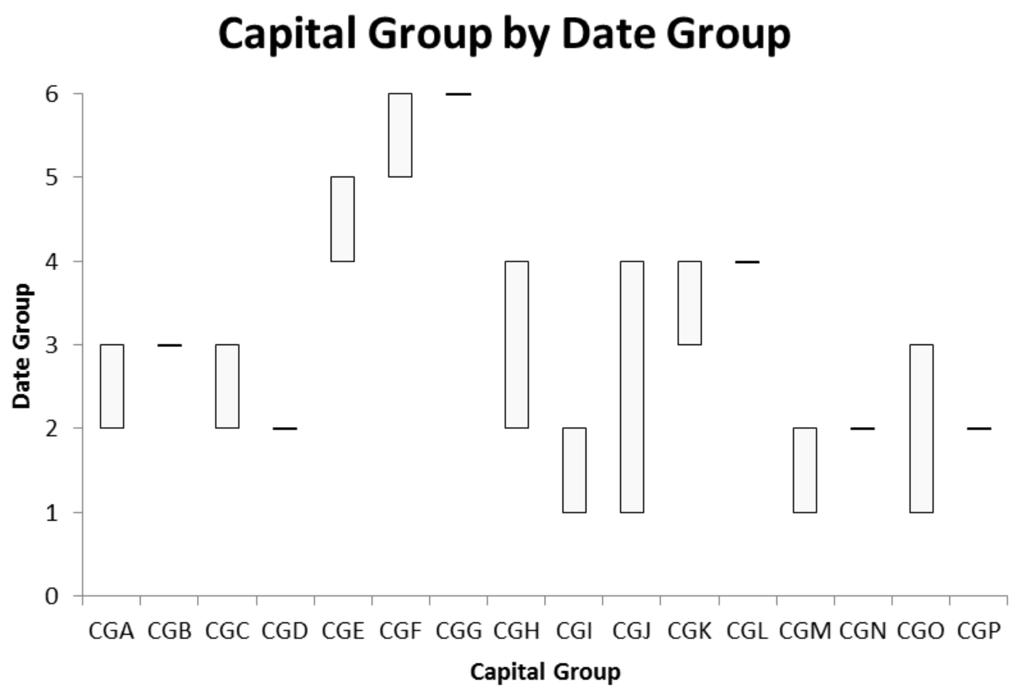


Figure 77 Bar graph showing the amount of time that each capital group was in use, demonstrating that most capital groups were utilised for multiple periods and that most periods contained multiple capital groups. For example, date group 4 contains capitals from five different capital groups.

Elevation: Entablature

The final elevation elements to be discussed are the various measurements that formed the Doric entablature. The entablature measurements that have been recorded in the data-set include the architrave height (45 examples), frieze height (46), metope (46) and triglyph widths (58). As with the other elements of the temples' designs, the design of the entablature is not strictly limited by the shapes of other areas of the building, nor its date of construction. Thus, diverse entablature ratios were used, producing temples with a variety of different entablature designs regardless of the temples' overall size. For example, Temple A (Herakles) at Akragas (S4) has a stylobate width of 25.33m with an entablature height of 3.115m (ratio of stylobate width to entablature height: 8.13), whereas Temple E at Selinous (S18) has a similar stylobate width of 25.308m and a taller entablature height of 3.501m (SW/EntH ratio: 7.23). Likewise, the height of the entablature to the height of the columns can be markedly different (Figure 79). For example, Temple C at Selinous (S16) has an entablature to column height ratio of 2.67, resulting in an entablature that was almost a third as tall as the columns, whereas the Temple of Zeus at Nemea (P17) has a ratio of 4.74, the columns being almost 5 times as tall as the entablature; consequently the Temple of Zeus at Nemea had a relatively ‘light’ entablature, in relation to the column height (Figure 78).

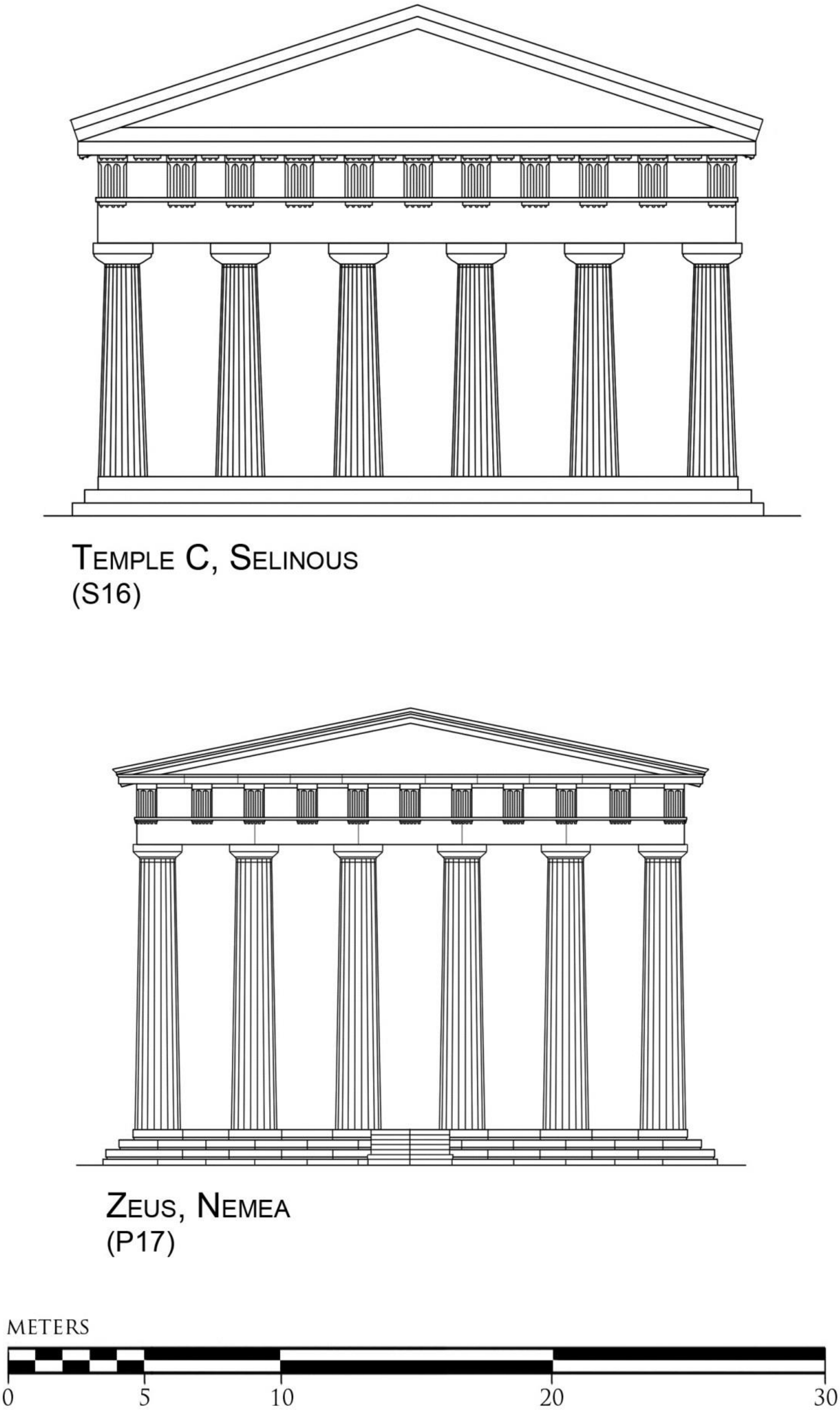


Figure 78 Elevations of Temple C at Selinous (S16) and the Temple of Zeus at Nemea (P17; *After* Miller 1990: 133; Prokkola 2011: 154).

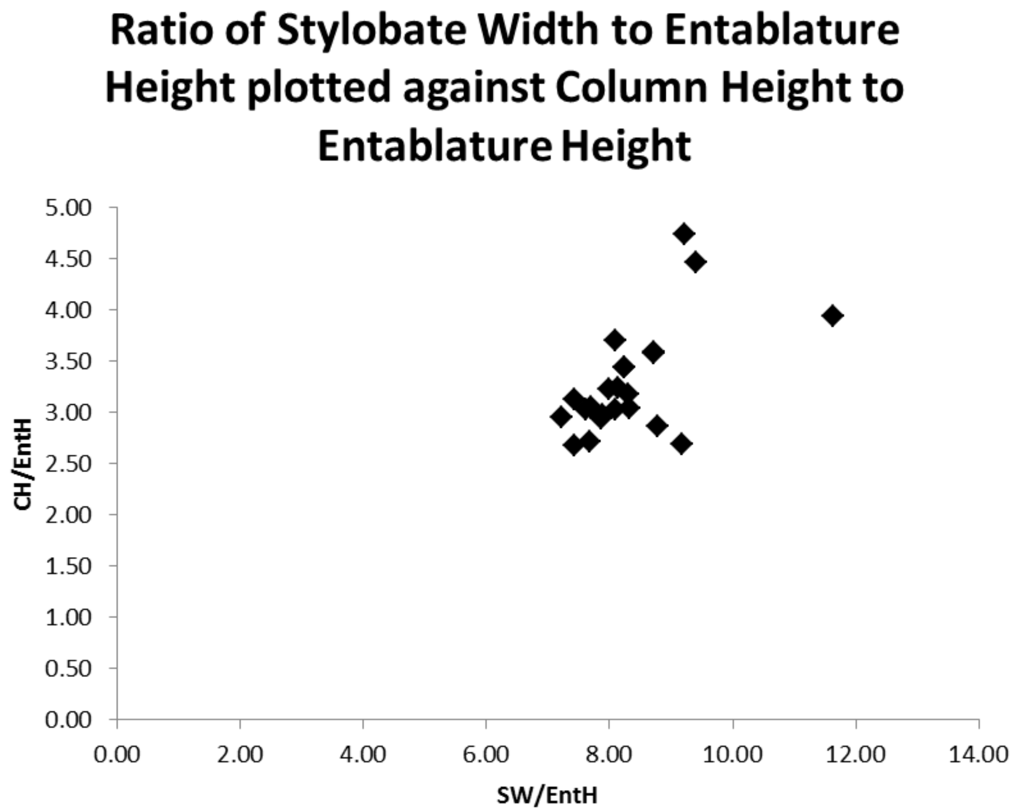


Figure 79 The ratio of stylobate width to entablature height plotted against the ratio of column height to entablature height. When read from left to right, the temples have progressively smaller entablatures in relation to the temples' width. When read from bottom to top, the temples at the bottom have 'heavier' entablatures with entablatures that are almost half the height of the columns, up to the 'lighter' entablatures at the top of the graph that are only a fifth as tall as their respective columns. The graph demonstrates that temples with the same ratio of SW/EntH utilise different ratios of CH/EntH and vice versa.

The entablature's appearance could further be altered by varying the relationship between the individual entablature elements. For example, a number of temples had friezes that were taller than the architrave and vice versa; the Temple of Hera at Foce del Sele (I10) has a frieze height of 0.864m and an architrave height of 1.031m (ratio of architrave to frieze height: 1.193), whereas the Temple of Zeus at Nemea (P17) had a frieze height of 1.1505m and an architrave height of 1.03m (ArH/FrH: 0.895). The result is two temples with the same size architrave, but different frieze heights (Figure 80).

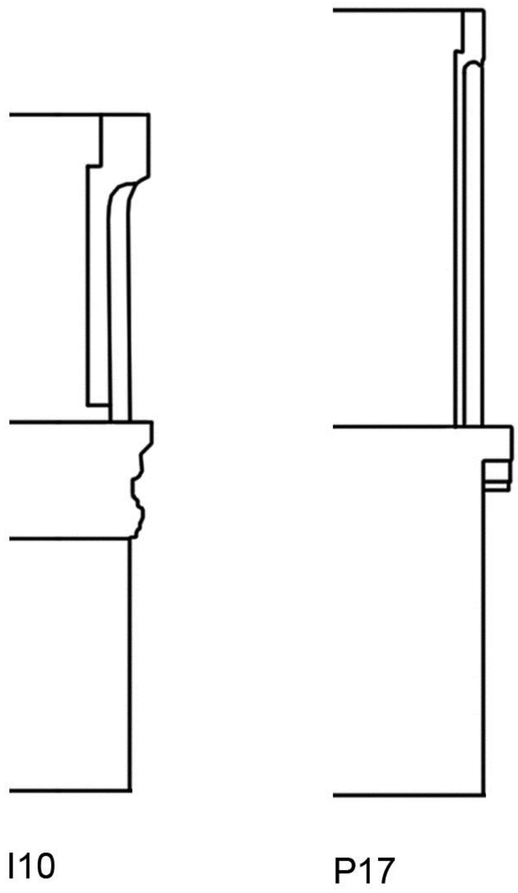


Figure 80 Entablature cross sections of the Temple of Hera at Foce del Sele (I10) and the Temple of Zeus at Nemea (P17) scaled to the same architrave height (*After* Krauss 1951: Tafel XXX; Hill 1966: Plate XIII).

Furthermore, the entablature's appearance could be altered by changing the shape of the triglyph and metope elements of the frieze. Due to the nature of the Doric order, with one triglyph per axial spacing,[56] the width of a single triglyph and metope unit is invariably linked to the number of columns and the length of the stylobate. However, the shapes of the various frieze elements and their relationship to one another are subject to significant alteration, some buildings utilising relatively wide metopes and wide triglyphs in relation to height; whilst others utilise relatively narrow metopes and wide triglyphs, amongst the other possible variations. For example, the Temple of Apollo at Cyrene (O12) had narrow metopes (metope width/frieze height: 0.72) and narrow triglyphs (triglyph width/frieze height: 0.55); whereas, the Temple of Athena at Prasidaki (P21) had squarer metopes (metope width/frieze height: 0.98) and triglyphs (triglyph width/frieze height: 0.75).

[56] This is the case on most temples; the only exceptions in this study are the Temple of Apollo at Sikyon (P8), which had two triglyphs per axial spacing and the Temple of Apollo at Syracuse (S22) whose triglyphs were not aligned with the columns (see Chapter 4).

As such, taking all the ratios into account, temples were built with very different entablatures. A comparison of the entablatures from Temple E at Selinous (S18) and the Temple of Athena Alea at Tegea (P6) demonstrates how different they could be. In comparison to the entablature of the Temple of Athena Alea, Temple E's entablature is very 'heavy', having a column height to entablature height ratio of 2.91 compared with 4.61 at Tegea. Temple E has a taller architrave than frieze, whilst the opposite is true for the Temple of Athena Alea. Furthermore, the metopes and triglyphs belonging to Temple E are relatively narrow and tall and in comparison the metopes from the Temple of Athena Alea are almost square and its triglyphs are wide and short in shape (Figure 81). Therefore, through the use of different sized entablatures and by altering the relationship between the various elements, the entablature was also used to create buildings with diverse and distinct external designs.

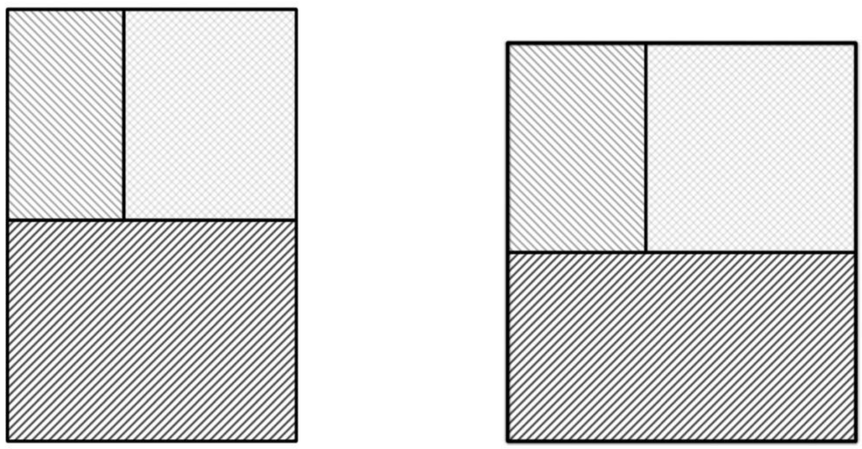


Figure 81 The entablatures belonging to Temple E at Selinous (left) and the Temple of Athena Alea at Tegea (right); showing the relative shapes of the architrave (darkest hatch), triglyph (right slant hatch) and metope (pale cross hatch).

As with the other elements of the Doric order, it has been suggested that these design differences were connected to the dates of temple construction, particularly with relation to the ratio of architrave height to frieze height, frieze height to metope width and entablature height to column height (Plommer 1960: 134; Østby 2000: 250; Nakasēs 2004: 281; Pakkanen 2004: 95). However, as demonstrated by Figure 82 and Figure 83 there is no direct correlation between the selected entablature design and a temple's date of construction. Indeed, as with the other elements, the differences in the entablature designs are not connected to temple date or the design of the other elements. The fact that temples of different dates used the same entablature designs, whilst temples of the same date use different ones, indicates that their designs were influenced by factors other than their construction dates.

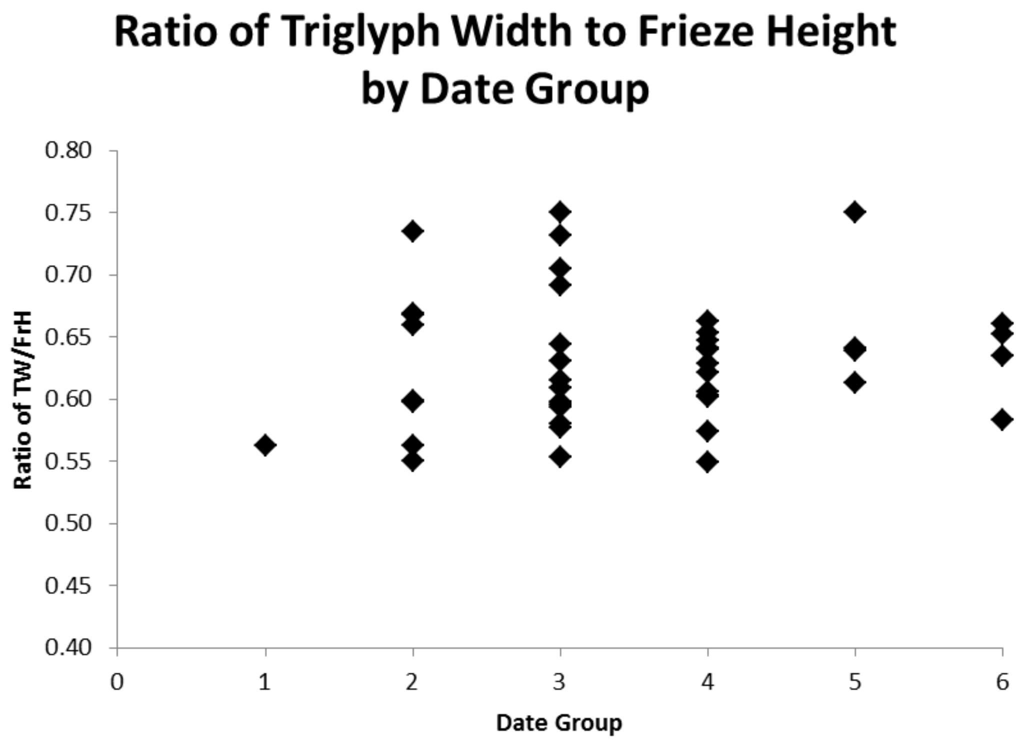


Figure 82 Graph plotting the ratios of TW/FrH by date group, demonstrating that the same ratios are used in multiple date groups. The one example from date group 1 makes it difficult to analyse trends relating to this period. A similar distribution is also found when the ratio of MW/FrH is plotted against date group.

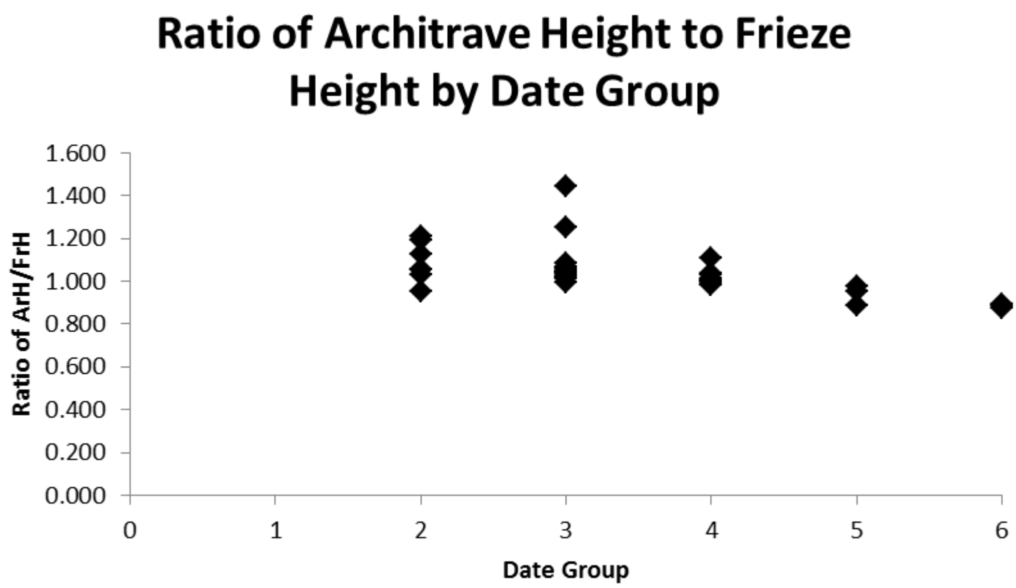


Figure 83 Graph plotting the ratios of architrave height to frieze height by date group, demonstrating that the same ratios were used over multiple date groups. Although it may appear at first glance that there is a trend towards smaller ratios in later groups, this effect is mainly influenced by the presence of two large anomalous ratios in date group 3.

Elevation: Case Studies

The disparities in the sizes and shapes of the various elements, which were largely independent of one another in terms of shape, allow for the construction of temples with very different elevation designs. Comparing the unit designs of Temple D at Selinous (S17) and the Temple of Zeus at Nemea (P17) demonstrates that when the separate elements were brought together they can produce elevations that were significantly different. For example, Temple D at Selinous had wider spaces between the columns (lower diameter/flank axial spacing: 0.37 compared to 0.43 on the Temple of Zeus), shorter columns (column height/flank axial spacing: 1.86 compared to 2.76), more 'flaring' columns (lower diameter/upper diameter: 1.40 compared to 1.25), different capital shapes (CGA compared to CGF), a 'heavier' entablature (entablature height/flank axial spacing: 0.68 compared to 0.58) and an architrave that is taller than the frieze (architrave height/frieze height: 1.06 compared to 0.90). Thus, regardless of their differences in size, their elevations utilised remarkably different designs, indicating that through the alteration of these elements' shapes different temple designs were created.

A final case study, focusing on the elevations of Temple D (Hera Lacinia) at Akragas (S5) and the Temple of Zeus at Stratos (N13), demonstrate that temples with the same size plan could use different ratios in order to create different elevation designs and appear visually distinct from one another. The Temple of Zeus at Stratos and Temple D at Akragas both have similar stylobate widths of 16.64m and 16.93m respectively. Despite their similarity in size, the Temple of Zeus uses significantly taller and slimmer columns (column height/flank axial spacing: 2.50 compared to 2.06 on Temple D at Akragas), with different shaped capitals (CGF compared to CGK). The entablature belonging to this building is significantly 'lighter' with a column height to entablature height ratio of 4.46 compared to 2.94 on Temple D. Furthermore, the separate elements of the entablature are designed differently, for example, the architrave of Temple D is taller than the frieze (architrave height/frieze height: 1.111); whereas on the Temple of Zeus, the opposite is true (architrave height/frieze height: 0.872). Therefore, despite their similarity in stylobate width, through the use of different ratios, their elevations are very different.

Conclusion

Obviously, due to the locations of the temples, often on different sides of the Greek world from one another, the above numerical comparisons would not have been possible in the ancient world. However, this exercise has demonstrated the wide range of ratios that were utilised in temple design and how the temples' ratios could be manipulated to create buildings with completely different appearances.

Furthermore, the above analysis has demonstrated that there was not a fixed connection between specific ratios and a temple's date of construction. Even in instances where multiple ratios are analysed, as with the Parthenon plan, there is no clear connection between the date group and the utilised ratios. The fact that the differences in the designs of the individual temples were not linked to the temples' dates of construction, suggests that there was no single line of design evolution. The indication that there was no single predominant trend in architectural design over time, the factor that limited Østby's (2005) Arcadia study to a single region in the sixth century, means that temple design can now be analysed on a regional scale without the differences in design being directly ascribed to the temples' dates. To this end, the next chapter analyses temple design on a regional level, demonstrating that temples in the same region were constructed with the same plan dimensions, but, with different elevation designs.

Chapter 6: Size and Regionalisation in Doric Peripteral Temple Design

> The modern temple [of Athena Alea at Tegea] is by a long way first of all temples in the Peloponnese for its size and its whole construction (Pausanias 8.45.5).

In the above quote, Pausanias stresses the size of the temple as one of its most important attributes. Size is a theme that is often overlooked in the analysis of the Panhellenic evolution argument, but it forms the focus of this chapter. The previous chapter evaluated the evidence for the Panhellenic evolution argument, in light of both recent scholarly debate and new discoveries. The analysis demonstrated that a wide range of different temple designs were used, even on buildings that utilised the same sized plans, and that, in contrast to the traditional evolution explanation, the differences in the temple designs were not directly influenced by their dates of construction.

As discussed in Chapter 2, in order to understand the differences in the temple designs, a number of recent studies have demonstrated the importance of analysing them on a regional rather than Panhellenic level (Barletta 1990; 2009a; Winter 1990; 1993; Østby 1991; 1995b; 2000; 2005; Wescoat 2012: 1-4). These studies have identified regional trends in the inclusion of additional decorative elements, such as the ramps and sculpture that were added to particular temples' designs (Winter 1990; 1993; Pfaff 2003a: 195; Bookidis 1967: 505; Marconi 2007: 217). Furthermore, it has been suggested that during the sixth century there may have existed a number of regional 'tangents' to the single Panhellenic line of proportional evolution (Østby 2000: 257; Barletta 2009a: 82; Wescoat 2012: 1-4). Studies of these tangents have demonstrated that, in these particular instances, the overall differences between the temples' designs are underlined by certain similarities between their designs. For example, Østby (1991; 1995b; 2000; 2005) identified a series of temples in archaic Arcadia that utilised similar design features to one another. However, outside of this Arcadian 'tangent,' Østby argued that the majority of temples were designed according to the Panhellenic evolution trend. Thus, due to the belief in a Panhellenic design trend that dominated design outside of the insular 'tangent' regions, studies of the regional influence upon temple design have been limited to particular regions at particular times. However, as demonstrated in the previous chapter, there is very little evidence to support the notion of a single Panhellenic design trend. To this end, this chapter analyses all the temple designs on a regional basis. The regions that were assigned to each temple, and discussed in Chapter 3, provide the framework in which to discuss the statistical analysis of temple design.[57] Although the regions are to certain extents 'artificial and heuristic', in that they have been applied based upon geographical, rather than historical and cultural, boundaries, it is, in fact, groups of temples within these regions, referred to as 'sub-regional groups' that the statistical analysis indicates were important and form the focus of the discussion.

The discussion of meaning in Chapter 2 suggested that when two temples utilised the same dimensions it could be regarded as significant. Indeed, given the enormous variation in the designs of Doric temples, when a group of temples in the same region utilise similar dimensions it further suggests that these similarities had significance. Indeed, it is more likely that poleis closer together would be most likely to compare and contrast their architecture (Nielsen 2002: 181-4; Nielsen and Roy 2009: 262). Consequently, when many temples in a single region, or a sub-set of temples in a region, utilise similar sizes and shapes in their design, it is regarded as significant. The studies of Østby (see above) and Snodgrass (1986; see Chapter 2) have demonstrated that the sizes of the temple plans are particularly important in identifying group design trends. Snodgrass, when considering the largest temples in the Greek world, observed that, despite their extraordinary sizes in comparison to the other Doric peripteral temples, the plans of Temple G at Selinous (S20) and the Temple of Zeus Olympios (Temple B) at Akragas (S8) were very similar. Likewise, in Arcadia, Østby (2005: 499) noted that the Temple of Athena at Vigla (P23) and Temple C at Pallantion (P24) were constructed with similar sized plans, further suggesting that plan size was significant. Furthermore, the excellent preservation of the plan dimensions in the data-set allows for a wide-ranging analysis of the size similarities of this element.[58] Building upon these studies, the analysis conducted in this chapter focuses upon the size of the Doric peripteral temple plans, with a particular focus upon the width of the foundations and stylobates.

[57] The chapter contains discussions of the five geographical regions: Sicily, South Italy, the Peloponnese, North Greece, and Attica and the Saronic Gulf; however, the temples identified as belonging to the 'other' region are not analysed as they are geographically heterogeneous.

[58] As discussed in Chapter 4, the plan dimensions are generally well preserved, with foundation widths being preserved on 93 of 104 temples (89%), and the stylobate widths being preserved on 56 of 104 temples (54%).

The analysis focuses particularly upon the widths of the temple plans as the east end of the temple was often the most emphasised element. Although the temenos was never as formally planned during the archaic and classical periods as in the Hellenistic (Wycherley 1951: 234-236), the location of the altar opposite the east façade, the altar being the location where most worshippers would stand during sacrifices, meant that the temples' façades formed the backdrop to religious ceremonies (Coulton 1977: 74; Burkert 1988: 37). Moreover, when temples were constructed next to each other, they were placed so as to emphasise their facades instead of their flanks, with no temples being built so that their facades are closest together, on the contrary, there are numerous examples of temples built with the flanks closer to each other, effectively hiding this side and encouraging a comparison of the buildings' facades; for example, the three temples of the Gaggera hill sanctuary outside Selinous (Figure 110) and the two temples in the Sanctuary of Hera in Poseidonia (Figure 115). Furthermore, as well as being the location of the pediment sculpture, if the metopes were to be sculpted, almost inevitably, it would be the eastern metopes, overlooking the altar, that would receive the additional decoration (Maggidis 2009: 80-81).

Temples constructed with exactly the same size plan are easy to identify; however, as highlighted by Snodgrass' (1986) study, temples whose plan sizes were designed to be similar to one another are rarely exactly the same. For example, the stylobate sizes of the Temple of Zeus Olympios (Temple B) at Akragas (S8) and Temple G at Selinous (S20) are clearly related, given their similarity and clear difference to any other structure, but the stylobate width of the Temple of Zeus Olympios is over 5% larger than that of Temple G. Therefore, in order to identify temples with similar widths, a hierarchical cluster analysis of the temples' stylobate widths was cross-referenced with a hierarchical cluster analysis conducted on the foundation widths, in order to assign each temple to a cluster of similar sized buildings, thus creating, on a Panhellenic scale, clusters of temples that share similar plan dimensions.[59] These clusters were then compared with each temple's assigned regional attribute. An independent samples T-test or a one-way Analysis of Variance (ANOVA) were subsequently conducted on each of the identified sub-regional groups.[60] This analysis demonstrated that the identified groups are statistically significant in their difference from one another; in other words, the mean

[59] A discussion of hierarchical clustering can be found in Chapter 5 in relation to the column capitals. A further discussion of hierarchical cluster analysis as well as T-tests and ANOVA can be found in Appendix VI.

[60] Statistical methods used to compare the means of the groups (the specific technique used was dependent on the number of identified groups).

width of each identified group differs from the others more than could be expected by chance.

The analyses indicate that a number of statistically significant sub-regional groups have been identified. In order to discuss their significance in the ancient world, and how these similarities in width affect the temples' elevation designs, the sub-regional groups are each discussed in relation to their assigned regions. Beginning with the temples of Sicily and concluding with those of Attica and the Saronic Gulf, this chapter analyses the temple architecture of all the identified regions in turn, demonstrating that each region contained a number of sub-regional groups, with each group having distinct plan dimensions.

Sicily

The Sicilian colonists, for the most part, had left Greece and founded new poleis before the stone Doric tradition had begun to manifest itself, and so it should not be unexpected that the temples of Sicily were slightly different from the temples of mainland Greece. Indeed, as discussed in Chapter 2, their different and apparently "provincial" designs meant that scholars of the evolution model, such as Winter (1976) and Mertens (1996: 332), had particular issues placing the Sicilian temples into the single line of proportional evolution. The analysis conducted below demonstrates that the Sicilian temples belong to a number of sub-regional groups, based around the sizes of their plan dimensions.

Twenty-four Doric peripteral temples have been discovered on Sicily (Figure 84), ranging in states of preservation from Temple A (Herakles) at Akragas (S4), which preserves evidence for all the measurements gathered for this study, to Temple E (Athena) at Akragas (S6) which preserves only a small section of the northern side of the krepidoma, since it was built over by the church of S. Maria dei Greci (Marconi 1929: 77). However, the temples are generally well preserved, with 16 of the 24 preserving both their stylobate widths and lengths (67% compared to an average 50% in the other regions) and 12 of the 24 temples preserving the height of their columns (50% compared to an average 30% in the other regions). All the buildings belong to the sixth (29%) and fifth (71%) centuries with no fourth-century temples known to have been constructed on the island. The 24 temples were built in eight different poleis and range in foundation sizes between 16.63m by 34.59m on Temple I (Dioskouroi) at Akragas (S3) to 56.3m by 113.45m on the Temple of Zeus Olympios (Temple B) at Akragas (S8). Indeed, the temples were, on the whole, significantly larger than the Doric temples built elsewhere during the archaic and classical periods.[61] The hierarchical cluster analysis indicates that the plan dimensions of the Sicilian temples belong to three discrete groups, identified here as group SA, which contains ten temples with average foundation widths of 26.37m, group SB, containing nine temples with average foundation widths of 18.75m, and group SC, which contains two temples with average foundation widths of 54.8m (Figure 85, Table 11).[62]

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[61] The average foundation width of the Sicilian temples equals 25.8m (without the extra-large temples of group SC: 22.8m), compared to the average foundation width of the other regions, which equals 17.5m.

[62] Three Sicilian temples do not preserve their foundation widths and so could not be included in the hierarchical analysis, Temple E (Athena) at Akragas (S6), Temple C at Gela (S11) and Temple O at Selinous (S21).

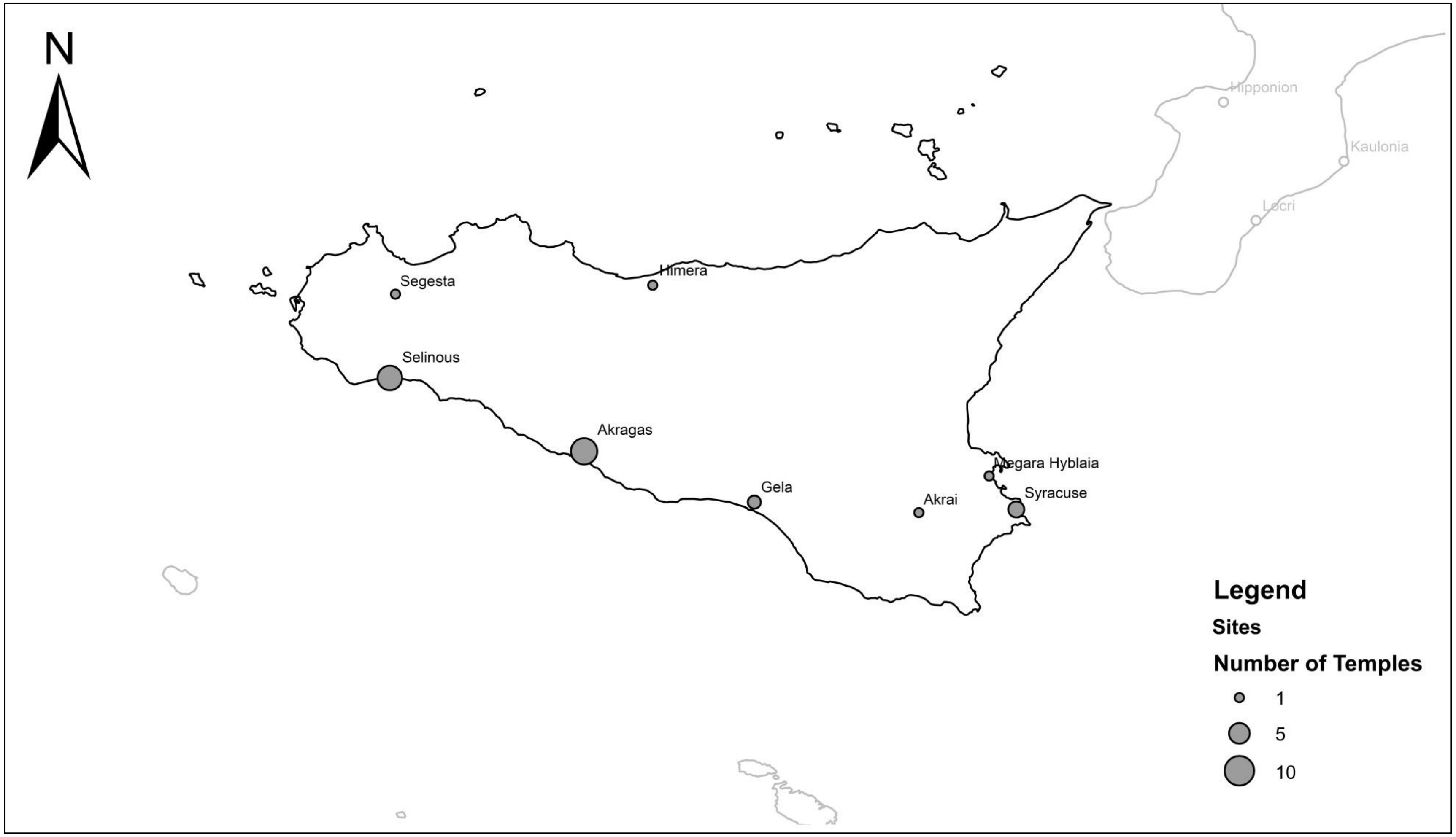

Figure 84 Map showing the locations of the 24 Sicilian Doric peripteral temples.

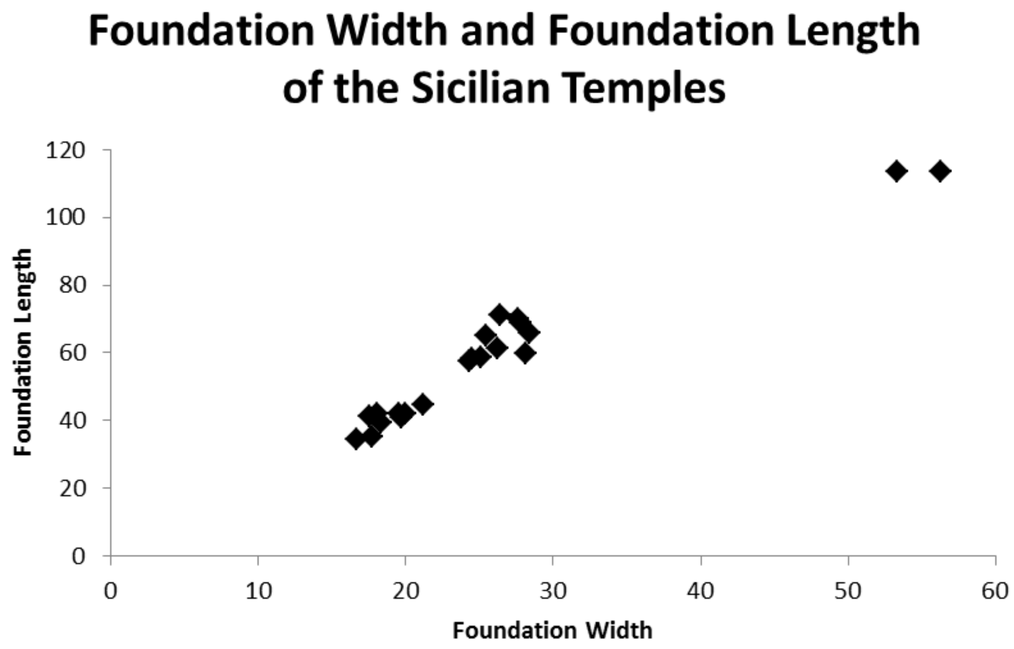

Figure 85 Graph of the foundation widths and lengths of the Sicilian temples, showing their division into three separate groups.

Group SA

The first Sicilian group, referred to as group SA, contains 10 temples from five different locations on the island (Figure 84; Figure 86; Table 11). The temples range in date between the date group 1 Temple of Apollo at Syracuse (S22) and the date group 4 temple at Segesta (S13). The temples of this group are well preserved, with all 10 temples preserving their stylobate dimensions and eight temples preserving their column heights. The temples vary in foundation width between 24.308m on the Temple of Athena at Syracuse (S23) to 28.39 on Temple F at Selinous (S19). Thus, the ten temples have a relatively small range of foundation widths (4.1m), especially considering that on a Panhellenic scale, the foundation widths range between 10.65m and 56.3m (a range of 45.65m). The difference in average width between the three Sicilian size groups also demonstrates the discrete nature of this group. The fact that the temples of this group range in date between date group 1 and 4 further suggests that the size had significance in ancient Sicily. Furthermore, the geographical range of the group, the temples being constructed in five different locations, from Segesta in the west to Syracuse in the east, indicates that meaning of this similarity was understood across the island.

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
SA	S22	Apollo	Syracuse	1	24.46	58.32	21.5	54.9

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
	S24	Zeus	Syracuse	1	25.4	65.05	22.4	62.05
	S4	Temple A (Herakles)	Akragas	2	27.77	69.065	25.33	67.005
	S16	Temple C	Selinous	2	26.357	71.15	23.937	63.72
	S12	Victory	Himera	3	25.09	58.61	22.455	55.955
	S17	Temple D	Selinous	3	28.096	59.879	23.626	55.679
	S18	Temple E	Selinous	3	27.582	69.979	25.308	67.749
	S19	Temple F	Selinous	3	28.39	65.9	24.37	61.88
	S23	Athena	Syracuse	3	24.308	57.533	22.2	55.455
	S13	Unknown	Segesta	4	26.26	61.17	23.12	58.035
SB	S10	Temple B (Athena)	Gela	1	17.75	35.22		
	S9	Aphrodite	Akrai	2	18.3	39.5		
	S25	Temple A	Megara Hyblaia	2	17.55	41.4		
	S15	Temple A	Selinous	3	18.063	42.109	16.133	40.31
	S1	Temple F (Concord)	Akragas	4	19.57	41.98	16.92	39.44
	S2	Temple G (Hephaisteion)	Akragas	4	19.955	42.138	17.25	39.43
	S3	Temple I (Dioskouroi)	Akragas	4	16.63	34.59		
	S5	Temple D (Hera Lacinia)	Akragas	4	19.74	40.895	16.93	38.13
	S7	Temple L	Akragas	4	21.2	44.6		
SC	S8	Temple B (Zeus Olympios)	Akragas	3	56.3	113.45	52.74	110.1
	S20	Temple G	Selinous	3	53.31	113.36	50.07	110.12
Unknown	S6	Temple E (Athena)	Akragas	3				
	S11	Temple C	Gela	3				
	S21	Temple O	Selinous	3				

Table 11 Temples of Sicily organised by sub-regional plan size group, showing the temples' foundation and stylobate dimensions.

Although the temples of group SA utilise similar foundation widths, their overall plan and elevation designs vary significantly. For example, Temple D at Selinous (S17) has 13 flank columns, whereas, Temple C at Selinous (S16) has 17. Likewise, the preserved column heights vary between 7.98 on the Temple of Apollo at Syracuse (S22) and 10.335

on Temple E at Selinous (S18). The temples also utilised different ratios in their elevation designs, for example, Temple E at Selinous (S18) had a stylobate width to entablature height ratio of 7.23, which resulted in a relatively taller entablature than Temple A (Herakles) at Akragas (S4) that had a stylobate width to entablature height ratio of 8.13. The temples of group SA also had different capital designs, the Temple of Athena at Syracuse (S23) having capitals of CGH and Temple F having capitals of CGA. Furthermore, the temples even made use of different additional decoration, the Temple of Zeus at Syracuse (S24) having a Medusa mask pediment, whereas, the Temple of Victory at Himera (S12) had a sculpted pediment and sculpted metopes. Therefore, to summarise group SA, the buildings of this group utilise similar plan dimensions, which are distinct to those of the other Sicilian groups, but, were constructed with different plan and elevation designs.

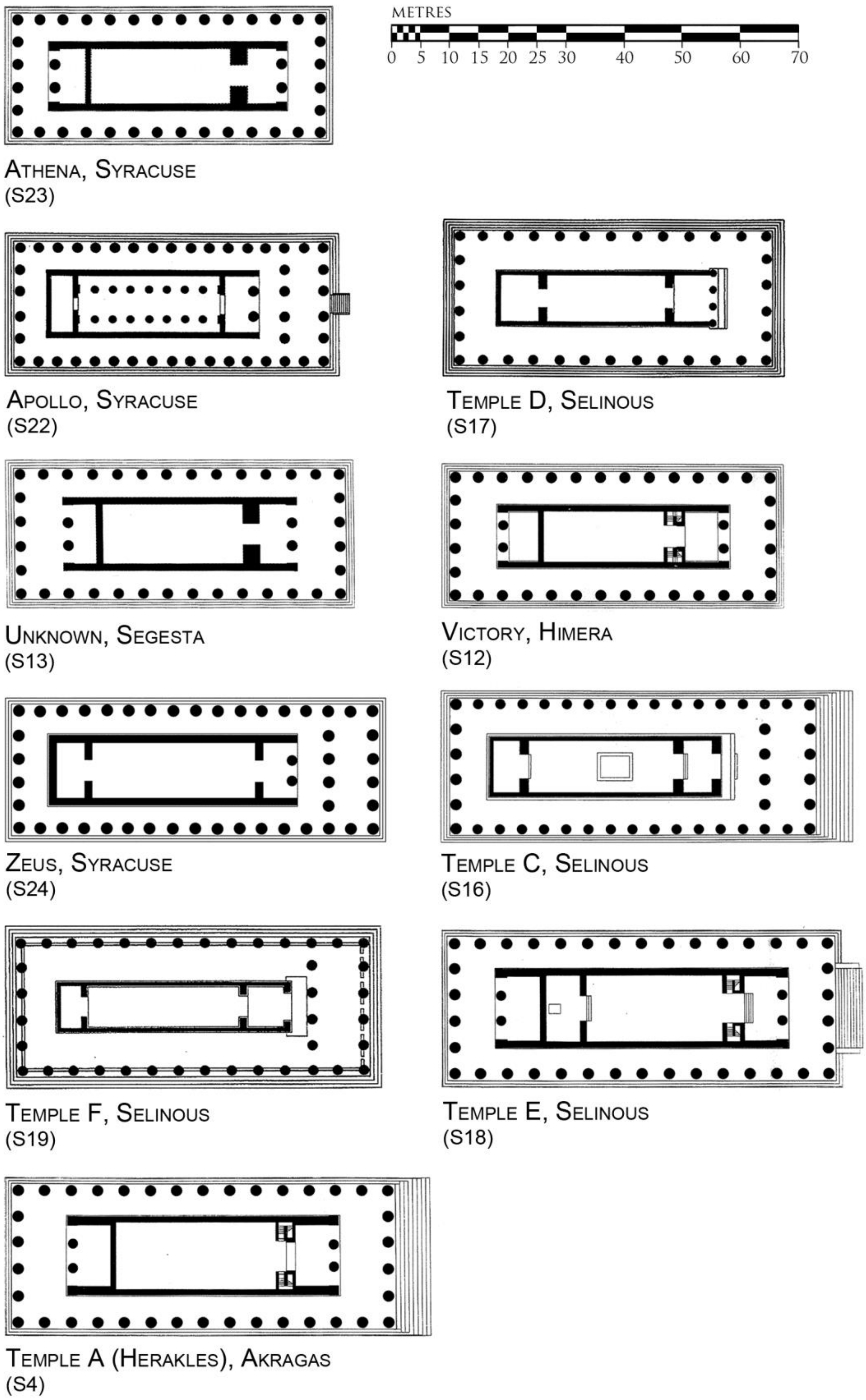

Figure 86 Plans of the temples belonging to group SA (*After* Dinsmoor 1950: Figure 26; Mertens 1984: 164, Beilage 26).

Group SB

The suggestion that the Sicilian Doric peripteral temples were deliberately designed to share plan dimensions with each other is further indicated by an analysis of the second sub-regional group, group SB. The group contains nine temples (Figure 87, Table 11), which vary in foundation width between 16.63m on Temple I (Dioskouroi) at Akragas (S3) and 21.2m on Temple L at Akragas (S7). The temples are from five different locations on the island and range in date between the date group 1 Temple B (Athena) at Gela (S10) and the date group 4 Temple D (Hera Lacinia) at Akragas (S5). The temples are not as well preserved as those of Group SA, with only four temples preserving their stylobate dimensions and column heights. However, the foundation dimensions indicate that the temples form into a discrete group. The temples are smaller than those of group SA, having an average width 18.75m compared to 26.37m. As with the temples of group SA the fact that the group remained in use throughout the sixth and fifth centuries, and were used in multiple locations across Sicily, indicates that the size had particular significance on the island. Interestingly, the elevations of the majority of temples of group SB are different from one another, however, a number of temples, all constructed in Akragas, utilise very similar elevation designs. Only one temple outside of Akragas preserves its number of peristyle columns, Temple A at Selinous (S15).[63] Therefore, in order to demonstrate the similarity of the Akragantian temples, they are compared with Temple A at Selinous.

In contrast to Temple A at Selinous, which had 14 'flaring' flank columns (ratio of lower diameter to upper diameter: 1.37), the temples of Akragas all appear to have been built with 13 similarly shaped flank columns (LD/UD: 1.26-1.33), with similar column spacing (Akragas temples: 3.118-3.195m; Temple A: 2.997m) and the same capital design (Akragas temples: CGK; Temple A: CGO). The design differences between Temple A at Selinous and the Akragas temples, yet with similar plan dimensions, suggest that the temples had the same relationship with each other as did the temples of group SA. Similarly, the fact that the other temples of the group (outside of Akragas) utilised different elevation designs suggests that they also had the same relationship with one another. However, the similarity in the elevation as well as plan designs of the temples of Akragas suggests that their overall designs were more closely related with one another. The fact that these temples, with the same overall designs, were built in the same poleis and around the same time (all constructed in the fifth century), further suggests that the similarities were significant. The temples of Akragas and Selinous are discussed further

[63] The preserved measurements from the other less-well preserved temples of group SB indicates that they utilised different designs to one another; for example, the Temple of Aphrodite at Akrai (S9) is the only temple of the group to preserve evidence for a double front.

in Chapters 7 and 8; however, it is interesting to note at this point that temples with the same plan and elevation design could be and were constructed, providing further indication that differences in the elevation designs of temples with the same sized stylobate width were important.

Group SC

One further, short lived, size group (SC) also appears on Sicily during the early fifth century. This group contains the two large temples of G at Selinous (S20) and Zeus Olympios (Temple B) at Akragas (S8) that were analysed by Snodgrass (1986) and discussed in the introduction to this chapter (Figure 87). Indeed, as with the temples of group SA and the majority of the temples of group SB, the two extremely large temples of group SC have similar plan sizes, which were clearly different from the other Sicilian temples, yet with very different elevation designs.

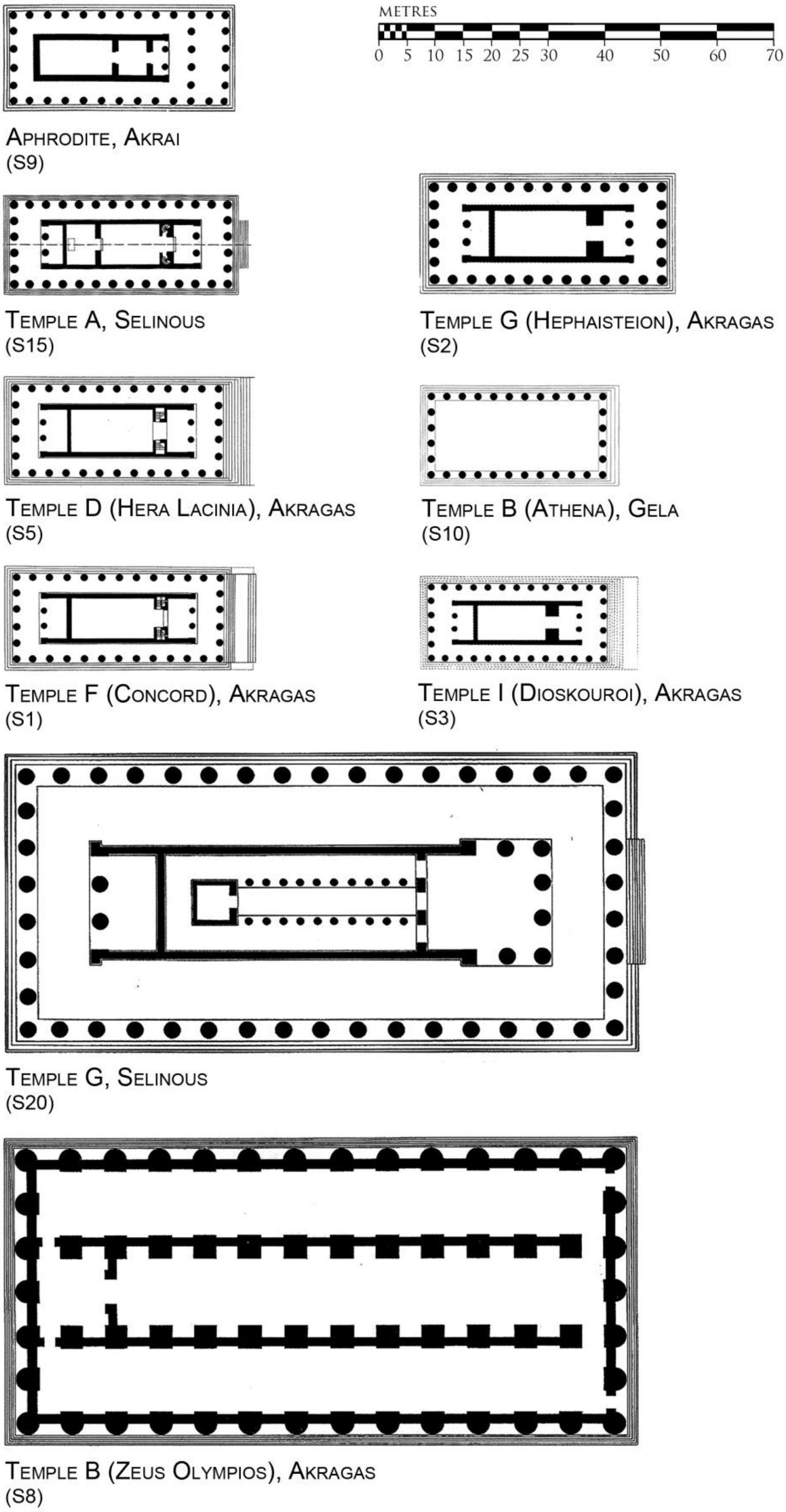

Figure 87 Plans of the temples belonging to groups SB and SC (*After* Brea 1952: 16; Mertens 1984: 164, Beilage 26; Spawforth 2006: 124). Plans have not been published for Temple A at Megara Hyblaia (S25) and Temple L at Akragas (S7), and consequently the temples' plans have not been included in this figure.

Therefore, of the 21 Sicilian temples whose plan dimensions are included in the data-set, nine have foundation widths of c.18.75m (group SB), ten have widths of c.26.37m (group SA), and two have widths of over 50m (SC). The amounts of temples in the three groups, and the difference in size between the three sub-regional groups, indicates their discreteness. The fact that the same sizes were continuously used throughout the sixth and the fifth centuries, despite temples being constructed to other sizes in other parts of the Greek world such as the 11.4m wide Temple C at Pallantion (P24) or the 21.957m wide Temple of Zeus at Nemea (P17), is indicative of the sizes' importance in Sicily. The differences in the temples' elevation proportions, as well as the decorative elements on temples of the same size plan, suggests that a degree of diversity between the buildings' designs was felt to be necessary. The use of similar elevation designs on the temples of Akragas suggests that, had the other temple builders of Sicily wished, they could have built their temples with the same overall design, but chose not to. Likewise, their similarity in elevation design suggests that these temples had a different relationship with one another than the other temples of group SB, further indicating that the observed differences in elevation bore meaning. Thus, an analysis of the Sicilian sub-regional groups suggests that the statistically identified groups are not arbitrary; rather, the analysis indicates that these groups were significant in the ancient world, and that their relative similarities and differences in design bore meaning.

South Italy

As with the temples of Sicily, the temples of South Italy appear to be constructed with similar sized plans to one another, albeit utilising different sizes to the Sicilian buildings. Thirteen poorly preserved Doric peripteral temples from eight different poleis have been discovered in South Italy (Figure 88, Table 12). Only five buildings preserve both their stylobate widths and lengths (38% compared to an average 53% in the other regions) and only four conserve their front and façade columns (31% compared to an average 44% in the other regions), three of which are the remarkably well preserved temples in Poseidonia. Despite the generally poor state of preservation of the temples of South Italy, the fact that the vast majority of the temples were built in date group 2, with nine temples (82%) dating between 550 and 500, suggests that the temples of South Italy were built to address regional issues. The hierarchical cluster analysis of the sizes of the temple plans of South Italy indicates that the foundation widths form into two discrete groups. The first group contains the majority of the temples of South Italy (seven of eleven temples with preserved foundations), which have an average foundation width of 19.4m, and are referred to as group IA.[64] The second group contains the much larger temples of Hera at Poseidonia, referred to as group IB with average foundation widths of 26.02m. There are also two other temples in South Italy, whose foundation widths are preserved, but they do not appear to belong to either group and these are discussed separately.

[64] The results of the hierarchical cluster analysis suggest that the temples of group IA may be further divided into two groups (the first group containing the temples of Hera at Tavole Palatine (I5) and Foce del Sele (I10) and the temple at Kaulonia (I2); the second group containing the temple at Hipponion (I1), the Casa Marafioti Temple at Locri Epizephyrioi (I4), Temple Bii at Metaponto (I7) and the Temple of Minerva at Pompeii (I13)). The first group would contain the smaller temples with foundation widths c.18.5m and the second group would contain the larger temples with foundation widths of c.20.3m. However, given the fact that the other temple group in South Italy group (group IB) is so much larger than the temples of group IA, and the relative difference between IA-a and IA-b being much smaller, further suggests that the difference is not significant. Therefore, the temples have not been assigned to their own separate size groups, but, further study, focusing upon the temples of South Italy may indicate that group IA should be further divided.

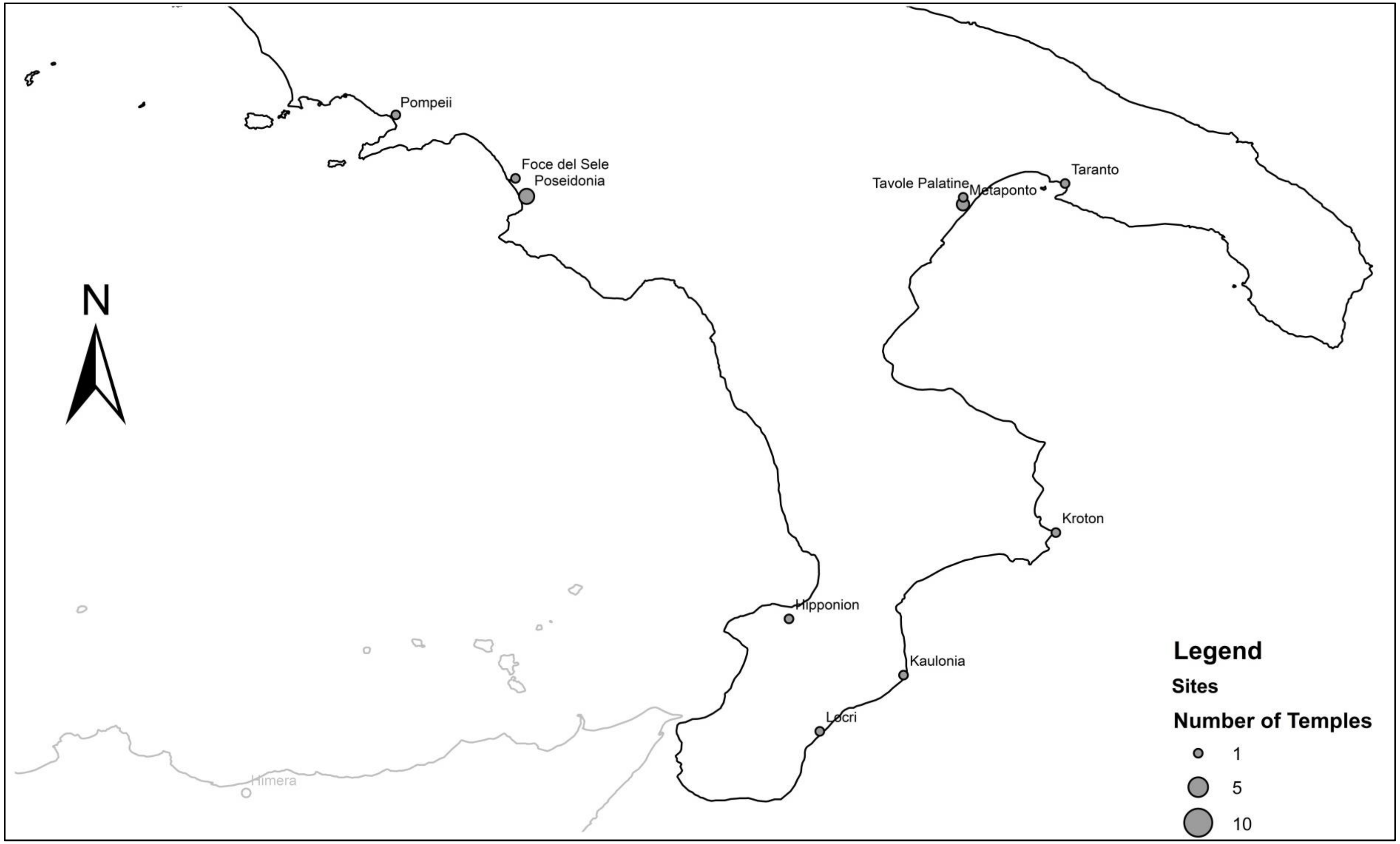

Figure 88 Map showing the location and numbers of temples in South Italy.

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL	Capital Group
IA	I1	Unknown	Hipponion	2	20.5	37.45			
	I4	Casa Marafioti	Locri Epizephyrioi	2	20.1				
	I5	Hera	Tavole Palatine	2	18.46	35.69	16.06	33.3	CGI
	I7	Temple Bii	Metaponto	2	19.85	41.6			
	I10	Heraion	Foce del Sele	2	18.615	38.95			CGD
	I13	Minerva	Pompeii	2	20.39	29.69	17.2	27.24	
	I2	Unknown	Kaulonia	4	18.2	41.2			CGK
Other	I6	Temple Aii (Apollo Lykeios)	Metaponto	2	22.21	51.15			CGN
	I8	Athena	Poseidonia	2	16.127	34.52	14.53	32.883	CGP
IB	I9	Hera I (Basilica)	Poseidonia	2	25.983	55.722	24.49	54.258	CGD
	I11	Hera II (Poseidon)	Poseidonia	4	26.06	61.7	24.316	59.961	CGJ
Unknown	I12	Unknown	Taranto	1					CGJ
	I3	Hera	Kroton	3					CGH

Table 12 Temples of South Italy organised by sub-regional plan size group.

Group IA

The seven temples of group IA have a relatively narrow range of widths of only 2.3m, between 18.2m on the temple at Kaulonia (I2) and 20.5m on the temple at Hipponion (I1, Figure 89, Table 12). The seven temples have a wide geographical spread, being found in seven different locations, ranging from Pompeii in the north to Locri Epizephyrioi in the south (Figure 88). Despite this geographical distribution, six of the seven temples were constructed in the same period (date group 2). The fact that six temples were constructed in South Italy, with similar plan dimensions, in the same period, suggests that the similarity in plan size was deliberate. The construction of the temple at Kaulonia, almost 100 years later (date group 4), with the same size plan further suggests that this plan size was important in ancient South Italy. Unfortunately, the poor state of preservation of the temples of group IA precludes a detailed comparison of their elevations. However, the fact that the buildings all utilised different capital designs suggests that, as with the Sicilian examples (with the exception of Akragas), the temples had different elevation designs. The indication that the buildings were built in the same period with similar plan dimensions, but different elevation designs, suggests that the temples', and their designs, had meaning and significance in the ancient world.

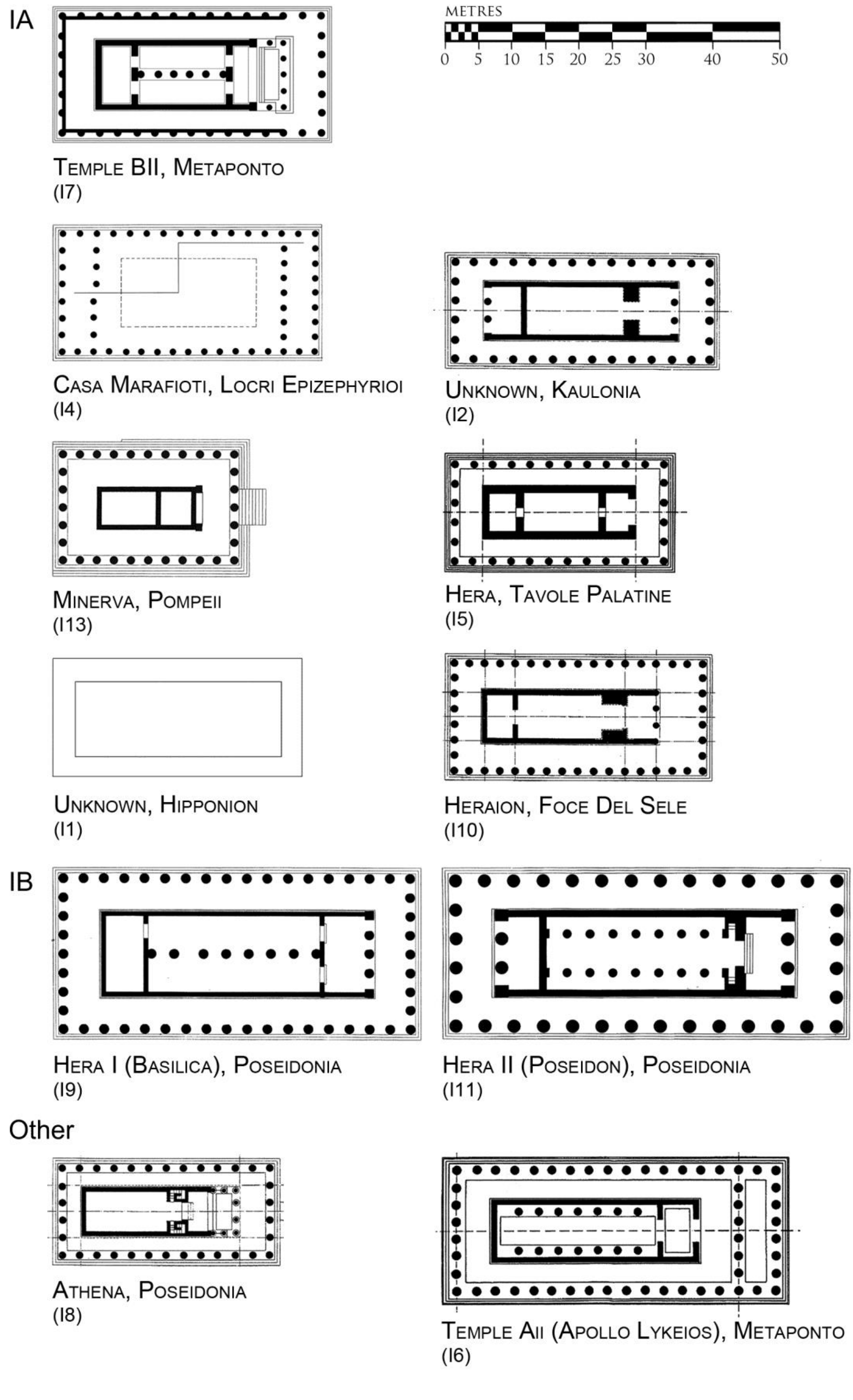

Figure 89 Plans of the South Italian temples (*After* Orsi 1921: 480; Mertens 1973: XLVI, XLVIII; 1984: Beilage 26; Østby 1978: Plate VII; Barletta 1990: 57; De Waele 1994: Figure 4; Martin 2003: 38, 55).

Group IB

The two temples of group IB further demonstrate the same trend, although in this instance, the two temples were constructed side-by-side, in the same sanctuary, further suggesting that their similarity in size and difference in elevation were intentional. The ground plans of the two well preserved temples of group IB, the Temple of Hera I (Basilica, I9) and Hera II (Poseidon, I11) at Poseidonia, are extremely similar in size to one another, the Temple of Hera II being less than 18cm narrower on the stylobate than the Temple of Hera I (Figure 89, Table 12). The amount of available space in the sanctuary suggests that the second temple (Hera II) could have been built to any number of different sizes (Figure 90); thus, the similarity in size must be regarded as significant. As with the other temples discussed above (with the exception of the fifth-century temples of Akragas), the temples of group IB were constructed with distinctly different elevations (Coulton 1977: 77; see Chapter 3, Figure 20). The Temple of Hera II (I11) made use of fewer, taller columns than the Temple of Hera I (I9) having six façade columns measuring 8.88m compared to the nine façade columns measuring 6.45m on the Temple of Hera I. Furthermore, they both utilise different column and capital shapes (see Appendix IV.2). Whether the Temple of Hera II was an aesthetic improvement over the Temple of Hera I as suggested by Coulton (1977: 77) is a matter of much debate and it is beyond the scope of this thesis to discuss here. However, the fact that the temples had almost exactly the same plan dimensions and stand directly next to each other in the Sanctuary of Hera at Poseidonia, suggests that, the similarity in the width of the temples is unlikely to be a coincidence. Indeed, being constructed in such close proximity, it is clear that the buildings' designs would have been compared. The indication that these two buildings utilise the same plan dimensions but different elevation designs, as with the other sub-regional groups discussed above, further supports the notion that the identified sub-regional groups were significant.

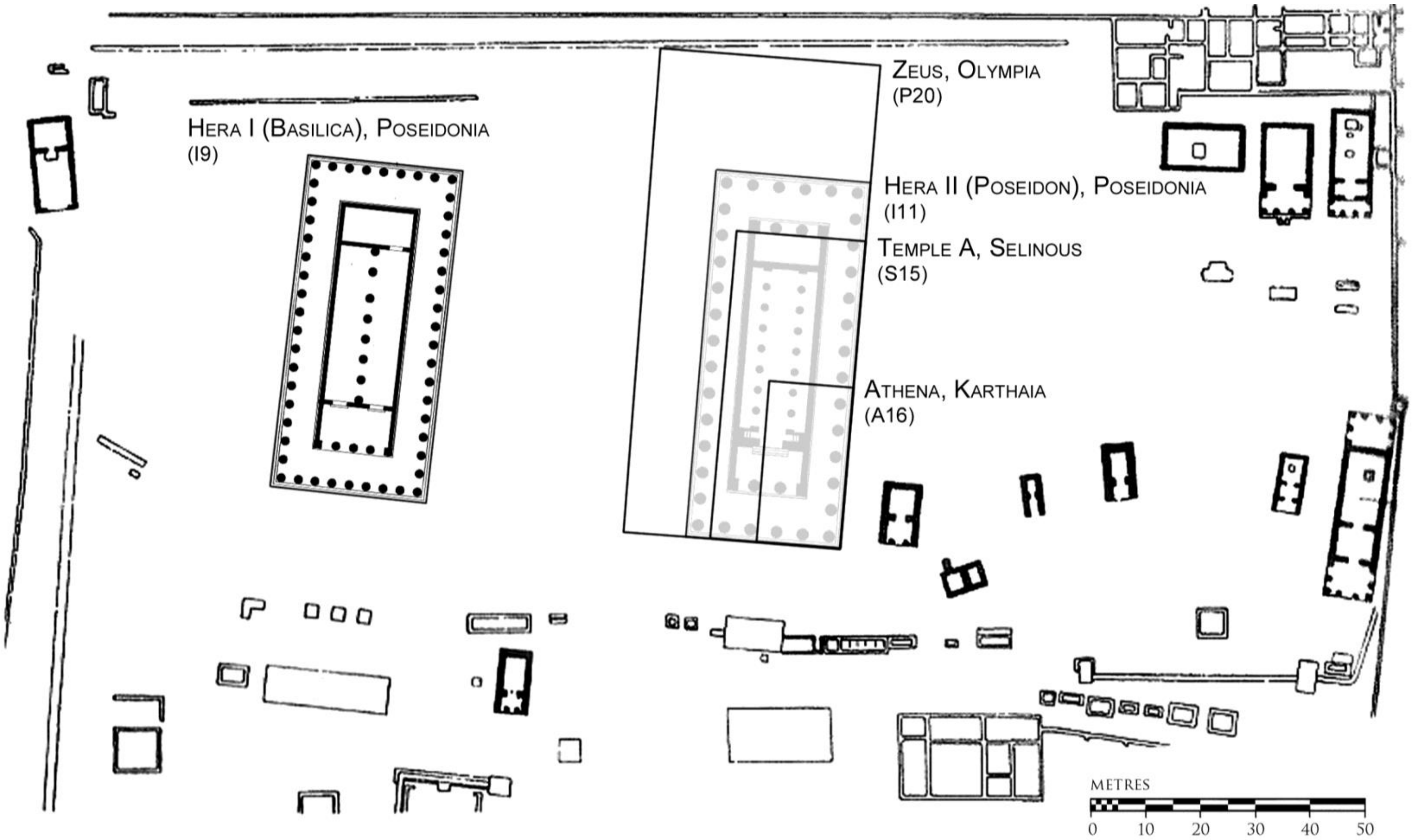

Figure 90 The Sanctuary of Hera in Poseidonia containing the Temples of Hera I (I9) and Hera II (I11). The figure shows the outline sizes of other temples in the data-set, demonstrating that temples of other dimensions could have been constructed in the space occupied by the Temple of Hera II (*After* Gruben 2001: 260).

Other Doric Peripteral Temples of South Italy

There are two South Italian temples that cannot be ascribed to either size group (IA or IB): the Temple of Athena at Poseidonia (I8) and Temple Aii (Apollo Lykeios) at Metaponto (I6, Figure 89, Table 12). Temple Aii is something of an enigma, indeed, it could be argued that the temple's size indicates that it was not designed to belong to either of the South Italian groups; rather, it was intended to be compared via a means other than the plan size. The same could be said for the Temple of Athena at Poseidonia (I8), which is discussed further in Chapter 8, where it is argued that the temple's exuberant decoration, rather than its size, clearly suggests that the temple is designed to be viewed as completely different from the other Poseidonia temples. At this point, however, it is interesting to note that not all the temples of South Italy can be assigned to the groups, but, the fact that these two temples stand out as different is further indication of the discrete nature of the groups to which most of the temples of South Italy belong.

Therefore, despite the poor state of preservation of the Doric temples in South Italy the foundations indicate that, as with the Sicilian temples, the similarity in the plan dimensions should be regarded as significant. The fact that the seven temples of group IA have a range of widths that is less than half the range between the two groups, is further indication that the temples were deliberately built to a similar size of the other temples in the group (largest IA temple: 20.5m, smallest IB temple: 25.983m, a range of 5.483m, over double the 2.3m range of the IA group). Indeed, the difference in size between the two groups, and the relative consistency of the temple sizes within the groups, especially when compared to the range of sizes that were utilised on a Panhellenic scale (see Chapter 4), suggests that these similarities were significant. The fact that the majority of temples in South Italy were constructed in the same period further suggests that the temples were built with direct reference to one another. Thus, the sub-regional groups should be understood as having significance within ancient South Italy.

Peloponnese

As with the temples of Sicily and South Italy, hierarchical cluster analysis indicates that the sizes of the Doric peripteral temples of the Peloponnese belong to three sub-regional groups. The data-set contains 25 temples from 22 different locations within the Peloponnese (Figure 91). The temple plans are relatively well preserved, with 13 temples preserving both their stylobate width and length (52% compared to an average 51% in the other regions). In contrast, the elevations are not well preserved, with only six examples retaining enough evidence to indicate their column heights (24% compared to an average 38% in the other regions). Unlike in South Italy, where the majority of temples were constructed in a single period, the Doric peripteral temples of the Peloponnese appear to have been constructed at a relatively regular rate throughout the period of study.

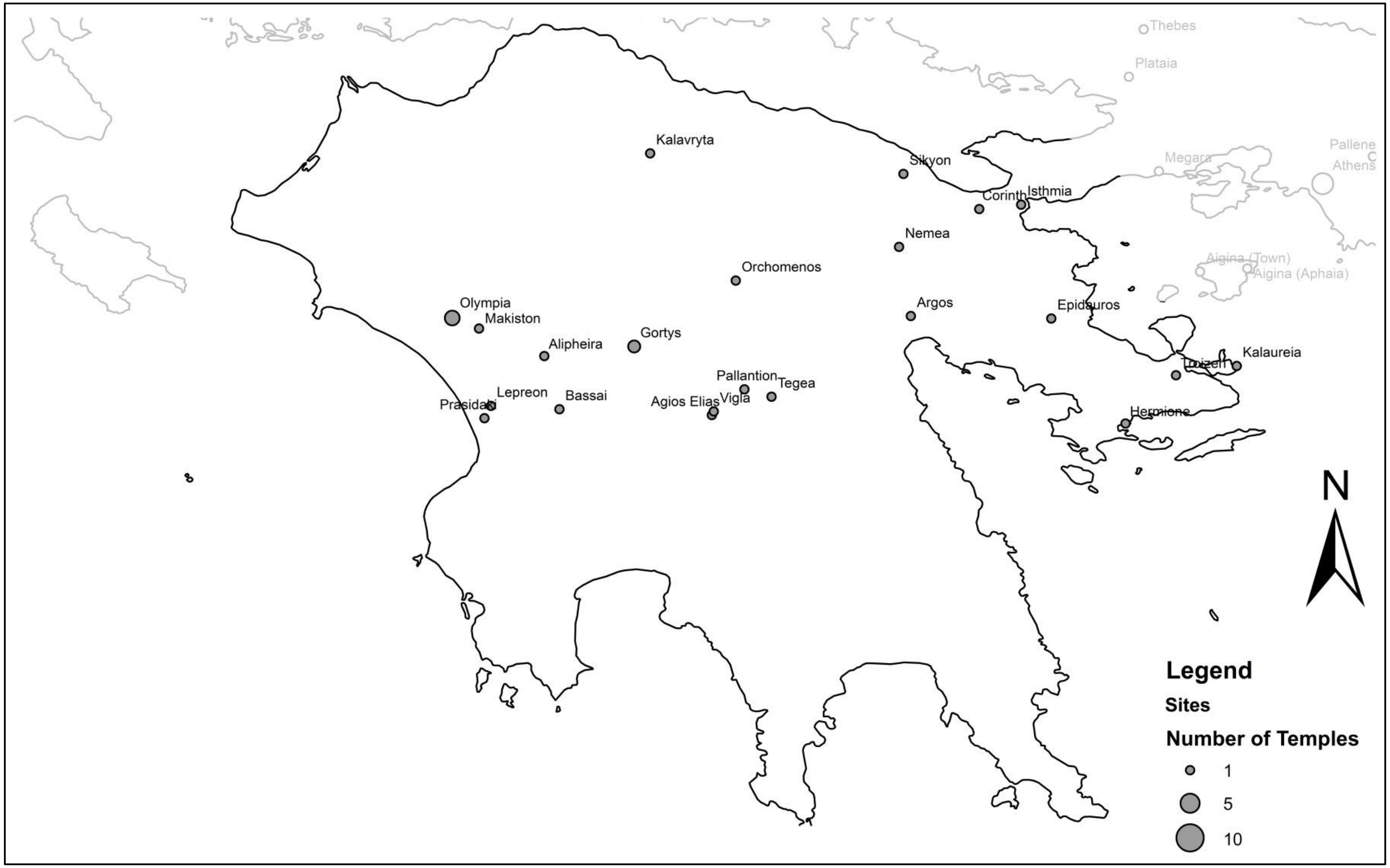

Figure 91 Map showing the locations and number of Doric peripteral temples in the Peloponnese.

The 25 preserved foundation widths of the Peloponnesian temples range between 10.65m on the Temple of Athena at Alipheira (P1) and 30.2m on the Temple of Zeus at Olympia (P20). Similar to the regions discussed above, the hierarchical cluster results suggest that the Peloponnesian temples can be divided into three sub-regional groups (Table 13). The 13 smallest temples, with average foundation widths of 12.75m, are referred to as group PA. The second group, referred to as group PB contains five temples and has an average foundation width of 16.22m, whilst the final group, PC, contains six temples with an average foundation width of 21.35m. There is one other temple that is significantly larger than the other temples in the Peloponnese and is discussed separately.

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
PA	P5	Unknown	Orchomenos	2	13.33		13.33	
	P14	Poseidon	Kalaureia (Poros)	2	14.4	27.5		
	P23	Athena	Vigla	2	11.55	24.33		
	P25	Unknown	Kalavryta	2	13.9	34.75		
	P1	Athena	Alipheira	3	10.65	29.58	10.37	29.3
	P3	Unknown	Agios Elias	3	15.3	32.64	12.04	29.51
	P24	Temple C	Pallantion	3	11.4	25		
	P9	Asklepios	Epidauros	5	13.2	24.45	12.03	23.28
	P10	Grand Asklepios	Gortys	5	13.25	23.6		
	P11	Acropolis Temple	Gortys	5	13.55	27.09		
	P15	Demeter	Lepreon	5	11.98	21.69	10.445	20.226
	P19	Metroon	Olympia	5	11.88	21.93	10.62	20.67
	P8	Apollo	Sikyon	6	11.4	37.6	11.4	37.6
PB	P12	Poseidon	Hermione	2	16.25	32.98		
	P16	Athena	Makiston	3	15.79	34.55	14.18	32.94
	P21	Athena	Prasidaki	3	15.85	35.3	14.7	33.3
	P4	Apollo Epikourios	Bassai	4	15.84	39.57	14.548	38.342
	P22	Unknown	Troizen	6	17.365	31.783		
PC	P7	Apollo	Corinth	1	22.79	55.7	21.58	53.8
	P18	Hera	Olympia	1	20.15	51.11	18.75	50.01
	P13	Poseidon	Isthmia	3	22.05	55.65		
	P2	Hera	Argive Heraion	4	20.1	39.75		
	P6	Athena Alea	Tegea	6	21.04	49.4		
	P17	Zeus	Nemea	6	21.957	44.421	20.085	42.549

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
Other	P20	Zeus	Olympia	3	30.2	66.64	27.68	64.12

Table 13 The temples of the Peloponnese organised by sub-regional size group.

Group PA

The most populous Peloponnesian group, referred to as group PA, which contains temples that are significantly smaller than any temple constructed in Sicily and South Italy (Figure 92). At the core of this group are the temples of the archaic 'Arcadian' style that were identified by Østby (1991; 1995b; 2000; 2005), Nielsen (2002: 180) and Winter (2005) and discussed in Chapter 2. The analysis of Peloponnesian temples, demonstrates however, that these temples actually belong to a sub-regional trend that extends beyond the borders of Arcadia and across the entire central Peloponnese. The group contains temples ranging in date from the date group 2 temple at Kalavyrta (P25) to the date group 6 Temple of Apollo at Sikyon (P8) suggesting that this size group must have been regarded as significant otherwise later temples would have been constructed to different sizes, especially considering the wide range of sizes of temples on a Panhellenic scale.

Twelve of the temples in group PA range in foundation width between 10.65m on the Temple of Athena at Alipheira (P1) and 14.4m on the Temple of Poseidon on Kalaureia (P14) with a foundation width of 14.4m, which gives the group a foundation width range of 3.75m. Bearing in mind the fact that the group comprises 12 temples, a range of 3.75m for the foundation widths is remarkably small. Comparing the size of the group PA temples to the Sicilian temples, the largest temple of group PA is narrower than the smallest temple on Sicily (smallest foundation width in Sicily: 16.63m) and the range of sizes utilised on a Panhellenic scale (45.65m), demonstrates the relative cohesiveness in the size of these 12 temples.

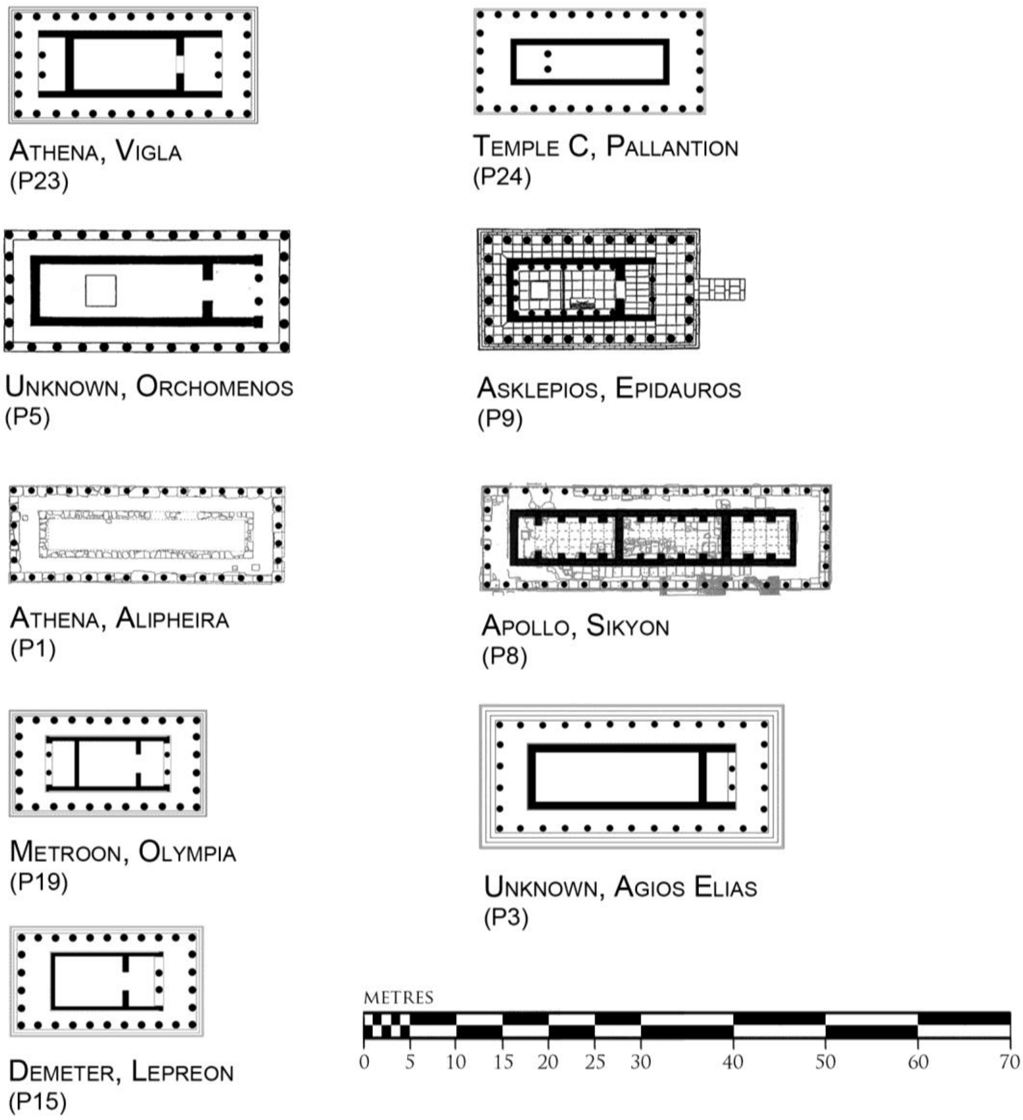

Figure 92 Temple plans of group PA (*After* Auberson 1976: Plate 7; Knell 1983b: 131; Østby 1991: 45; 1995b: Figure 194, Figure 195, Figure 200; Spawforth 2006: 160, 165; Krystalli-Votsi and Østby 2010: 55).

With the inclusion of the thirteenth temple, the temple on Agios Elias, the foundation width range of group PA is increased to 4.65m; however, the temple on Agios Elias is not included in the group based upon the size of its foundations, rather, the size of its stylobate. The temple on Agios Elias has a particularly wide set of krepidoma steps (stylobate width to foundation width ratio of 0.79 compared to the Panhellenic average of 0.91), which culminates in a stylobate width of 12.04m that is remarkably similar to the other temples of group PA, such as, the Temple of Asklepios at Epidauros (P9) with a stylobate width of 12.03m. Indeed, as discussed by Forsén *et al.* (1999: 186), a lot of effort was expounded bringing all the material to the inaccessible mountain site from the Dholiana marble quarries near Tegea, in order to ensure that the temple was of comparable size to the other temples built nearby.

Unfortunately, the temples of group PA are not as well preserved as the Sicilian temples, with no temples preserving their column heights. However, the preserved element dimensions of various elements suggest that the temples of group PA utilised different designs. For example, the foundation lengths of the temples vary between 21.69m on the Temple of Demeter at Lepreon (P15) and 37.6m on the Temple of Apollo at Sikyon (P8). Likewise, the relationship between the cellae and the stylobates were different, with the ratio of cella width to stylobate width on the Metroon at Olympia (P19) being 0.67, resulting in a relatively wider cella than on the temple at Orchomenos (P5), which had a ratio of 0.44. The temples also made use of different capital designs, the capitals from the Temple of Athena at Alipheira (P1) belonging to CGH, whilst those of the Temple of Athena at Vigla (P23) belong to CGM.

Although the majority of temples in group PA appear to have similar plan dimensions to one another but with different elevation designs, two temples appear to use the same plan dimensions and the same elevation designs. In an approach that is akin to the fifth-century temples of Akragas discussed earlier, the Temple of Demeter at Lepreon (P15) and the Metroon at Olympia (P19) have similar plan dimensions (Figure 92, Figure 93), as well as analogous elevation designs. The temples have stylobate widths of 10.445m and 10.62m and stylobate lengths of 20.226m and 20.67m respectively. The temples elevations are not well preserved, but, a number of key measurements indicate that the temples were almost identical. Although the capitals belong to two different groups, the indication that the Temple of Demeter at Lepreon had 11 flank columns with lower diameters of 0.83m, whilst the Metroon also had 11 flank columns which measured 0.85m on the lower diameter, suggests that their overall appearance was very similar.[65] Likewise, the upper diameter of 0.64m on the Temple of Demeter at Lepreon and 0.65m on the Metroon further demonstrates the design similarities between these two temples. Geographically, these temples were constructed close together, not in the same poleis, as with the temples of Akragas, both being built near the west coast of the Peloponnese. Unfortunately, not much is known about these two temples or the identity of their dedicators. However, given the temples' similarity in date (both date group 5), resemblance in design and geographical proximity, as with the fifth-century temples of Akragas, it is a reasonable conclusion that the two projects have a closer relationship with one another than the other temples in group PA.

[65] Indeed, the only major different in the capital designs is the relative heights of the echini (Metroon: 0.096m; Demeter at Lepreon: 0.112m); however, the 'flaring' of the abacus, which many scholars consider important in dating capitals, is almost exactly the same.

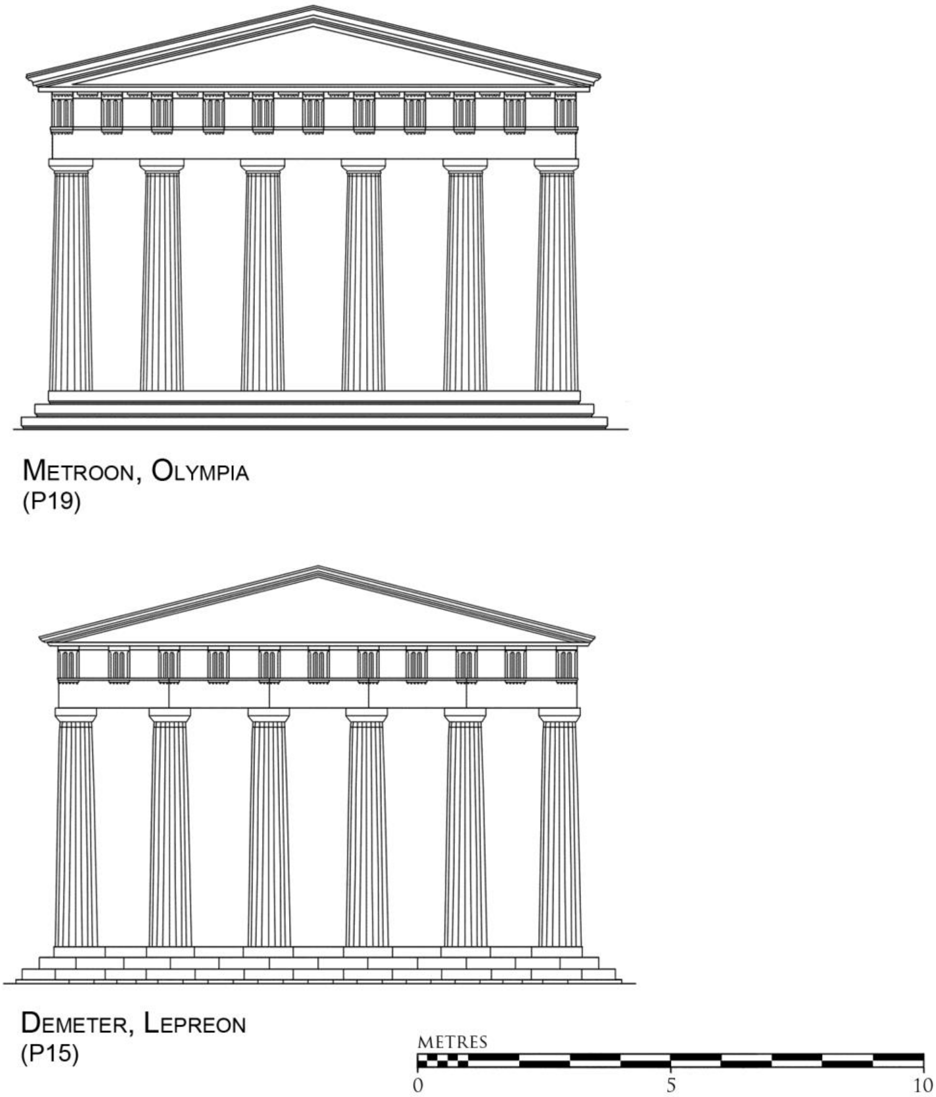

Figure 93 Restored elevations of the Metroon at Olympia (P19) and the Temple of Demeter at Lepreon (P15). The column heights are reconstructed; however, the fact that both temples had the same plan dimensions as well as upper and lower diameters indicates that they probably shared a very similar design (*After* Mallwitz 1972: Figure 125; Knell 1983b: 133).

Group PB

Group PB contains five temples, which range in date between the date group 2 Temple of Poseidon at Hermione (P12) and the date group 6 temple at Troizen (P22). The temples of group PB have a small foundation width range of 1.57m, varying between 15.79m on the Temple of Athena at Makiston (P16) and 17.365m on the temple at Troizen (P22, Table 13). Geographically, this group is split into two clusters. The first cluster contains the Temple of Poseidon at Hermione (P12) and the temple at Troizen (P22), which are located in the Argolid (Figure 91). Unfortunately, due to their poor state of preservation, neither temple from this first cluster preserves any of their elevation measurements, thus it is not possible to discuss their designs any further. Fortunately, the second geographical cluster, containing the Elian and south Arcadian temples of Athena at Makiston (P16), the

Temple of Athena at Prasidaki (P21) and the Temple of Apollo Epikourios at Bassai (P4), are preserved to greater extents and consequently form the basis for the below discussion of elevations.

The two date group 5 temples of Athena in the second cluster appear to have very similar overall plan dimensions, with foundation widths measuring 16.1m and 15.85m and almost identical lengths of 35.1m and 35.3m. Similar to the Metroon and the Temple of Demeter at Lepreon (discussed above), the preserved measurements of the Athena temples at Prasidaki and Makiston suggest that they had similar plan and elevation designs, with 13 flank columns and comparable cella dimensions (ratio of cella length to cella width: 2.82 and 2.78). With only a preliminary report having been published for the Temple of Athena at Prasidaki it is impossible to complete a more detailed comparison of the buildings' designs, but, the available information suggests that the temples had similar elevation designs (for example, the LD of the Temple of Athena at Makiston was 0.97m compares with 1.1m on the Temple of Athena at Prasidaki).

However, the similarity of these temples' elevation designs is given context through a comparison with the different elevation design of the third temple of this geographic cluster, the Arcadian Temple of Apollo Epikourios at Bassai (P4). The Temple of Apollo Epikourios at Bassai had a longer plan (foundation length: 39.57m) and 15 flank columns, with a longer cella (ratio of cella length to cella width: 3.25). The peristyle columns were larger and closer together than those of the other two temples (LD: 1.112m compared to 0.966m on the Temple of Athena at Makiston; flank axial spacing: 2.673; compared to 2.68 on the Temple of Athena at Prasidaki). The temples' geographical proximity to one another, and difference to the architecture of the other areas of the Peloponnese, provides further indication that the size of the temple's plan was unlikely to have been a coincidence. Without the subsequent analysis of the historical and archaeological evidence it is impossible to speculate whether the two geographical clusters of group PB were part of a single tradition, or two separate traditions. However, the fact that group PB appears to belong to two separate geographical clusters does not undermine the significance of the size groups. Although both clusters are geographically separate, the temples in the clusters are very close to one another, suggesting that, whether belonging to one tradition or two, the temples in each separate cluster were built to the same dimensions of a nearby temple, indicating that the similarity in size was still regarded as significant.

Group PC

Group PC contains six temples that range in date between the date group 1 Temple of Apollo at Corinth (P7) and the date group 6 Temple of Athena Alea at Tegea (P6). Geographically, there appears to be a particular clustering of temples in the north-east of the Peloponnese in the Corinthia and the Argolid; however, the geographical division is not as clear as with group PB. Indeed, group PC contains temples from a wider range of locations, throughout the Peloponnese. The temples of this group are much larger, in terms of width, than those of groups PA and PB, with foundation widths ranging between 20.1m on the Temple of Hera in the Argive Heraion (P2) and 22.79m on the Temple of Apollo at Corinth (P7).

The two temples of this group constructed in the Corinthia, the Temple of Apollo at Corinth (P7) and the Temple of Poseidon at Isthmia (P13) have very similar overall foundation dimensions, with foundation widths of 22.79m and 22.05m and both have identical lengths of 55.7m. As with many of the other temples of the Peloponnese, the Temple of Poseidon at Isthmia is poorly preserved, making further comparisons difficult. However, Broneer's (1971) reconstruction of the temple with a peristyle of 6 by 13 columns is different from the 6 by 15 columns of the Temple of Apollo, which suggests that, despite the connection between the temples with relation to their size, the elevation was likely to be different. Indeed, the fact that both temples' elevation designs are different is also indicated by the variety in the preserved upper diameters of their columns (Corinth: 1.232m; Isthmia: 1.476m). Obviously, given the relationship between Corinth and the Panhellenic Sanctuary of Poseidon at Isthmia, the Panhellenic sanctuary being in the territory of the powerful city of Corinth (Tomlinson 1976: 93; Broneer 1976; Pedley 2005: 47), the architectural connection is particularly interesting. Indeed, given the evidence presented above for the similarity of the foundation dimensions in other parts of the Greek world, the extremely similar plan dimensions of Isthmia and Corinth must also be regarded as significant.

Other Doric Peripteral Temples in the Peloponnese

The largest temple in the Peloponnese, the Temple of Zeus at Olympia (P20) is without comparison in terms of size and thus, unlike the other Peloponnesian temples does not appear to belong to a sub-regional group. The temple has foundations over 30 metres wide and a stylobate width of 27.68, making it larger than most Sicilian temples. The size of the temple is especially surprising, given the disposition towards smaller temples in the Peloponnese, the average foundation width of group PA being only 12.75m. The temple's size suggests that it was not designed to be part of any of the Peloponnesian sub-regional groups; rather, its size was a statement that went unmatched in the Peloponnese.

Although the Temple of Zeus at Olympia does not appear to belong to a specific sub-regional group, the numbers of temples that appear to belong to specific size groups are indicative of their significance within this region. The importance of the sub-regional trend in the Peloponnese is further demonstrated by the surprising lack of temples in a number of large areas of the Peloponnese. For example, Doric peripteral temples, to judge from their density, appear to be of some importance within Arcadia, Eleia and the Argolid, but of little importance in Laconia and Achaia during the periods considered here. It is obviously difficult to say how much of this is due to lack of excavation; however, the sheer number of peripteral temples in Arcadia, Eleia and the Argolid gives an indication of their importance and the relative un-importance of temples in Laconia. Indeed, as discussed by Thucydides (1.10):

> Suppose, for example, that the city of Sparta were to become deserted and that only the temples and foundations of buildings remained, I think that future generations would, as time passed, find it very difficult to believe that the place had really been as powerful as it was represented to be…the city contains no temples or monuments of great significance.

As with the other regions discussed above, the temple architecture of the Peloponnese further demonstrates that the dimensions of the temple plans were significant. Indeed, to a greater extent than the sub-regional groups of Sicily and South Italy, there appears to have been a specific geographical element to the sub-regional groups of the Peloponnese. For example, the second cluster of group PB containing three very similar sized temples were all located very close to one another in the west of the Peloponnese. Furthermore, unlike the temples of group IA, there is no indication that the temples of the Peloponnese were built around the same time, instead, the same sizes appear to have had particular lasting importance in the Peloponnese. Thus, there are slight differences between the regions in the approach to the construction of temple architecture; however, the same underlying trend, discrete sub-regional groups containing temples with similar plan dimensions but different elevation designs, is present in all regions.

North Greece

Twenty-two Doric peripteral temples from North Greece are included in the data-set. The temples range in location from Aphytis in the north to Thebes in the south (Figure 94). Although there are examples of temples constructed in all six date groups, there are two main periods of building activity; seven temples (32%) being built in the second half of the sixth century (date group 2) and seven (32%) being constructed in the second half of the fourth century (date group 6), in comparison, only one temple is built in the first half of the sixth century (date group 1). The temples of North Greece are not particularly well-preserved, with only 36% preserving their stylobate dimensions (compared to an average 55% in the other regions) and only 18% preserve their column heights (compared to an average 39% in the other regions).

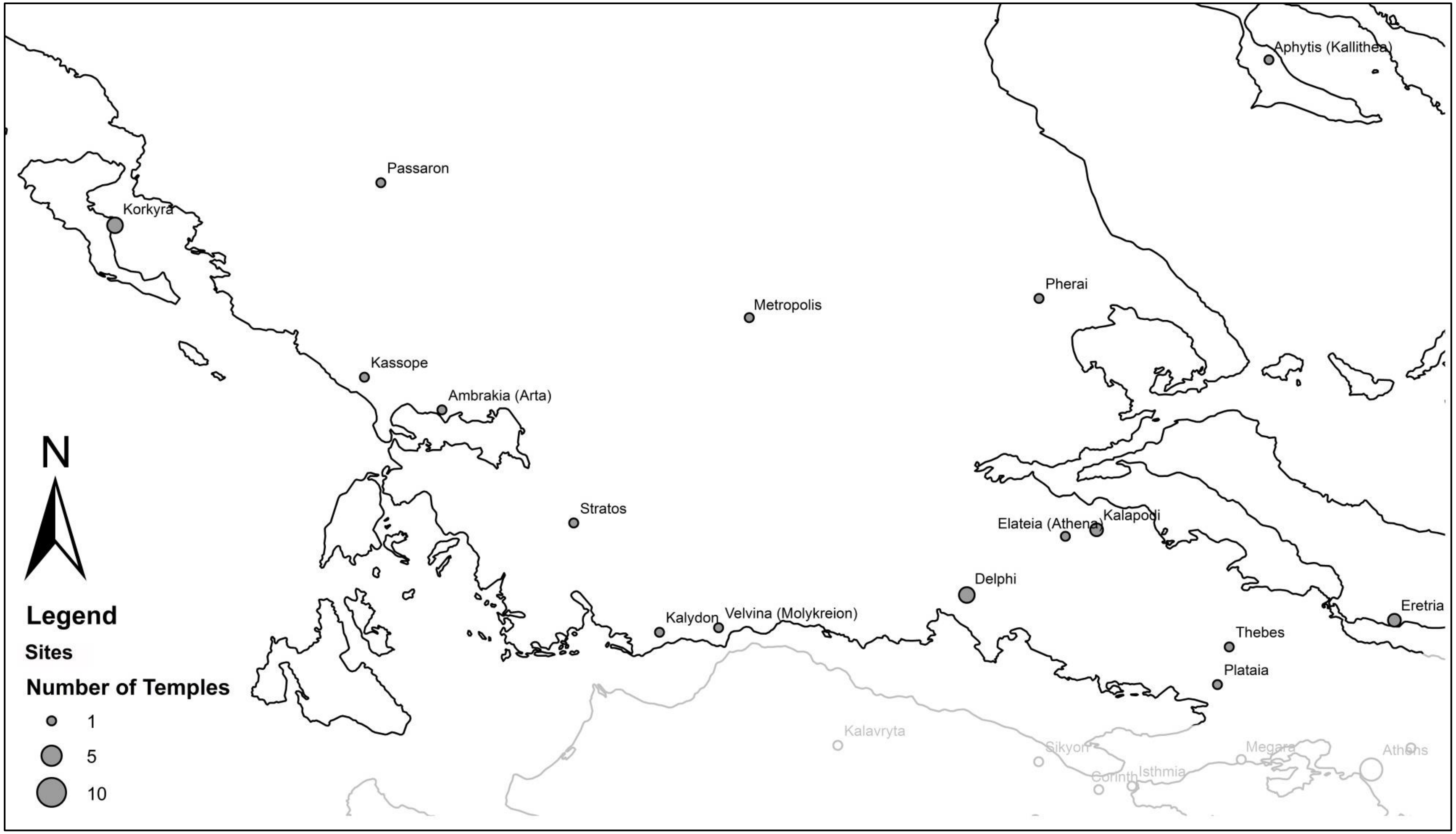

Figure 94 Map of the locations and numbers of Doric peripteral temples in North Greece.

The foundation widths, used in the hierarchical cluster analysis, are preserved on 20 temples, and most of these are much smaller than those belonging to the temples of Sicily and South Italy, again highlighting the regional nature of temple design. The sizes of the temples of North Greece range between 11.5m on the Temple of Athena Kranaia at Elateia (N18) and 23.82m on the fourth-century Temple of Apollo at Delphi (N15). The hierarchical cluster analysis indicates that the temple plan dimensions can be split into four sub-regional groups (Table 14, Figure 95): the nine temples with an average foundation width of 13.35m (referred to as group NGA), the two temples with an average foundation width of 16.55m (group NGB), the five temples with average foundation widths of 19.9m (group NGC), and the four temples with average widths of 23.47m (group NGD).

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
NGA	N17	Athena	Delphi	2	14.25	28.45	13.25	27.464
	N19	Apollo	Kalapodi (Hyampolis)	2	14.12	26.88	13.6	26.3
	N21	Apollo	Metropolis	2	13.75		13.75	
	N24	Kardaki	Korkyra	2	12.64		11.91	
	N18	Athena Kranaia	Elateia	3	11.5	27.5	11.5	27.5
	N1	Artemis	Kalydon	5	14.85	32.29	13.28	30.63
	N7	Dionysos	Eretria	5	12.45	23.05		
	N2	Poseidon	Velvina (Molykreion)	6	14.254	31.416	12.87	30.032
	N9	Zeus Ammon	Aphytis (Kallithea)	6	12.38	23.33		
NGB	N5	Hera	Plataia	2	16.7	49.9		
	N22	Unknown	Pherai	6	16.4			
NGC	N6	Apollo Daphnephoros	Eretria	2	20.55	47.8		
	N10	Apollo	Ambrakia (Arta)	3	20.75	44		
	N13	Zeus	Stratos	6	18.32	34.12	16.64	32.44
	N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4	19.26	46.12		
	N25	Hera (Mon Repos)	Korkyra	5	20.6			
NGD	N3	Apollo Ismenios	Thebes	5	22.82	46.25		

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
	N15	Fourth c. Apollo	Delphi	6	23.82	60.32	21.68	58.18
	N16	Sixth c. Apollo	Delphi	2	23.8	59.5		
	N23	Artemis	Korkyra	1	23.45	48.96	22.41	47.89
Unknown	N12	Unknown	Kassope	6				
	N14	Zeus	Passaron	6				

Table 14 Dimensions of the plans relating to the temples of North Greece and their assigned date groups.

Group NGA

The nine temples of group NGA range in date between the date group 2 Kardaki temple at Korkyra (N24) and the date group 6 Temple of Zeus Ammon at Aphytis (N9). The foundation widths of the NGA temples range between 11.5m on the Temple of Athena Kranaia at Elateia (N18) to 14.85m on the Temple of Artemis at Kalydon (N1). The consistently small size of these temples cannot be attributed to their date, as there is precedent for significantly larger temples, such as the date group 1 Temple of Artemis at Korkyra (N23; foundation width: 23.45m). The similarities in this group's foundation widths also extends to the stylobate widths, in fact, the group becomes even more cohesive at the level of the stylobate, with the stylobate widths only having a range of 1.1m, between 11.5m on the Temple of Athena Kranaia at Elateia (N18) and 13.75m on the Temple of Apollo at Metropolis (N21). The next largest temple in North Greece to preserve its stylobate width is almost 3m wider (and consequently almost 3 times the range of the seven temples of NGA that preserve their stylobate width), thus further indicating the cohesiveness of the temple sizes in group NGA.

As with the temples of South Italy, the NGA group as a whole represents extraordinary cohesion in terms of their plan dimensions but, despite their poor state of preservation, there are indications that the temples utilised very different ratios in order to alter the appearance of their elevations. The temples that preserve their stylobates make use of differing numbers of krepidoma steps; for example, the Temple of Athena Kranaia at Elateia (N18) has one, the Temple of Athena at Delphi (N17) has two and the Temple of Artemis at Kalydon (N1) has three. Likewise, those that preserve evidence for the number of columns demonstrate the use of varying amounts, for instance, the Temple of Apollo at Metropolis (N21) has 5 façade columns, whereas the Kardaki temple at Korkyra (N24) has 6. The Temple of Athena Kranaia at Elateia (N18) has 13 flank columns, whereas, the Temple of Athena at Delphi (N17) has 12. Furthermore, there is little similarity between the decorative elements associated with the temples. The Temple of Artemis at

Kalydon (N1) had hunting-dog shaped water-spouts, as opposed to the more usual lions' heads (Heffner 1927: 124; Dinsmoor 1950: 218). Indeed, the Temple of Athena at Delphi (N17) utilised additional sculptural decoration on the pediments, whereas, the nearby Temple of Apollo at Kalapodi (N19) did not. Therefore, despite the seemingly deliberate similarity in the size of their plans, the elevations of the temples were very different.

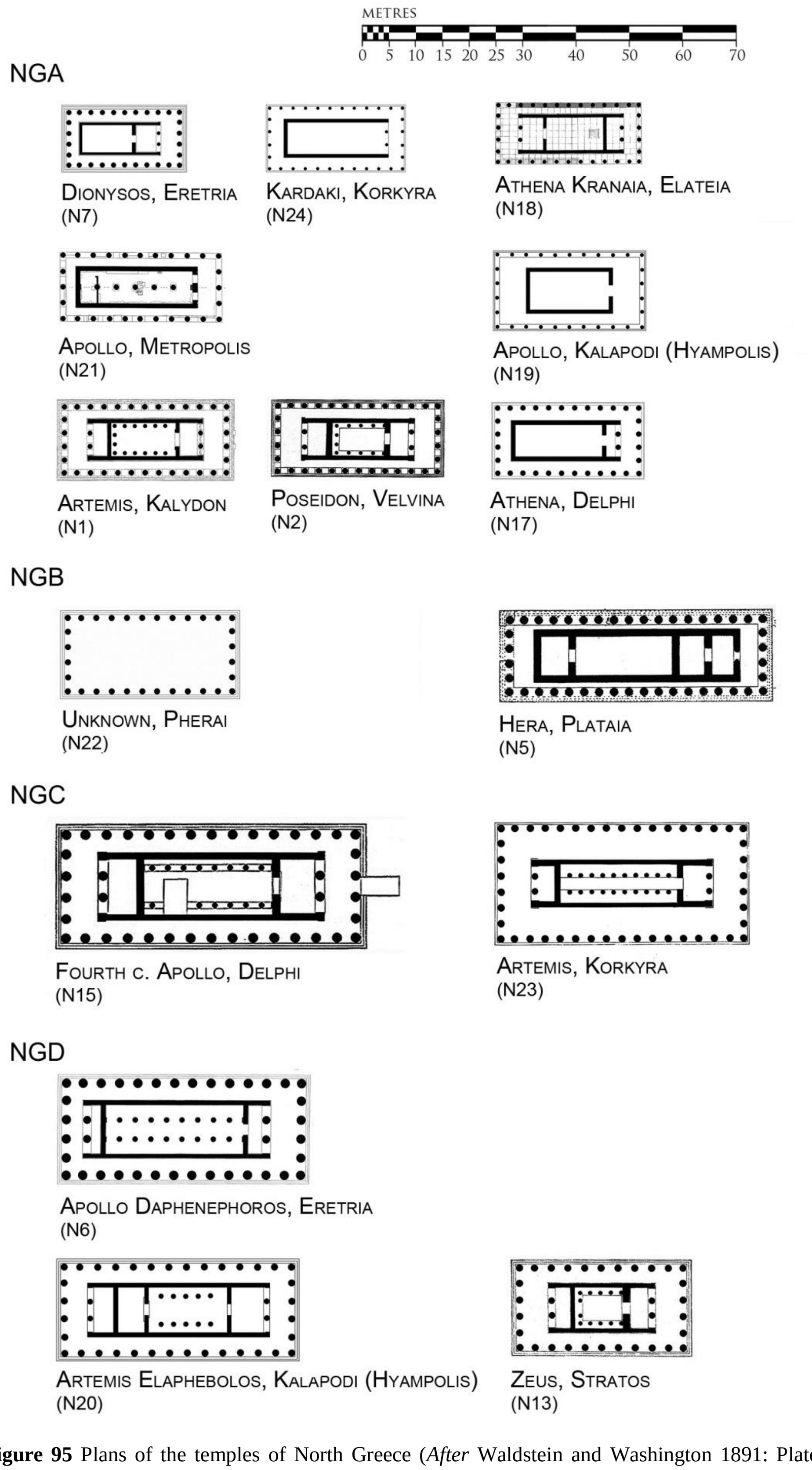

Figure 95 Plans of the temples of North Greece (*After* Waldstein and Washington 1891: Plate XX; Paris 1892: Plate 4; Demangel 1923: Plate 7; Dyggve 1948: Tafel XXXIV; Auberson 1968: Plate 5; 1976: Plate 2; Dinsmoor Jr. 1973: Plate 16; Coulton 1977: 42; Linders 1992: 35; Østby 1994a: 140; Intzesiloglou 2002: 114; Spawforth 2006: 171, 173, 175). Plans have not been published for the Temple of Zeus Ammon at Aphytis (N9), the Temple of Apollo at Ambrakia (N10), the Temple of Hera at Korkyra (N25), the Temple of Apollo Ismenios at Thebes (N3) or the sixth-century Temple of Apollo at Delphi (N16), and consequently these temple plans have not been included in this figure.

Group NGB

Group NGB contains two temples, the Temple of Hera at Plataia (N5) and the Temple at Pherai (N22). The two temples were built in different periods (date groups 2 and 6), and there is a wide geographical distance between the two locations. The disappearance of the Temple of Hera at Plataia following its excavation in the nineteenth century makes further comparisons between the temples difficult (Aravantinos *et al.* 2003: 304). Given the relatively small number of temples in this group, and the geographical distance between the two temples, without further historical and archaeological analysis it is difficult to discuss the significance of this group in the ancient world.

Group NGC

The five temples of group NGC range in date between the date group 2 Temple of Apollo Daphnephoros at Eretria (N6) and the date group 6 Temple of Zeus at Stratos (N13). The temple foundations range in width between 18.32m on the Temple of Zeus at Stratos and 20.75m on the Temple of Apollo at Ambrakia (N10). Unfortunately, the temples' elevation dimensions are not well enough preserved to enable a comparison of their designs. However, the differences in the ratios of foundation width to length and cella width to length suggest that the temples had different overall designs (see Appendix IV.1). As with group NGB, group NGC also has a wide geographic range, between Eretria in the south and Korkyra in the north. However, given the number of temples in the group, and their relative cohesion in terms of plan dimensions, it is suggested that this group was significant in the ancient world.

Group NGD

The four temples of group NGD range in date between the date group 1 Temple of Artemis at Korkyra (N23) and the date group 6, fourth century Temple of Apollo at Delphi (N15). The few temples in this group, two of the temples being the sixth- and fourth-century Temples of Apollo at Delphi (N15, N16), makes it difficult to discuss the significance of this group, however, it is interesting to note that the Temple of Apollo Ismenios at Thebes (N3) and the sixth-century Temple of Apollo at Delphi (N16) utilise the same foundation widths. Given the relative dearth of temples that were constructed to the same width, it could be argued that the width of the Temple of Apollo Ismenios at Thebes was making a direct reference to the Temple of Apollo at Delphi. The poor state of preservation of the Temple of Apollo Ismenios makes a comparison of the temples' elevations impossible, however, the fact that the temples had different foundation lengths suggests that they utilised different overall designs.

Therefore, an analysis of the temples of North Greece demonstrate that, as with the other regions, the temples can be organised into discrete sub-regional groups based upon the sizes of their plans. The above discussions of the temples in the various regions have demonstrated that the sub-regional groups are not arbitrary and had importance in the ancient world. The significance that was ascribed to the construction of temples with the same plan dimensions suggests that the differences in the elevations of the temples with the same size plans, as with the temples of Group NGA, had meaning in the ancient world.

Attica and the Saronic Gulf

Fifteen Doric peripteral temples have been discovered in Attica and the Saronic Gulf (Figure 96), ranging in date between the date group 2 Temple of Athena at Karthaia (A16) and the date group 6 Temple of Artemis at Loutsa (A12). The temples are all in various states of preservation. For example, the Hephaisteion (A6) and the Parthenon (A8) preserve all the measurements gathered for this study; whereas, only the foundations belonging to the Temple of Apollo Delphinios (A7) have survived. Despite the remarkable state of preservation of a few of the temples, only five of the fifteen temples preserve their column height (33% compared to an average 35% in other regions).

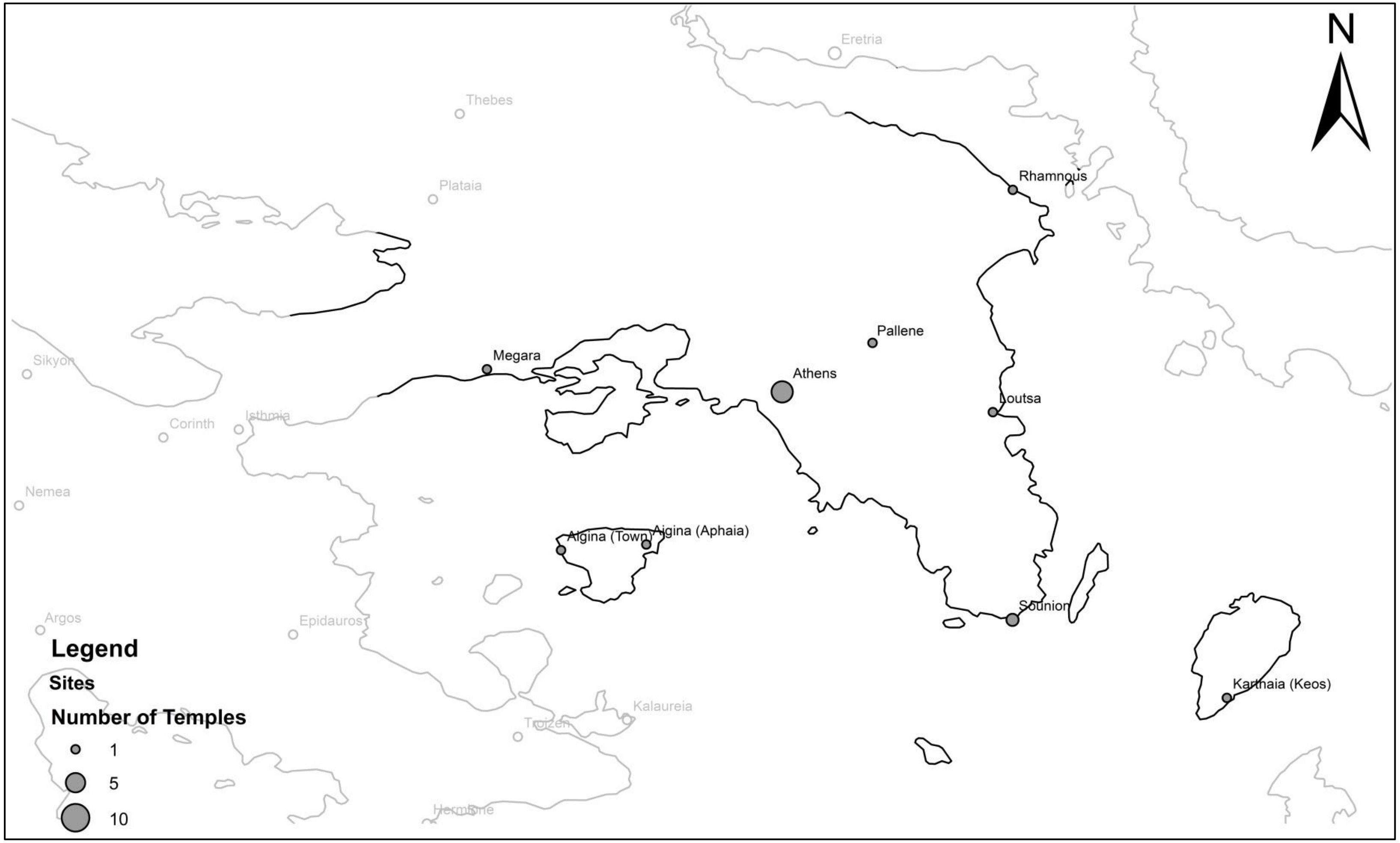

Figure 96 Map showing the location and number of the temples of Attica and the Saronic Gulf.

The foundations of the Doric peripteral temples of Attica and the Saronic Gulf range in width between 11.58m on the Temple of Nemesis at Rhamnous (A11) and 33.69m on the Parthenon (A8), whilst the foundation lengths range between 21.16m on the Temple of Artemis at Loutsa (A12) and the 72.32m on the Parthenon. Similar to the other regions, a hierarchical cluster analysis indicates that the temples of Attica and the Saronic Gulf can be split three into sub-regional groups based upon their foundation sizes, referred to as groups AA, AB and AC (Table 15). As with the Peloponnese, there is also one temple that does not appear to belong to a sub-regional group, the Parthenon (A8).[66]

Sub-regional Group	Cat No.	Name	Location	Date Group	FoW	FoL	SW	SL
AA	A16	Athena	Karthaia (Keos)	2	12.76	23.58	11.98	23.19
	A11	Nemesis	Rhamnous	4	11.58	22.76	9.96	21.431
AB	A15	Athena	Megara	2	14.5	35.5		
	A14	Aphaia	Aigina	3	15.5	30.5	13.77	28.815
	A6	Hephaisteion	Athens	4	15.42	33.48	13.708	31.769
	A7	Apollo Delphinios	Athens	4	15.26	33.08		
	A9	Second Temple of Poseidon	Sounion	4	15.2	32.8	13.47	31.124
	A10	Athena	Pallene	4	16.32	32.25		
	A12	Artemis	Loutsa	6	14.11	21.16	12.56	19.6
AC	A3	Athena Polias	Athens	2	21.85	43.95	21.3	43.15
	A13	Apollo	Aigina	2	18.872	34.325		
Other	A8	Parthenon	Athens	4	33.69	72.32	30.88	69.503
Unknown	A2	Olympieion	Athens	2				
	A4	First Temple of Poseidon	Sounion	3				
	A5	Old Parthenon	Athens	3				

Table 15 Temples of Attica and the Saronic Gulf organised by sub-regional size group.

[66] The only surviving mainland temple to rival the Parthenon in terms of size is the Temple of Zeus at Olympia (P20), which as discussed above forms its own group in the Peloponnese and it is therefore tempting to suggest that the Parthenon's size was connected to that of the Temple of Zeus at Olympia, a connection also made by Coulton (1983: 43 n.20).

Groups AA and AC

Group AA contains the two smallest temples, with average foundation widths of 12.17m and stylobates of 10.97m (Figure 97). The foundation widths of the temples in the third group, referred to as group AC, are not as cohesive as the temples in the other groups. Groups AA and AC are similar to the groups in the other regions, in that, they have similar sized foundation widths but different elevation designs.

Group AB

The most populous group, identified as group AB, contains seven temples with average foundation widths of 15.19m and stylobate widths of 13.38m (Figure 97). What follows is a brief introduction to group AB, which is supplemented by a more in-depth analysis and discussion in Chapter 8. Similar to the Sicilian group SB, the majority of temples of group AB have similar plan dimensions but different elevation designs; however, as with the fifth-century temples of Akragas, the fifth-century temples of group AB have similar plan dimensions and elevation designs. All these temples were constructed in date groups 3 and 4 and include; the Hephaisteion (A6), the Second Temple of Poseidon at Sounion (A9), the Temple of Athena at Pallene (A10) and possibly the Temple of Apollo Delphinios in Athens (A7).[67] The first temple at Poseidon at Sounion (A4) may also be included in this group; despite the temple's poor state of preservation, it has generally been agreed that it shared the same stylobate size and plan design as the second temple (Doerpfeld 1884: 329; Camp 2001: 308). As well as similar size plans, the fifth-century Attic temples of group AB also utilise similar plans and elevation designs, all being constructed with 6 by 13 columns and the same capital design (CGL). Comparing the two most well preserved temples of this group, the Hephaisteion (A6) and the Second Temple of Poseidon at Sounion (A9), demonstrates the extent to which the temples shared designs. Both buildings utilised almost exactly the same lower and upper column diameters and entablature measurements; for example, the architrave and frieze height of the Hephaisteion are 0.836m and 0.828m, whereas on the Temple of Poseidon, the same elements measure 0.834m and 0.829m. Given the range of sizes and proportions to which Doric temples were constructed, the remarkable similarity in the designs of the fifth-century temples of group AB should be regarded as significant. Indeed, the fact that these temples were built geographically close together further suggests that these similarities

[67] The Temple of Apollo Delphinios is not well preserved with only the foundations surviving *in situ* and evidence for the elevation being reduced to little more than a few column and stylobate fragments. However, when compared to the other temples that were constructed in the ancient Greek world, the foundations of the Temple of Apollo Delphinios are remarkably similar to those of the Hephaisteion. Given the fact that two other temples in this region, constructed around the same time, utilise the same design as the Hephaisteion, it is a reasonable assumption that the Temple of Apollo Delphinios also utilised this design.

had meaning. Thus, as with the temples of Akragas, it is suggested that these temples' designs had significance and meaning that was different from that of the other sub-regional groups.

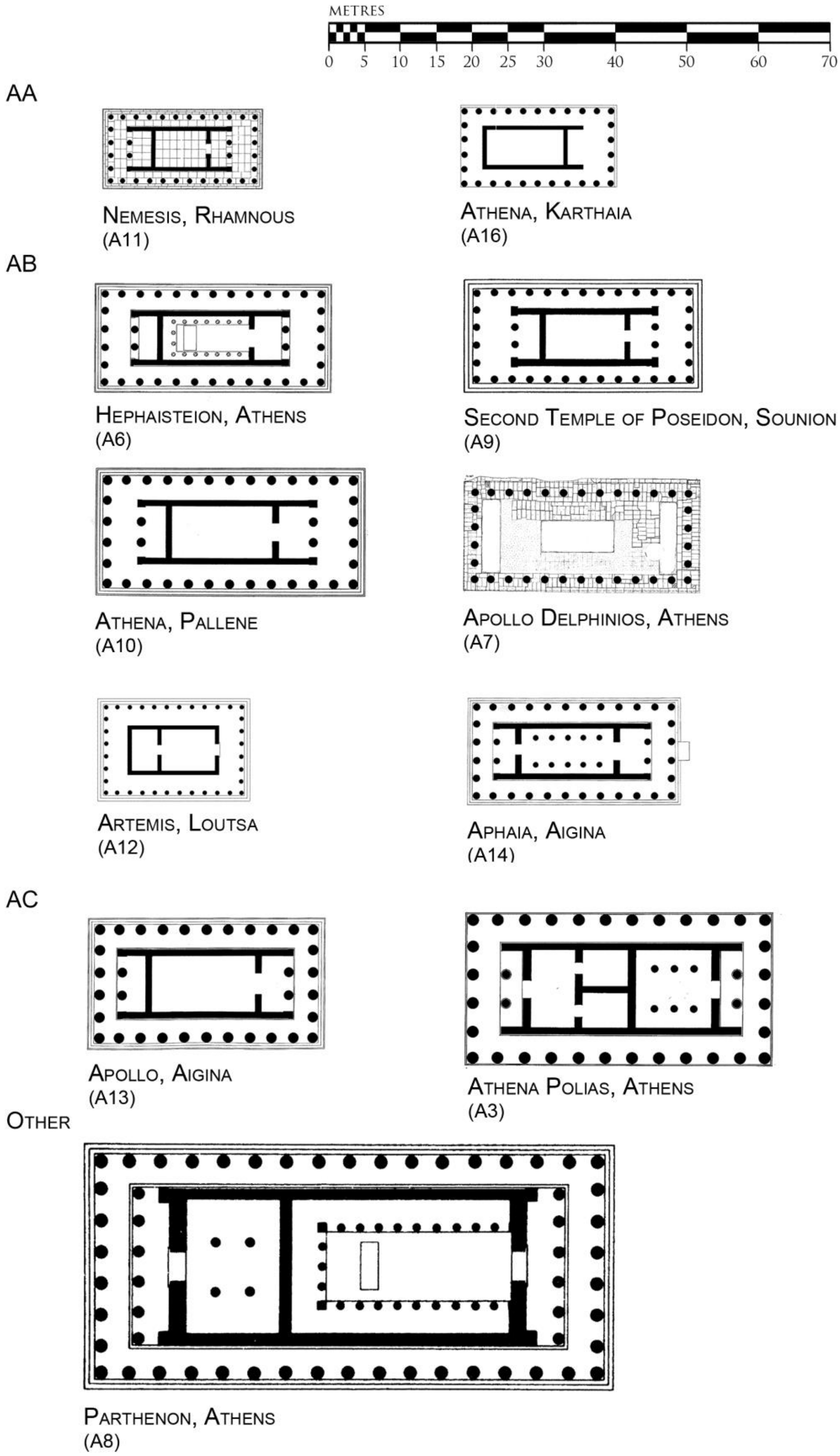

Figure 97 Plans of the Doric peripteral temples of Attica and the Saronic Gulf (*After* Boersma 1970: 196; Wurster 1974: 107, Tafel 34; Østby 1980: 192; Travlos 1971: 84, 106; Knell 1983c: 41; Miles 1989: 143; Hurwit 1999: 122; Pedley 2005: 69; Barringer 2008: 116). A Plan has not been published for the Temple of Athena at Megara (A15), and consequently the temple's plan has not been included in this figure.

Similarities across Regional Divisions

One area that has not yet been addressed is the possibility of overlap in size groups between the various identified regions. A certain amount of overlap is to be expected, given that the regions, particularly in the case of the mainland, are ascribed somewhat arbitrarily. Thus, it should not be expected that the observed patterns should stop and begin with the geographical limits that have been imposed. Indeed, it may well be that temples in particular regions made specific allusions to temples in other regions. This may have been the case with the two Poseidonia temples of Hera, which were much larger than the other temples of South Italy but remarkably similar in size to the Sicilian temples of group SA, or the Parthenon and the Temple of Zeus at Olympia. However, it is difficult to ascribe significance to similarities that are found on different sides of the Greek world. Given their proximity to one another, as well as their cohesiveness, the presence of discrete sub-regional size suggest that the similarities had significance at the sub-regional level, and it is the similarities and differences in the designs of the temples of these groups that form the focus of the discussion in the next chapter.

Conclusion

Therefore, this chapter has demonstrated that, when the plan dimensions are analysed on a regional scale, the temples belong to discrete sub-regional groups. The number of these sub-regional groups, their cohesiveness, and their relative difference to one another, suggest that these groups are not arbitrary and must be regarded as significant. Despite sharing the same plan dimensions, the above analyses have demonstrated that the temples rarely share the same plan and elevation designs, thus, creating groups of temples that share plan dimensions, but, have different overall designs. The fact that temples which were built close together in the same sanctuary utilised the same plan dimensions but different elevations, such as the two temples in the Sanctuary of Hera in Poseidonia (group IB), suggests that these similarities and differences had significance in the ancient world. There does appear, however, to be some groups of temples, such as those of fifth-century Akragas and Attica, which utilise similar plan and elevation designs. The geographical proximity of the temples in these groups suggests that their relationship with one another was different from those temples that had similar plan dimensions but different elevation designs. Thus, analysing the architecture in this way suggests that the similarities and differences in the temple designs had significance and meaning in the ancient world. Consequently, with the removal of the constraints of the overarching Panhellenic evolution model (as demonstrated in the previous chapter), it is possible to go further than the conclusions of Snodgrass (1986) and Østby (2005) discussed at the start of this chapter. Indeed, the ‘Arcadian’ group identified by Østby was not an insular example, or a single ‘tangent’ to the single linear line of evolution, but in fact, the majority of temples appear to belong to sub-regional groups.

The next chapter discusses both, the temples that have similar plan dimensions but different elevations, and those with similar plans and elevations, demonstrating that the differences and similarities in Doric peripteral temple design were connected to the same notions of comparison, competition and identity that dominated the activity in the religious sanctuaries during the archaic and classical periods.

Chapter 7: Temple Design, Competition and the Expression of Identity

> At Athens, for example, the architects Antistates, Callaeschros, Antimachides and Pormos laid the foundations when Pisistratus was building the Temple of Olympian Jupiter, but after his death they abandoned what they had begun because of political upheavals (Vitruvius, preface to 7.15).

The previous chapter demonstrated that when the temple sizes are analysed on a regional scale, they fit into particular sub-regional groupings based upon their plan dimensions. In the majority of cases, the temples in each sub-regional group had significantly different elevation designs to one another. However, in a few instances, the similarities in the temple plan dimensions carried through to the elevations, which resulted in temples with very similar overall designs. The numbers of temples in each sub-regional group and their discreteness suggests that these similarities and differences in the architecture had significance in the ancient world.

This chapter seeks to demonstrate that the identified sub-regional groupings were linked to inter-group competition, with the differences in their elevation designs being linked to the expression of identity on behalf of the individual temples' clients. Unlike the investigations of Snodgrass (1986), Østby (1991; 1995b; 2000; 2005) and Nielsen (2002) discussed in Chapter 2, which were limited to investigations of 'tangents' to the single line of Panhellenic evolution, by analysing the temples in their sanctuary contexts, this chapter demonstrates that temple design was primarily influenced by the desire of the clients, using widely circulated designs, to compete with, and express distinct identities from, the other temple builders around them. Thus, it is argued that the sub-regional similarities in plan size, discussed in the previous chapter, are connected to the notions of competition that were so prevalent in ancient sanctuaries; whilst the differences in their elevations were used to express the distinct identities of the temples' clients. Furthermore, it is argued that in instances where the temples have the same overall design, such as those of fifth-century Akragas, are due to them being constructed by the same client, be they a city, tyrant, individual or other political or social group.

The chapter commences with a discussion of Greek sanctuaries and the spirit of competition that characterised the activity within them, before going on to discuss the role of architectural design in inter-group competition. The second section re-addresses the discussion of architect and client introduced in Chapter 2, demonstrating that it was the client who influenced the temple's design and that the differing expressions of identity should be directly associated with the construction of temples by different groups, rather than different periods in time.

Competition, Votives and the Expression of Identity in Greek Sanctuaries

In order to understand the observed sub-regional trends in temple design, it must be understood that the Doric peripteral temple was part of a larger context, namely, the sanctuary (Jenkins 2006; Barringer 2008). Sanctuaries, and the votives left within them, formed a physical manifestation of the inter-group competition that was a principal component in ancient Greek society (Adshead 1986: 20). Thus, it is in the atmosphere of competition that temples' designs were meant to be understood.

Sanctuaries were amongst the most significant spaces in the ancient polis, forming the prime location for a population or group to congregate for political, social or cultural gatherings (Alcock 2007). The sanctuary spaces themselves were primarily public places designed for the display of votives, where communities and individuals could display their gratitude and piety towards the chosen god (Rouse 1902; Burkert 1988: 43; Ammerman 1991: 203; Whitley 2001: 136; Osborne 2007: 254; Price 2008: 58). As well as showing their gratitude and piety, the setting up of a votive presented another opportunity for competition, to display the dedicator's wealth, status and to ensure that any achieved glory would not be forgotten; as such, votives would be set up where both gods and mortals would notice them (Spivey 1996: 82; Whitley 2001: 140; Rocca 2006: 144; Barringer 2008: 46). For example, victory in an athletic competition at one of the Panhellenic or local events would subsequently be commemorated through a votive dedication in a sanctuary. Sometimes this would involve dedicating the awarded prize; for example, many of the Panathenaic amphorae that were awarded at the Panathenaic Games were discovered on the Athenian Akropolis, having subsequently been dedicated to Athena (Hurwit 1999: 23). Therefore, the votive dedications that were deposited in the sanctuaries of the ancient Greeks were intrinsically tied to a notion of competition.

In many cases, athletic victors were not happy with simply dedicating their awarded prizes; instead they would commission statues, which subsequently competed with each other in order to attract the visitors' attention. At Olympia, the athletic victory statues were grouped around the particularly important military victory monuments because of the higher visibility being near one of these major dedications guaranteed (Scott 2010: 197). The political and social importance of the athletic statues to the inter-group competition conducted in the Panhellenic sanctuaries meant that cities would often erect statues to Olympic victors of the past. For example, Poulydamas of Skotussa won at Olympia in 408 but a statue was not erected until 330 (Barringer 2008: 50). However, the competitive nature of votive dedications did not only apply to those dedicated by athletic victors. When an Olympic victor erected his statue at Olympia, he joined the company of votives statues that were erected for other reasons. For example, Mikythos dedicated a number of statues in order "to fulfil a vow on the recovery of his son, who was sick with a deadly disease" (Pausanias 5.26.5). Likewise, statues were also erected to celebrate military victories, such as the Nike of Paionius, dedicated by the Messenians and Naupactians as a result of their victory over the Spartans, which Scott (2010: 195) argues was deliberately designed to rival a specific Spartan dedication. Thus, larger votives, such as statues, also formed part of the competition that underlay activity in classical sanctuaries.

The highly competitive inter-group nature of votive offerings in the archaic and classical periods is further demonstrated through the ebb and flow of dedicatory trends at particular sanctuaries. For example, the inscribed military dedications (*tropaia*) at Olympia appear to have become increasingly popular during the period 500-450. Although *tropaia* had been dedicated in the sanctuary from the seventh century, the fifty year period at the start of the fifth century saw more *tropaia* being dedicated at Olympia than in any other period in history (Scott 2010: 151, 191). Indeed, the very act of dedicating particular items of *tropaia* was intimately connected to inter-group competition. For example, the Spartans dedicated a golden shield, bearing a dedicatory inscription detailing that it was in celebration of their victory against the Athenians, Argives and Ionians at the battle of Tanagra and they placed it above the east pediment of the Temple of Zeus (Pausanias 5.10.4). Furthermore, even when similar items were being dedicated, it was still part of the network of competition; the different groups wanting to dedicate a similar item to their rivals in order to ensure a direct connection (and probably a direct comparison) between the votives. For example, when Gelon wanted to compare his victory at Himera to the battle of Plataia, he dedicated a bronze column and gold tripod at Delphi, whose visual similarity with the serpent column and tripod constructed in the same sanctuary to celebrate Plataia was "unmistakable" (Scott 2010: 88). Thus, the sanctuaries, in which the Doric peripteral temples were constructed, were highly competitive environments and the votives formed the physical manifestation of this competition.

The Athenian Akropolis, Korai and Identity

The votive dedications discovered on the Athenian Akropolis indicate that the same trend, votives being used as a means of inter-group competition, can also be identified in the sanctuaries that were of primarily local importance. Moreover, an analysis of the votives left on the Athenian Akropolis and specifically the korai statues indicates the importance that was ascribed to the dedication of similar objects, but, with subtle differences in their designs.

The vast cache of votives from the Athenian Akropolis demonstrates the large amount of money that was spent on individual and group dedications in the name of self-commemoration (Price 2008: 63). The dedications on the Akropolis were left by both individuals and groups; for example, Sostratos erected a full size four horse chariot to celebrate a victory of his stables (Hurwit 1999: 58) and the Athenians dedicated a chariot group following their victory over the Boiotians and Chalcidians of Euboia (*IG* I^2 394). However, it was not only sculpture that formed appropriate dedicatory gifts on the Akropolis. For instance, no fewer than fifty inscribed *perirrhanteria* have also been found along with examples of votive pottery and figurines (Camp 2001: 43). The same trend towards periods of popularity for particular votives, that was prevalent at the Panhellenic sanctuaries, can also be seen on the Akropolis; for example, votive reliefs dedicated to Athena appear to have become particular popular around the turn of the fifth to the fourth century, and then subsequently declined in popularity (Hurwit 1999: 36). Likewise, the dedication of korai on the Akropolis appears to have been extremely popular for only a short period of time. The remains of seventy-five korai, dating between 530 and 480 were found on the Akropolis. These were dedicated by a wide range of different individuals, such as traders and potters, but the vast majority appear to have been dedicated by the aristocracy (Holloway 1992). Similar to an architectural order, the korai all conform to a recognisable, almost standardised, design (for instance, standing up, facing forward) and also similar to Doric temple design, they all differ slightly in their appearance (for example, some wear bracelets and necklaces, some had a more ‘naturalistic’ appearance, whilst others utilised imported Naxian and Cycladic marble (Fehr 1996: 178; Hurwit 1999: 104)).

The similarities and differences in the korai’s designs have been associated with differing statements of identity on behalf of the sculpture’s patron. Firstly, it has been suggested that their regularity and similarity in design are linked to the expression of aristocratic identity (Tanner 2006: 60-63; Mee 2011: 286) and by extension, also the inherent competition between the different aristocratic groups, as well as those individuals who wished to seen as belonging to the aristocracy (Pedley 2005: 108-110).[68] Secondly, it is suggested that the design differences were utilised to articulate the differing identities that the dedicatory group wished to express, not only to the non-elites but also between the individual aristocrats. For example, one of the most noticeable and abrupt differences in korai design is the transference from the 'Ionic' chiton to the 'Doric' peplos in the early decades of the fifth century. As discussed by Hall (2007) this change in design was linked to an appropriation of items that had formally signalled elite identity in an attempt to democratize the formally elite expressions of status, without completely suppressing their creation. This appropriation suggests that subtle design differences between votives that utilise a repetitive style are to be associated with differing expressions of group identity.

Architecture, Competition and Identity

In some cases, the votives left in the sanctuaries incorporated architectural elements, or in other instances, an architectural element formed the entire dedication. For example, it has been suggested that the form of the korai was taken from architectural models, with some korai, such as the Lyons kore from the Athenian Akropolis, being used as caryatids (Holloway 1992: 269-270). Furthermore, Doric columns commonly formed votive objects either as a support for sculpture or on their own. These range in size between miniature "representative" votives, such as those at Delphi (Fehr 1996: 174), Isthmia (Broneer 1971: 169) and Corinth (Roebuck 1955: 152), to the large-scale examples, such as the sixth-century votive Doric column next to the Temple of Athena at Poseidonia (Trendall 1955: 55; Coulson 1976a), the late sixth- or early fifth-century inscribed votive Doric column in the Argive Heraion (Daly 1939: 165-169), or the column supporting a youth at Rhamnous (Straten 1992: 248). These are symptomatic of the fact that height, and the need to capture the attention of the public, had become critical issues when making dedications (Marconi 2007: 11). Indeed, with so many votives being dedicated, a sanctuary could quickly become 'overcrowded' with offerings, an issue that represented a great source of irritation for Plato (*Laws* 909 e-910 a). Consequently, columns afforded a dedicator's votive prominence amongst the 'clutter' of smaller votives.

Although single architectural elements commonly formed votive dedications, entire buildings could also make appropriate votive offerings in ancient Greek sanctuaries. A

[68] The korai dedicated by artisans such as that by Nearchos the potter (*IG* I^3 628), are suggested to represent wealthy businesspeople laying claim to elevated status, utilising prestige symbols that were normally associated with the aristocracy (Hurwit 1999: 62). Rather than laying claim to elevated status, Holloway (1992: 272) argues instead that the korai were the vehicles for the "expression of achievement" by the citizen workshop owners. Despite these scholarly differences, the fact that korai were chosen by the artisans as well as the aristocrats suggests that they were the appropriate votive for public expressions of identity (whether aristocratic or as a successful individual) in this period.

form of competitive architectural dedication that were popular in the Panhellenic sanctuaries, with examples being found at Delphi, Delos, Nemea and Isthmia, as well as in those of local importance, such as the Akropolis and Poseidonia, were the small buildings known as treasuries. Pedley (2005: 74) describes treasuries as:

> Small temple like buildings, boxy in appearance, built to a regular plan with access often through a two columned porch. Built high on podia with thick and windowless walls, their main purpose was to protect objects of basic value…and to keep intruders out.

The buildings are in fact offerings to the sanctuary's god, erected in the sanctuary by a city or individual. Pausanias' (6.19.1-15) description of the treasury terrace at Olympia indicates that a treasury was identified by the dedicating city or individual dedicator, and that the treasury would contain dedications from that city. In most cases the treasuries are identified as having been built by a city: "The Megarians… have built a treasury" (Pausanias 6.19.12), or "before the catastrophe [the people of Selinous] built a treasury to Olympian Zeus" (Pausanias 6.19.10). However, there are instances where they were built by tyrants, as well as by the city as a collective whole: Herodotus (1.14) states that a number of gold mixing bowls stand in the Corinthian Treasury, "though to speak strictly it should not be called the public treasury of the Corinthians, but the treasury of Cypselus, son of Eëtion". Indeed, the fact that the buildings served as an *oikos* for the dedicating community (Gardiner 1925: 218), further exaggerated the connection between the architecture and the dedicatory group.

The inter-polis competitive nature of the buildings is borne out through a study of their contents. For example, Pausanias (6.19.13) relates that the Megarian treasury at Olympia bore a shield indicating that the treasury was paid for using the spoils of a war with Corinth, whilst, the Sikyonian treasury contained an inscribed bronze shield indicating that it was dedicated "to Zeus from the Myanian spoils" (Pausanias 6.19.4). Thus, these buildings were clearly associated with the individual dedicatory group and were built as monuments to the rivalry that existed between the different poleis that constructed them.

At Olympia eleven treasuries stand in a line overlooking the altar of Zeus and the end of the stadium (Figure 98). Most were dedicated by cities in Sicily and South Italy and all were built over the course of just 120 years (600-479; Scott 2010: 163). Given the short period of time over which these treasuries were constructed, their contents, and the competitive nature of inter-polis dedications in this sanctuary, it is probable that the treasuries were constructed in the same spirit of competition that led to the erection of the *tropaia* and the korai discussed above.

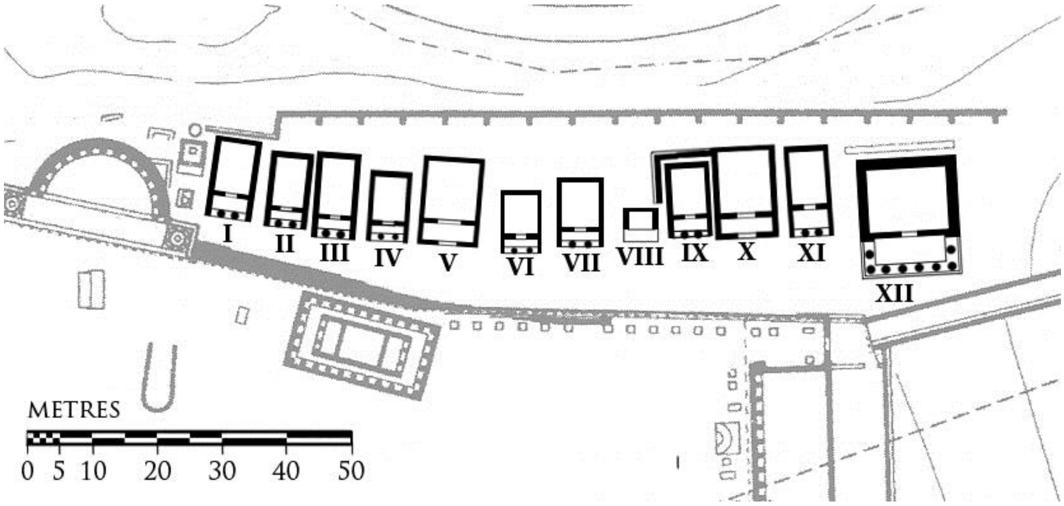

Figure 98 The treasuries of Olympia (*After* Scott 2010: 206).

As with the sub-regional groups of temples discussed in the previous chapter, the treasuries of Olympia were often constructed with a similar sized ground plan to those around them. For example, the Sikyon (Oikos I), Syracuse (Oikos II), Byzantium (Oikos IV), Cyrenian (Oikos VI), Selinous (Oikos IX), and the Megaran (Oikos XI) treasuries at Olympia all utilised widths of c.6.3m (Mallwitz 1972: 167, 170, 173, 174; De Angelis 2003: 158). Likewise, they all appear to have been constructed using the Doric order and utilising the di-style in antis plan.[69]

Although the scant remains make it very difficult to accurately compare their height, the evidence from their materials and decorative elements suggest that considerable effort was expended in order to ensure that the treasuries appeared different from one another. In most cases distinct forms of decoration, which are clearly associated with the identity of the building's dedicator, were utilised.[70] Many of the treasuries used construction material that was brought over from the dedicating city. For example, the Cyrenian treasury had African limestone for the pediment (Scott 2010: 165 n.82); whereas, the Selinous treasury was built with stone from near Selinous (Scott 2010: 165 n.82). Further to this, most treasuries made use of forms of decoration that were particular to a particular polis. For instance, the Syracusan treasury has a peculiar architrave taenia with a sunken astragal, a comparison for which has also been found on the Temple of Apollo at Syracuse (Dinsmoor 1950: 116; Cultrera 1951: 821; Barletta 1983: 73). The treasuries would often utilise roof decoration that was characteristic of the dedicating city (Winter 1990: 13; 1993: 313); such as the terracottas from the treasury of Gela at Olympia that

[69] It is probable that Oikoi III, VII and IX also utilised this design and a similar width of c.6.3m. Unfortunately, Mallwitz (1972) does not publish the measurements for these treasuries, however, their published plans (see Figure 98) are of similar width and design to those discussed above.

[70] The treasuries were originally constructed without identifying inscriptions, although the treasuries of Megara and Sikyon received inscriptions at a later date (Scott 2010: 163).

match examples from the home polis (Van Buren 1923: XX). The most notable variation between the buildings is the addition of sculpture, which may have had specific meaning to the members of that polis, but also served to mark the treasuries as different (Barringer 2008: 26-28); for example, the Megarian treasury contained a gigantomachy (Vikatou 2006: 67, 71; Pausanias 6.19.13) and one of the treasuries bore a highly decorated akroteria depicting Zeus and Ganymede. The pediment of the Cyrenian treasury contained a sculptural theme that was very particular to that polis, a cockerel and lion (Bookidis 1967: 85-87; Scott 2010: 165). It is interesting to note that architectural sculpture at Olympia was rare before the middle of the sixth century, around which point all the treasuries begin to use it, further highlighting the competitive nature of the treasuries (Marconi 2007: 17-18). Therefore, as with the smaller votives, the dedication of a treasury was connected to the inter-group competition that was so prevalent in Greek sanctuaries, utilising a similar size to indicate their rivalry; however, they used different decorative elements in order to express their individual group identities.

It is interesting to note that, although these buildings were clearly competitive in nature, there was no apparent desire to compete through the construction of larger, or different 'types' of buildings. Instead the competition (and individual expressions of identity) was conducted through different elevation designs. It could be postulated that sanctuary rules forbade the construction of larger treasuries. However, the presence of two larger treasuries, which were clearly built to rival each other, rather than the other treasuries (V and X discussed below), suggests that this was not the case. Rather, as with the repeated use of the korai, the repeated use of the Doric order, the in-antis design, and the same sized plan is connected to the symbolic capital that is acquired through the construction of a recognisable structure 'type'. The recognition that the structure is of a particular 'type' allows the building to be compared with other buildings of the same 'type,' and it is the differences in the elevation designs that aid this comparison.

This conclusion is further confirmed through a study of two of the exceptions amongst the Olympian treasuries, the treasuries of the South Italian cities of Metaponto (Oikos X) and Sybaris (Oikos V). Unlike the other treasuries that have a width of c.6.3m and a di-style in-antis design, the treasuries of Metaponto and Sybaris are c.9.3m wide and do not utilise a di-style in-antis design (Mallwitz 1972: 170; 174). Indeed, both these treasuries were erected around the same time, dated by Dyer (1905: 299) to the middle of the sixth century. Given the geographical proximity of the dedicating cities to one another, it cannot be a coincidence that it was these two cities that both built treasuries of the same size, in order to compete with one another. The fact that the Sybarite treasury utilised additional sculpture (Scott 2010: 167 n.83) suggests that the two treasuries were built with different elevation designs. Thus, the similarity in the plan dimensions is indicative of the rivalry and competition between these two poleis, but the distinctiveness of the treasuries' elevations is designed to express the separate identities of the treasuries' builders.

The same architectural competition and expression of identity, through the use of treasury buildings of the same size plan but different elevations, can also be found at the Panhellenic sanctuaries of Delphi, Delos, Nemea and Isthmia (Miller 1990: 117-125; Hemans 1994: 65). For example, the four Ionic treasuries at Delphi all have foundation widths of c.6.4m (Dinsmoor 1913: 5-6), but utilise very different decoration. For example, the Siphnian treasury utilises caryatids instead of columns as well as an enormous amount of sculptural decoration in order to attract the sanctuary visitor's attention (Scott 2010: 64), which is in stark contrast to the relatively plain appearance of the Massiliot treasury (Dinsmoor 1950: 138-140). The buildings testify to the fact that architecture and architectural design were used in sanctuaries of Panhellenic importance as monuments to inter-group competition and as expressions of the individual dedicatory group's identity.

Before going on to discuss the presence of treasuries in sanctuaries of primarily local importance, it is interesting to note the position of the treasuries within their sanctuaries. The treasuries at Olympia and Nemea are all grouped together in a single line, which further serves to emphasise the buildings' widths. This is in contrast to the treasuries at Delphi and Delos, which are spread throughout the sanctuary, yet also utilise a standardised width. Scott (2010: 165) postulates that at Olympia the locations of the treasuries were dictated to the dedicators by the sanctuary officials, and the same may have been true at Nemea. However, the fact that the treasuries at Delphi are distributed around the sanctuary, yet still maintain the standard size and 'type' of building design, suggests that the presence of these elements was enough to encourage comparisons to be made between the buildings, and the buildings did not have to be placed next to each other in order for the elevations to be compared.

Interestingly, these monuments of inter-group competition and identity can also be found in sanctuaries of local importance, implying that the practice was not solely reserved for inter- but also intra- polis competition. For example, on the 'archaic' Athenian Akropolis at least seven comparable 'treasury type' buildings can be identified (Klein 1991: 335). Most of these treasuries utilised Doric entablatures of various shapes (in most instances the entablature is the best preserved element) and differing pedimental themes, albeit with a certain tendency towards depictions of different images of Herakles, such as the presentation of Herakles to Olympus (Spivey 1996: 99; Marconi 2007: 20), Herakles wrestling a Triton, Herakles fighting the Lernean Hydra and the so-called Olive Tree pediment (Hurwit 1999: 112-3; Camp 2001: 32). Unfortunately quarrying and later building on the Akropolis has all but eradicated any trace of the foundations of these buildings, meaning that their precise location and relation to the other buildings of the Akropolis remains unknown (Camp 2001: 32; Marconi 2007: 19-20). As the 'archaic' Akropolis was only of local importance, it generally assumed that these treasuries were constructed by the wealthy competing groups of aristocrats (such as, the Alkmaionidai, the Philaidai, and the Eteoboutadai) who controlled Athenian cult activity in the sixth century (Boersma 1970: 18; Camp 1994: 9; Hurwit 1999: 116). Indeed, it has been argued that the predominance of Herakles on the pediments is due to the hero's representation of the Panhellenic ideals of the upper class (Marconi 2007: 20), thus further suggesting that the treasuries were constructed by the private family groups, the different depicted episodes in the life of Herakles being used to signify their construction by different groups.

Similar buildings have also been found in other polis-based sanctuaries, for instance eleven were found in the Sanctuary of Hera at Poseidonia (Trendall 1955: 54) and ten possible treasuries have been discovered in the Heraion at Samos, which Kyrieleis (1993: 133) postulates may have been dedicated by the local aristocracy. Therefore, in a similar way to the smaller votives, architecture in Greek sanctuaries, both Panhellenic and local, was also used as a means for competition and as a way to express the dedicators distinct identity.

Temples, Competition and Identity

The Greek sanctuaries in which the Doric peripteral temples were constructed were highly competitive environments. The physical form of the votive offerings was used to express individual and group identities. As discussed in Chapter 3, temples were not an essential part of a sanctuary nor did they play a functional part in the conduct of ancient Greek worship. Likewise, the use of temple architecture to provide prominence to other votives also suggests that the temple architecture played an important role in the competition and expression of identity that characterised the ancient sanctuaries. Indeed, it could be argued that the temples themselves were also large votives. Consequently, similar to sculpture and treasuries, the Doric temples that form the focus of this study could also be seen as gifts to the god (Burkert 1988: 43; Garland 1994: 16; Morgan 2003: 144).

As discussed in the preceding chapter, similar to the treasuries, Doric peripteral temples were constructed with the same plan dimensions to those around them.[71] For example, the temples of Sicily clearly form into three discrete groups based upon the size of their plans. Consequently, it is not unreasonable to suggest that the size of the Doric peripteral temple is directly linked to the same notions of inter-group competition that affected the designs of the treasuries. Thus, the size of Temple D at Selinous (S17) was determined by the desire of its dedicators to compete with the other dedicators of temples of the same size. Likewise, it is the same desire to express the different group identities that led to the use of different elevation designs of the treasuries and the temples. As discussed in the previous chapter, although Temple D at Selinous (S17) utilises the same size plan as the other temples of group SA, it has a different elevation design. As with the treasuries, the temples rely on each other to help express their meaning. Thus, the similar sized temples provide a context in which a temple's expression of identity can be understood. As well as being statements of the obvious wealth of the dedicatory group, the temple was intended to be viewed in direct competition with those of their neighbours and rivals, whilst simultaneously expressing the individual group's distinct identities. Therefore, similar to Hölscher's (2011: 55) conclusion in relation to sculpture, it is argued that, although the styles used were not necessarily specific to a particular city; the polis citizens would identify with the specific combination of architectural element designs that were used.

To summarise, the differences in the elevation designs of temples that share similar plan dimensions were linked to the expression of differing (and competing) identity on a sub-regional scale. However, in order to further understand the reasons for these public (and resource intensive) displays of competitive identity, the nature of the dedicating groups and the roles of the individuals behind the temple projects need to be discussed. To this end, the second half of this chapter discusses and re-addresses the relationship between the Doric peripteral temple architects and the clients; demonstrating that the temple's design and therefore, the expression of identity are directly linked to the client and not the architect.

Architect and Client

In light of the above conclusions, and in order to explain the presence of temples with similar elevation designs, it is important to re-introduce and analyse the impact of the

[71] The use of similar widths, rather than similar lengths, is no doubt due to the emphasis that was often placed on the east end of the temple. As discussed in Chapter 6, the east end of the temple was often the most emphasised side of the temple, being the location of the altar and often the only place on the building with sculpture.

architect and the client upon temple design. As discussed in Chapter 2, despite a number of studies having suggested alternative approaches in particular instances (Bundgaard 1957: 97; Martin 1967; Kostof 1977: 23; Burford 1996: 374), the traditional roles of the architect and patron in temple design have generally been clearly defined in temple scholarship. For the Panhellenic evolution model to work, a method of moving new designs between projects, no matter their location in the Greek world, and refining the earlier designs on subsequent projects was required. As such, along with the application of the evolution model, it became generally established that the architect was responsible for all aspects of a temple project, not only design, but also administration, finance, and the overseeing of the craftsmen (Coulton 1977: 16; Barletta 1983: 78; 2005: 95; 2009a: 80). In these studies, it was the patron's responsibility to decide upon the building's size, as "it was upon the size that the cost would largely depend" (Coulton 1977: 74). However, the evidence discussed in Chapter 2 demonstrated that the client (through the building committee) probably had a much more significant role in temple design than has previously been postulated.

Removing some of the design responsibility that has previously been placed upon the architect, and placing it in the hands of the client (and the building committee), has a significant effect upon the interpretation of individual temple designs. For instance, in previous studies, the architect was postulated to be little more than a wandering mercenary with little attachment to the individual project. Whereas, the involvement of the client in the design process means that an individual (or group) with a significant vested interested in the project, who would be directly affected by its construction and understands the reasons for its erection, is included in the design process.

The Client

Before going on to analyse how these changes affect how Doric temple design is understood, it is important to investigate the various groups who financed the temple projects. Unlike smaller dedications in sanctuaries, temples rarely bear dedicatory inscriptions and this makes it difficult to identify the different clients who funded their construction. Consequently, the client for most temple projects has traditionally been identified as either the 'city' or an all-powerful 'tyrant', that is, when the identity of the client is considered at all (Holloway 1969: 281-2; 1999; Miles 1989: 240; Linders 1992: 12; Morgan 1993: 19; Burford 1996: 373; Mertens 1996: 328; Osborne 1996: 102; Spawforth 2006; Mee 2011: 58). Indeed, for Hansen and Fischer-Hansen (1994: 83), for buildings to be classed as 'monumental' they have "to be built by the public (the polis)". In fact, due to the all-powerful nature of the architect in the evolution model, and the little effort expounded in understanding the different designs, it made little difference if the 'patron' was a city or a tyrant (Nielsen 2002: 177).

In Athens, the peripteral temples constructed prior to the foundation of classical democracy are assigned to the tyrant Peisistratos, even if the evidence suggests that they were constructed before he came to power (Camp 2001: 30; Shear Jr. 1978: 3). In contrast, it is often suggested that all the temples constructed after the foundation of democracy are constructed by 'the city' (Camp 2001: 74). For example, Miles (1989: 234) presumes that Athens must have contributed to the construction of the Temple of Nemesis at Rhamnous (A11), even though the cult is not listed among the 'Other Gods' whose funds and treasures were overseen in Athens (*IG* I^3 369; *IG* I^3 383).

The role of private individuals or groups in the construction of monumental buildings is not generally considered a possibility until at least the fourth century (Burford 1996: 373; Townsend 2004: 322). Hölscher (2007: 175) argues, however, that the connection between monumental public building and tyrants, depends both on overrating the status of tyrants and on underrating the ambitions of aristocratic communities to present themselves in full view of the entire Greek world.[72] For example, it would be too simplistic to ascribe all monumental building at Selinous during the period 550-460 to Selinous' tyrants, mainly because the last 40 or so years of this period were without tyrannical rule, but also because it must be assumed that rival factions, both inside and outside the city, could have contributed to and competed for position and prestige through their own building projects (De Angelis 2003: 169). Burford (1969: 84), Fehr (1996: 175) and De Angelis (2003) further argue that the potential contribution of the 'average' private individual and of temple treasuries should not be forgotten.

The evidence for the identity of who paid for the various temple projects is as sparse as for the architect and the committee, discussed in Chapter 2. Three pieces of evidence are widely debated in relation to the nature of the ancient client; an inscription from the Temple of Apollo at Syracuse (S22; *IG* XIV^1), Herodotus' (5.62-3) account of the construction of the sixth-century Temple of Apollo at Delphi (N16) and an inscription relating to the payment for the fourth-century Temple of Apollo at Delphi (N15; *CID* ii: 31-2).

[72] Indeed, the fourth-century rhetorician Isocrates (5.117) highlights that "both private individuals and states erect temples and altars".

Figure 99 Inscription from the krepidoma steps of the Temple of Apollo at Syracuse (S22; *After* Holloway 2000: 73).

The meaning behind the inscription on the Temple of Apollo at Syracuse (S22; *IG* XIV[1]; Figure 99) has caused significant controversy amongst scholars of temple architecture, mainly because it has been translated in a number of ways:

> Κλεομ[…]ες : έποίεσε τόπέλονι : ho Κνιδιείδα : κέπικ[λ]ές <σ>τυλεία : καλά Fεργα (Umholtz 2002: 264).
>
> Kleo[men]es the son of Knidieides made (it) for Apollo and Epikles (made) the columns, fine works (Guarducci 1949: 7).
>
> Kleomenes, son of Knidieidas, made [me] for Apollo, and raised the columns, fine work (Wescoat 1989: 85).
>
> Kleomenes the son of Knidieidas made (the temple) to Apollo, and Epikles son of Tyletas finished it (Jeffery 1990: 265).
>
> Kleomenes, the son of Knidieides built it for Apollo. And he put his hand to the columns; beautiful accomplishments they are (Holloway 1999).
>
> Kleomenes the son of Knidieides made it for Apollo. And he included columns. They are fine works (Holloway 2000: 73).
>
> Kleom[..]es, son of Knidieidas, made (the temple) for Apollo, and Epik[l]es (made) the columns, beautiful works (Umholtz 2002: 264).

Some scholars prefer to see Kleomenes as the architect of the temple (Guarducci 1949: 10; Cultrera 1951: 812; Umholtz 2002: 264; Spawforth 2006: 22), while others choose to see Kleomenes as the client (Holloway 2000: 73).[73] Indeed, Guarducci (1949: 10) suggested that Kleomenes and the possible second individual, 'Epikles', were architect brothers. However, Guarducci (1987: 44-45; cited in Umholtz 2002: 264) later argued that Kleomenes was neither the architect nor the client and may instead have been a

[73] Holloway (1969: 288) originally suggested that Kleomenes was the temple's engineer, whereas, Epikles was the architectural designer, however, he later suggests that Kleomenes was both the architect (1999) and the director (2000: 73).

representitve of the state responsible for overseeing the project. Jeffery (1990: 265) believes that the inscription dates to the last quarter of the sixth century (the temple traditionally being dated to the period 590-580), and suggests that the second individual, Epikles, finished the temple or, may have been an expert in carving columns. Therefore, it is far from clear what this inscription refers to, especially if it dates later than the original construction as suggested by Jeffery.

The second widely discussed piece of evidence, Herodotus' (5.62-3) reference to the Alkmaionidai and the sixth-century Temple of Apollo at Delphi (N16), has been interpreted both as evidence that wealthy families used temple architecture as a means of winning political support (Davies 2001) and that the city was always the client (Morgan 1993: 19). Despite Morgan's assertions, Herodotus' reference, rather than irrefutably determining the identity of the client, serves to highlight the role of family groups in temple construction and the political importance of their involvement. Indeed, inscriptions and references to other projects indicate that monumental buildings were also constructed by individuals. For example, Kimon's brother-in-law, Peisianax, constructed the painted stoa in the Athenian Agora (Demosthenes XX (*Leptines*) 112; Diogenes Laertius VII.1.5; Plutarch *Kimon* 5-6; Wycherley 1957: 35; Camp 2001: 68). A large block, originally from the east façade of Temple Aii (Apollo Lykeios) at Metaponto (I6; 540-530 BC) is inscribed in early Greek lettering with the words 'for himself and his *ghenos*' (Spawforth 2006: 119; Carter 2006: 208). A block belonging to the Temple of Athena at Prasidaki (P21) bore an inscription of the name ΔΑΪΑΛΚΗΣ, believed to be the temple's donor (Arapogianni 2002: 225). Likewise, an inscription belonging to the Temple of Apollo at Kalapodi (N19) may also have the temple's donor (Spawforth 2006: 170). Whilst, Pausanias (2.7.8; 5.6.5) relates that the Temple of Apollo at Sikyon (P8), as well as the cult statue were dedicated by Pythokles,[74] and states that Xenophon could afford to build an entire sanctuary enclosure and a temple to Ephesian Artemis at Skillous.

In contrast, there are no temple inscriptions relating to the 'city' as a temple client, but there are a few historical references to cities providing funds for temple projects. Pausanias (8.45.4) states that Aleos made the Sanctuary of Athena Alea at Tegea but the

[74] Other examples include: the columns on the Temple of Artemis at Ephesos (550 BC) bear dedicatory inscriptions from King Kroisos (Fornara 1977: 31; Umholtz 2002: 265). Aristotle (*Oeconomica* 2.2.19) states that when the Ephesians were rebuilding the Temple of Artemis, they "offered to any citizen who was willing to pay a fixed sum the right of having his name inscribed on a certain pillar of the temple as the donor thereof". An Ionic inscription has been found at Sidene, commemorating two benefactors of a temple; the dedication is inscribed upon one of two Ionic columns (Jeffery 1990: 367). A priest is honoured on an inscription at Cape Zoster for the repair work on the temple and his adornment of its statues (Tod 1933: 177).

Tegeans built the later temple (Meiggs 1963: 44). Plutarch (*Perikles* 14) states that when Perikles was accused of squandering the tribute money from their allies in the Delian League, he replied that he would shoulder the cost and have his name inscribed on the sacred buildings, at which point the opposition was withdrawn. Perhaps temples were only inscribed when they had a clearly identifiable client, as suggested by Umholtz (2002). However, although Perikles threatens to inscribe his name upon the Parthenon (Plutarch *Perikles* 14.1-2) and it is made clear that the project is paid for with Athenian (not the allies') money (Plutarch *Perikles* 12), the buildings do not bear dedicatory inscriptions from the Athenians, even though they were known to inscribe their monuments in other locations, for example the Stoa at Delphi (early fifth century; *SIG* 29; Meiggs and Lewis 1969: 52; Fornara 1977; Umholtz 2002: 269). Indeed, if the inscription on the temple of Apollo at Syracuse is dated later than the construction of the temple, as suggested by Jeffery (1990: 265), then there is surprisingly little evidence for any dedicatory inscriptions on temples from any form of client. Thus, contrary to the claims of Morgan (1993: 13), it is not clear that the city is always the client.

The third piece of evidence, the fourth-century inscription, on a separate stele, listing the various states that contributed to the construction of the Temple of Apollo at Delphi (N15) suggests that temple projects were not just paid for by a single coherent group, but also through the accumulation of small amounts from various groups (*CID* ii: 31-2; Davies 2001; 2003). Likewise, the Parthenon (A8) accounts that were erected on the Akropolis effectively listed the different contributors to the Parthenon project, which in this case were city-appointed 'boards' (Kallet 2005: 56).[75] A similar list of contributors to a temple project has also been uncovered to the north-east of the Temple of Zeus at Stratos (N13; *IG* IX[1] 446; Pakkanen 2004: 107 n.45). Several scholars have speculated that multiple clients may have been involved in temple projects based upon the varying designs of different elements, even though they all belong to a single project. For example, the differing designs of the capitals on the Temple of Athena at Assos (O1), as well as on the Temple of Hera at Olympia (P18), the Temple of Apollo at Metropolis (N21), and the Temple of Poseidon at Vigla (P23) have been taken as evidence of different clients paying for different elements of the temple (Wescoat 1987; 2012: 212; Williams 1984: 69; Intzesiloglou 2002: 112; Winter 2005: 486).[76] Indeed, Coulton (1977: 20) and Fehr (1996: 175-176) suggest that the vast amount of temple projects were paid

[75] One year, three names do appear in the inscriptions as contributors, although Kallet (2005: 58) argues that these contributions had to be approved by the demos as a whole before they were included.
[76] Although, Winter (2005: 486) also suggests that the differences in the shapes of the Orchomenos capitals indicate that construction extended over a considerable number of years.

for from various small (and large) private contributions. Consequently, the evidence presented above provides an interesting insight into who paid for temple projects, highlighting that, in fact, the nature of the client could be quite diverse and not only tyrants or the ‘city’ performed the role of ‘client’, but also that private groups were involved in temple construction.

A brief review of ancient finance also indicates that temple construction was not beyond the wealthy individual, particularly if acting as part of wider, social/ political/ family group. Although there are only a few fragments of evidence regarding the costs involved with a temple project, or the amount of wealth generated by the city or an individual, and the vast majority of evidence relates to Athens, there have been a number of estimates of temple costs. The cost of an ancient temple could vary dramatically depending upon their size and decoration (Figure 100).[77] For example, the Temple of Asklepios at Epidauros (P9; 380-370 BC) cost 23 talents (Burford 1969: 84; 1996: 374) and Miles’ (1989: 234) estimate for the Temple of Nemesis at Rhamnous (A11; 439-420 BC) is very similar (around 30 talents). De Angelis (2003: 168) estimates that the temples of Selinous range between 51 and 68 talents for Temple A (S15), up to a possible 756 talents for Temple G (S20) and estimates of the cost of the Parthenon (447-432 BC) range between 350 and 800 talents (Meiggs and Lewis 1969: 165; Burford 1996: 374; Kallet 2005: 54). To put this sum into context, the estimated annual polis income of Athens in the fifth century was around 400 talents (Burford 1969: 84; Spawforth 2006: 70).

[77] It could be argued that the similarities in the sizes of the plans of the sub-regional groups is due to the various projects in those areas having similar budgets, thus, resulting in the temples having the same plan dimensions. Indeed, Coulton (1977:74) suggested that “it was upon the size that the cost would largely depend”. Although there is no way of accurately knowing how much each temple cost, it is difficult to imagine that all the clients of the sub-regional groups all had exactly the same budgets. Furthermore, the fact that some temples utilised additional sculpture, rather than using the additional finance to make their plans larger, suggests that the exact plan size was not determined by the temple’s overall budget.

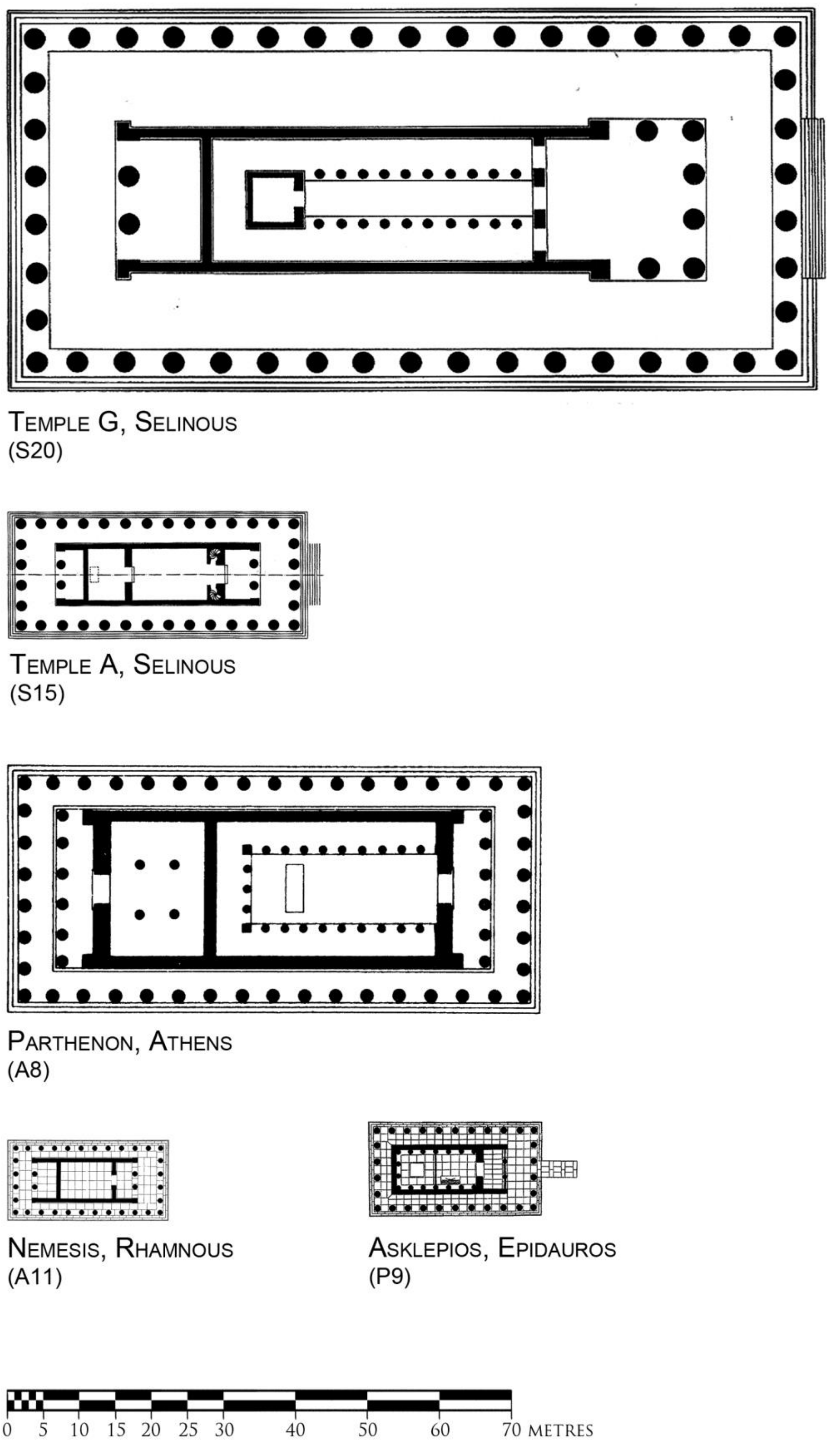

Figure 100 The plans of the temples whose costs have been estimated by various scholars (*After* Mertens 1984: 164, Beilage 26; Miles 1989:143; Pedley 2005: 143; Spawforth 2006: 165).

The evidence suggests that private individuals could also afford to construct a temple. A speech by Lysias (21, 1-5) defending an individual who spent over 10 talents in 8 years on public service highlights the amount of money that individuals were willing to spend on gaining public glory (Ferguson and Chisholm 1978: 34). More prominent public individuals had even more disposable income. For example, Plutarch (*Themistokles* 25) reports that although Themistokles began his career with only 3 talents of property, by the time of his ostracism c.470 BC, "a lot of his money was smuggled across to Asia by friends, but even so 100 talents were discovered and sequestered for the public treasury". Indeed, wealthy men were required to undertake work for the state at their own expense as part of the liturgy; this process channelled their expenditure and competitiveness and was felt to be less confiscatory than taxation (Roberts 2005: 426). Consequently, this process also involved the individual receiving glory from an appreciative public (Finley 1985: 151).

Wealthy individuals may also give money to religious projects in exchange for religious favour. For example, in 417, Nicias the Athenian "bought a plot of land for 10,000 drachmas and gave it to Apollo, with the proviso that the income from it was to be devoted to a festival at which the Delians were to pray to the gods that many blessings should come to Nicias. And he engraved a record of this on a stele which he left behind as a sentinel to watch over his gift" (Plutarch *Nicias* 3.6; Kent 1948: 256). Therefore, temple construction was certainly not beyond the means, desires or obligations of the wealthier members of society. Indeed, these wealthy individuals may come together as a religious/political/corporate/family group to fund projects. For example the Alkmaionidai family and the sixth-century Temple of Apollo at Delphi (Herodotus 5.62-3), the dedication by the Athenian deme of Marathon on the Athenian Akropolis (Pausanias 1.27.9) and the dedication by the Boule of the archonship of Pythodotos (*IG* II^2 233; Wycherley 1957: 101) demonstrate that different socio-political groups could also form dedicatory groups.

Indeed, a group wanting to build a temple may have received support from the benefiting cult, which often also had a healthy reserve of money. Property at Athens confiscated by the state from individuals condemned in the courts for serious political offences was sold, and a tenth of the proceeds given to Athena (*IG* I^2 63). Proportionate sums might be deducted in other places, for instance, the cult of Herakles on Thasos received a ninth part of the produce from certain land (Tomlinson 1976: 50). One preserved account from the Sanctuary of Nemesis at Rhamnous (c.440 BC), of five years of loans belonging to the goddess, suggests that the sanctuary had around 9-10 talents in resources (*IG* I^3 248; Miles 1989: 234). Further to this, temples took a considerable amount of time to construct and therefore, payment could be staggered. For example, the Temple of Nemesis at Rhamnous (A11) remained unfinished, with the peristyle columns being unfluted and the lifting bosses were not removed from the orthostates or the antae of the walls (Miles 1989: 147, 157). Diodorus Siculus (11.26.7) relates that Gelon of Syracuse began a temple to Demeter at Aetna "but he did not complete it, his life being cut short by fate". Therefore, the evidence for the identity of the temple client indicates that many different groups could be involved in temple construction and it is likely that the nature of the client varied from project to project. Alongside the 'city' and tyrants as builders of temples, the role of different aristocratic and political groups as well as the collection of subscriptions in temple building cannot be overlooked.

The relative lack of dedicatory inscriptions on temples suggests that the relationship between dedicator and dedication is not as clear as with smaller votives, where both the city as well as individual aristocrats would include an inscription along with the dedication. On the Athenian Akropolis a number of inscriptions from statue bases indicate that various groups dedicated and inscribed their dedications; for example, an inscription indicates that Kallias dedicated the bronze Aphrodite, the *Hippeis* dedicated an inscribed horse group, and the 'Athenians' dedicated the Athena Promakhos statue (Hurwit 1999: 147, 149, 151).

The presence of dedicatory inscriptions on the un-viewable foundation blocks of the Beoetian treasury at Delphi indicates the controversial nature of inscriptions on monumental buildings during the archaic and classical periods (Scott 2010: 60, 61 n. 102). Indeed, it is commonly suggested that there are no inscriptions upon temples due to the sense of public modesty, which precluded individuals from gross acts of self-aggrandizement (Hornblower 1982: 274; Morgan 1993: 19). The same sense of 'public modesty' may be seen when Miltiades was not allowed to have his name inscribed upon the painting of the battle of Marathon in the Stoa Poikile: "instead of the inscription of his name [the assembly] granted him the privilege of being depicted in front exhorting his men" (Aeschines III *Ktesiphon* 186). Likewise, when Alexander offered to pay for the Temple of Artemis at Ephesos and all future expenses as long as he could be honoured with an inscription on the temple, the Ephesians were unwilling to allow this as it would cause spoliation to the temple (Strabo *Geography* 14.1.22), however, he was eventually allowed to pay for and inscribe his name upon the Temple of Athena at Priene (Butz 2009: 32-33).

Foxhall (1995: 141-2) has argued that the lack of inscriptions upon these buildings means that the temples did not need them to maintain their association with their dedicators, as the monuments "acted as signifiers which trigger off the words of men, in which truly permanent memories reside". If this argument were combined with Burkert's (1988: 43) suggestion that once the temple is dedicated it no longer belongs to the dedicator and becomes a document of pride for the polis, it may be argued that the lack of inscriptions on temples is not evidence that they all had the same client. Therefore, the lack of inscriptions does not necessarily preclude the construction of temples by groups other than tyrants and cities, rather, inscriptions were not needed to signify the dedicator.

Inscriptions upon a dedication may also be linked to an element of continued responsibility and therefore a considerable subsequent charge. A large peripteral temple would cost a vast amount in maintenance and upkeep; unlike smaller dedications that are removed once the sanctuary becomes too cluttered, temples remain, often in prominent locations overlooking the city. Indeed, temples could require large repairs, such as the replacements of the lion's head gutter spouts on the temple of Zeus at Olympia, but also the day-to-day cleaning and maintenance added to the overall cost (Linders 1992: 10; Spawforth 2006: 71).[78] Thus, dedicating the construction on behalf of the city would place the future maintenance of the structure under the responsibility of the polis. Consequently, a mixture of pride, obligation, fulfilment of liturgy, dedicating the project as a gift, avoidance of financial responsibility and the knowledge that the building (even without an inscription) would continue to be associated with them, probably resulted in the dearth of architectural inscriptions that are associated with Doric peripteral temples.

At this juncture it is important to consider the relation between the building committee and the client. In Chapter 2, it was suggested that the building committee had significantly more input into the temple building process than has previously been suggested, and that the building committee represented the interests of the client. However, there is very little evidence to suggest how the relationship between the client and the building committee was conducted. In the case of projects funded by the city or through donations, the evidence from the Athenian Akropolis and the Sanctuary of Asklepios at Epidauros suggests that the individuals were elected or appointed to the committee, and that these committees produced reports which were submitted to the governing body (*IG* I^2 24; *IG* IV^2 1.102; Burford 1969: 128, 134). Unfortunately, there is no evidence to indicate how the family or political groups communicated with building

[78] Aristotle (*Politics* 1322b.18-29) highlighted that entire boards concerned with "the preservation of existing buildings and the restoration of those that are ruinous" had to be appointed. Xenophon (*Anabasis* 5.3.9-12) was obviously concerned that his temple would be left to ruin because he also dedicated a large amount of sacred land and an inscription that read: "This place is sacred to Artemis. He who holds it and enjoys its fruits must offer the tithe every year in sacrifice, and from the remainder must keep the temple in repair. If anyone leaves these things undone, the goddess will look to it" (Xenophon *Anabasis* 5.3.13).

committee, or if, they themselves formed the committee. Either way, it is likely that they too had significant input into the design process.

Therefore, the evidence presented above suggests that a number of different groups could have been the ‘client’ of a Doric peripteral temple project. Each type of client would have had their own motives and relationship with the building committee. The lack of inscriptions does not indicate that all temples were built by the same type of client with the same motive, or that the process of temple construction and the relationship between client and architect were as simple as has been previously purported. The fact that the temple would not be inscribed once finished provided further motivation for the clients, whether they were cities or wealthy family groups, to take a direct interest in the project and to use the architecture itself as a means of expressing their individual identity and having their contribution remembered.

The Client and the Architecture

In Chapter 6, it was demonstrated that in contrast to the vast majority of temples in the sub-regional groups, which used similar plan dimensions but distinct elevation designs, small groups of temples utilised the same overall designs. These were: the temples of fifth-century Attica (in sub-regional group AB), the temples of fifth-century Akragas (in sub-regional group SB), the Temple of Demeter at Lepreon and the Metroon (group PA), the Temples of Apollo and Zeus at Syracuse (SA) as well as the Temple of Athena at Syracuse and the Temple of Victory at Himera (SA; see Chapter 2, Figure 10). It was argued that the similarities in the overall designs of these temples, which were constructed in close proximity to one another, meant that they had a different relationship with each other than the other temples in the sub-regional groups. It has previously been suggested, by proponents of the evolution argument, that the similarities in temple designs are attributable to their construction by the same architect. For example, the similarities between the fifth-century temples of Attica (AB) was attributed their construction and design by the unknown ‘Theseum’ architect (Dinsmoor 1941: 113; 1950: 181-182), the Temples of Apollo and Zeus at Syracuse to ‘a single workshop’ (Barletta 1983: 78) and the Temples of Athena at Syracuse and Victory at Himera were attributed to the ‘Syracusan’ architect (Dinsmoor 1950: 109). However, the available evidence suggests that, whilst there is no indication that these temples shared an architect, there is evidence to suggest that these temples had the same client.

As discussed in Chapter 2, although Iktinos is assigned the role of ‘architect’ on both the Temple of Apollo Epikourios at Bassai (P4) and the Parthenon (A8), the temples did not utilise similar appearances, sharing significantly more features with their immediate predecessors than with each other (see Chapter 2, Figure 12). Further to this, the analysis conducted in Chapter 6 has shown that the size of the Temple of Apollo Epikourios at Bassai is very similar to the nearby temples of Athena at Prasidaki (P21) and Makiston (P16), suggesting that it was sub-regional competition that affected the plan size of the Temple of Apollo Epikourios at Bassai, not Iktinos (Figure 101). Therefore, as discussed in Chapter 2, in instances where the same architect is identified as having constructed two buildings, they do not share attributes.[79] However, in situations where temples are assigned to the same client they do appear to share a significant number of attributes. For example, the Temple of Athena at Syracuse (S23) and the Temple of Victory at Himera (S12), which were ascribed by Dinsmoor (1950: 109) to the 'Syracusan' architect based upon their design similarities, actually shared clients, being constructed by the victorious brothers-in-law of the battle of Himera, Theron of Akragas and Gelon of Syracuse (Diodorus Siculus 11.25; Wescoat 1989: 85; Holloway 2000: 112; discussed further in Chapter 8).[80] Likewise, the temples of fifth-century Attica were constructed by the same client, in this case the Athenian state (discussed further in Chapter 8).[81] Indeed, as highlighted by Mertens (1996: 334), the use of a 'standardised' design across multiple temples would make overseeing multiple projects easier to centrally control. Therefore, the evidence indicates that it is temples that share a client, not an architect, which have the same overall design.

[79] The same also appears to be true for Paionios, who was the architect of the Ionic temples of Ephesos and Didyma (Spawforth 2006: 199). Although both temples had very similar plan dimensions (Ephesos: 51.44m by 111.48m; Didyma: 51.13m by 109.34m), they both utilised different elevation designs, for example, the columns of the Temple of Artemis at Ephesos stood on high plinths and utilised extensive sculpture, not present on the Temple of Apollo at Didyma.

[80] Another temple commonly associated with the victory at Himera, Temple C at Gela (S11, Rhodes 2005: 82), is not well enough preserved to be compared.

[81] The same trend can also be seen with the treasuries; treasuries dedicated by Kroton at Delphi and Olympia utilised similar designs (Scott 2010: 69).

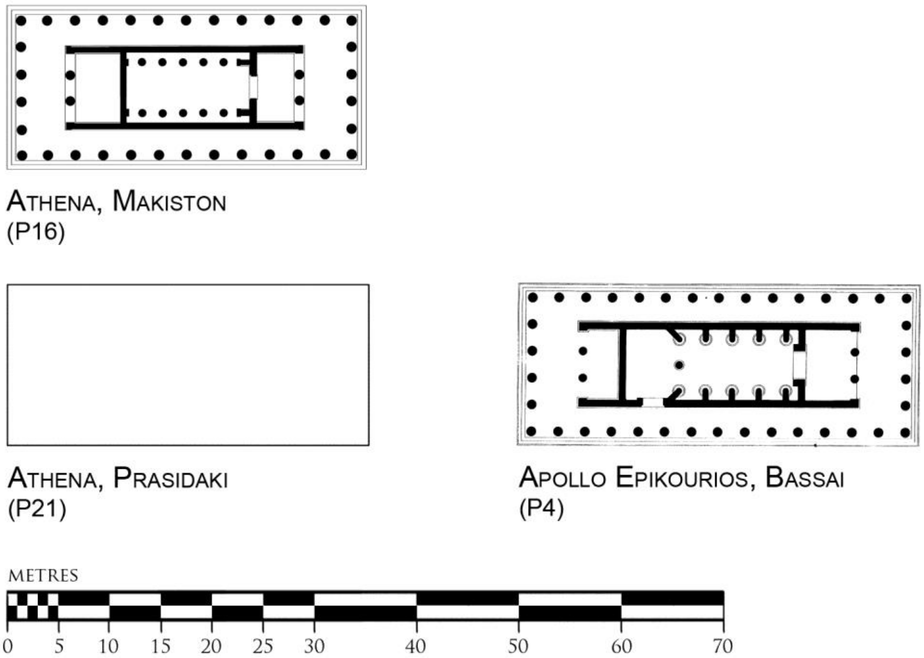

Figure 101 Plans of the Temple of Athena at Makiston (P16) and the Temple of Apollo Epikourios at Bassai (P4; *After* Martin 2003: 80; Nakasēs 2004: 219) alongside the outline of the foundations of the Temple of Athena at Prasidaki (P21).

The implication of these results, that temples with the same design share a client, is that temples with different designs to one another are likely to have been built by different groups. Given the wide range of different groups that could build temples, the fact that there is enormous variety in the range of different temple designs is not to be unexpected. For example, the Temples of Apollo (S22; date group 1) and Athena (S23; date group 3) at Syracuse both share similar stylobate dimensions and are placed in the same size group (SC; Apollo: 21.5m by 54.9m; Athena: 22.2m by 55.455m), indicating that they were constructed in relation to one another; however, unlike the Temple of Athena and the Temple of Victory at Himera, the Temple of Athena and the Temple of Apollo both utilise very different plan and elevation designs, the Temple of Apollo having a double front, shorter columns, a denser stylobate with 17 flank columns (compared to 14 on the Temple of Athena) and a significantly taller architrave (Figure 102). As discussed above, the Temple of Athena was built by Gelon following the Carthaginian victory and the Temple of Apollo may have been built by Kleomenes (see above discussion of the inscription), but even if the inscription was a later addition (Jeffery 1990: 265), the amount of time between the construction of the two temples would make the same clients unlikely.

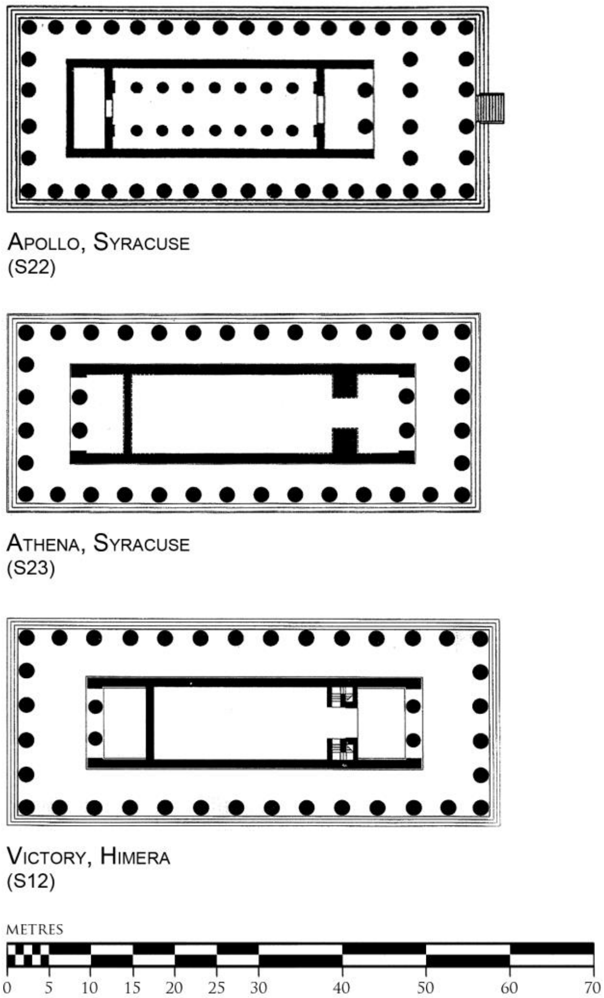

Figure 102 Plans of the Temple of Apollo at Syracuse (S22), the Temple of Athena at Syracuse (S23) and the Temple of Victory at Himera (S12). The figure shows the similarity in size of all three temples, but the different plan design of the Temple of Apollo compared to the other two buildings (*After* Mertens 1984: 164, Beilage 26).

The temples of Syracuse are discussed in greater detail in Chapter 8, but, these two brief analyses have demonstrated that differences and similarities in temple design are to be more closely associated with the identity of the client, rather than the architect. Therefore, the competition and the expression of identity that are encompassed in the design of the Doric peripteral temples are to be associated with the building's client. This conclusion does not preclude the idea that temples meant different things in each region, but, the fact that temples had contemporary political and social meaning and were not just objets d'art places the buildings back into their contemporary surroundings. As discussed above sanctuaries were highly competitive environments that presented individuals and groups the opportunity to construct a recognisable political monument in the most public arena, indeed, as stated by Hölscher (1998: 156):

> [Monuments] represent the public power of certain persons or ideological concepts. They proclaim a public message and demand its general and collective approval. In this sense monuments represent and create ideological identity; in fact, they are the concrete expression of such identity, be it of a whole community or of groups or individuals within this community.

As with sculpture, where evolutionary studies have given way to discussions of agency, concerned with consumers and context as well as the changing self-perception of the society to which sculpture belongs (Smith 2002; discussed in Chapter 2) as well as issues of culturally situated 'ambition', 'competition' and 'talent' (Schultz 2009), the temple architecture, especially when compared to similarly designed buildings, allowed the dedicating individuals or groups the opportunity to use the building's design to express the group's individual identity.

One issue that has not yet been addressed is the use of similar elevation designs on temples of different sizes that do not belong to the same sub-regional group. For example, Capital Group J (CGJ) contains capitals from Akragas in Sicily, Poseidonia in Italy, Korkyra on Corfu, and Orchomenos in the Peloponnese. As discussed in Chapter 2, it is likely that details, such as the shape of a capital could be distributed via the production of treatises. These treatises would allow for the distribution and diffusion of standard designs around the Greek world, which could subsequently be adapted for inclusion in different temple projects. There is no reason to believe that this did not happen with areas of the design other than the capitals, which would result in temples on opposite sides of the Greek world making use of the same axial space design (see Chapter 2; Figure 11). For example, Temple D at Selinous (S17) in Sicily, and the Temple of Athena at Assos (O1) in Turkey, utilise very similar column ratios (Figure 103), despite their difference in size (FoW: D at Selinous: 28.096m; Assos: 14.59m). As discussed in Chapter 5, the use of a particular design is not directly related to date and as discussed in Chapter 6, the temples in the same sub-regional groups do not utilise the same elevation design. Thus, it is suggested that, whilst a number of treatises are available on a Panhellenic scale, particular designs are utilised and manipulated depending upon the requirements of the temple's client. As discussed in Chapter 6, the elevation designs of the temples in the same sub-regional group were different, thus, different treatises were employed by clients looking to create a unique temple design in their sub-regional group, regardless of its use outside of their sub-regional group. Consequently, the same designs continue to be used for long periods of time (as demonstrated in Chapter 5, the column height to lower diameter ratio of 2.08 was used on temples in the first four date groups).

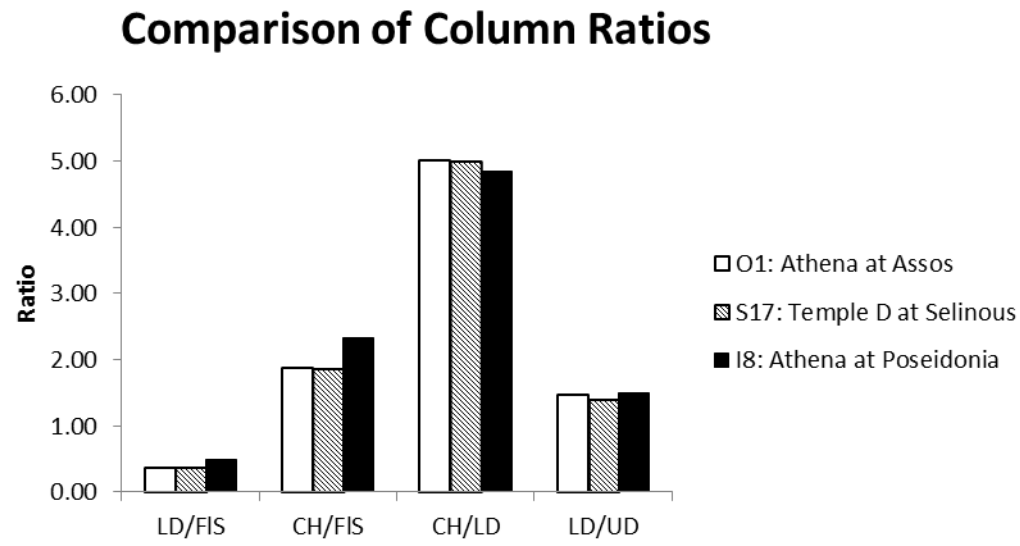

Figure 103 Comparison of the column ratios of the Temple of Athena at Assos (O1), Temple D at Selinous (S17) and the Temple of Athena at Poseidonia (I8); demonstrating the use of similar ratios on the Temple of Athena at Assos and Temple D at Selinous. The Temple of Athena at Poseidonia is included as a comparative example as it is of comparable date to the two other temples and utilises 13 flank columns.

Case Study: Corinth

To go beyond the suggestion that temples belonging to the same sub-regional group with different elevation designs were constructed by different competing groups and highlight a specific client is difficult without historical evidence, especially given the range of different groups that constructed temples. However, as discussed above, it is reasonable to suggest that temples that share the same overall design share a client and it is likely that those with a different design do not, so in cities with multiple temples of the same size but with different elevations it is a reasonable assumption that they had different clients (similar to the case with the treasury buildings in local sanctuaries). Therefore, viewing the temple's design as having contemporary political and social importance provides further insight into inter- and intra-polis relations. For example, given their social and political connections, the similarity in the foundation sizes of the early temples of Apollo at Corinth (P7; date group 1), the Temple of Artemis at Korkyra (N23; date group 1), the Temple of Athena Polias at Athens (A3; date group 2), and the Temple of Poseidon at Isthmia (P13; date group 3), must be regarded as significant. Despite the similarity in their plan dimensions, the temples all had very different elevations, for example, the Temple of Apollo had 6 by 15 columns; whilst, the temple of Artemis probably had 8 by 17 (Dinsmoor 1950: 73 n.3), the Temple of Athena had 6 by 12 and the Temple of Poseidon had 6 by 13.

Interestingly, Corinth had complicated relationships with each of these locations. The Corinthian colony at Korkyra was particularly un-cooperative towards their mother-city,[82] killing the Corinthian tyrant Periandros' son and eventually defeating them in the first sea battle in Greek history (Herodotus 3.48.2-53.7; Thucydides 1.25.3-4; Marconi 2007: 13).[83] Around the time of the construction of the Temple of Athena Polias at Athens, Peisistratos and the Peisistratids were keen to use architecture to compete with the other powerful Greek states and proclaim Athens importance (and subsequently their own) on a world stage. Consequently, he began a temple to rival the largest in the Greek world, the Olympieion (Boersma 1970: 25),[84] and one to compete with their most wealthy and successful neighbour, whose business in painted pottery Athens was now dominating (Osborne 1996: 247).[85] Likewise, although the Sanctuary of Poseidon at Isthmia was within Corinthian territory (Broneer 1976), the sanctuary's Panhellenic importance and place on the Panhellenic athletic circuit meant that it had an unusual relationship with the polis.[86] Given the historical connections between the cities, the similarities in the sizes of the temples cannot be coincidental, the temples being built at points of particular historical competition and conflict. As such, the differences in the elevations were used to express the individual identities of the differing groups.

Conclusion

In conclusion, through an analysis of the temples' context, namely the ancient sanctuary, it is clear that they were primarily public spaces designed for the display of votives and the subsequent competition that this encouraged. The same notion of competition that prompted the dedication and design of the smaller votives, such as *tropaia* and sculpture, also led to the construction of the treasuries. An analysis of the treasuries demonstrated that they were generally built with the same sized plans but with different elevation designs. It is argued that the similarity in the plan dimensions was determined by the same notion of competition that dictated the construction of the same 'type' of building,

[82] As discussed by Danner (1997) and Funke (2006: 155-6), it was not uncommon for colonies to have fractious relationships with their mother-cities.
[83] Scott (2010: 49) has argued that the Korkyran treasury at Delphi was built as a "very physical statement of their independence [from Corinth] by matching, even surpassing, the Corinthian treasury", thus further demonstrating the role that architecture played in the fractious relationship between colony and mother city.
[84] Indeed, Salmon (2001: 197) has suggested that the Olympieion was built to specifically compete with the sixth-century 'Great' Temple built in Corinth and possibly identified by Dinsmoor (1949) with subsequent discussions by Wiseman (1967a: 29-30; 1967b: 412; 1969: 94-96) and Pfaff (2003b: 116-119).
[85] The similarity of the Temples of Athena Polias and the Temple of Apollo has been noticed before; however, it was argued that the similarity was due to the Apollo temple being the 'model' for the Athena temple (Boersma 1970: 22).
[86] Although Corinth was more than happy to advertise its importance within the sanctuary, erecting a cenotaph following the battle of Salamis, indicating the extent of their own sacrifice on behalf of all 'Hellas' (Scott 2010: 242 n.73).

in this case, an in-antis Doric structure. Whilst, the different elevation designs were linked to the desire of the dedicating groups to express their distinct identities. It is further argued that the same situation led to the existence of the sub-regional groups of temples with the same plan dimensions but different elevation designs that were identified in the previous chapter. A review of the evidence associated with the clients of temple projects suggested that the few temples with the same plan and elevation designs were constructed by the same group. Moreover, the same discussion demonstrated that a wide range of different groups constructed temples, a theme that is further addressed in the proceeding chapter, which discusses the conclusions presented in this chapter in a series of polis-based case-studies, further demonstrating that temple design was linked to sub-regional competition and the consequent expressions of identity.

Chapter 8: Temple Design and Group Identity: Case Studies

> The Greeks regard it as outrageously arrogant treatment, as blatant tyranny, when they can see that we are using the funds they were forced to contribute for the military defence of Greece to gild and embellish our city, as if she were a vain woman adorning herself with costly marble, statues, and temples at 1,000 talents a time (Plutarch *Perikles* 12).

The previous chapter demonstrated that the designs of Doric peripteral temples were linked to sub-regional notions of competition as well as the expression of identity on behalf of the client. As discussed in Chapter 2, and endorsed by a number of recent architectural sculpture studies (Marconi 2007; Østby 2009), analysing the temples within their contemporary political and geographical contexts and by studying them at the level of the individual poleis, allows for further insights into their design. Therefore, through a series of polis-based case studies, building on the conclusions of previous chapters, this chapter further considers the role of temple design in inter- and intra-polis relations. Thus, the chapter demonstrates the role of temple architecture in the creation of a visual symbol of the client's social and political identity.

The case studies considered here were selected from the small number of poleis with more than one temple. Outside of Attica, twelve poleis contain more than one temple (Table 16). Given the various states of preservation of the temples, and the limited historical and archaeological knowledge available regarding certain poleis, five poleis were selected to discuss in further detail. The state of historical and archaeological knowledge in the selected poleis allows for a review and discussion of the major themes and issues raised in this thesis.

Polis	No. of Temples
Aigina	2
Athens and its demes*	11
Metaponto	3
Poseidonia*	4

Polis	No. of Temples
Eretria	2
Kalapodi	2
Korkyra	3
Cyrene	2
Gortys	2
Akragas*	8
Gela	2
Selinous*	7
Syracuse*	3

Table 16 Poleis with more than one temple and the amount of temples included within the study. The poleis discussed in this chapter are identified with an asterisk.

In order to utilise the wealth of historical evidence that is available for classical Attica, the first case study focuses upon the architecture of Athens and the demes. Building upon the discussion of the architect and client in Chapter 7, this case study further indicates that the elevation design was connected to the expression of identity on behalf of the client. Furthermore, in instances where temples were constructed to a single design, such as the fifth-century temples of Group AB (as discussed in Chapter 6), they should be associated with a centrally controlled building programme, rather than an individual architect.

The next two case studies examine the temple architecture of Akragas and Selinous in Sicily. A discussion of the contrasting approach towards temple construction in the two poleis demonstrates that, as in Attica, the similarities in the designs of the fifth-century Akragas temples (Group SB) suggest that they belong to a cohesive programme, whereas the differences in the designs of the temples of Selinous should be linked to intra-polis competition.

The fourth case study, focusing upon Syracuse, provides an opportunity to summarise all the issues raised in the previous case studies and further discusses the role of temple design in the expression of political and social identity in the ancient world. The final case study focuses upon the extra-ordinarily well preserved temple architecture of Poseidonia (South Italy), and demonstrates that, in contrast to other poleis, decoration rather than plan dimensions are more important in helping to express conflicting group identities in this polis.

Athens and its Demes

The first case study, focussing upon the Doric peripteral temples of Athens and its demes (Chapter 6, Figure 96), demonstrates that temple design was used in different ways to create statements of identity. The temples of sixth-century Attica were designed to reflect the power of the buildings' clients through allusions to temple projects elsewhere in the Greek world. In contrast, the temples of fifth-century Attica demonstrate the power of the Athenian state in a different way; instead of competing directly with specific projects, the democracy utilised a standard temple design to present a coherent statement of the demos' power and collective identity.

Sixth-Century Athens

In the early sixth century, social and political tensions had led Athens to the brink of collapse with almost all power being controlled by a few strong families. Solon was appointed to arbitrate the dispute; accordingly, he abolished debts and arranged for a redistribution of power (Camp 2001: 26). However tensions among the aristocratic families continued with three major factions emerging: the Alkmaionidai, the clan of Lykourgos and the Peisistratids led by Peisistratos (Camp 2001: 29; Roberts 2005: 573). Herodotus (1.59) and Aristotle (*Athenian Constitution* 13.4) describe these families as controlling large areas of Attica, holding almost all political, religious and economic power (Camp 1994: 7).

Around this time a possible peripteral temple was constructed on the Akropolis (Shapiro 1989: 5).[87] Known as the Bluebeard temple, it is conceivable that this temple was built as part of the increasing aristocratic, architectural competition that began to dominate the Akropolis during this period.[88] Indeed, it was during the second quarter of the sixth century that the treasury buildings on the Akropolis that were discussed in Chapter 7 begin to be built and life-sized statues, such as the Moschophoros (Akropolis 624; 570-560 BC), were dedicated in the sanctuary by wealthy individuals (Klein 1991: 335; Hurwit 1999: 103, 112). The aristocratic dedications and the competing statements of aristocratic identity on the Akropolis highlight the importance of religion and votive dedication in sixth-century Athenian politics and society.

Immediately after the Solonian reforms, shifting alliances among three powerful families had kept anyone from seizing full power. However, by 545, following several failed attempts and subsequent exiles, Peisistratos managed to seize power for himself (Shapiro 1989; Camp 2001: 29; Roberts 2005: 573). Peisistratos was able to finally secure control through a ruse, which involved a 'handsome woman called

[87] This temple is not included in the data-set as it does not have attributable foundations and has been reconstructed by at least one scholar (Dinsmoor 1947) as tri-style in-antis, rather than peripteral (see Appendix II).

[88] Although a connection between the Bluebeard temple and Peisistratos has been suggested, it is purely speculative (Shapiro 1989: 5; Spivey 1996: 99; Hurwit 1999: 109).

Phye' dressing up as Athena and accompanying Peisistratos upon his return to Athens (Herodotus 1.60). Despite Herodotus' dismay at the stupidity demonstrated by the Athenians, the use of Athena to help gain the popular support of the Athenians further indicates the importance of festival and religion in the political life of archaic Athens (Connor 1987: 49).

It is probably under Peisistratos that the largest Athenian temple, the Olympieion, was planned (A2; 530-510; Wycherley 1964: 163; 1978: 156), the foundations of which have been variously restored as being between 30.50m by c.70m (Travlos 1971: 402) and 40.99m by 107.747m (Dinsmoor 1950: 91). As discussed in Chapter 7, this temple was constructed on a scale to directly rival the largest temples in the Greek world, such as the 'Great Temple' at Corinth (see Appendix II), Polykleitos of Samos' Temple of Hera, the Temple of Artemis at Ephesos as well as the large Doric Peripteral temples of Zeus Olympios (Temple B) at Akragas (S8) and Temple G at Selinous (S20, Dinsmoor 1950: 91; Boersma 1970: 25; Wycherley 1978: 156; Shapiro 1989: 6; Lawrence 1996: 80; Camp 2001: 36; Lattimore 2006: 460). The fact that the temple was never completed makes comparing the architectural details of the Olympieion to the other large temple projects difficult; indeed, the exact layout and number of the Olympieion's columns are debated (Dinsmoor 1950: 91; Shear Jr. 1978: 10; Wycherley 1978: 156; Travlos 1971: 402; Hammond 1986: 285; Lawrence 1996: 80; Osborne 1996: 263). However, the implications and intentions of such a large project are clear. Only a few temples in the Greek world were built to such a large size; for example, a contemporary temple at Kalaureia (P14; 525-500) only measured 14.4m by 27.5m on the foundations. The Olympieion's size indicates that it was intended to be a clear statement, on a Panhellenic scale, of Peisistratos' and consequently Athens', wealth and power (Shapiro 1989: 8).

In contrast to the other projects completed by Peisistratos that were designed to marshal popular Athenian support, such as the development of the Agora (Boersma 1970: 18), the Olympieion was a statement of Peisistratos' power on a Panhellenic scale, comparable to Peisistratos' activity on Delos (Boersma 1970: 18). The location of the temple, below the Akropolis and close to the Old Agora, and Peisistratos' general avoidance of the Akropolis, perhaps indicates his desire not to be associated with the traditional aristocratic competition. Completing projects away from the Akropolis also avoided a comparison with the statements of elite identity that had been so prevalent on the early sixth-century Akropolis (indeed, various groups continued to dedicate on the Akropolis (including a number of treasuries) during the reign of Peisistratos, but no votive has been identified that can be associated with the tyrant (Hurwit 1999: 118)). After the collapse of the tyranny (510), work on the Olympieion immediately ceased (Vitruvius, Preface to 7.15), further highlighting the strong relationship between temple projects and the identity of the client.

Following the death of Peisistratos in 527, two of his sons, Hippias and Hipparchos, reined until the murder of Hipparchos in 514 and the expulsion of Hippias in 510 (Herodotus 5.55-65; Camp 2001: 29). Around this time a peripteral temple was constructed on the Akropolis, known as the Temple of Athena Polias (A3; 520-500; SW: 21.3m; SL: 43.15m). It is difficult to recreate the exact history of the Temple of Athena Polias and the building has been associated with both the Peisistratids and the fledgling democracy (see Appendix V entry A3 for a discussion of the reasons).

It is often commented that the Temple of Athena Polias had a very similar stylobate width to the sixth-century Temple of Apollo at Delphi, which was constructed around the same time (N16, Childs 1993; 1994; Camp 2001: 43).[89] As well as sharing a similar stylobate width, the temples also have very similar elevation designs, utilising the same capital shape and frieze dimensions (to the point where they both share the same triglyph widths, 0.822m).[90] Furthermore, both temples' pediments depicted gigantomachies, featuring a central chariot (Hurwit 1999: 123; Marconi 2007: 193; Barringer 2008: 72).[91] These design similarities would have resulted in both temples having very similar façades. Although there are clear similarities in the façade elevations of the Temple of Athena Polias and the sixth-century Temple of Apollo at Delphi, the two temples had very different plans. For example, the foundations of the Temple of Apollo measure 59.5m in length in contrast to the shorter 43.15m of the Temple of Athena Polias. The 'unusual' layout of both temples' cellae (the Temple of Apollo incorporating the oracular adyton and the Temple of Athena Polias having a

[89] The fact that contemporary temples were built with very different stylobate widths, such as the 13.25m stylobate width on the Temple of Athena at Delphi (N17; 550-500), 16.06m on the Temple of Hera at Tavole Palatine (I5; 520-510), and 11.91m on the Kardaki temple at Korkyra (N24; 525-500) suggests that the similarity in stylobate width between the Temple of Athena Polias and the Temple of Apollo at Delphi was significant.

[90] The Temple of Athena Polias had triglyphs measuring 0.822m on the façade, 0.753m on the flank. The temple's capital dimensions are not included within the data-set as the published measurements are now felt to be inaccurate (see Appendix V, Catalogue entry A3); however, in Childs' (1994: 2) discussion of the new capital drawings he states that the capitals are similar to those of the sixth-century Temple of Apollo at Delphi (N16).

[91] Østby (2000: 258) has concluded that the currently available publications of the sixth-century Temple of Apollo at Delphi and the Temple of Athena Polias in Athens are far from satisfactory and a comparative study of the subtleties of the temples designs, based upon the reports, cannot give any clear answer to the problems concerning the temples' relative dates. However, the reported dimensions of the large architectural elements, which form the focus of this comparison, and also form the largest part of the buildings' exterior appearance, are accurate enough for a study of this type.

unique ‘tripartite’ plan) could have resulted in the differing lengths. The longer stylobate on the Temple of Apollo would have resulted in the two temples’ flanks having different flank appearances.

The similarity between the two buildings is interesting given Herodotus’ (5.62-63) reference to the construction of the Temple of Apollo at Delphi by the exiled Athenian family, the Alkmaionidai, in exchange for Spartan help against the Peisistratids in Athens. Although Childs (1993: 432-440) doubts the exact chronology of Herodotus’ version, Childs still associates the Alkmaionidai with the construction of the Temple of Apollo at Delphi (albeit 20 years earlier than suggested by Herodotus). As discussed in Chapter 7, when two temples share the same stylobate width it is associated with inter-group competition; however, when two temples share the same width and elevation design it is indicative of the two temples having the same client. Thus, it is an attractive proposal to suggest that the Temple of Athena Polias was also built by the Alkmaionidai to celebrate the removal of the Peisistratids and the victory over the Boiotians (507/6 BC). Attributing the construction to the Alkmaionidai may also explain why the temple was built on the Akropolis, given the Peisistratids’ previous lack of interest in this sanctuary during their tenure.[92] Although believing the temple was constructed by the ‘new democracy’ Shapiro (1994: 123) has suggested that the pedimental gigantomachy should be read as a metaphor for driving out the tyrants. However, the responsibility for the removal of the tyrants appears to lie with the Alkmaionidai, who, with the help of the Spartans, expelled Hippias in 510.

Scholars who date the Temple of Athena Polias to the period after the Kleisthenaic reforms associate the temple with the ‘city,’ on the assumption that because the temple dates to post-508, the ‘city’ instantly took over the responsibility for monumental construction from the Peisistratids (for example, Shapiro 1994: 123; Hurwit 1999: 121; Camp 2001: 42).[93] However, there is no evidence that Kleisthenes’ reforms instantly led to a change in dedicatory practices within the city; indeed, treasuries continue to be built and korai continue to be dedicated on the Akropolis

[92] The possible destruction of the Bluebeard temple to make room for this new structure could have been symbolic of a break with the old.

[93] Hurwit (1999: 132) argues that the fact that the Older Propylon, constructed between the Persian Wars (489-480), is axially aligned with this temple indicates that it was a “project of the democracy”; however, there is no reason to believe that the democracy would only align the Propylon with a temple that they had built. Whether or not the temple was a project of the democracy, the Temple of Athena Polias was still the most holy sanctuary on the Akropolis (Hurwit 2005: 22).

well into the fifth century (Klein 1991: 335; Hurwit 1999: 112, 126). Therefore, the design of the Temple of Athena Polias suggests that it should no longer be associated with the Peisistratids or the nascent democracy, as has been previously postulated, but should instead be seen as being constructed by Kleisthenes' Alkmaionidai family.

By constructing a temple to a similar design as their associated temple at Delphi, the Alkmaionidai were making a clear statement regarding their power and position in the Greek world. However, it should be observed that they made this statement in a very different way than the Peisistratids did with the Olympieion. Instead of building a large temple in order to compete with the other powerful individuals in the Aegean and beyond, the Alkmaionidai temple indicated their power through association with (their) earlier projects rather than through direct competition with other groups (although the comparatively similar size of the Temple of Apollo at Corinth (P7) no doubt indicates that a certain amount of competitive comparison between the Athenian and Corinthian temples was intended; see Chapter 7).

Fifth-Century Athens and its Demes

In contrast to the design of the Peisistratid Olympieion, whose size referred to activity outside of the immediate region, the design of the fifth-century Attic temples indicate a concern with the expression of a coherent statement of identity, that does not rely on contemporary building activity in the wider Greek world. Similar to the Alkmaionidai and the Temple of Apollo at Delphi, the temples of fifth-century Attica utilise a standard temple design in order to create a 'unique' image (or perception) of their own self-identity through the adoption and manipulation of previously aristocratic symbols. As such, the temples of fifth-century Attica further serve to demonstrate the link between temple design and the expression of identity on behalf of the temple's client.

Following the reforms of Kleisthenes, which reorganised the social and political structure of Attica, the power of the aristocratic families was broken, making it difficult for one family to gain too much popular support (Waterfield 2004: 69; Roberts 2005: 156). Despite these reforms, treasuries continue to be built and individuals continue to dedicate korai on the Akropolis, indicating that the introduction of the reforms did not have an instant effect upon dedication policy on the Akropolis (see Chapter 7 and the discussion of the Temple of Athena Polias above). Indeed, a real change in the dedicatory practices in Athens only become manifest in the first years of the fifth century.

The earliest democratic political monument was the Tyrannicides, a statue group which was voted into existence sometime between 510 and 480 (Lattimore (2006:

456) prefers a date post-490 for the statues). This statue group stylistically reinforced the government's democratic stance as being "opposed to the world of Persian images" (Shapiro 1994: 124; Spivey 1996: 27-28, 113-116; Hölscher 1998: 158-160). The equivalent of the tyrant-slayers on the level of myth was Theseus (Hölscher 1998: 160-161; 2011: 56; Maurizio 1998: 298). Although Peisistratos may have shown some favour to Theseus he preferred Herakles; however, beginning in the early fifth century Theseus became the hero apparent for the democracy, appearing on an increased scale on painted pottery as well as in public works of art (Hurwit 1985: 314; Shapiro 1994: 124-6). Consequently, Theseus became part of the visual repertoire of the Athenian democracy and a key part of the demos' identity. As discussed in Chapter 7, it is during these years that the democracy also began to appropriate the image of the aristocratic korai (Hall 2007: 343-349).

Furthermore, under the democracy religion became integrated with state life, with many religious appointments being made by the state (Osborne 1994a: 145; Rhodes 2005: 59). The running of the important religious festivals, such as the Dionysia, was subsumed under the normal administration of the Athenian democratic state (Cartledge 1985: 124). Likewise, political meetings were 'authorised' with the performance of religious acts; meetings of the Ekklesia began with the sacrifice of a pig, fumigations and prayers by the herald (Aeschines 1.22-3; Demosthenes 54.39), whilst the members of the Boule prayed to Zeus Boulaios and Athena Boulaia as they entered the Bouleuterion (Antiphon 6.45; Mikalson 1983: 13).

In addition, the buildings of the new government, serving as the physical and visual manifestation of the new system, appropriated religious architecture in order to add a religious aspect to the identity of the new Athenian public buildings. Around the turn of the sixth and fifth centuries the Bouleuterion and the Royal Stoa became two of the first civic buildings to be embellished with the Doric order (Chapter 1; Figure 3), which before that time had been reserved almost exclusively for the sanctuaries of the gods (Shear Jr. 1994: 231-239; Lattimore 2006: 461). This had the effect of associating the new democratic order with the Doric.

Similarly, in the first few years of the fifth century, Athens began to show a keen interest in large scale dedications at Delphi (Scott 2010: 77-81), dedicating both a treasury and a stoa in the sanctuary (Butz 2009: 32), the latter being clearly inscribed:

> The Athenians dedicated the stoa and the equipme[nt a]nd the stern ornaments, having taken them from their ene[mie]s (*SIG.*[3] 29; Umholtz 2002: 269).

As such, the demos took great care to create an image in which the new democratic order was intimately connected with the state religion, not only metaphorically, but also physically, through the appropriation of previously religious symbols, such as the Doric order, and using them to form part of the visual identity of the new government. This also appears to be the case with the adoption of an 'Athenian' style of Doric peripteral temple, with 6 by 13 columns (discussed below).

There can be no doubt that the Athenian activity in the Persian Wars (490 and 480/479) contributed to the changes in the expression and salience of Athenian democratic identity during this period, both within Athens and in the Panhellenic sanctuaries. And it was in the period between the two Persian Wars (490 and 480/479) that a new Temple of Poseidon was begun in the Sanctuary of Poseidon at Cape Sounion on the southernmost tip of Attica. Although the sanctuary was previously the preserve of large aristocratic dedications, in particular kouroi (Camp 2001: 28), the sanctuary came to be particularly important to the Athenian democracy, which held an important festival at the sanctuary every four years (Herodotus 6.87) and levied a tax on shipping to help maintain the cult (*IG* I 38). Indeed, Sounion's position, looking out over the Saronic Gulf towards Aigina, and the important role of Sounion in the rivalry between Athens and Aigina during this period (Herodotus 6.49-51, 6.73, 6.85-94; Thucydides 1.93), suggests that the choice of Sounion for this new temple was significant.

In contrast to the earlier Attic temples, the new (first) Temple of Poseidon at Sounion (A4; 490-480) was much smaller. Although the structure is not well preserved, having been built over by the Periklean marble temple, the surviving remains, discovered under the marble temple, indicate that it was a similar size to the later building, with a stylobate width around 13.12m (Doerpfeld 1884: 331; Camp 2001: 308).[94] Similarities between the remaining elements of the first Temple of Poseidon and the Periklean temple suggest that

[94] The temple is much closer in size to the Temple of Athena at Delphi (N17; 550-500; SW: 13.25) and the late sixth-century temples on the Saronic Gulf, such as the Temple of Poseidon at Kalaureia (P14; 525-500; FoW: 14.4m), the Temple of Poseidon at Hermione (P12; 525-480; FoW: 16.25m) and the Temple of Athena at Megara (A15; sixth century; FoW: 14.5m), although these all utilised different elevation designs from one another. Indeed, the similarity in stylobate width of the later Temple of Aphaia on Aigina (A14; 480-470; SW: 13.77), and different elevation design, further highlights the role of temple building in inter-state competition and subsequent expression of identity. Indeed, Lattimore (2006: 459) suggests that the sculpture on the Temple of Aphaia may have originated as anti-Athenian propaganda.

the earlier temple also had a peristyle of 6 by 13 columns (Doerpfeld 1884: Tavola XV; Dinsmoor 1950: 107). Unfortunately, the poor state of preservation makes detailed conclusions about the elevation purely hypothetical.

The same temple design next emerges on the island of Delos, with the construction of the Temple of Apollo (O8; 478-450). Following the Persian Wars, the island became particularly important in Athenian foreign policy, since it was the location of the treasury of the Delian League, of which Athens was the leading state (Miles 1998: 55; Waterfield 2004: 89). The temple was similar in size to the Temple of Poseidon at Sounion, having a stylobate width of 12.47m and a peristyle of 6 by 13 columns. The temple also utilised almost exactly the same elevation proportions as the later Hephaisteion (A6) and the Second Temple of Poseidon at Sounion (A9; see Appendix IV, Figure 104). It is difficult to categorically confirm that the Temple of Apollo was directly associated with the Athenians.[95] However, the similarity to the Temple of Poseidon at Sounion, Athenian interest in the sanctuary, and the relative lack of peripteral temples in the Cyclades prior to this point (Coulton 1984: 44), suggest that the Athenians were likely to have been involved in the project.

[95] Tomlinson (1976: 75) argues that as the Athenians chose to build a brand new temple in 425 instead of completing this temple, they cannot have originally been associated with the older building. Likewise, Osborne (1999: 324) argues that the temple should be seen as being paid for by the League using the financial share that the “Delian Apollo putatively took from the tribute whilst the Treasury was at Delos”. But given the Athenian interest in the island, and control of the league, it is not unlikely that they had a significant input into the decision to build the Temple of Apollo (O8).

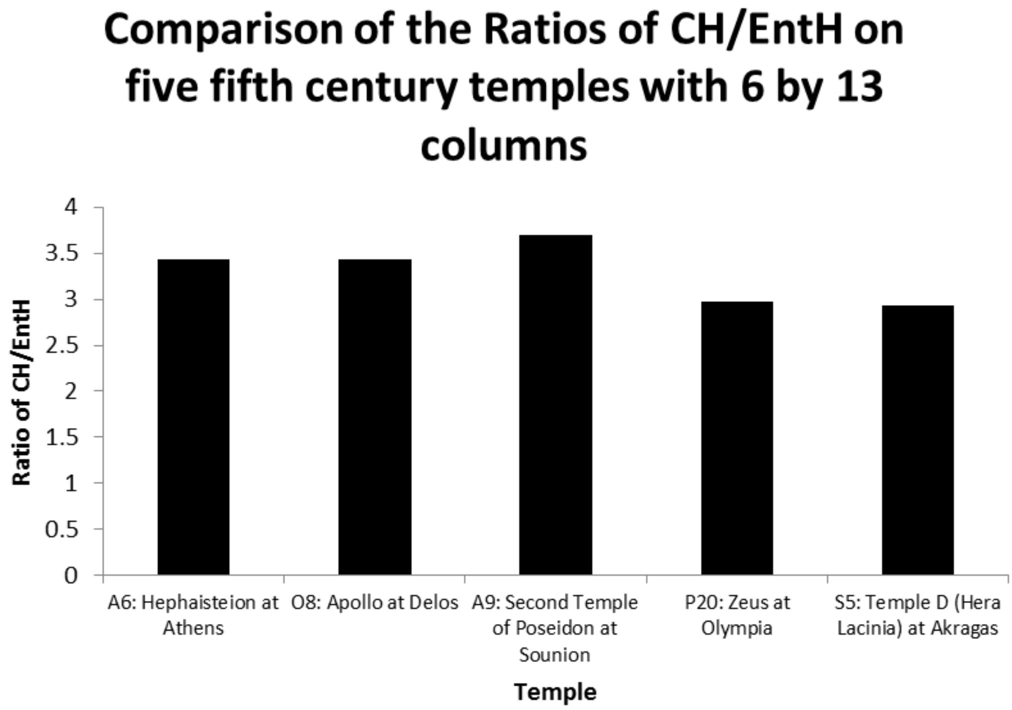

Figure 104 The ratio of column height to entablature height was highlighted by Coulton (1984: 41) as being indicative of the 'Periklean Doric'. As demonstrated in the above graph, the Temple of Apollo on Delos (O8) clearly belongs in this group.

The same 6 by 13 design was subsequently used on the Hephaisteion (A6; 450-440 (see Appendix III.7 for a discussion of the temple's date); FoW: 15.42m; SW: 13.708m) built overlooking the new Agora, the Second Temple of Poseidon at Sounion (A9; 450-430; FoW: 15.2m; SW: 13.47m) and possibly the Temples of Athena at Pallene (A10; 440-420; FoW: 16.202m) and Apollo Delphinios (A7; 450-440; FoW: 15.26m) constructed next to the Delphinion (Figure 105). As well as utilising the same plan with 6 by 13 columns, the well preserved examples indicate that they also had very similar elevation designs. For example, the most well preserved buildings, the Hephaisteion and the Second Temple of Poseidon at Sounion utilise the same capital design (CGL), both have similar shaped columns, and entablature designs, with almost exactly the same dimensions (see Chapter 4, Table 5 and Appendix IV). Indeed, as identified by Coulton (1979; 1984) and Townsend (2004: 315) these temples utilise decorative design features that are not found outside of fifth-century Attica, such as the 'Periklean Fillet' moulding.

In contrast, elsewhere in the Greek World temples were being constructed utilising multiple different designs. For example, the fifth-century Temple of Hera in the Argive Heraion (P2) had a foundation width of 20.1m and a peristyle of 6 by 12 columns whilst the temple at Segesta (S13) has a stylobate width of 23.12m and a peristyle composed of 6 by 14 columns. In a period when multiple different temple designs are being utilised in other parts of the Greek world, it cannot be a coincidence that six temples of the same design were constructed in the same polis.

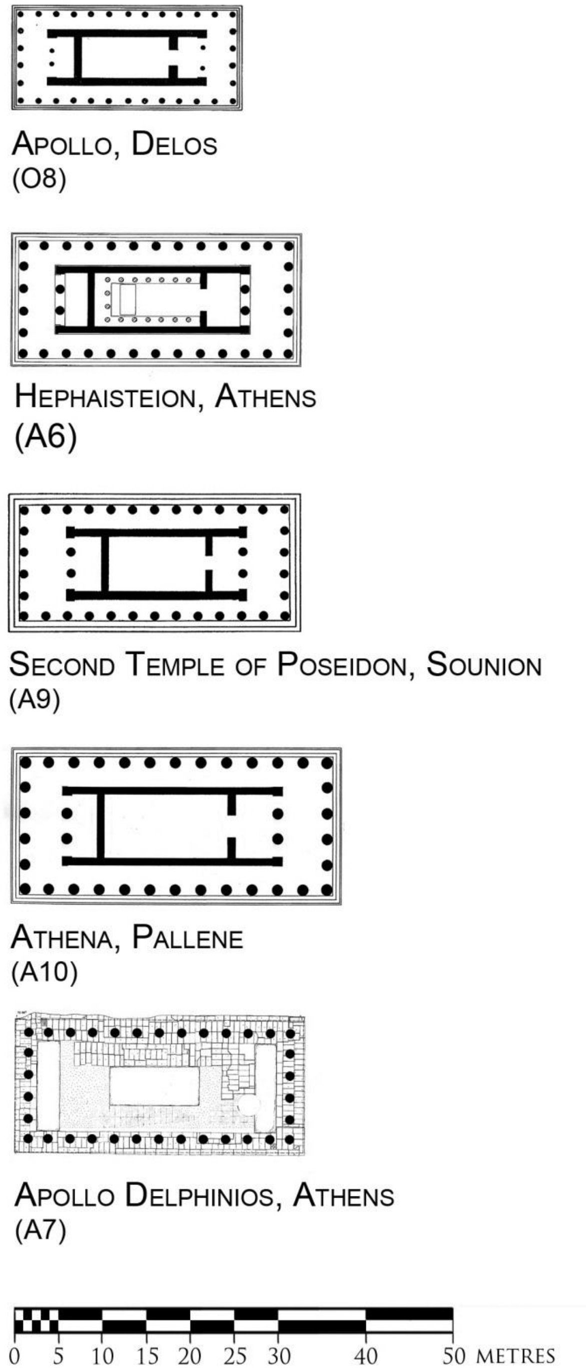

Figure 105 Plans of the fifth-century Attic temples of group AA (*After* Boersma 1970: 170, 196; Travlos 1971: 84, 106; Barringer 2008: 116).

Having highlighted the remarkable similarities between some of the temples of fifth-century Attica, it is important to acknowledge a number of differences in the temples' designs. These differences are most notable in relation to the materials, the height of the columns and the addition of sculpture. For example, the Hephaisteion has sculpted metopes over the east end, whilst on the Temple of Poseidon the metopes were blank and constructed of local marble from the Agrileza quarries. This difference, in an otherwise remarkably similar series of buildings, raises an interesting question regarding the identity of the temples' client(s). As discussed in the previous chapter, their similarity cannot be attributed to the use of the same architect (a point further corroborated through an examination of their frieze constructions (Miles 1989: 239-242)). Unfortunately, there is no evidence to suggest who paid for the temples; however, given the importance of the rise in dedications on behalf of the 'Athenians' during the fifth century and the integration of public art and Athenian identity (see above), it would be entirely appropriate if the temples were completed by the Demos, or at least overseen by a central authority.[96] Indeed, despite the differences in the position of the sculpture on the buildings, the depiction of Theseus on both the Hephaisteion (Camp 1986: 84; 2001: 102)[97] and the Temple of Poseidon at Sounion (Shefton 1962 350 n.35), as well as on the Athenian treasury at Delphi, further reinforces the connection between the temple architecture and the physical expression of Athenian identity.[98]

Such was the importance that this expression of identity was seen to represent the Athenians, and not any powerful individuals, is further demonstrated through a passage in Plutarch's *Perikles* (14.1-2) in which the value of the temple building programme is being debated in the Ekklesia:

> So the politicians who supported Thucydides were loudly denouncing Perikles for having squandered and wasted the tribute money. He therefore got up in the Assembly and asked the Athenian people whether they thought he had spent too much. When they said that he had spent far too much, he replied 'in that case it should not be you who incur the cost, but me. I will have only my name inscribed on the sacred buildings'. Perhaps they were impressed by his principled stand, or perhaps they did not want to let him have all the glory for the work, but at any rate their response to these words of his was to cry out that he was to draw money from the public funds and spend freely.

[96] It could equally be possible that the Ekklesia allotted money to the various sanctuaries for the completion of their temples. These were then managed locally, but overseen centrally. This may explain the temples' overall similarities but also the subtle differences.
[97] Boersma (1970: 60) and Whitley (2001: 343) believe that the combination of Herakles and Theseus on the metopes of the Hephaisteion may be to suggest that the Athenian hero was the equivalent of his Peloponnesian counterpart.
[98] Unfortunately, the sculptures from the pronaos frieze of the Temple of Athena at Pallene are not well enough preserved to interpret their theme.

Likewise, an offer by the family of Perikles to pay for a spring-house is politely rejected by the demos, who instead pay for the spring house utilising moneys left over from tribute (*IG* I^3 49; Kallet 2005: 58). In his remarks at the trial of Leocrates in Athens, Lycurgus equates being a traitor to the temples of Athens with treason against the city and country (Lycurgus *Against Leocrates* 1.1; Stevenson 2001: 82 n.330). Indeed, during the second half of the fifth century, it became increasingly rare for private individuals to dedicate bronze votives upon marble bases on the Akropolis, especially in comparison to the large amount of individual dedications in the sixth and early fifth centuries (Hurwit 1999: 35). As with the korai, the fact that temples had previously been associated with issues surrounding aristocratic and tyrannical identity provided the democracy with an opportunity to appropriate and adapt their design for their own purpose. This transition is discussed by Kallet (2005: 59) in relation to the Parthenon, where the demos usurped the image of tyrant as a "funder of monuments and patron of all", allowing the demos to present itself as having the power equivalent to a tyrant.

Further to this, the locations chosen in which to construct the six temples with 6 by 13 columns are indicative of a centrally controlled programme. Unlike the aristocratic clamour to dedicate on the Akropolis in the sixth century, and the construction of treasuries next to each other in the Panhellenic sanctuaries in order to compete for attention and prestige, each of these temples is placed in a different sanctuary, if not in an entirely different area of the polis. Furthermore, the selected sanctuaries were all of Pan-Attic importance. For example, the Temple of Apollo Delphinios (A7) was constructed next to the Delphinion (Wycherley 1978: 167), a law court associated with Theseus, who had united the demes under Athenian rule (Pausanias 1.28.10; Thucydides 2.15-16). Likewise, for the Athenians, Pallene and Delos both had important connections with Theseus, Pallene being the location of one of Theseus' greatest victories (Hadjimihali 1973: 168; Hurwit 1985: 313).

As well as possible mythical associations, the temples' locations were also chosen for their contemporary importance. For example, when the Temple of Apollo was being constructed on Delos the Athenians were not the head of an empire, they were just the alliance's elected leader; however, the construction (and the associated symbolism) of the 6 by 13 Doric peripteral temple design, previously used as a symbol of Athenian identity at Sounion, cannot have been ignored or regarded as coincidental. Likewise, when the league treasury was brought to Athens, and work on the Temple of Apollo on Delos had ceased (having been constructed to the level of the frieze), the subject allies were required to come to Athens to attend the Dionysia (Isocrates *On the Peace*

8.82) and the Panathenaic procession (Hurwit 1999: 226). It could not have escaped them, the processions leading them past the Hephaisteion, that the Hephaisteion was in fact a completed version of the unfinished temple on Delos.

Therefore, it is argued that these six temples share a similar overall design due to the desire to express a coherent and powerful statement of political and social identity on behalf of the temples' client, the Athenian demos. The continued use of this design by a single city for so long, while temples of other designs were being constructed elsewhere, clearly indicates the importance of the 6 by 13 temple design in the visual construction (and expression) of fifth-century Athenian identity. However, three of the nine temples of fifth-century Athens in the study do not utilise this design, including the temple that many scholars feel was the pinnacle of the fifth-century Athenian building programme, the Parthenon (A8) and its predecessor, the Old Parthenon (A5, Figure 106).[99]

[99] The third non-6-by-13, the Temple of Nemesis at Rhamnous is discussed below.

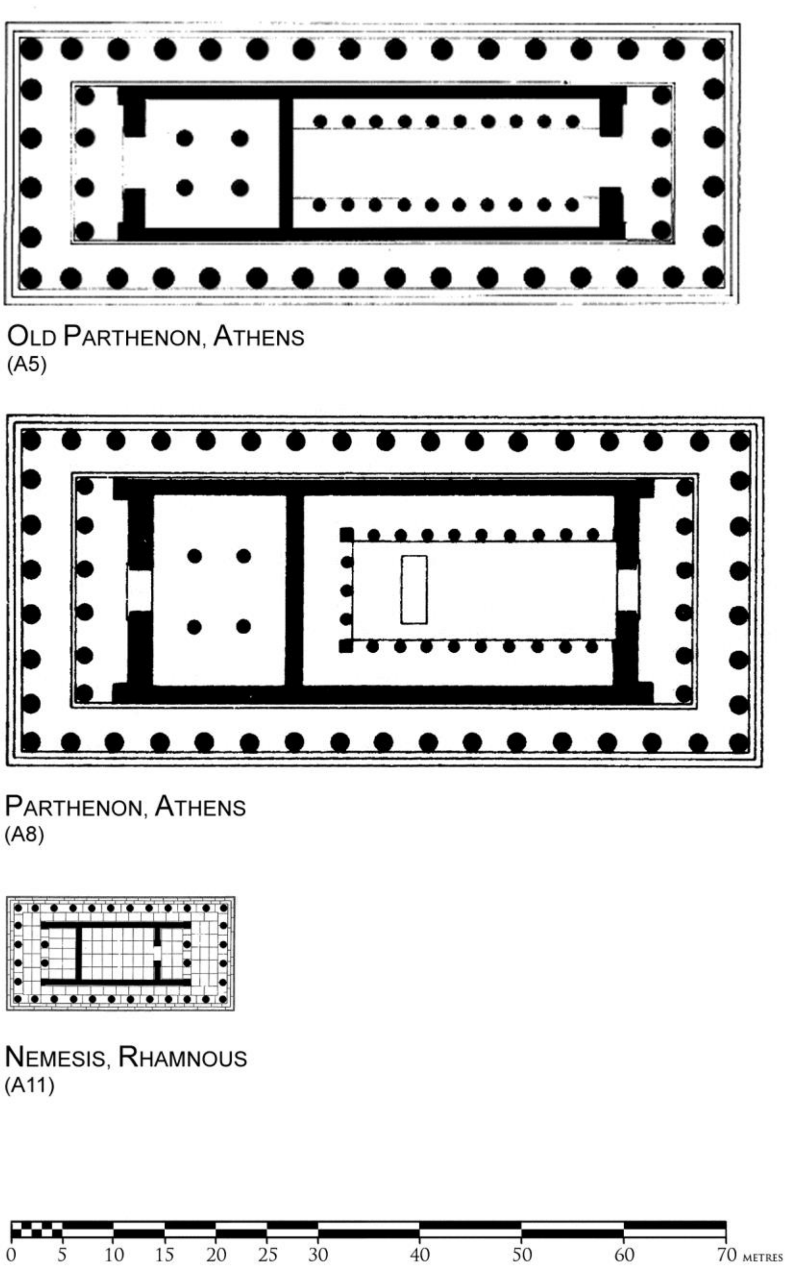

Figure 106 Plans of the Old Parthenon (A5, largely restored), the Parthenon (A8) and the Temple of Nemesis at Rhamnous (A11; *After* Travlos 1971: 446; Miles 1989: 143; Pedley 2005: 69).

Everything about the Parthenon marks it out as different from the other temples of fifth-century Attica, not just the building's dimensions and proportions, but also the amount of sculptural adornment, the so-called 'west chamber' and the extensive use of subtle architectural refinements. However, any discussion of the Parthenon has to begin with the Old Parthenon, since the Old Parthenon provided the guide for the Periklean Parthenon, not only in terms of size, but also the building's internal layout (see discussion of Iktinos in Chapter 2). Indeed, the design of the Parthenon had to account for the reuse of a number of the remaining blocks of the Old Parthenon, which had remained on the site following the Persian destruction of Athens in 480 (Coulton 1984: 42; Seki 1984: 77; Barletta 2005: 69).

This is not to say that both buildings meant the same things to the contemporary sanctuary visitors. Indeed, the wealth of sculpture on the Parthenon and the various readings of the frieze indicate that the sculpture's meaning should be understood in the contemporary context of the Periklean Akropolis (the various readings of the Parthenon frieze are summarised in Hurwit 2004: 224-226). However, the similarities to the Old Parthenon (constructed around the same time as the first 6-by-13 Temple of Poseidon at Sounion (A4)), suggest that in order to begin to understand why the Parthenon does not utilise the 'standardised' 6-by-13 plan, an analysis of the earlier temple must first be undertaken.

There is little evidence to suggest that either the Parthenon or the Old Parthenon functioned as a 'temple' in the same sense as the other Attic temples (if indeed temples had a standard function; see Chapter 3). Unlike other temples and cults, there is no known priestess of Athena Parthenos, no altar was built to accompany the building, and it was not connected to any of the great festivals. In fact, the focal point of cult activity on the Akropolis was the north side, in the area occupied in the sixth century by the Temple of Athena Polias (A3) and in the later fifth century by the Erechtheion (Herington 1955: 37; Burkert 1988: 29; Camp 2001: 81; Lattimore 2006: 465). Hurwit (2004: 110-116, 132 and 154) argues that instead of being seen as a religious building for Athena, the Parthenon and the Old Parthenon functioned more like a bank or a 'Temple to Athens'. Indeed, it is often suggested that the Old Parthenon was built primarily as victory monument following Marathon, rather than to house a specific cult (Hurwit 1999: 133; Camp 2001: 52).

As discussed above, the 6-by-13 temples were located in sanctuaries of particular importance to the democracy; however, it is interesting that no temple utilising the 6-by-13 design was ever built upon the Akropolis. In fact, under Perikles, the Akropolis came to be closely associated with the Delian League and imperialism. For example, the statue of Athena Lemnia erected at the entrance to the Akropolis around 450 is described by Hölscher (1998: 169) as "the first aggressive monument of Periklean policy against Athens' allies". In addition, a building of the size and elaboration of the Parthenon would have been impossible without the stable income provided by the empire (Kallet 2005: 52). Indeed, from 454, as the subject allies participating in the Panathenaia reached the Akropolis they were faced with a huge stele recording the lists of their enforced dedications to Athena (Kallet 2005: 60). Likewise, the mix of Ionic and Doric elements in the building has been seen as symbolic of imperialistic architecture (Prokkola 2011: 203). Furthermore, the Parthenon may have been built overlooking the burnt remains of the Temple of Athena Polias (A3) that had been destroyed in the Persian invasion of 480, an act clearly associated with the foundation of the league (Ferrari 2002; although Pakkanen (2006) feels that the evidence presented by Ferrari is flawed, and no firm conclusions can be made regarding the later life of the Temple of Athena Polias). Therefore, it could be argued that the Parthenon was conceptually separate from the displays of democratic self-identity (a point further reinforced by the curious absence of Theseus from the sculptural program), especially given the contradictions and confusions that were evident between the freedom afforded by democracy and the servitude of the empire's allies (Osborne 1994b). Indeed, similar to Maurizio's (1998) arguments for the Panathenaic procession, it may have been part of the Parthenon's role to challenge these seemingly opposing identities and "expose the tensions between these different modes of…communal self-definition". As such, the Parthenon, and indeed the Periklean Akropolis more generally, make references to Athens as leader and victor as opposed to the coherent and consistent democratic identity symbolised by the temples designed with 6 by 13 columns.

Although the 6-by-13 temples contributed to, and expressed, the image and self-identity of the fifth-century Attic state, they also formed part of a wider building programme that was being undertaken between the second Persian invasion and the Peloponnesian War, including two Telesteria at Eleusis (the Kimonian Telesterion, c.480, and the Periklean Telesterion, c.449), various civic buildings, such as the Stoa Poikile (c.460) and the public baths (433/2; *IG* I^2 343; Boersma 1970: 233), as well as multiple Ionic buildings including the Ilisos temple in Athens (c.440; Goette 2001: 101-102) and the addition of a colonnade to the Temple of Athena Sounias at Sounion (460-450; Boersma 1970: 184).[100] After all, as discussed by Cooper (1996e: 403), temples were only one way in which a Greek city could declare its importance and wealth; indeed, Aristotle (*Politics* 1330b) felt that a city's walls primary purpose was to 'contribute to the embellishment of the city'. As such, the 6-by-13 temples formed part of a wider series of building programmes (which included the Parthenon) each contributing towards the overall image and expression of identity on behalf of fifth-century Athens, which in turn formed part of the general approach of the fifth-century Athenian state's use of religion in self-definition (Shapiro 1994). As part of the programme, the standardised design of the 6-by-13 temples was used as a repeatable, physical symbol of Athenian group identity. By placing the

[100] The capitals of the Ionic temples built during this period appear to belong to a single trend that differentiates them from the earlier Ionic capitals in Athens (Shear 1963: 381). See Boersma (1970: 42-81) and Camp (2001: 59-117) for overviews of Attic building activity in this period.

temples in fundamental locations at specific periods in time (see discussion of Delos and the Hephaisteion above), the standardised design was used to signify the temples' construction by a single, coherent, powerful group, the demos.

There is, however, one other 'standard' Doric peripteral temple that does not utilise the 6-by-13 design found on the six other Doric temples, the unfinished Temple of Nemesis at Rhamnous (A11; 430-420). Unlike the Old Parthenon and the Parthenon, the Temple of Nemesis at Rhamnous appears to be a 'normal' temple, in that it has an associated altar (Boersma 1970: 143). The temple is much smaller than the six 'standardised' temples, with foundation dimensions of 11.58m by 22.76m (compared to 15.42m by 33.48m on the Hephaisteion (A6)) and a colonnade comprising 12 flank columns instead of 13. Despite Dinsmoor's (1950: 182) belief that the temple was intended to have sculptural adornment, the lack of evidence on the blocks for any preparations, which would be necessary if the temple were to bear sculpture, must surely indicate that, unlike the Hephaisteion (A6) and the Temple of Poseidon at Sounion (A9), this temple did not bear sculpture. Miles (1989: 22) suggests that the temple may have been built on a tight budget, especially given the temple's chronological proximity to the Peloponnesian War and this may explain why the building is much smaller, and bears less sculptural adornment, than the other Attic peripteral temples. However, an alternative explanation for the variation in the design can also be postulated based upon the evidence gathered in this study. As discussed in Chapter 7, differences in temple design are indicative of differing expressions of identity on behalf of the client. The prevalence of the 6-by-13 design in fifth-century Attica suggests that the demos had a very clear and standardised way in which to express their own identity through temple architecture, so the presence of a single structure that does not share the same design is particularly interesting.

The shortened peristyle of the temple cannot be attributed to contemporary Panhellenic fashion, since many temples constructed at the same time were designed with a varying numbers of flank columns, such as the Temple of Apollo Epikourios at Bassai (P4; 429-400) with 15. Interestingly, the cult of Nemesis at Rhamnous is not listed amongst the "Other Gods" whose funds and treasures were overseen in Athens (*IG* I^3 369, 383), suggesting that, unlike the other temples' sanctuaries, the Nemesis sanctuary's finances were not overseen centrally. Furthermore, unlike the other sanctuaries that received new temples as part of the fifth-century building programme, such as Pallene, Sounion and Eleusis, the Rhamnousian sanctuary's sphere of influence was only limited to the deme (Boersma 1970: 79). The funerary record of fourth-century Rhamnous further suggests that it was an exceptional deme. Marble funerary monuments are not common in Attica, and family periboloi are rare. However, Rhamnous had family monuments that are striking in both their physical and genealogical extent. Osborne (1985: 141) argues that these tombs proclaim the depth of local families and their connection with the deme.

The evidence suggests that the Temple of Nemesis at Rhamnous may have been a deme based, rather than a centrally controlled Athenian project. An argument against this conclusion would be the indication from the accounts found on the site that the sanctuary did not have enough capital to finance the building of a temple (Boersma 1970: 78). However, there is reason to suggest that, although unfinished, the temple may have taken many years to get to this point. The unfinished nature of the temple is usually explained as a product of the outbreak of the Peloponnesian War and the annual invasions of Attica by the Spartans that started in 431 (Dinsmoor 1950: 182; Hodge and Tomlinson 1969: 185), but this argument seems flawed considering that it was not felt necessary to fortify Rhamnous until 412 (Camp 2001: 129). Furthermore, as discussed in Chapter 7, there is no reason to discount the involvement of the wealthy (and not so wealthy) in temple building projects, especially when only (relatively) small sums would have been needed on a yearly basis (the Parthenon accounts indicate that work was completed on a yearly basis, hence the reporting of yearly accounts (Burford 1963: 23-24)). Likewise, the fact that some temples remained unfinished testifies to the staggered approach to temple building (presumably both the Segestans and the Rhamnousians intended to eventually return to and complete their respective temples).

Although the demesmen of Rhamnous could afford to build a temple that does not explain why they did. Pausanias (1.33.2) relates that the temple's cult statue was carved by Pheidias out of a Parian marble block, brought by the Persians in anticipation of their victory at Marathon. The use of a marble block specifically associated with Marathon, a battle whose outcome was affected by the presence of Nemesis (Pausanias 1.33.2), may provide a clue. The exclusion of Rhamnous from the temple building programme, despite the deme's proximity to Marathon, as well as the presence of a particularly strong tie to the land, may have caused the Rhamnousians to begin a temple project of their own.[101] Likewise, although the use of local marble may have been primarily a cost saving exercise (Hodge and Tomlinson 1969: 192), it also added to the 'local' appearance of the temple and further reinforced the message of 'local' identity being expressed. Whilst the temple borrowed a number of features from the 6-by-13 Attic temples and the Parthenon, such as the capital shape (CGE), the use of 12, relatively shorter flank columns, supporting a lighter entablature and the dearth of sculptural adornment, with no reference

[101] Indeed, Miles (1989: 242) concludes that the temple architect was probably a local man.

to Theseus, suggests that the temple was designed to be different to the 6-by-13 temples constructed elsewhere in fifth-century Attica. The distinctiveness in the design of the temple was a clear indication of the Rhamnousians' separate identity as a group that was different, but no less important, than the rest of Attica.

Therefore, to summarise the arguments presented for fifth-century Attica, and the Attica case study more generally, it is suggested that temple design played a fundamental part in the formation (and expression) of group identity. This was achieved in a number of ways, either by building to a similar size as a rival (as with the Olympieion (A2)) or building multiple temples with the same design in order to create a sense of self-identity through the repeated use of a standard design and the associations that the repeated use brings with it (as with the Alkmaionidai at Delphi and the democracy with Delos and the Hephaisteion). The Athenian case study demonstrates the social and political importance of the design of the Doric peripteral temple, and highlights the significance of analysing the temples' designs from a local, as well as regional and Panhellenic perspective.

Sicily

The next three case studies analyse the architecture of Akragas, Selinous and Syracuse in Sicily and further demonstrate the role of Doric peripteral temple design in the expression of group identity. As discussed in Rhodes (2005: 78) and Funke (2006: 160-161), the historical evidence, particularly for sixth-century Sicily, is limited, making it difficult to complete a detailed historic-archaeological analysis. However, the well-preserved and numerous examples of temple architecture in Sicily provide a sample for the analysis of competition and identity in Doric peripteral temple design.

The temples on Sicily have been recognised by previous scholars as different from those of the mainland (see Chapters 2 and 6); however, the importance of their designs within the island and within the individual poleis has been overlooked. As discussed in Chapter 6, the temples of Sicily utilise a number of design features that are almost unique to the island, particularly in relation to the use of the double fronted colonnade and 14 flank columns.

The numerous temples on Sicily are particularly large and very similar sized (10 temples in Group SA, 9 in Group SB and 2 in Group SC). The desire of the colonists to build more frequently than the homeland has been linked to the spirit of militant Hellenism, in which the temples represented the colonists' Greek identity (Sjöqvist 1973: 64; Mertens 1996: 319). However, as discussed in earlier chapters, the levels of identity that were associated with Doric temples are more complicated, being part of a network of comparative and contrasting statements of group identity as well as being statements of the colonists' 'Greek-ness'. However, an analysis of the temple architecture of individual cities demonstrates how these elements and differing proportions were used to express specific competitions and cohesive statements of identity, both between and within the poleis.

Akragas

The second polis-based case study investigates the Sicilian city of Akragas, extolled in classical literature as the 'wealthiest of all Greek cities' (Diodorus Siculus 13.90.4). The eight temples of Akragas are well preserved and demonstrate very similar trends, in terms of the use of a 'standardised' design, to the peripteral temples of fifth-century Attica. The eight Doric peripteral temples of Akragas are in various states of preservation and range in date from the late sixth-century Temple A (Herakles, S4) to the five temples constructed in the second half of the fifth century (Temples F (Concord, S1); G (Hephaistos, S2); I (Dioskouroi, S3); D (Hera Lacinia, S5) and L (S7), Figure 107).

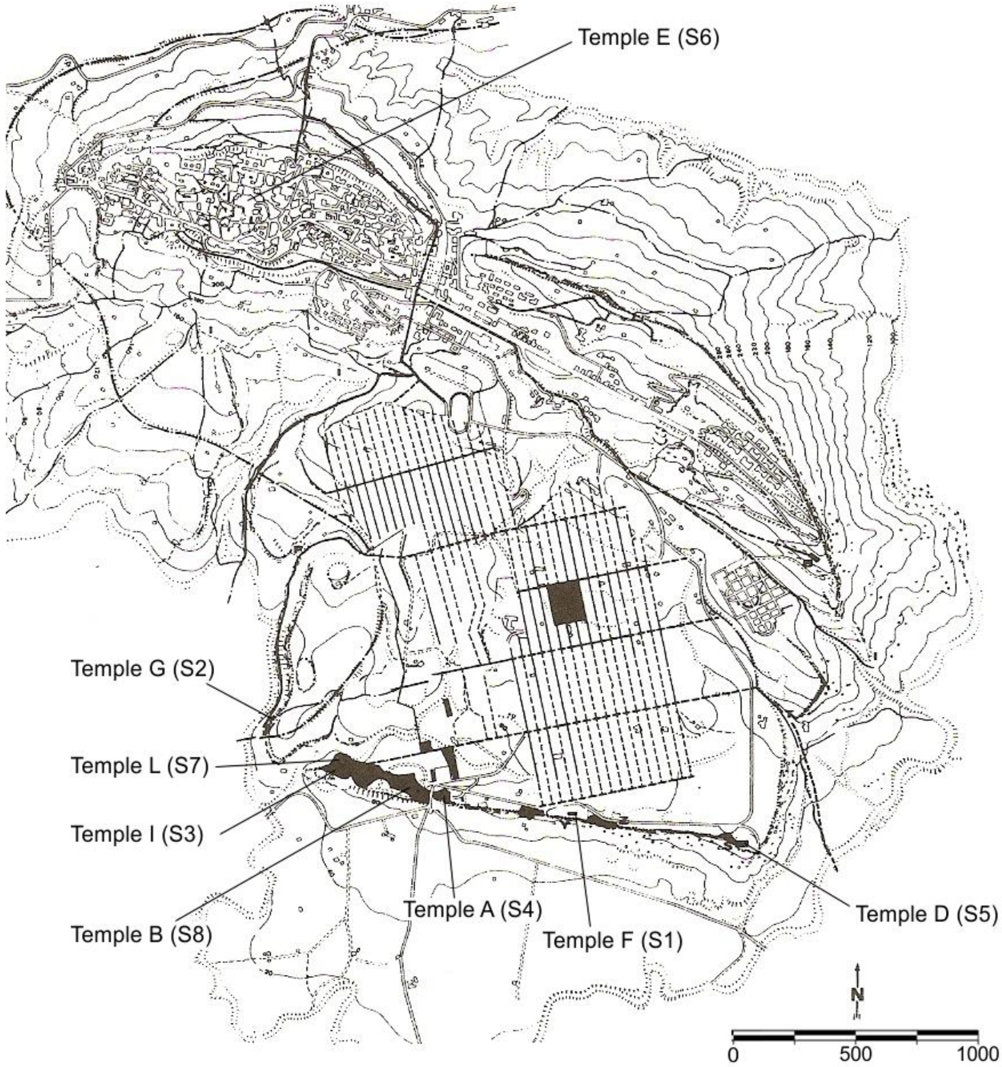

Figure 107 Map of Akragas showing the locations of the temples (*After* Domínguez 2006: 309).

Akragas was founded on land bordered by the rivers Akragas and Hypsas, 3km from the sea and 65km east of Gela. Both historical and archaeological evidence would suggest that Akragas was established in the early sixth century, c.580 BC (Thucydides 6.4.5; Pindar *Olympian Odes* 2.93-96), possibly by colonists from Rhodes and Gela (Boardman 1999: 187; Domínguez 2006: 307). Domínguez (2006: 308) suggests that the city was founded in this location as a means for Gela to help maintain its control of the area. Polybius (9.27) describes the topography of the city:

> The city of Akragas is not only superior to most cities in the particulars I have mentioned, but above all in beauty and elaborate ornamentation. It stands within eighteen stades of the sea…while its circuit of fortification is particularly strong both by nature and art. For its wall is placed on a rock, steep and precipitous, on one side naturally; on the other made so artificially. And it is enclosed by rivers.

The Sixth Century

Within ten years of the city's foundation, it came under the control of the tyrant Phalaris, who ruled the city until 566.[102] Most of what is known about Phalaris is negative; for example the brazen bull mentioned by Pindar (*Pythian Odes* 1.95) used by Phalaris to burn 'his victims'; however, this may have largely been adverse propaganda generated by the later tyrant Theron (Domínguez 2006: 310). Phalaris was succeeded by other tyrants such as Alkamenes and Alkandros (Orlandini 1976a). During the second half of the sixth century, the city gained prosperity through the production and exportation of grain, wine and olives, the breeding of livestock as well as expansion into the rich hinterland (Olandini 1976a; Boardman 1999: 188). However, it is commonly argued that the city did not reach the peak of its military and political power until the arrival of the tyrant Theron (489 or 488-472 (Guido 1967: 109; Bell 1980: 371)).

During the tyrannical rule of the sixth century, two Doric peripteral temples, Temple A (Herakles, S4) and the Temple of Zeus Olympios (Temple B, S8) were constructed in Akragas. As with the sixth-century temples of Attica, the two temples have very little in common with one another. Temple A (Herakles, S4; 525-480) appears to be constructed with a focus upon the other temples of Sicily; with a stylobate width of 25.28m, it closely matches the stylobate size of other temples belonging to Group SA (see Chapter 6). The size of the temple is very similar to that of the earlier Temple C at Selinous (S16; 550-520), suggesting that Temple A was built with knowledge of Temple C, no doubt being built to directly rival each other (Figure 108). Indeed, at some point within the traditional date range of Temple A (525-480), Akragas appears to have taken control of the Selinuntine colony of Herakleia Minoa, suggesting that there was an intense rivalry between the two poleis in this period.[103] Furthermore, as discussed in previous chapters (see Chapters 4 and 6), the size of the other temple constructed in this period, the Temple of Zeus Olympios (Temple B, S8), indicates that it was designed to directly rival Temple G at Selinous (S20, Figure 108).

[102] Although De Angelis (2003: 159) dates the commencement of Phalaris' reign to the period 570-565 and he ruled for 15 years.
[103] The date of the capture of Herakleia Minoa is placed by De Angelis (2003: 162) between 505 and 488.

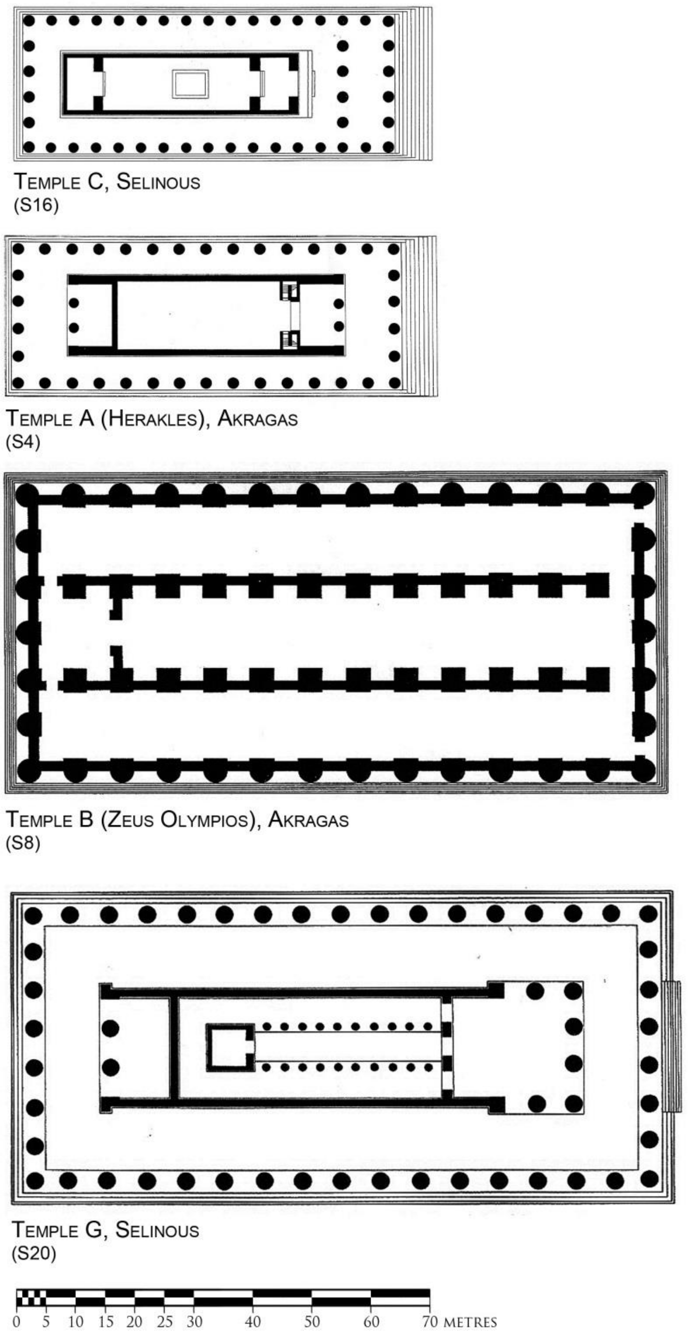

Figure 108 The similar sized temples of Akragas and Selinous (*After* Mertens 1984: 164, Beilage 26).

It is debated whether neither, or one or both Temple A and the Temple of Zeus Olympios can be clearly associated with Theron (Dunbabin 1948: 323; Guido 1967: 109; Orlandini 1976a; Bell 1980: 371; Østby 1995a: 98; Burford 1996: 373; De Angelis 2003: 169; Lattimore 2006: 460). Although, Diodorus Siculus (11.25.2) indicates that the Carthaginian prisoners from Himera (booty from Theron's and Gelon's defeat of the Carthaginians in 480) worked on the temples, he does not refer to the Temple of Zeus Olympios specifically nor does he indicate that these projects were not underway before their arrival (Bell 1980: 371). However, both buildings were clearly designed as monuments to inter-polis competition, with a particular focus upon Selinous. This is not to say that the temples were not designed to have meaning to the inhabitants of Akragas, rather, the competition with Selinous formed the basis for their designs. Interestingly, given that Gela was the Akragantian mother-city, the decision to build the Akragas temples to compete directly with Selinous and not to be directly comparable with Temple B (Athena) at Gela (S10; early sixth century) may also have been part of Theron's deliberate attempts to break any relationship between Akragas and Gela (Domínguez 2006: 307). Therefore, as in Attica, the first two temples constructed in Akragas were built with very different designs. These coincide with periods when the city was dominated by aristocratic rulers and tyrants, who looked to forge their identity through competition and comparison with external competition.

Democracy in Akragas

Following the death of Theron in 472, the city was ruled for a short time by the unpopular Thrasydaeus (Diodorus Siculus 11.53.1-5), who was defeated in a war with Syracuse and consequently fled to Megara (Rhodes 2005: 81; Funke 2006: 165). Thrasydaeus' rule was subsequently superseded by a democratic constitution (Diodorus Siculus 11.53.5; Orlandini 1976a; Rhodes 2005: 81). Under the democratic constitution, the nature of the temple architecture of Akragas completely changes. Similar to the temples of fifth-century Attica, the temples of democratic Akragas were constructed to a 'standardised' design (Group SB). It is also interesting to note that during this period construction work on the previous temples (Temple A (S4) and Zeus Olympios (Temple B, S8)) appears to cease, leaving the temples unfinished (Mertens 1996: 333).

The series of 'standardised' temples comprises the remaining six temples, five of which were constructed in the second half of the fifth century, despite the city's heavy defeat by Syracuse in 446/5 (Rhodes 2005: 84; Funke 2006: 167). Instead of being built next to each other like the treasuries at Olympia, the temples are distributed around the city at strategic locations, overlooking the key entrances. The three temples preserving most of their measurements are Temples F (S1; 450-420; Concord), G (S2, Hephaistos) and D (S5, Hera Lacinia; Figure 109). The temples have stylobate widths of 16.92m, 17.25m and 16.93m, with stylobate lengths of 39.44m, 39.43m and 38.13m. All three have 6 by 13 columns, measuring 6.712m (Temple F) and 6.322m (Temple D) high, with 20 flutes and lower diameters of 1.42m, 1.55m and 1.375m respectively. Moreover, there is no evidence that any of them bore sculptural decoration, further highlighting the uniformity of these three structures.

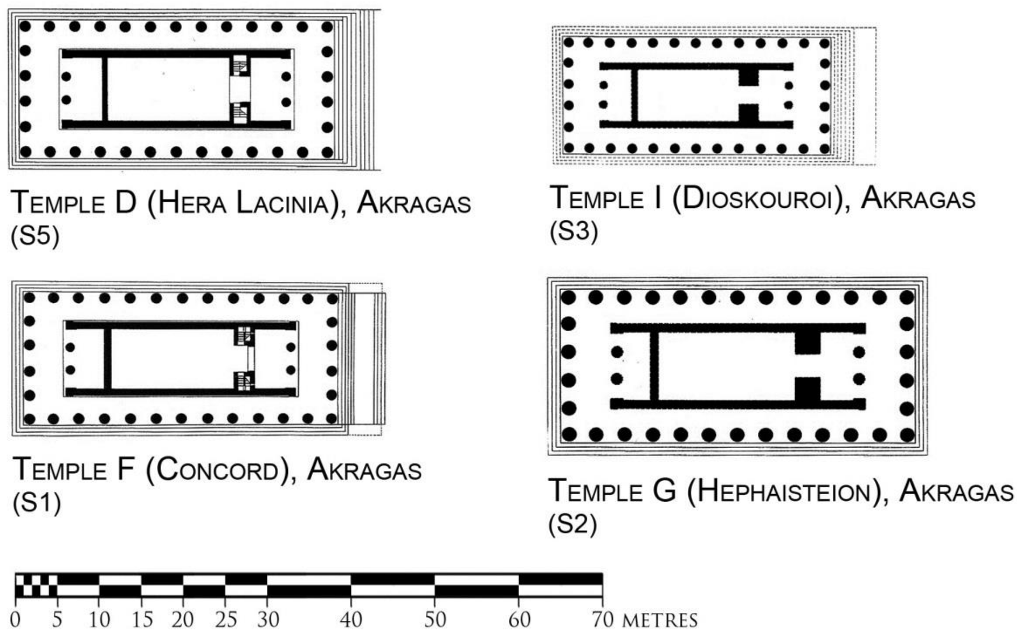

Figure 109 The fifth-century temples of Akragas (*After* Mertens 1984: Beilage 26).

The remaining three temples in the series are preserved to varying extents and their attribution to this group is based upon similarities between their surviving elements. Temple I (S3, Dionysos) has a preserved foundation width of 16.63m whilst being slightly smaller than the 19.57m foundation width for Temple F (S1, Concord), it is still remarkably similar to those of the series, especially when compared with the much larger foundations of the other Sicilian temples (the average FoW for the temples of Group SA is 26.58m). The 21.2m foundation width for Temple L (S7) also indicates that this temple belonged to this group. Indeed, the foundation ratios of 2.08 and 2.10 are remarkably similar to the rest of the group, being 2.14, 2.06 and 2.07 respectively (compared to the foundation ratio of 2.72 on the sixth-century Temple A (S4, Herakles)). Temple E (S6, Athena) was the earliest of the series, constructed in the first half of the fifth century, and is also the least well preserved, with no evidence for the foundation dimensions, since the temple was incorporated into the church of S. Maria dei Greci. However, the similarity of the surviving measurements to the other temples of fifth-century Akragas suggests that this temple may also belong to the same series (for example, lower diameter of 1.41m compared to 1.42 on Temple F (Concord, S1)).

Therefore, as with the temples of fifth-century Attica, the similarity in the overall design of these temples suggests that they formed part of a cohesive project. Furthermore, as in fifth-century Attica, the temples are spread around the city and are not built in a single location next to each other, as would be expected for competitive dedications (as with the treasuries at Olympia). In other cities that do not use a 'standardised' design, such as Selinous, the temples are constructed close together in order to further encourage comparison. In contrast, the temples of Akragas are all placed at key entrance points to the city, further indicating that they are part of a centrally controlled programme. Indeed, as discussed by Mertens (1996: 334), in the case of the Akragantian temples:

> The specifics of site and position for each temple becomes a feature as vital as the temple itself. One can observe how…the temples came to fill all the major panoramic points of the city and surrounding *chora*, becoming landmarks for the entire city.

Furthermore, unlike the earlier Akragantian temples (Temple A (S4, Herakles) and Zeus Olympios (Temple B, S8)), which were focussed upon the temple projects constructed in surrounding poleis, the Akragantian temples of Group SB were constructed to a different size than the majority of temples in Sicily.[104] By the time the Akragantian temples of Group SB came to be built, the majority of Sicilian temples were constructed with foundation widths around 25m (Group SA); however, the foundation widths of the Akragantian temples were around 20m. Indeed, the design of other Sicilian temples erected during this period further demonstrates that this particular design had particular significance within Akragas and was not a pan-Sicilian phenomenon. For example, the temple at Segesta (S13; 426-409), built around the same time as the Akragantian temples, was constructed by the native Elymians with a foundation size comparable to the temples of Group SA and a peristyle of 14 flank columns, indicating that the 'standardised' designs of the Akragantian temples were not connected to pan-Sicilian trends.[105]

Therefore, the temples' standardised design and their strategic placement around the city suggests that the projects were centrally controlled, if not necessarily centrally funded and were part of a cohesive statement of group identity. Indeed, despite Mertens' (1996) underlying belief in the evolution of Doric design, he draws a similar conclusion, arguing that the "loss of singularity in the individual temple is at this point compensated by the synoptic vision of the overall urban plan, in which the temples combine and complement each other to perform a new role of immense importance". However, as with many other

[104] Although the fifth-century Akragantian temples of Group SB utilise 6 by 13 columns, the same as the Attic fifth-century temples, they are constructed to different sizes; for example, the foundation of the Hephaisteion in Athens measure 15.42m by 33.48m, whereas, Temple F's at Akragas measure 19.62m by 41.99m.

[105] The temple at Segesta is itself an interesting case-in-point regarding architecture and the expression of identity, the temple being built in the 'Greek' Doric peripteral style by the native Elymians (Burford 1961),

temple scholars, Mertens (1996) views this as a one-off instance, it being a particularly late phenomenon not applicable to other Doric temples.

Selinous

As discussed in previous chapters (see specifically Chapter 2 and Chapter 7), the temples of Selinous have played a prominent role in the discussion of the nature of temple architecture. For example, the temples of Selinous are felt to epitomise the gradual 'conventionalizing' of the Doric peripteral temple during the fifth century (Winter 1976: 140). Furthermore, the temples have had a foremost position in the discussion of temple patrons; for instance, it has been argued that the presence of so many Doric temples around the city indicates that the city, as a political entity, and not individual aristocrats were in charge (Holloway 1999; 2000: 61; Marconi 2007: 194). On the other hand, both Coulton (1977: 20) and De Angelis (2003: 169) suggest that the presence of so many temples indicates that powerful groups (rival factions) were vying for power, as a single political entity, either tyrant or government, could not afford to construct so many temples. In contrast to these earlier studies, whose arguments were based upon the number of temples in Selinous, this case study demonstrates, through an analysis of the temple architecture and a comparison with the temples of Akragas, that the temples of Selinous were the result of the competition between rival aristocratic groups within the city and not a centrally controlled building programme.

Selinous is often referred to as 'the westernmost of the Greek colonies' (Dinsmoor 1950: 78), operating as an outpost of Greek civilization in western Sicily (Tusa 1976). Founded on a hill by the sea, the city occupies a position between two rivers, whose mouths served as the city's harbours. Historical sources disagree upon the precise date for the founding of Selinous; however, the archaeological remains would suggest that Greeks were present in the area from the middle of the seventh century (Thucydides 6.4; Diodorus Siculus 13.59.4; Tusa 1976; Domínguez 2006: 302).

The territory of Selinous is not well known, but it is suggested that it extended a long way inland (Holloway 2000: 61; Domínguez 2006: 305). Evidence for Selinous' territory comes from two sources: first, Thucydides (6.6.2) states that there were conflicts between Selinous and Segesta regarding land and second a discovery of an early sixth-century inscription dedicated to Herakles in the Selinuntine alphabet 25km away from the city (Domínguez 2006: 305). This large amount of land, trade and continued peace with Carthage meant that Selinous became extremely wealthy (Tusa 1976; Østby 1995a: 92-93; De Angelis 2003: 154; Marconi 2007: 67-68).

Unfortunately only very little is known about the archaic history of the colony; however, with a certain amount of apprehension (see Marconi 2007: 67 for a recent discussion of the evidence) the following chronology has been generally accepted. At some point in the sixth century, the city came to be ruled by a pro-Punic tyrant known as Theron (Polyainos I.28.2; De Angelis 2003: 156-157). Theron was followed by another pro-Punic tyrant, Peithagoras (Herodotus 5.46), who is generally considered to have been in power around 510. At an unknown date, there appears to have been a significant attempt by the Selinuntines (aided by the anti-Punic Euryleon) to overthrow Peithagoras (De Angelis 2003: 160; Østby 1995a: 93). Despite this, the archaeology of Selinous provides the best source of data regarding the city's sixth- and fifth-century history.

In the first half of the sixth century the city received a regular street layout, a series of city-walls and an agora (Domínguez 2006: 303, Figure 110). During the early sixth century a number of the sanctuaries also began to be elaborated, including the Sanctuary of Demeter Malophoros to the west of the city and the sacred areas on the Akropolis. It was also during the early sixth century that two temples were constructed on the Akropolis for which only terracotta tiles and no foundations remain; the large Temple X and the highly ornate Temple Y (see Appendix II for list of references).

It is during the second half of the sixth century/ first half of the fifth century that the seven Selinuntine Doric peripteral temples were constructed, which, unlike the fifth-century temples of Attica and Akragas were not constructed to a 'standardised' design. The first peripteral temple, whose elevation elements can be securely associated with their foundations, is Temple C (S16; 550-530). At the time of construction, Temple C was the largest temple on Sicily, although it was soon to be outdone with the construction of Temple A (Herakles) at Akragas (S4, see above). The next project to be commenced was the large Temple G (S20; 520-470), which as discussed above was no doubt constructed in direct competition with Akragas (see Chapter 2; it is unclear which project was begun first). The temples were built in different areas of the city, Temple C on the Akropolis and Temple G (S20) in the Gaggera hill sanctuary to the east of the city. Indeed, given the similarity in size to the two sixth-century temples in Akragas, likely to have been begun by a single client (tyrant), it may be possible that both of the early Selinuntine temples can be associated with a single client/ tyrant, with Theron a particularly likely candidate. Alternatively, the stop-start nature of the construction work on Temple G, as well as the different element designs used in the different parts of the building (see the capital analysis in Chapter 5) may be indicative of multiple clients, each attempting to finish the project.[106]

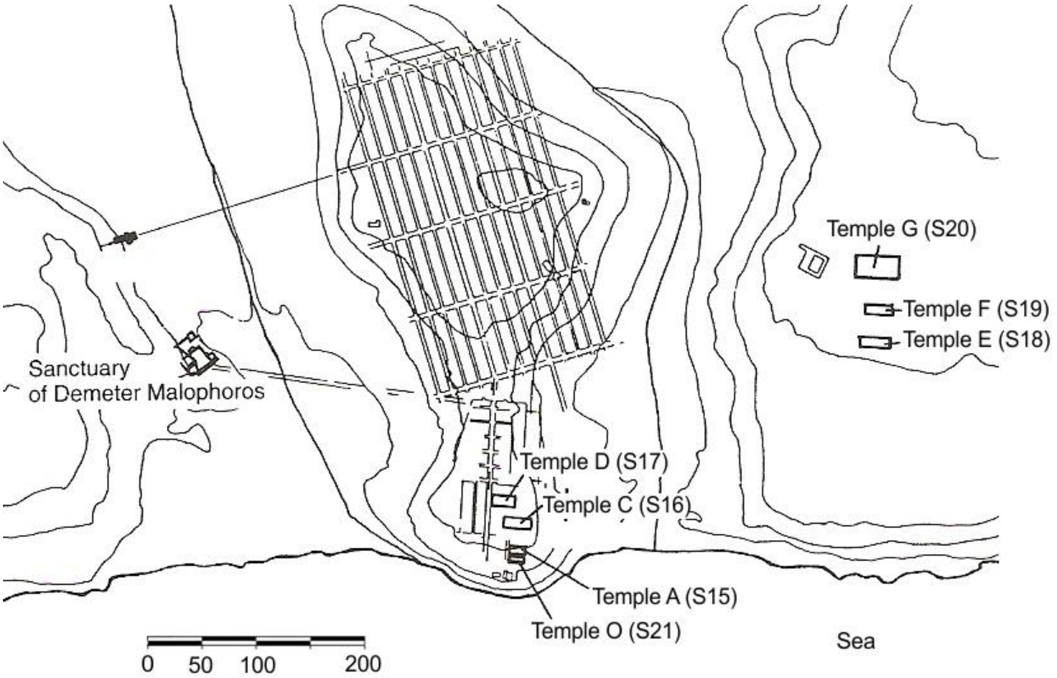

Figure 110 Map of Selinous showing the locations of the temples (*After* Osborne 1996: 265).

Following a brief hiatus in temple construction, three further temples are begun in quick succession (D (S17; 490), E (S18; 500-480) and F (S19; 490-480)). In terms of plan dimensions, all three temples are remarkably similar to the earlier Temple C (Figure 112), all belonging to Sicilian group SA. For example, Temple D, constructed next to Temple C on the Akropolis, has a stylobate width of 23.626m compared to the stylobate width of 23.937m on Temple C. Despite the similar stylobate widths, their plan and elevation designs are very different. For example, Temple C has 17 flank columns that were comparatively squatter, straighter and supporting a heavier entablature with different shaped elements than were found above the 13 flank columns of Temple D (Figure 111). In addition, Temple C had a double colonnade at the front, additional frontal stairs, a different number of krepidoma steps (4 (Temple C); 5 (Temple D)), different capital shapes and sculpted metopes above the peristyle.

[106] Similar to the varying capital designs on the Temple of Athena at Assos (O1) and the Temple of Hera at Olympia (P18, Williams 1984: 69; Wescoat 1987).

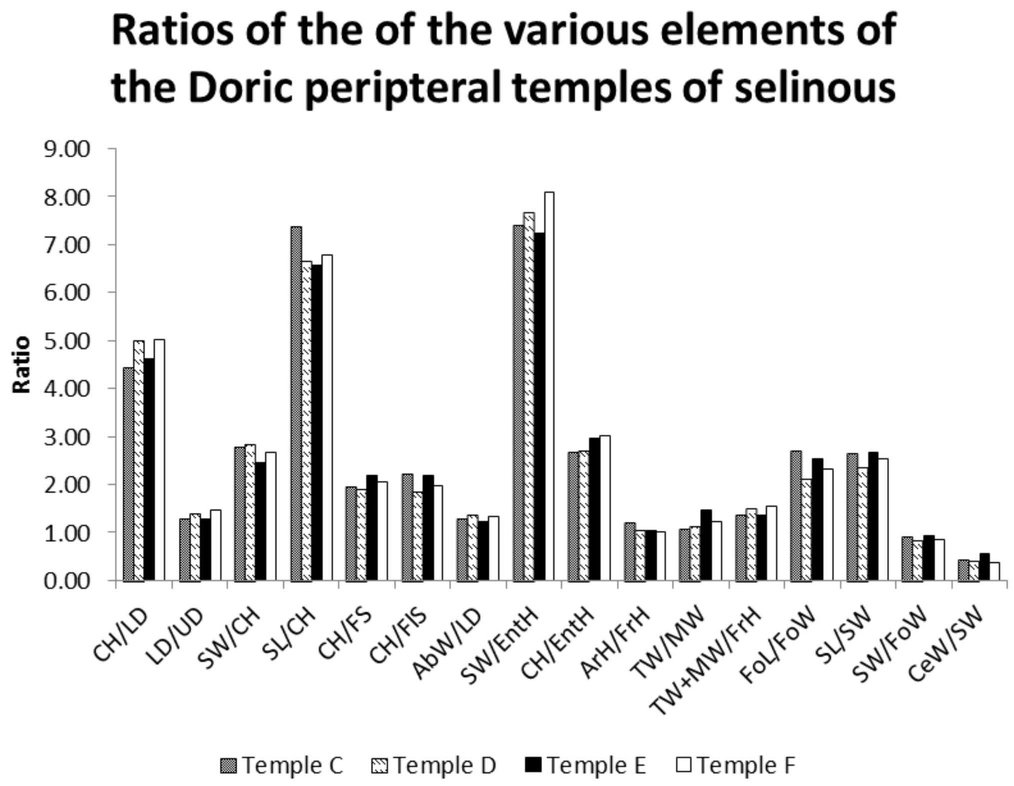

Figure 111 Proportions of the four similar sized temples in Selinous.

The other two temples (E and F) were constructed in the Gaggera hill sanctuary, but also utilised similar plan dimensions to Temple C. Again, despite their similarity in terms of plan dimensions, they have very different designs, both in relation to each other, but also to the two temples on the Akropolis. For instance, Temple E had 15 flank columns, whilst Temple F had 14; Temple F had a narrower cella, comparatively taller and more tapered columns than temple E, with a 'lighter' entablature and utilised a different capital shape (Figure 112). Further to these proportional differences, Temple F utilised a double colonnade at the eastern end and had sculpted metopes above the peristyle, the construction of which makes references to Samos and appears to signify an appreciation of mainland architecture (Østby 2009: 160-161). Temple E, by contrast, had sculpted metopes above the cella, the subjects of which appear to indicate a conscious attempt to appropriate local traditions rather than those of Greece as seen on Temple F (Østby 2009: 161). Therefore, despite the similarity in stylobate width, the four Group SA temples of Selinous utilised different plan and elevation designs. The differences between the temples are further emphasised by the use of limestone from different quarries in the buildings' construction (De Angelis 2003: 165, 183-4).[107]

[107] Studies remain incomplete; however, as discussed by De Angelis (2003: 165), the stone on Temple G appears to come from three or four different quarries.

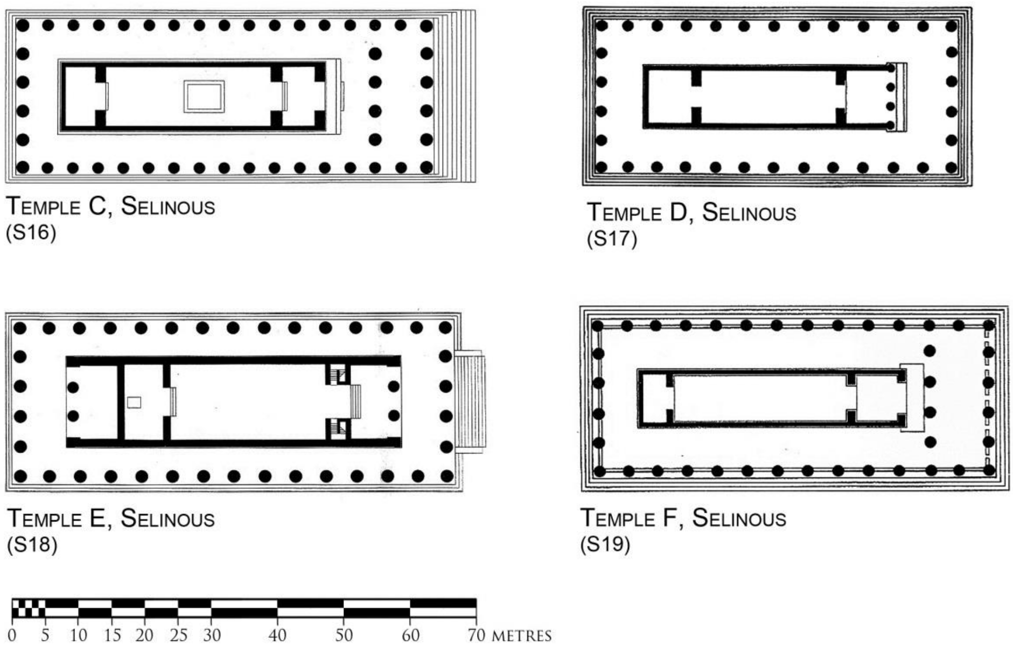

Figure 112 Plans of the group SA temples of Selinous (*After* Mertens 1984: Beilage 26).

In terms of the temples' locations, unlike the regular distribution of the 'standardised' temples of fifth-century Akragas, the four Group SA temples of Selinous are only found in two locations: two of the temples on the Akropolis, and two built side-by-side next to Temple G in the Gaggera hill sanctuary. The placement of the temples in two clear groups, placed side-by-side, along with the similarity in stylobate size, indicates that the temples were designed to be compared, in a manner directly analogous to the line of treasuries at Olympia. The similarity in the dates of the Selinuntine temples further suggests that their design differences are not attributable to their date of construction. Instead, as with the *tropaia* at Olympia, they were erected in direct competition with one another. Østby (2009: 160) argues that as Temple D was slightly smaller than Temple C and as it had no sculpture at all this meant that it was "clearly not meant to compete with it"; however, despite Østby's arguments to the contrary, the temples' sizes are remarkably similar.[108] Furthermore, the significant differences between the temples' elevations are indicative of their competitive nature (see the differences in the elevations of G at Selinous and Zeus Olympios at Akragas (Figure 113)).

[108] For example, the stylobate dimensions for other temples built during this period are significantly different, such as the Temple of Zeus Olympios at Akragas (Temple B, S8; 520-480; SW: 52.74m), the Temple of Athena at Prasidaki (P21; 500-480; SW: 14.7m), the Temple of Athena at Makiston (P16; 500-490; SW: 14.18).

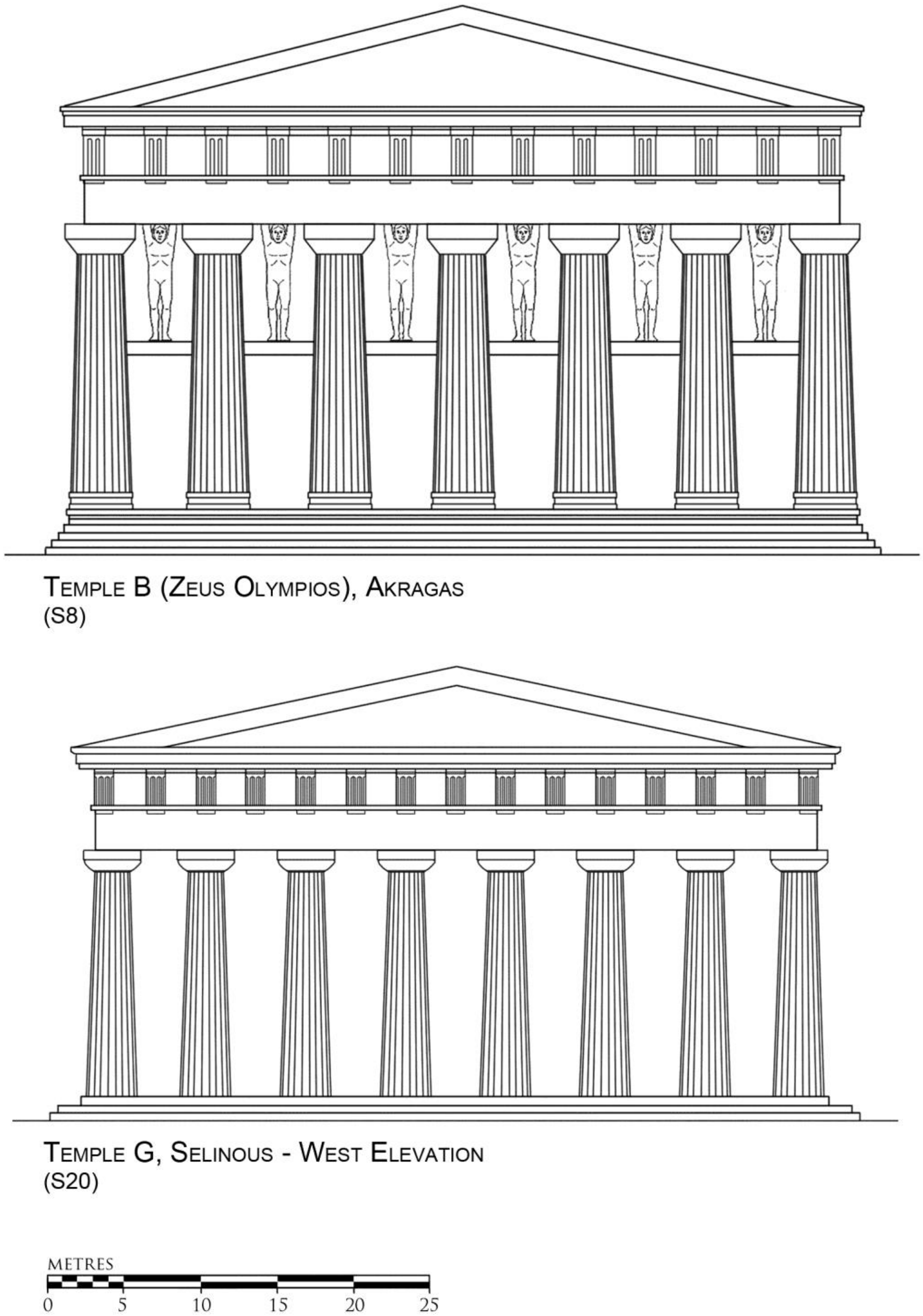

Figure 113 Comparison of the elevations of Temple G at Selinous (S20) and the Temple of Zeus Olympios (Temple B) at Akragas (S8; *After* Spawforth 2006: 29; Prokkola 2011: 156).

Therefore, the temples' designs and their locations suggest that they were constructed in order to compete with one another, indicating that different wealthy groups were constructing temples and displaying alternative identities within Selinous in the late-sixth/ early-fifth century. The existence of these families is well documented in the middle of the sixth century by a dedication to Zeus Meilichios made by the 'Kleulidai' (Marconi

2007: 69). Indeed, the relatively quick turnover of leaders, the presence of ancestor cults and the expulsion of one aristocratic group to Megara Hyblaia (*SIG*^{3} 642), indicate that factional strife was particular common in late-sixth/ early-fifth-century Selinous (De Angelis 2003: 161; Marconi 2007: 69). Furthermore, the introduction of coinage around the time of the construction of Temple C, would have helped the colony achieve a level of social organisation, which would help to establish and compound 'aristocratic' position and identity (Marconi 2007: 75-76). Consequently, the gathered evidence suggests that the temples were built by different groups instead of the city as a cohesive group.

This conclusion is in direct contrast with those of a number of scholars, including Marconi (2007: 74, 195) and Salt (2008: 149) who argue that their grouping and their orientation (in line with the street plan) indicate that the city built them as a ratification of the urban plan. Holloway (1999) has also suggested that there are so many temples on the eastern hill because they were the location of private cults in the early history of the colony that later came to be appropriated by the community.[109] However, given the preponderance of religious sites in the territory of Selinous without a peripteral temple, such as those on the western hill, the close proximity of the temples must be indicative of the desire on the part of the temples' clients for comparisons between projects similar to the situation with treasuries and smaller votives at the Panhellenic sanctuaries, the temples relied on each other for the design differences to be given meaning.[110]

Furthermore, the use of the standard 'Sicilian' size of Group SA suggests that the clients of the Selinuntine temples were also looking to make statements regarding their identity, not only through comparisons between the other temples (and groups) in Selinous, but also the major temple projects constructed by the elite in the other Sicilian cities. For example, as discussed above, the design of Temple A (Herakles) at Akragas (S4) is related to, and draws meaning through a comparison to Temple C at Selinous. Temple C at Selinous, meanwhile, was built earlier than A at Akragas and consequently was no doubt influenced by architecture elsewhere, such as the temples of Syracuse. If a comparison with an earlier building was not intended it would be expected that the temple would not be constructed to almost exactly the same size as an earlier example but the temple is very similar in size to the early temples at Syracuse, especially when compared

[109] The alignment of a temple with a street plan cannot be taken as evidence that the 'city' constructed the temple, for example, Temple Aii (Apollo Lykeios) at Metaponto (I6), clearly inscribed as being dedicated by an individual (see previous chapter), is aligned with the city's street plan.

[110] In this context Temple G (although much larger) provided a positive association for the other temples, especially if successive 'aristocratic' clients had failed to complete the project. Comparable to the grouping of athletic statues around victory monuments at Olympia (Scott 2010: 197), the temple may also have guaranteed greater visibility for Temples F and E.

with the other early sixth-century temples in Sicily, such as the sixth-century temples at Syracuse. Likewise, Temple E at Selinous is very similar to Temple A (Herakles) at Akragas. In this connection, Østby (1995a: 99) argues that the similarity should be seen as Selinous following Akragas' lead into the fifth century, "the gradual introduction of classical forms and systems can almost be read as a silent acknowledgement of Akragantine leadership", a point that the Selinuntines would no doubt have denied, let alone building a temple to monumentalise their diminished position. Obviously, without knowing the exact historical situations that led to the erection of these two temples it is difficult to be certain why they share such a similar appearance. However, the most notable comparative situation, discussed in Chapter 7, is that of the Temple of Victory at Himera (S12) and Athena at Syracuse (S23), constructed by the victorious brothers-in-law at the battle of Himera. Indeed, it is not too difficult to imagine that the two temples were erected by aristocratic groups in the two cities that shared common ancestry or similar political ambitions. Indeed, as highlighted by Small (2004), the aristocratic elites of the colonial cities probably had more in common with each other than with their fellow citizens. In any case, this similarity in the design of the two temples should be contrasted with the situation in relation to Temple G at Selinous (S20) and the Temple of Zeus Olympios at Akragas (Temple B, S8) begun only a few years earlier. Clearly, the situation that led to the erection of the two large temples with very different elevations was different from that which led to the construction of the two smaller temples, A (Herakles) at Akragas (S4) and E at Selinous (S18).

The Mid-Fifth Century

Evidence from Thucydides (7.55) and Diodorus Siculus (11.68.5; 11.76.4-6) as well as inscriptions within the city suggests that Selinous received a democratic constitution in the 460s (Robinson 2011: 105-106). It is during this period that two further temples were constructed on the Akropolis, Temples A (S15) and O (S21). Both temples appear to have been constructed to the same size as each other, whilst being different from the Selinuntine temples of Group SA discussed above and if Dinsmoor's (1950: 79) reconstruction is to be believed, they also share the same plan, although in reality only the foundations of Temple O survive (Tusa 1976; Blandi 2000: 109).

As with temples elsewhere, it is argued here that their similarity in size and design is due to their construction by the same client or groups wishing to display a coherent statement of identity. However, unlike the coherent temple projects in Attica and Akragas, the temples are not in different locations, but in fact are constructed within the same temenos. This may, however, be due to the dedication of both temples to the 'twin' deities of Apollo and Artemis (De Angelis 2003: 220; Salt 2008: 146-147; Fischer-Hansen 2009:

220).[111] As such, in contrast to the varying designs of the earlier temples, the (possible) similarity of Temples A and O suggests that they were dedicated by the same group (possibly the ‘city’, based on an analogy with Attica and Akragas).

These two temples are not constructed to the same size as those of the late-sixth/ early-fifth century, but were built to the same size as the fifth-century temples of Akragas, albeit with different elevation designs. Unfortunately, the earliest of the Akragantian temples (S6, Temple E; Athena) is not well preserved; however, the stylobate width on Temple D (Hera Lacinia) at Akragas (S5, part of the same group) measures 16.9m, very similar to the 16.33m stylobate width on Temple A at Selinous, especially when compared to the 23.937m stylobate width on the earlier Temple C (S16). However, the plan and elevation designs are very different, the Temples of Akragas having 13 flank columns and Temple A having 14, with a different capital design (Temple A at Selinous: CGE; Temple D (Hera Lacinia) at Akragas: CGA). Therefore, given the rivalry between the two cities (discussed above), it is suggested that the two temples’ smaller size is based upon the size of contemporary structures in Akragas. Also, their similarity to one another is due to their construction by the same client, possibly ‘the city’.

To summarise, unlike the centrally controlled temple programmes of fifth-century Attica and Akragas, the plan and elevation designs of the temples of the main group of Selinuntine temples are very different from one another. The temples are clustered in two distinct groups built very close together and as such were constructed in the knowledge that they would have been compared to each other. When temples are constructed in such close proximity to one another, despite the presence of other sanctuaries in the city without temples, it must be taken as a clear indication that they were constructed with the intention of comparison. This conclusion is further reinforced through the temples’ design, with similar sized stylobate widths and very different elevation designs. Therefore, in contrast to the arguments of Holloway (1999; 2000: 61) and Marconi (2007: 194), but similar to the conclusions drawn by De Angelis (2003: 169) and Coulton (1977: 20), the evidence from the architectural design as well as a comparison with the ‘standardised’ architecture of Akragas demonstrates that the architecture of Selinous was the result of competition and displays of identity between powerful internal groups, rather than the polis acting as a coherent dedicatory unit, at least until the construction of Temples A and O following the instigation of the democracy.

[111] Some caution should be exercised in relation to this deity attribution, as the evidence is partly based upon the similarity in the designs of Temples A and O, a situation not seen in other instances where temples share designs. As discussed in Chapter 7 a similarity in temple design is more often due to the buildings sharing a client.

Syracuse

The third case study analyses the temple architecture of Syracuse in the south-east corner of Sicily. As briefly discussed in previous chapters (see particularly Chapter 7), the architecture of Syracuse demonstrates that temple design was controlled by the client. This case study further establishes the importance of temple architecture in the expression of the dedicatory group's political and social identity. Moreover, the evidence presented for Syracuse serves to reinforce the conclusions already drawn in relation to the architecture of Attica, Akragas and Selinous. Three of the temples in the data-set were located in Syracuse, the Temple of Apollo (S22; 590-580), the Temple of Athena (S23; 478-475) and the Temple of Zeus (S24; 580-555). The most striking feature about the three temples is their similarity in stylobate width, 21.5m, 22.2m and 22.4m respectively.

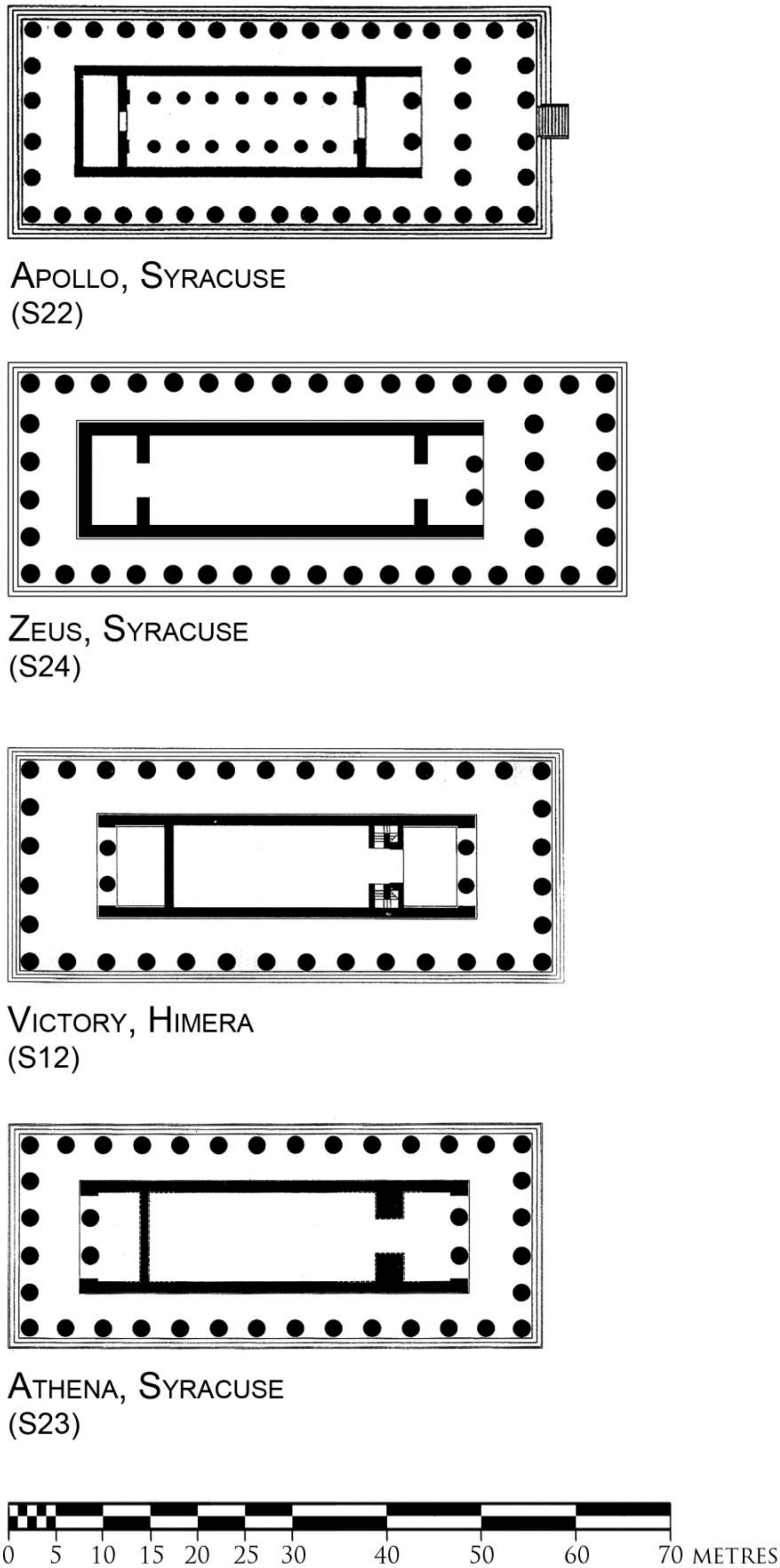

Figure 114 The three Doric peripteral temples of Syracuse and the Temple of Victory at Himera (*After* Mertens 1984: 164, Beilage 26).

According to the traditional dating, utilising the evidence from Thucydides (6.3) and Strabo (6.2.4), Syracuse was founded from Corinth in 734 (Voza 1976) or 733 (Domínguez 2006: 269). The foundation of sub-colonies, Akrai in 664, Kasmenai in 624 and Kamarina in 559, indicates that the city subsequently flourished (Voza 1976). Strabo (6.2.4) states that the city became very prosperous because it had both excellent natural harbourage and an extra-ordinarily fertile territory.

The two earliest temples, the Temple of Apollo (S22), which was constructed between 590 and 580 and the Temple of Zeus (S24), which was built between 580 and 555, were both constructed in different parts of the city. Both temples have very similar widths as well as utilising similar plans and elevations (Mertens 1996: 324) with 6 by 17 columns, a double colonnade at the east end, lower diameters measuring c.1.85m and very similar upper diameters of 1.5m and 1.42m.[112] Both temples have columns with 16 flutes (as opposed to the more frequent 20 (see Chapter 4)) and the same unusual un-fluted band at the bottom of the column (Dinsmoor 1950: 77). Furthermore, both temples preserve evidence for similar sculptural adornment (Marconi 2007: 50).

During the early sixth century, the city was ruled by the wealthy *gamoroi* and it is to these groups that Wescoat (1989: 85) attributes the construction of the temples of Apollo and Zeus. Analogies with other examples (such as the Temple of Victory at Himera and the Temple of Athena at Syracuse, see Chapter 7) where temples' designs were incredibly similar, suggest that both the temples of Apollo and Zeus had the same client, be it the city as a whole or a single wealthy aristocratic group.[113] This conclusion is further corroborated by their locations, since, as with the temples of Attica and Akragas, they are constructed in different places around the city, the Temple of Apollo being built in the city and the Temple of Zeus outside, instead of directly next to each other as with the temples of Selinous.

Towards the end of the sixth century, following a c.50 year hiatus in peripteral temple construction in the city, an Ionic temple was begun just to the north of the Sanctuary of Athena on Ortygia (Holloway 1999). Interestingly, the general dimensions of this temple (21.4m by 51m; Spawforth 2006: 122) are remarkably similar to the Doric temples of Syracuse. Whoever constructed this temple was obviously making a clear point; not

[112] As demonstrated by the reconstructed plans of the temples in Figure 114, the Temple of Zeus is thought to be slightly longer than the Temple of Apollo. The fact that the temple was slightly longer does not alter the appearance of the eastern end of the temple, which, judging by the surviving elements' measurements, and the surviving decoration, would have been remarkably similar.

[113] A discussion of the Kleomenes inscription on the steps of the Temple of Apollo can be found in Chapter 7.

satisfied with the differences in design permitted by the Doric order, the client went a step further and utilised a completely different order (the only one in Sicily; Wescoat 1989: 85), whilst retaining the same width as the earliest peripteral temples.

Despite the early increases in territory and subsequent wealth, it is argued that Syracuse's greatest period came under the leadership of Gelon (whose seizing of power is traditionally dated to c.485; Rhodes 2005: 78), who, along with his brother-in-law Theron of Akragas, beat the Carthaginians at the battle of Himera in 480 (Osborne 1996: 344). Following the accession of Gelon, work on the Ionic temple seems to have come to an abrupt halt, probably when the tyrant Gelon came to power and the nearby Doric temple of Athena was begun (Holloway 2000: 72).

As discussed in Chapter 7, the third Doric temple, dedicated to Athena (S23; 478-475), demonstrates that, when temples have the same client, the temples' designs are the same. The temple has very similar ground plan dimensions to the other temples of Syracuse; however, the building's elevation design is completely different from the earlier temples. For example, the Temple of Athena has 14 flank columns, with no double front, 20 flutes, larger lower diameters and the columns are almost a metre taller than those belonging to the Temple of Apollo. Furthermore, the surviving architrave fragments from the Temple of Apollo and the Temple of Athena demonstrate that the entablature belonging to the Temple of Athena was significantly 'lighter' than that of the Apollo temple (ArH/CH: Apollo: 0.3; Athena: 0.17). The Temple of Athena also did not make use of a Gorgon mask in the pediment, as did the Temple of Apollo.[114] Therefore, despite the similarity in the stylobate sizes, the temple of Athena is very different in overall design from the other temples of Syracuse; however, as discussed in previous chapters (see Chapter 6 and 7), the Temple of Athena is very similar in overall design to the Temple of Victory at Himera (S12), both of them having been constructed by the victorious brothers-in-law from the battle of Himera (although Rhodes (2005: 78-79) argues that Himera should be seen more as a victory for Gelon, which provides further indication that they shared the same client). Thus, the main connection between the two projects is the clients, further suggesting that the temples' similarities were attributable to their shared client.

The unknown tyrant's decision to build an Ionic temple of similar dimensions to the earlier Doric temples demonstrates the importance that was ascribed to building temples with the same plan dimensions but different elevation designs. Furthermore, Gelon's decision to leave that temple incomplete and begin a new Doric temple, again sharing the

[114] So too did Temple C at Selinous (S16), indicating a further connection between these two structures.

same plan dimensions but with a different elevation design, demonstrates the connection between the temple architecture and the identity of the temple's client.[115]

As such, this brief case-study of the temple architecture of Syracuse suggests that the designs of the temples of Apollo and Zeus are similar due to their shared client; whilst the similar stylobate width but the different overall design of the Athena temple is attributable to a different client, in this case the tyrant Gelon, looking to impress his power (and differing identity from the earlier temple builders) upon his subjects. Interestingly, despite the introduction of democracy following the expulsion of the tyrants (466) and the victory over Akragas (446/5) there is no further peripteral temple building in the city.

Therefore, to summarise the Sicilian case studies, the evidence further suggests that the differences and similarities in the design of Doric peripteral temples are linked to the notions of competition and expressions of identity that characterised ancient Greek sanctuaries. Further to this, the Sicilian case studies demonstrate that the architectural competition and differing expressions of identity were linked to inter- and intra- polis competitions.

Italy

The final case study focuses upon the well-preserved temples of Poseidonia in South Italy. As with Sicily, very little remains of the literature from the cities of South Italy and their history is reduced to an occasional fragment of evidence (Holloway 1978: 25), making the surviving temples a vital source of information regarding the cities' social and political development. Despite their importance in the history of the region, the temples of South Italy have generally been given little regard; the 'unusual' features often being referred to as 'experimental' or due to 'barbaric influences' (Dinsmoor 1950: 92) instead of as unique features utilised to establish conflicting statements of group identity.

Poseidonia

The excellent state of preservation of the Poseidonia temples allows for a number of issues to be discussed, particularly with regard to the relationship between 'urban' and 'extra-urban' sanctuaries and the alternative ways that architecture can be used to establish identity through comparison. This case study demonstrates that, as with the temples of Selinous and Syracuse, the temples of Poseidonia were built by competing aristocratic groups; however, it is only later that the plan dimensions, so important

[115] As discussed in the above case studies, many other temple projects appear to have ceased when their client was overthrown, as the Olympieion in Athens (A2) and Temple A (Herakles) at Akragas (S4).

elsewhere become important in Poseidonia; before the fifth century, decoration is fundamental to understanding the differing expressions of identity. The case study further suggests that the temple in the Sanctuary of Hera at Foce del Sele was not only built as a marker of the city's territory (De Polignac 1995; Pedley 2005: 167-168), but also with a particular focus towards the architecture of the city.

Poseidonia was founded around 600, by refugees from Sybaris in the south of Italy (Strabo 5.4.13). The earliest pottery from the Greek graves to the north of the city is of the Early Corinthian style, which suggests a date around 600 BC for the arrival of the Greeks (Ammerman 1991: 206; Pedley 2005: 170). However, Coulson (1976a) suggests that the presence of proto-Corinthian pottery indicates an earlier date, in the middle of the 7th century. The fertility of the plain surrounding the city, as well as its advantageous position for trade enabled it to become extremely prosperous, especially following the fall of Sybaris' commercial empire in 510 (Coulson 1976a; Mello 1985: 14). Unlike the other case studies that are presented in roughly chronological order, this case study's focus upon the relationship between sanctuaries means that the temples are discussed on a geographical rather than a chronological basis.

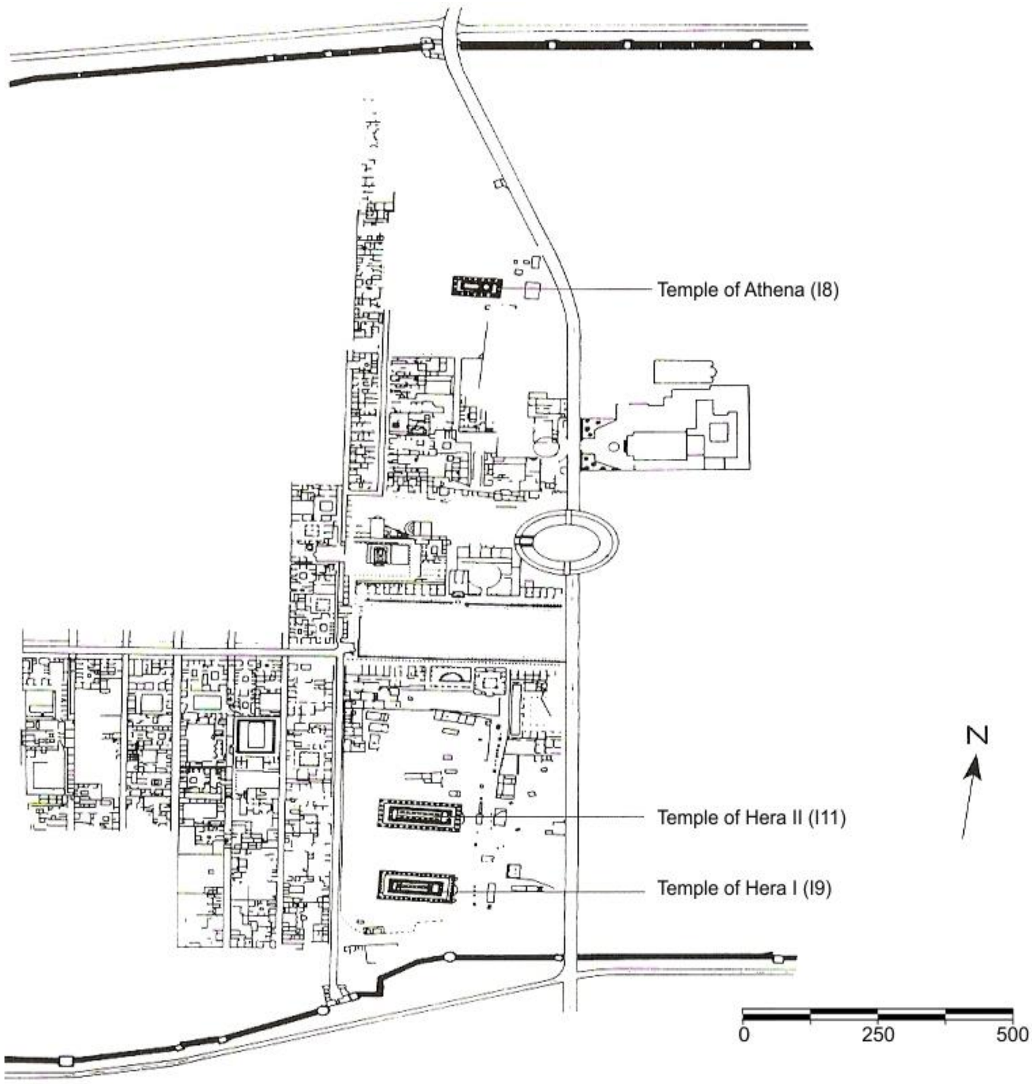

Figure 115 Map of Poseidonia showing the locations of the temples (*After* Spawforth 2006: 111).

The largest sanctuary in the city, belonging to Hera (Figure 115), contained two Doric peripteral temples: the Temple of Hera I (Basilica, I9; 550-520) and the Temple of Hera II (Poseidon, I11; 470-430).[116] As discussed in the earlier chapters (see particularly chapter 6), despite the difference in the temples' dates of construction, they both utilise very similar stylobate dimensions (Hera I: 24.51m by 54.27m; Hera II: 24.264m by 59.975m).[117] However, both temples have very different elevation designs (see Chapter 3, Figure 20), suggesting, that, as with the temples of other poleis, the temples had different

[116] Along with the lack of historical evidence relating to Italy in general, the votives from this sanctuary have not yet been published (Ammerman 2007: 133 n.5), adding further importance to the interpretation of the architecture in understanding the history of sixth- and fifth-century Poseidonia.

[117] Other contemporary temples utilise a wide range of different sized stylobates: the Temple of Athena at Delphi (N17; 550-500; SW: 13.25m); the Temple of Apollo at Metropolis (N21; 560-540; SW: 13.75m); the Temple of Apollo on Delos (O8; 478-450; SW: 12.47m); the Temple of Zeus at Olympia (P20; 472-456; SW: 27.68m); the Hephaisteion (A6; 450-440; SW: 13.708m); Temple F (Concord) at Akragas (S1; 450-420; SW: 16.92m).

clients. This conclusion is further corroborated through an analysis of the sanctuary in which they stood.

Interestingly, there is no evidence in the sanctuary for foreign imports or any large-scale dedications in stone such as those found on the Athenian Akropolis (Pedley 2005: 173). It is to this lack of large and expensive dedications that Pedley refers to as evidence that Poseidonia was a highly egalitarian society “less prone to the elitism of mainland-Greek political structures and more attuned to the colonial experiences of collaborative effort”, suggesting that “most resources went into the communal efforts at temple building, and that this was not, at an individual level, a highly competitive society” (Pedley 2005: 173, 175). Indeed, Marconi (2007: 75) highlights that during this period of temple building, there is no evidence for tyrants at Poseidonia. However, the lack of sculpture does not necessarily indicate a lack of elite competition. As discussed in Chapter 7, the sanctuary contained a large number of treasuries (Trendall 1955: 54; Pedley 2005: 172; Coulton 1976a). The sanctuary was only of local importance and as with the treasuries on the Athenian Akropolis, thus it is likely that these were constructed by local aristocratic groups. Likewise, there appears to have been a large number of altars in the sanctuary (Pedley 2005: 172). Indeed, it is not uncommon for altars to form dedicatory offerings, for example, the altar of Apollo at Delphi was dedicated by the Chians (Umholtz 2002: 268) or the Altar of the Twelve Gods on the Athenian Agora and the altar of Pythian Apollo dedicated by Peisistratos the Younger (Camp 2001: 36). Indeed, the small amount of surviving sculpture is unsurprising considering the various raids on the city and the removal of all the “portable sculptures to Salerno” in the eleventh century by Robert Guiscard (Dilla 1932: 344). Furthermore, there is relatively little freestanding sculpture in Italy in general (Holloway 1978: 32). Indeed, the presence of tombs that were decorated differently from those of the rest of the populace, such as the ‘princely’ burial at Roscigno and the Tomb of the Diver (Holloway 2006: 376), may further indicate the presence of different levels of wealth of sixth- and fifth-century Poseidonia. Furthermore, although 18 shrines have thus far been identified in Poseidonia (Ammerman 2007: 131), the fact that these two temples are built in the same sanctuary to the same size further suggests that they were designed to be compared.

The situation with the two Hera temples at Poseidonia is remarkably similar to the urban temples of Metaponto (Aii (Apollo Lykeios, I6) and Bii (I7)), constructed overlooking the Agora and the important meeting place known as the ‘Ekklesiasterion’, demonstrating that they were built in order to attract attention. The fact that, during this period, the chora appears to be dominated by wealthy family groups (Carter 1994: 180-183) and the presence of the inscription on Temple Aii (Apollo Lykeios, I6), suggesting that the temple was dedicated by the head of a powerful family group "for himself and his *ghenos*" (Carter 2006: 208; Spawforth 2006: 119), adds further weight to the suggestion that the Hera temples at Poseidonia were built to compete with one another.

Therefore, the lack of surviving statuary does not necessarily indicate a lack of competition in the city; rather, the appropriate form of dedicatory competition was conducted through monumental architecture. To this end, the Temple of Hera II was not constructed as a replacement to the Temple of Hera I as suggested by Dinsmoor (1950:110); rather, they should be viewed as competing symbols of identity on behalf of different groups. As demonstrated in the above case studies, the situation with regard to the Temples of Hera I and II (same stylobate width but with different elevation design) is relatively standard and is a competitive pattern that can be found repeated throughout the Greek World. However, the two temples that form the final focus of this chapter (the Temple of Athena at Poseidonia (I8; 520-500) and the Temple of Hera at Foce del Sele (I10; 540-500)) represent particularly interesting exceptions to this rule, demonstrating the importance of elements other than size in the expression of different group identities.

The plan dimensions of the Temple of Athena at Poseidonia (FoW: 16.127m; FoL: 34.52m) are much smaller than those of the other temples of South Italy, the closest example being the temple at Kaulonia with a foundation width measuring 18.2m, and are certainly significantly smaller than the 26m foundation width of the Temple of Hera I. However, the temple also utilises a number of highly unusual design features, such as the replacement of the pediment floor with a series of mouldings and a prostyle porch of Ionic columns, both of which are ascribed to Etruscan influence by Skele (2002: 29). Indeed, so unique is the elevation that the committee probably felt that the temple's design did not require the 'context' provided by a similar sized plan to the Temple of Hera I. Indeed, the very elements that make the temple 'barbaric' to Dinsmoor (1950: 92) make it stand out as different from the other temples in the Greek world.

The Extra-Urban Sanctuary of Hera at Foce del Sele

Outside of the city, the temple architecture is remarkably different (particularly in relation to elevation design) from that of the 'urban' temples in the city. The most noticeable difference is the dramatic inclusion of sculpture to decorate the buildings' exteriors, noticeably absent from the temples in the city.

Pedley (2005: 167-168) argues that Poseidonia laid claim to a large amount of territory, and following the arguments of De Polignac (1995) and Edlund (1987: 102-104) he argues that Poseidonia laid claim to this territory through the creation of a sanctuary to Hera at Foce del Sele. Further to this, Mello (1985: 14) has argued that, as well as serving as an ‘outpost’ of Greek civilization, the sanctuary also operated as a bridge between the Etruscans and the Greeks. This connection can also be seen in the kourotrophos terracottas from the sanctuary, which “display strong Etruscan influence” (Ammerman 2007: 149). Indeed, there is strong evidence for non-Greeks in the hinterland of Poseidonia (Skele 2002). Thus, the Temple of Hera at Foce del Sele (I10) finds itself not so much in a sanctuary outpost, built to defend against Etruscan interests in Greek territory, but in a sanctuary where Etruscan influence was commonplace.

If the temple was supposed to signify a physical connection between the city and the territory it would be expected that there would be similar temples in both locations (as can be found in Attica, Akragas, Syracuse and Himera). Instead, the temple at Foce del Sele bears little resemblance to any of the city temples, incorporating both inter-axial walls and sculpted metopes, neither of which can be found in the city. The fact that the temple is smaller than the (almost contemporary) Temple of Hera I suggests that direct comparison (as with Hera I and Hera II) was not intended, but, rather, the identity of the temple’s builder(s) was so different that they did not make their point about separate identity through a comparison. Rather, the architecture was so different from that of Hera I that a direct comparison based upon ratios was not necessary. As with the ‘extra-urban’ towers on Lesbos analysed by Spencer (1995), it is tempting to view this temple as a construction by an elite group, separate from those who built in the city, but keen to display their separate identity in a separate, yet still culturally important, location.

Conclusion

Through a series of case studies this chapter has demonstrated the role of temple design in inter- and intra-polis relations and the expression of identity. The case studies have demonstrated that if the designs of temples are analysed as symbols of identity and competition, rather than merely as mute art-pieces which were the products of chronological evolution, they appear to have an active role in inter- and intra- polis relations. Indeed, analysing temples at the level of the individual polis (albeit alongside a discussion of the architecture in surrounding poleis) further demonstrates that temples were built by a number of groups; including, the community as a whole in the form of centrally controlled projects as in fifth-century Attica and Akragas, competing aristocratic groups as in early fifth/ late sixth-century Selinous or a powerful individual as with the temples of Athena at Syracuse (S23) and Victory at Himera (S12). Furthermore, the final case study demonstrates that as well as the use of similar plan dimensions to provide context for the design differences of temples, in particular instances, the temples’ designs could be so different that no context was required for the differences to be understood.

Chapter 9: Conclusion

> Why this extraordinary absence of 'signatures' in association with the greatest works of Greek art, given that signatures are common on smaller-scale pieces? The answer must be that they didn't need them. The monuments are not a direct entry into permanent, monumental time in their own right. Rather they act as a signifier which triggers off the words of men, in which truly permanent memories reside (Foxhall 1995: 141).

The aim of this thesis is to investigate why the variations in the external appearance of Doric peripteral temples occur. An analysis of the previous studies which sought to investigate these differences suggested that temple design was directly connected to date. However, the underlying contradictions in the evidence, as well as the growing number of identifications of 'regional' tangents to the single evolutionary Panhellenic line suggests that the differences may not be as closely connected to date as was once presumed. Thus, in order to re-analyse Doric peripteral temple design on a Panhellenic level a data-set of measurements from 104 temples was collected. The data-set allowed for a systematic analysis of the size, shape and decoration of the designs of the external elements of the buildings. To ensure that no reconstructed measurements were used in the data-set a number of criteria were formulated and applied to the remains before their dimensions were included in the data-set.

The analysis of the data-set completed in Chapter 5 demonstrated that the differences in the designs of the temples were not connected to their dates of construction in as straightforward manner as was suggested by earlier scholars. For instance, temples with similar ratios of stylobate length to width were constructed in each date group and each date group contained a wide range of different ratios. Likewise, the same capital design, an attribute commonly believed to be indicative of date, was used on buildings that were constructed in multiple date groups. Furthermore, the size of one element did not necessarily determine the size of another. For example, temples with the same plan dimensions were constructed utilising a different number and shape of columns. Thus, temples of the same size with very different designs could be created, and the differences were not directly linked to date.

When analysed on a regional level, the temples appear to belong to discrete sub-regional groups based upon the size of their plans. Indeed, the sizes of the plans in one particular region are not found in another. The discreteness of the groups, as well as the numbers of temples in each group, suggests that the similarity in their size is significant. Despite this similarity in their plan dimensions, the majority of the temples that belonged to the same group utilised different elevation designs. The subsequent discussion of activity in ancient sanctuaries (Chapter 7) and an analysis of the votive offerings and treasuries, suggested that the similarities in the temple plan sizes (as well as the general use of the same building 'type') was connected to the inherent competition between the different dedicating groups and their desire to express a separate, distinct identity. Thus, it is argued that the similarity in the plan sizes of the Doric peripteral temples with different elevation designs are connected to same notions of competition and the desire to express separate identities that affected the designs of the treasuries.

Furthermore, the construction of a number of temples which utilise the same plan dimensions and the same elevation designs, are connected to the desire of a single group to express a coherent statement of their identity. For example, as discussed in Chapter 8, the construction of six temples with a 'standardised' design at around the same date in Akragas, at a time when multiple different sizes and shapes were being used across the Greek world, must be regarded as significant. Consequently, it is argued that the variations in the external appearances of the Doric peripteral temples are connected to the desire of the temples' clients to express competing, but distinct, statements of identity.

Although this study has demonstrated the connection between temple design and the expression of identity on behalf of the client, the length of this thesis has prevented the further study of particular issues that were not central to the formulation of this conclusion. The size of the data-set and the length of the thesis meant that only an overview of each sub-regional group could be completed in Chapter 6, and only the poleis which contain multiple, well-preserved temples could be analysed in more detail in Chapter 8. For example, whilst it was possible, in an overview, to ascertain that the well-preserved temples of Sicilian group SA were different from one another (with the exception of the Temple of Victory at Himera (S12) and the Temple of Athena at Syracuse (S23)), a more detailed analysis of the temples, focusing upon the use of more subtle decoration (akin to Barletta's (1990) study of the sometimes subtle decorative features of the 'Ionian Sea Style') may aid further understanding of the relationships between the various buildings.

Another area that was beyond the scope of this thesis and consequently requires further investigation, particularly in light of the discovery of the lack of correlation between the use of particular ratios and date, is the use of ‘similar’ temples in the reconstruction of poorly preserved buildings and the use of ratios to date temples to specific 10 year periods, especially without the relative security of a secondary dating source. Likewise, it was beyond the scope of this thesis to investigate how the competitive elements of their designs and the consequent expressions of identity, are connected to other building activity, such as city walls, and dedicatory policies in the polis at the same time. Moreover, the specific expressions, the direction of such statements, as well as the buildings’ relationship with other structures, could be further understood through an analysis of the temples’ positions in the landscape. This analysis may further help to understand the placement of temples in different ‘categories’ of sanctuaries and their subsequent role following the formulation of the polis, such as the ‘extra-urban’ sanctuaries discussed by De Polignac (1995). Thus, the acknowledgement that the variations in Doric peripteral temples designs were connected to the varying statements of identity on behalf of the buildings’ dedicators provides an opportunity to place temples (and their designs) in their contemporary environments, a theme that was not of primary concern to earlier scholars of temple architecture.

Therefore, this thesis has demonstrated that the design of Doric peripteral temples was affected by notions of competition and the consequent, distinct expressions of identity at the sub-regional level. By analysing temples’ designs at this level and in this manner, the differences in their designs can be understood as having meaning in the ancient world, rather than simply being connected to the search for the set of Panhellenic ‘perfect’ ratios, with the result that each temple would be constructed with the knowledge that its design would have been out of date before it was finished.

Appendix I: Stoa Catalogue

Name	Location	Region	Date	Date Group	Coulton (1976a) Pg. No.
Royal Stoa	Athens	Attica	6th c.	2	219
Peristyle Building	Athens	Attica	325	6	221
Stoa Poikile	Athens	Attica	460	3	221
South Stoa 1	Athens	Attica	Last q. 5th c.	4	221
Stoa of Zeus	Athens	Attica	425-410	4	222
Stoa (Artemis Brauronia)	Athens	Attica	440-430	4	222
Chalkotheke	Athens	Attica	400	5	222
Propylaia	Athens	Attica	438-430	4	222
E Stoa (Asklepion)	Athens	Attica	Mid-4th	6	223
W Stoa (Asklepion)	Athens	Attica	Late-5th	4	225
E Stoa A on Pnyx	Athens	Attica	Before 350	5	225
E Stoa B on Pnyx	Athens	Attica	3rd q. 4th c.	6	225
W Stoa on Pnyx	Athens	Attica	3rd q. 4th c.	6	226
Pompeion	Athens	Attica	400	5	226
Stoa by Theatre of Dio	Athens	Attica	Late 5th - early 4th	4	226
Stoa	Brauron	Attica	425-416	4	227
Stoa	Oropos	Attica	360	5	269
Stoa by the harbour	Piraeus	Attica	Late 5th - early 4th	4	277
N Stoa	Sounion	Attica	425 - 400	4	285
4th c. Stoa	Foce del Sele	Italy	2nd h. 4th c.	6	283
Stoa	Agrinion	N. Greece	Mid-4th	6	212
Stoa of the Athenians	Delphi	N. Greece	478-470	3	234
West Stoa	Delphi	N. Greece	4th c.	6	234
Xystos	Delphi	N. Greece	334/3	6	236
Stoa	Molykreion	N. Greece	2nd h. 4th c.	6	261
Stoa at Nymphaion	Naousa	N. Greece	4th c.	6	264
Arsenal	Olynthos	N. Greece	After 348	6	269
East Hall	Olynthos	N. Greece	425 - 400	4	269
West Stoa	Olynthos	N. Greece	Late 5th - early 4th	4	269
Stoa with wings	Thasos	N. Greece	2nd h. 4th c.	6	288
N Building	Thasos	N. Greece	Mid-6th	2	288
S Building	Thasos	N. Greece	500	3	288

Name	Location	Region	Date	Date Group	Coulton (1976a) Pg. No.
East Gallery 'Lesche'	Thasos	N. Greece	Early 5th	3	288
Oikos Building	Thasos	N. Greece	Early 5th	3	289
Stoa	Andros	Other	Late-4th	6	215
Stoa	Antissa	Other	4th c.	6	215
North Stoa	Cyrene	Other	550-525	2	228
North Stoa B1	Cyrene	Other	525-500	2	228
North Stoa B3	Cyrene	Other	350-300	6	230
West Stoa	Cyrene	Other	4th c.	6	230
Building Delta	Delos	Other	600-550	1	233
Oikos of the Naxians	Delos	Other	575 - 560	1	233
Stoa of the Naxians	Delos	Other	Mid-6th	2	233
E Stoa	Didyma	Other	550-500	2	236
NE Stoa	Didyma	Other	550-500	2	236
S Stoa	Didyma	Other	600	1	236
Stoa	Gortyn	Other	Archaic	1	240
Stoa	Kolophon	Other	4th c.	6	246
N Stoa	Labraunda	Other	373-353	5	250
E Stoa	Larisa on the Hermos	Other	600	1	250
N Stoa I	Larisa on the Hermos	Other	600	1	250
N Stoa II	Larisa on the Hermos	Other	600	1	251
Delphinion	Miletos	Other	340 - 320	6	258
Stoa by the harbour	Miletos	Other	Late 4th	6	259
N L-shaped Stoa on N Market	Miletos	Other	4th c.	6	259
W Stoa on Temenos	Olbia	Other	5th - 4th c.	5	265
NW Stoa	Samos	Other	570 - 560	1	280
Anaktoron	Samothrace	Other	late 6th c.	2	280
Hall of Votive Gifts	Samothrace	Other	late 6th c.	2	281
North Stoa	Argive Heraion	Peloponnese	Late 7th - Early 6th	1	215
NE Building	Argive Heraion	Peloponnese	6th c.	2	215
S Stoa	Argive Heraion	Peloponnese	450-425	4	217
W Building	Argive Heraion	Peloponnese	Late 6th	2	217
Stoa	Argos	Peloponnese	Late 6th	2	217
S Stoa	Argos	Peloponnese	Early 4th	5	217

Name	Location	Region	Date	Date Group	Coulton (1976a) Pg. No.
W Stoa	Argos	Peloponnese	6th c.	2	217
Stoa IV	Argos	Peloponnese	4th c.	6	218
North Building	Corinth	Peloponnese	4th c.	6	227
North Stoa I	Corinth	Peloponnese	Before 450	3	227
North Stoa II	Corinth	Peloponnese	450-425	4	228
North Stoa III	Corinth	Peloponnese	450-425	4	228
S Stoa	Elis	Peloponnese	450-425	4	237
W Stoa	Elis	Peloponnese	5th or 4th c.	5	237
Abaton	Epidauros	Peloponnese	400 - 350	5	238
Abaton	Gortys	Peloponnese	400 - 375	5	240
Stoa	Gortys	Peloponnese	4th c.	6	240
Stoa	Halieis	Peloponnese	4th c.	6	240
Hall	Hira	Peloponnese	4th c.	6	242
Stoa I	Kalaureia	Peloponnese	525 - 500	2	242
Stoa II	Kalaureia	Peloponnese	4th c.	6	242
Stoa III	Kalaureia	Peloponnese	Mid 4th	6	242
Stoa IV	Kalaureia	Peloponnese	Late 4th	6	243
Bouleuterion	Mantineia	Peloponnese	4th c.	6	254
Stoa of Phillip	Megalopolis	Peloponnese	340-330	6	256
Stoa NW of the Asklepieion	Messene	Peloponnese	2nd h. 4th c.	6	256
Bouleuterion - N Building	Olympia	Peloponnese	6th c.	2	266
Bouleuterion - S Building	Olympia	Peloponnese	520 - 480	3	266
Echo Stoa	Olympia	Peloponnese	350-325	6	268
South Stoa	Olympia	Peloponnese	mid-4th	6	268
SE Building	Olympia	Peloponnese	375 - 350	5	268
Stoa South of Stadium	Olympia	Peloponnese	1st h. 4th c.	5	268
Bouleuterion	Orchomenos	Peloponnese	5th c.	4	269
Stoa	Orchomenos	Peloponnese	4th c.	6	269
Stoa by the Harbour	Perachora	Peloponnese	425 - 400	4	271
Stoa on the Akropolis	Sparta	Peloponnese	6th c.	2	285
Stoa	Akrai	Sicily	Mid-4th	6	214
Stoa C	Selinous	Sicily	2nd h. 6th c.	2	283

Appendix II: Temples Not Included in the Analysis

II.1 Pre-Sixth Century 'Doric' Peripteral Temples

As early examples of Doric peripteral temple construction, the below temples were largely constructed with wooden superstructures, which have subsequently disappeared. The lack of preserved, recogniably Doric elements from these temples and the highly conjectural nature of their reconstructions, means that the data-set is predominately limited to stone temples, thus, the below temples are excluded from the analysis.

- The late eighth century Megaron B at Thermon (Dinsmoor and Dinsmoor 1996: 376).
- The archaic Temple of Poseidon at Isthmia dating to the first half of the seventh century (Broneer 1971; Gebhard and Hemans 1992: 23-40; Gebhard 2010: 6-8).
- The seventh-century Temple of Hera at the Argive Heraion (Dinsmoor 1950: 53; Strøm 1989; Gebhard 2010: 107-111).
- The seventh-century Temple of Apollo at Eretria (Auberson 1968; Spawforth 2006: 166).
- The late seventh-century wood and mud-brick Temple of Athena Alea at Tegea (Østby 1986; 1994b).
- The late seventh-century Temple of Apollo at Thermon (Dinsmoor 1950: 51; Robertson 1979: 324).

II.2 Post-Fourth Century Doric Peripteral Temples

As the focus of this project is upon the architecture of the sixth, fifth and fourth centuries, a number of Doric peripteral temples belonging to the Hellenistic and Roman periods are excluded from the study. The most notable exclusions are:

- The Hellenistic Temple of Athena Polias at Pergamon (Dinsmoor 1950: 268, 339; Robertson 1979: 330; Spawforth 2006: 192).
- The Hellenistic temple at Mycenae (Klein 1997).
- The Hellenistic temple near Kourno in Laconia (Dinsmoor 1950: 268; Winter 1983: 3).
- The Hellenistic temple at Lusoi (Blackman 2001-2002: 28; Whitley 2003-2004: 35; Whitley *et al.* 2005: 48; Spawforth 2006: 150).
- The Hellenistic peristyle added to the Temple of Apollo at Thermon (Dinsmoor 1950: 52).
- The early third-century peristyle added to the Temple of Apollo Alaios at Krimisa (Dinsmoor 1950: 267; Spawforth 2006: 118).
- The third-century Temple of Apollo Ptoion at Ptoios (Shoe 1936: 50, 72, 114, 159; Dinsmoor 1950: 218; Touloupa 1970; Knell 1983a: 230; Spawforth 2006: 168).
- The third-century temple at Klaros (Robert 1957a; 1957b; 1958; 1959; 1960).
- The third-century Doric peripteral temple at Alabanda (Spawforth 2006: 208).
- The third-century Doric temple at Troy (Dinsmoor 1950: 267).

- The third-century temple at Aigeira (Spawforth 2006: 150).
- The second-century Temple of Asklepios on Kos (Lawrence 1996: 161).
- The two second-century temples on Rhodes (Spawforth 2006: 182).
- The hexastyle Doric temple at Hermopolis (Egypt) built to honour Ptolemy III and Berenice (Dinsmoor 1950: 268).
- The first-century pseudo-peripteral Doric Temple of Hercules at Cori (Giuliani 1976).

II.3 Possible Doric Peripteral Temples Excluded due to Lack of Evidence

In the absence of any foundations, a number of extant architectural blocks have been used to postulate the existence of a number of Doric peripteral temples. These temples have been excluded from the data-set on the grounds that the absence of attributed foundations means that the extant could also have belonged to a variety of building types, not only to a Doric peripteral temple.[118] Examples of Doric peripteral temples whose existence have been speculated from foundation-less remains include:

- The seventh/sixth-century Temple of Athena at Delphi (Dinsmoor 1950: 72-73; Barletta 2009a: 39).
- The so-called 'Great Temple' at Corinth (Dinsmoor 1949: Pfaff 2003b: 116-118; Wiseman 1967a: 29-30; 1967b: 412; 1969: 94-96).
- Temple D at Pallantion has not been included within this study, as only two blocks of the temple are extant today; these may belong to a planned, but never executed peristyle, although as stated by Østby (1991: 50), "the evidence is insufficient to prove it".
- The 'Contrada Mango' temple at Segesta (Mertens 1984: 87-91; Spawforth 2006: 132).
- The early sixth-century Temples X and Y on the Selinuntine Akropolis (Dinsmoor 1950: 80; Bookidis 1967: 202-207; Mertens 1996: 325-326; De Angelis 2003: 135; Østby 1995a: 92; 2009: 155; Marconi 2007: 84-85, 87-88).
- The fifth-century temple at Chalcis (Bakhuizen 1985: 90; Georgopoulou and Papadakis 1974).
- The temple on the east slope of the Akropolis hill at Knossos (Hood and Smyth 1981: 44-45).
- The possible fourth/third-century Doric peripteral temples from Gorgippia in the Northern Black Sea area (Krizhitskiy 2010: 109).
- The 'Bluebeard' Temple on the Athenian Akropolis (Wiegand 1904: 8, 21, Abb.23; Dinsmoor 1947; 1950: 72; Plommer 1960; Shear Jr. 1978: 3; Robertson 1979: 82; Travlos 1971: 258; Shapiro 1989: 5; Hurwit 1999: 109; 2004: 67; Camp 2001: 30-31; Marconi 2007: 18-19).

[118] In contrast, the Temples of Athena at Megara (A15), Hera at Plataia (N5), Poseidon at Hermione (P12) and the temples of Asklepios at Gortys (P10 and P11) have been included despite the lack of superstructure elements. This is because the foundations indicate that the temples were peripteral and the location and date of the temples further suggest that the temples were of the Doric order.

- The various pediment elements uncovered during the Athenian Agora excavations; the sixth-century lion's head (Harrison 1965: 31), late sixth-century Herakles and lion pediment (Thompson 1951: 59-60; Harrison 1965: 36) and a late archaic lion and bull pediment (Thompson 1958: 154).

Furthermore, there are a number of possible peripteral temples that could not be included due to a lack of available and published information. Most notably, this includes:

- The possible archaic peripteral temple in the lower city at Orchomenos, for which, none of the material has ever been published or illustrated (Voyatzis 1999: 147; Morgan 1999: 392)
- The Tempio Arcaico della Collina Settentrionale at Cyrene, the primary source of evidence being a summary report and a few photographs taken in 1926, with the only evidence remaining on the site being a fragment of bluish-grey limestone triglyph (Stucchi 1975: 22).
- The recently discovered Doric temple at Apollonia in Albania, primarily due to a lack of published material in relation to this building.

Appendix III - Specific Dating Controversies

A number of temples have attracted significant attention and disagreement regarding the date of their construction, with often disparate dates claimed by various scholars. As the assigned dates can often be in two completely different date groups, it is difficult to place them into a single date group utilising the methods outlined in Chapter 3. These temples are generally the better preserved examples, whose dating is based upon 'stylistic criteria'. Conflicting dates have generally been suggested because one element's evolutionary date disagrees with another (see Chapter 5). Date can also be an issue when the 'stylistic' date of a temple disagrees with a textual reference to the building's construction or a date that is assigned via additional archaeological sources. Therefore, what follows is a specific explanation of the reasons for the assignment of problematic temples to the specified date groups.

III.1 - Poseidonia

Three peripteral temples remain standing within the ancient city walls of Poseidonia in South Italy. Due to the extraordinary state of survival, their structures have been reused in later periods as churches and animal stalls (Spawforth 2006: 114). Consequently, their dates have been the subject of a significant amount of debate.

The earliest temple constructed at Poseidonia, the Temple of Hera I (Basilica, I9) has been placed both within the early sixth (Robertson 1979: 76) and the late sixth centuries (Spawforth 2006: 112). The terracotta decoration associated with the temple has been dated to the late sixth century. However, the eccentric nature of the plan has led scholars to argue for an earlier date. These eccentricities include the use of an odd number of façade columns and an 'unusual' stylobate ratio. In addition to the arguments for early and late dates, two approaches have been taken in order to reconcile this data. Lawrence (1996: 87), in an attempt to find a solution to the problem, based upon the same evidence, dates the temple to the middle of the sixth century, while Pedley (1990: 52) suggests that there may have been two phases of construction (570-560 and c.540).

However, the balance of evidence would suggest that the temple belongs in the second half of the sixth century. Firstly, the terracotta decoration is the only available dating source that does not rely upon vague notions of Panhellenic architectural evolution mixed with 'barbaric provincialism' (Dinsmoor 1950: 92). Furthermore, there is a much larger corpus of external comparanda available for the terracottas than for the other architectural elements. Secondly, the plan of the temple does not necessarily belong to the first half of the sixth century, since there are other temples of the late archaic period that utilise an odd number of façade columns (S8, Zeus Olympios (Temple B) at Akragas) and the fifth-century Temple of Hera II (Poseidon) at Poseidonia (I11) utilises a similar stylobate ratio of length to width. As such, the later date will be utilised for this study, putting the temple within date group 2.

There is significantly less debate regarding the date of the second temple constructed in the city. The profiles of the columns from the Temple of Athena at Poseidonia (I8) have led a number of scholars to suggest that the building dates to around 500 (Pedley 1990: 55; Spawforth 2006: 114). Similarly, the leaf-necking decoration on the capitals finds its closest parallels in Italy in the late sixth century, on the Temple of Hera I (Basilica) at Poseidonia (I9), suggesting that the Temple of Athena was constructed in the late sixth century (date group 2).

In contrast, the date of the Temple of Hera II (Poseidon) at Poseidonia (I11) is the subject of significant argument. The temple is commonly attributed to the period 470-460, primarily based on analogy with the Temple of Zeus at Olympia (P20, Dinsmoor 1950: 110; Symeonoglou 1985a: 60; Pedley 1990: 88; 1993: 226; Spawforth 2006: 113). The temple would be placed after the Temple of Zeus at Olympia, except for the identification of a number of 'archaisms' (24 column flutes, 14 flank columns and the echinus profile), which suggest the Temple of Poseidon must be earlier than the Temple of Zeus.

Shoe (1952: 33, 57) has suggested a later date for the temple, dating the mouldings to 460-450. Furthermore, the use of double-T clamps on the temple would seem to indicate a date in the second half of the fifth century, as their first attested use is on the Parthenon in Athens (A8), which was constructed between 447 and 432 (Gottlieb 1953; Camp 2001: 74). As with the Temple of Hera I (Basilica, I9), there is no reason to see the 'unusual' elements, such as the amount of column flutes, as archaisms. Indeed, temples from many different date groups make use of a varying amount of column flutes; the Heraion at Foce del Sele (I10; 540-500) has 18 and even high classical temples such as the second Temple of Poseidon at Sounion (A9; 449-430), vary from the 'standard' 20 flutes, in this case having 16. The use of 14 flank columns is not only limited to the archaic period and can also be found on temples of the late fifth century, for example, on the Temple at Segesta (S13). Therefore, a date in the second half of the fifth century is utilised for the Temple of Hera II (Poseidon) at Poseidonia (date group 4).

III.2 - Selinous

Selinous, on the south coast of Sicily contains seven Doric peripteral temples that have commonly been dated in relation to one another, in a series (Table 17). Dinsmoor (1950: 83) dated Temple C (S16), the earliest temple in the series, between 550 and 530 based upon the style of the sculpture in the metopes. This is followed by Temple D (S17), dated to 535, Temple F (S19) to 525, Temple G (S20) coming 'shortly after' Temple F and Temple E (S18) was placed around 480. The series culminates with Temple A (S15), which Dinsmoor (1950: 83 n.1) dates to 460, suggesting that it was a 'hybrid', which incorporated the original design of the Temple of Victory at Himera (S12). The order of construction is based upon the inclusion or exclusion of certain stylistic elements and the assumption that work was completed on one building before the next was begun. For example, Temple F is deemed to have been constructed after Temple D but before Temple G as the mutule widths are regular (unlike on Temple D), but the four lines of guttae represent an irregularity that is not present on Temple G (Østby 1995a: 96).

Cat. No.	Temple	Dinsmoor (1950)	Østby (1995a; 2009)	Dates Ranges Used	Assigned Date Group
S16	Temple C	550 - 530	530 - 520	550 - 520	2
S17	Temple D	535	490 - 480	490 - 480	3
S19	Temple F	525	490 - 480	490 - 480	3
S20	Temple G	520		520 - 480	3
S18	Temple E	480	460 -450	500 - 450	3
S15	Temple A	460		490 - 450	3

Table 17 The temples of Selinous and the dates assigned by various temple scholars.

However, the placement of this temple series within the overall Panhellenic temple chronology is based entirely upon the date of Temple C, which is far from secure. The temple has been placed both in the first half of the sixth century (Holloway 1971; 2000: 70; Spawforth 2006: 129) and the third quarter of the sixth century (Shoe 1952: 38; Dinsmoor 1950: 83; Østby 1995a: 89, 91; Guidoboni *et al.* 2002: 2966). The assignment of the early date is primarily based upon the construction of the terrace wall and the artificial extension of the akropolis in the middle of the sixth century (Holloway 2000: 70; Marconi 2007: 72). It is argued that the extension of the akropolis resulted in a lower ground level at the east of the temple, and additional steps were added to the building in order to gain access. The original building, therefore, must predate the extension of the akropolis in order to require additional steps. Holloway (1971; 2000: 70) also argues that the traditional dating of the metopes to the late sixth century is based upon the opinion that Sicilian art was provincial, and the metopes should in fact be dated around 575.

However, Østby (1995a: 90) argues that there is no link between the temple steps and the terrace, highlighting that the steps lead onto natural rock and as such the terrace would not affect the ground level in front of the temple. According to this line of argument, the additional steps were added to the temple at a significantly later date than the erection of the terrace. Furthermore, the stylistic criteria suggest a date in the second half of the sixth century: the sculptural styles of the metopes, the mouldings and the terracottas have been dated variously between 550 and 520 (Dinsmoor 1950: 83; Shoe 1952: 38; Bookidis 1967: 212; Østby 2009: 160). While the date of Temple C at Selinous remains a contentious issue, the link between the date of the terrace and the temple architecture cannot be positively proven, as such the later date will be used within the study (date group 2).

Dinsmoor's (1950: 98) assumption that the completion of one project led to the commencement of another placed the beginning of construction on Temple D around 530.[119] However, this date has been questioned by Østby (1995a). Attic sherds found underneath the western temenos wall of the sanctuary indicate a date of construction around 490. The foundations of Temple D and the temenos wall actually touch each other, with the construction blocks in both the wall and temple foundations being designed to accommodate each other. Thus, the two structures must be contemporaneous, suggesting that Temple D formed part of a large restructuring of the northern part of the sanctuary around 490 (date group 3).

The change in date of Temple D calls into question the date of the other temples of Selinous, which are deemed to be constructed after Temple D. Temple F was dated by Dinsmoor (1950: 99; Bookidis 1967: 217) between 525 and 500, with the lower date based upon the style of the sculpted metopes. Indeed, Gullini (1985: 443-444; cited in Østby 2009: 160 n.69) claims to have evidence from fieldwork supporting this date. However, the date of the metopes is not secure and Østby (1995a: 97; 2009: 160) has dated them around 480, suggesting that Temple F was constructed between 490 and 480, at a similar time to Temple D. This would explain the problems identified by Dinsmoor with regard to 'advanced' and 'reversion' elements of design. There is also no evidence to suggest that simultaneous building projects could not be undertaken. For example, multiple large buildings were constructed at the same time in the sanctuary at Epidauros during the fourth century (Tomlinson 1983). Furthermore, Østby (2009: 166) argues that there is no clear tradition in the stylistic exectution of the Selinuntine temples' metopes, further reducing the need for the temples to be completed simultaneously. Therefore, in the absence of additional dating evidence, it must be concluded that a date of 490-480

[119] Although it should be noted that Dinsmoor (1950: 98) was unsure whether Temple D or F came next in the order: "While Temple D is more advanced as to its plan, and F seemingly a reversion, the opposite is the case with the entablatures: here D retains the older traits, such as the alternating system with narrow mutules over the metopes, whereas in Temple F the mutules of the geison are uniform throughout".

(date group 3) for Temple F, represents the date that presents the least amount of problems.

Dinsmoor (1950: 98-100) dated the commencement of temple G to around 520, with work continuing into the fifth century and this attribution has generally become accepted (Barletta 1983: 212; Spawforth 2006: 130). Dating the temple to 520 is entirely based upon analogy with Temple F (S19), a desire to associate the project with the tyrants, and as a rival to the Temple of Zeus Olympios (Temple B) at Akragas (S8). However, the re-dating of both Temple F (see above) and Zeus Olympios (see below) to the early fifth century, and the general scepticism towards dates provided by capitals (Coulton 1979), could indicate that the temple is slightly later in date than Dinsmoor envisaged. As such, in line with the re-dating of a number of key temples, a date in the early years of the fifth century cannot be discounted for Temple G. Therefore, the building is placed in date group 3.

The date of temple E has generally been accepted as being around 480, mainly due to the similarities between this temple and those of Athena at Syracuse (S22) and Victory at Himera (S12, Dinsmoor 1950: 109; Blandi 2000: 81; Spawforth 2006: 131). The date of Temple A has, however, attracted a little more controversy, with Spawforth (2006: 130) dating the temple as late as 450 and Blandi (2000: 95) as early as 490. However, as all of the proposed dates are in the first half of the fifth century, both temples (E and A) are also placed in date group 3.

III.3 - Akragas

Similar to the temples of Selinous, the Doric temples of Akragas, also on the south coast of Sicily, are provided with a date based upon their relation with one another. Seven of the eight temples are generally deemed to belong to the fifth century, since they are stylistically closer to the mainland than those of sixth-century Sicily (Table 18). The series begins with Temple A (Herakles, S4) and the Temple of Zeus Olympios (Temple B, S8) and culminates with the construction of Temple L (S7) just before the destruction of the city in 406.

Temple A has been dated variously between the late sixth century (Marconi 1929: 56; Dinsmoor 1950) and 480 (De Waele 1980: 236; Holloway 2000: 118-119). A variety of dates in between have also been postulated, with most commentators preferring a date between 510 and 500 (Robertson 1979: 326; Gruben 2001: 325; Spawforth 2006: 128). The main evidence for these dates comes from the architecture itself, and is thus based upon stylistic evolution. With no external dating evidence the dates ascribed to Temple A are far from irrefutable. However, due to a lack of additional evidence, and the balance of scholarly opinion leaning towards a date in the late sixth century, the temple has been placed in date group 2. Based upon similar criteria, the next temple in the series, Temple E (Athena, S6), is placed in date group 3, since it is commonly dated somewhere between 500 and 450 (Spawforth 2006: 126; De Waele 1980: 237; Marconi 1929: 77).

The date of the ground-breaking on the Temple of Zeus Olympios (Temple B, S8) has been placed as early as 510 (Dinsmoor 1950: 101 n.1) and as late as 470 (De Waele 1980: 237). Diodorus (11.25.2) remarks that Carthaginian prisoners captured after the battle at Himera in 480 were used to construct the buildings in Akragas. This led a number of scholars to suggest that construction on the temple was begun in or around 480 (Robertson 1979: 327; De Waele 1980: 237). However, Diodorus does not refer specifically to the Olympieion, nor does he specify that they began rather than continued the work that was already underway (Bell 1980: 371). Dinsmoor (1950: 101 n.1) dates the surviving gable sculpture of the temple to 470, thereby suggesting that for the sculpture to have been completed, the project must have been very advanced by this date. Dinsmoor further argues that the amount of time it would have taken to get to the sculpture and the similarities to Temple G at Selinous (which Dinsmoor (1950: 100) dated to the late sixth century), date the temple to around 510. However, Bell (1980: 371) argues that the Atlantes and capital profiles suggest a date in the late archaic period, suggesting a date between 490 and 480. Thus, the temple is dated within the first half of the fifth century and placed in date group 3.

The date of Temple D (Hera Lacinia, S5) is equally contentious, it is commonly dated to the period 460-440 (Spawforth 2006: 126; Marconi 1929: 72, 76; Guido 1967: 117; Holloway 2000: 116), although Robertson (1979: 327) dates the temple as early as c.470, while De Waele (1980: 237) places the temple between 440 and 420. Temple D’s date is primarily based upon the building’s similarity in design to Temple F (Concord; S1). The mouldings on Temple F are commonly dated to the second half of the fifth century, thus providing a rough date for the temple, which is usually placed around 430 (Holloway 2000: 116; Dinsmoor 1950: 111; De Waele 1980: 237). As such, both temples, D and F, are placed in the same date group, in this case date group 4.

The remaining temples, I (Dioskouroi, S3), L (S7) and G (Hephaistos S2), are placed in the second half of the fifth century, between Temples D and F and the city’s destruction at the very end of the century, thereby placing them in date group 4 (see Table 18). Their dates are largely based upon their more ornate detailing, not seen on the earlier Sicilian temples, as well as pottery found in the remains of Temple G dating to the second half of the fifth century.

Cat. No.	Temple	Marconi (1929; 1933)	Dinsmoor (1950)	Robertson (1979)	Bell (1980)	De Waele (1980)	Holloway (2000)	Spawforth (2006)	Date Ranges Used	Assigned Date Group
S4	Temple A (Herakles)	Late sixth	Late sixth	510		488 - 480	Prior to 480	500	525 – 480	2
S8	Temple B (Zeus Olympios)		510	480	490 - 480	480 - 470		Late sixth	510 – 470	3
S6	Temple E (Athena)	490 - 460				460 - 440		500 - 450	500 – 450	3
S5	Temple D (Hera Lacinia)	460 - 440		470		440 - 420	450	460 - 450	470 – 420	4
S1	Temple F (Concord)	450 - 440	430	450 - 400		435 - 420	430	450 - 440	450 – 420	4
S3	Temple I (Dioskouroi)	450 - 400				460 - 440		450 - 400	450 – 406	4
S7	Temple L	450 - 400				415 - 406			450 – 400	4
S2	Temple G (Hephaistos)	433 - 406				415 - 406		430 - 425	433 – 406	4

Table 18 The temples of Akragas and the dates assigned by temple scholars.

III.4 - The Temple of Zeus at Cyrene (O11)

The peristyle belonging to the temple of Zeus at Cyrene has been dated as early 540 (Dinsmoor 1950: 86) and as late as 450 (Stucchi 1975: 24). The proportions of the columns, the bulging capitals, the ratio of the entablature height to the columns, and the alternating widths of the mutules above the frieze have led scholars to suggest that the peristyle was constructed in the second half of the sixth century (Dinsmoor 1950: 86; Buttle 1956: 32). However, the temple incorporates a number of optical refinements not utilised elsewhere until the middle of the fifth century. Stucchi (1975) further argues that the temple was built in two distinct phases. During the sixth century, a simple cella and pronaos were constructed, which was then surrounded by a peristyle in the middle of the fifth. The 'archaic' elements noted by Dinsmoor (1950: 86) were imitations of the first stage of construction in order to tie the two projects together. Spawforth (2006: 225) has suggested placing the temple between 500 and 480, thereby amalgamating the two previous arguments, retaining an archaic date that relates to the style of the architecture and a fifth century date for the refinements. Therefore, without further evidence, Spawforth's (2006: 225) reconciliation of the two dates seems to present the least divisive solution to the problem of seemingly archaic style and fifth-century refinements, thus, the temple is placed in date group 3.

III.5 – The Temple of Aphaia on Aigina (A14)

The date of the Temple of Aphaia on Aigina is generally placed between 510 and 480, putting the temple on the cusp of two date groups (2 and 3). Lawrence (1996: 99, 100) proposes that the proportions, sculpture and number of columns place the temple in the late sixth century. In contrast, Dinsmoor (1950: 105-7) suggested that although the architecture appears to belong to the late sixth century, in fact the style of the sculpture indicates that it belongs to the start of the fifth century, an opinion shared by Robertson (1979: 86), Williams (1987: 671), Spivey (1996: 107) and Osborne (1996: 264). Further to this, Gill (1988; 1993) argues that the Attic black-figured pottery discovered in the fill of the north terrace wall (which contained numerous fragments of the older temple) and the increased wealth of the period, should date the architecture (and sculptures) to the period post the Persian invasion of 480.

Despite the archaeological evidence suggesting a post-480 date for the temple, many commentators have continued to date the temple to c.500 (Barletta 2005: 71; Spawforth 2006: 149). However, Stewart's (2008: 593-597) analysis of the 'Severe Style' has further suggested a post-Persian date for the temple; stating that: "however, unpalatable to some: the new Aphaia temple surely post-dated the Persian Wars in its entirety".

Consequently, there appears to be little reason to disregard the archaeological evidence,[120] especially given the already controversial nature of the dates of the temple's sculpture and, indeed, other sculpture from this period (see Cook 1989), thus, the temple is dated between 480 and 470.

III.6 - The Temple of Apollo Daphnephoros at Eretria (N6)

The shape of the remaining two capital fragments indicate that the Temple of Apollo Daphnephoros at Eretria was constructed in the period between 530 and 520 (Auberson 1968: 20). Likewise, the marble sculpture, that was found 'piously buried' after the Persian sack of Eretria, has generally been considered to date to the late sixth century (Bookidis 1967: 113-116; Spawforth 2006: 167). Francis and Vickers (1983: 49-54) have argued, however, that the temple actually dates to post the Persian invasion, citing, the lack of proof for burning on the structure, epigraphical evidence, the over-reliance on the 'chronology of archaic Greek art', the 'archaistic' elements in the style of the sculpture and its pro-Athenian themes, an argument that may also be supported by Gill's (1993: 180) interpretation of the evidence from Aigina (see above). However, Boardman (1984) has subsequently identified a number of issues regarding Francis and Vickers' arguments, suggesting instead that all their arguments could equally attest to a date for the temple of c.490, further arguing that questions about the date of the Eretria temple "will be worth asking only when further excavation offers new evidence of a positive nature". To this end, the Temple of Apollo Daphnephoros at Eretria is dated to the period 530-490 and placed in date group 2.

III.7 - Hephaisteion in Athens (A6)

Although most scholars agree that the Hephaisteion in Athens was constructed around the middle of the fifth century, there is little consensus regarding the date of commencement, either before or after 450. The profiles of the mouldings and the masons' marks on the ceiling coffers indicate a start date for the Hephaisteion around 460 (Miles 1989: 222). Lawrence (1996: 133) believes attributing a date earlier than 450, based upon this evidence is 'unsafe,' particularly as these indicate an early date for the upper parts of the temple, which would have been constructed last. Delivorrias (1997: 93) suggests that the sculpted metopes must have been created before 450, and dates the temple's initiation to 454. However, Camp (1986: 87; 2001: 103) suggests that the temple may have been begun as late as 448, which agrees in date with the chronologies proposed by Boardman (2005: 146), Lawrence (1996: 129), Dinsmoor (1950: 180), Berve and Gruben (1963: 391) for the architectural decoration. Indeed, the occurrence beside the temple of marble

[120] Lattimore (2006: 459) cautiously accepts the lower date, suggesting a date for the temple between 500 and 470.

chips and potsherds, the earliest of which date to about 450, suggests that this is the commencement date rather than as a date for completion (Meiggs 1963: 39; Boersma 1970: 59). Due to the archaeological evidence and the amount of scholars preferring to date the temple to the second half of the fifth century, the temple is placed in date group 4.

III.8 – The Temple of Apollo Epikourios at Bassai (P4)

Pausanias (8.41.8) attributes the design of the Temple of Apollo Epikourios at Bassai to Iktinos, architect of the Parthenon (A8) and suggests that the motive for construction came from the survival of a plague in Phigalia, believed to be in the late fifth century. The date of the temple is contested primarily due to the 'archaic' design of the building's plan and the late fifth century date ascribed to the sculpture in the cella, the sculpted metopes and interior capitals. Dinsmoor (1933: 225; 1950: 154 n.2; 155) suggested that Iktinos may have designed the Temple of Apollo prior to undertaking work upon the Parthenon, thus explaining the 'archaic' elements of the exterior plan, further suggesting that Pausanias' date was mere 'conjecture', whilst the attribution to Iktinos is clear. Iktinos's departure to work on the Parthenon would have caused construction to cease until work began again in the last quarter of the fifth century, at which point the sculpted frieze in the cella was executed, possibly overseen by Kallimachos, inventor of the Corinthian capital (Dinsmoor 1933: 225).

Cooper (1996a), however, prefers to date the temple between 429 and 400. Cooper (1996a: 379) suggests that Iktinos oversaw the project at Bassai after the Parthenon (447-438) and the Telesterion (439-429). Thus, Iktinos can remain associated with the temple at Bassai, whilst retaining the date of construction to the period of plague (430-429). This date has subsequently been utilised in recent studies (Lawrence 1996: 134; Barletta 2005: 90; Spawforth 2006: 156). There is no reason to suggest that because the temple is missing 'Iktinian' refinements, it must have been designed prior to the Parthenon. As discussed in Chapter 2, there is no evidence that the architect controlled the design. As such, the absence of the refinements cannot be used to indicate a date prior to the Parthenon, as it was the client that controlled the temple's design, not the architect. Also, the so-called 'archaic' elements of the plan may be drawn from the earlier temple found to the south of the classical temple (Kelly 1995). Therefore, there is no reason to suggest that this temple belongs to the first half of the fifth century. Without any archaeological evidence for the date, the literature provides the only evidence, thus, the post-429 date is utilised in the data-set, placing the temple in date group 4.

III.9 – The Temple of Athena Alea at Tegea (P6)

The date of the Temple of Athena Alea at Tegea relies upon stylistic evidence, relating primarily to its sculpture and column capitals, as well as Pausanias's (8.45.5) attribution of the temple to the architect/sculptor Skopas. Stewart (1977: 80-84) identified a contradiction between the dates provided by the sculpture, which appear to date around 340 and the architecture which suggests a date around 370. These differences were assigned to the different stages of Skopas' design career and as such, the building was begun in 370 and took 30 years to complete. Dugas *et al.* (1924: 128) highlighted the strong connections between this building and the Tholos at Epidauros (360-330) and suggest that the temple was begun in the second third of the fourth century. However, Norman (1984: 193) prefers a later date, placing the temple between the horizontal sima at Delphi (343) and the column bases of the Bouleuterion at Sikyon (ca. 303). Norman (1984: 193) further asserts that Skopas would have been back on the mainland between 345 and 335 to create the cult statue of Artemis Eukleia at Thebes (Pausanias 9.7.1), and therefore the Temple of Athena Alea at Tegea was also completed between 345 and 335. A post-350 date has subsequently been widely accepted and the pottery discovered in the Norwegian excavations supports the dating of the temple to the second half of the fourth century (Lawrence 1996: 144; Pakkanen 1998: 9; Spawforth 2006: 160). A date in the second half of the fourth century will be used for this temple as Norman's (1984) date relates to a comparison of a number of areas of the architecture, instead of just the capital, as preferred by Dugas *et al*. (1924), thereby placing the temple in date group 6.

Appendix IV: Catalogue of the Ratios of Plan and Elevation Elements used on Doric Peripteral Temples

Appendix IV.1: Ratios between the Plan Element Measurements												
Cat No.	**Name**	**Location**	**Date Group**	**FoL/FoW**	**SL/SW**	**SW/FoW**	**SL/FoL**	**CeL/CeW**	**CeW/SW**	**CeL/SL**	**SL/FlC**	**FlS/LD**
A2	Olympieion	Athens	2									
A3	Athena Polias	Athens	2	2.01	2.03	0.97	0.98	2.58	0.63	0.80	3.60	2.47
A4	First Temple of Poseidon	Sounion	3									
A5	Old Parthenon	Athens	3									
A6	Hephaisteion	Athens	4	2.17	2.32	0.89	0.95	2.84	0.58	0.71	2.44	2.54
A7	Apollo Delphinios	Athens	4	2.17								
A8	Parthenon	Athens	4	2.15	2.25	0.92	0.96	2.64	0.72	0.85	4.09	2.23
A9	Second Temple of Poseidon	Sounion	4	2.16	2.31	0.89	0.95	2.55	0.62	0.68	2.39	2.47
A10	Athena	Pallene	4	1.98								
A11	Nemesis	Rhamnous	4	1.97	2.15	0.86	0.94	2.31	0.65	0.70	1.79	2.67
A12	Artemis	Loutsa	6	1.50	1.56	0.89	0.93	1.78	0.58	0.66		
A13	Apollo	Aigina	2	1.82								
A14	Aphaia	Aigina	3	1.97	2.09	0.89	0.94	2.81	0.58	0.78	2.40	2.59
A15	Athena	Megara	2	2.45								
A16	Athena	Karthaia (Keos)	2	1.85	1.94	0.94	0.98	2.40	0.56	0.69	2.11	2.47
I1	Unknown	Hipponion	2	1.83								
I2	Unknown	Kaulonia	4	2.26								

Appendix IV.1: Ratios between the Plan Element Measurements												
Cat No.	Name	Location	Date Group	FoL/FoW	SL/SW	SW/FoW	SL/FoL	CeL/CeW	CeW/SW	CeL/SL	SL/FlC	FlS/LD
I3	Hera	Kroton	3									
I4	Casa Marafioti	Locri Epizephyrioi	2									
I5	Hera	Tavole Palatine	2	1.93	2.07	0.87	0.93	2.90	0.50	0.70	2.78	2.72
I6	Temple Aii (Apollo Lykeios)	Metaponto	2	2.30				3.13				
I7	Temple Bii	Metaponto	2	2.10				2.43				
I8	Athena	Poseidonia	2	2.14	2.26	0.90	0.95	3.02	0.54	0.72	2.53	2.08
I9	Hera I (Basilica)	Poseidonia	2	2.14	2.22	0.94	0.97	3.21	0.55	0.79	3.01	2.14
I10	Heraion	Foce del Sele	2	2.09				2.43				
I11	Hera II (Poseidon)	Poseidonia	4	2.37	2.47	0.93	0.97	3.41	0.55	0.77	4.28	2.19
I12	Unknown	Taranto	1									
I13	Minerva	Pompeii	2	1.46	1.58	0.84	0.92	2.48	0.37	0.58		
N1	Artemis	Kalydon	5	2.17	2.31	0.89	0.95	2.87	0.56	0.70		
N2	Poseidon	Velvina (Molykreion)	6	2.20	2.33	0.90	0.96	2.64	0.61	0.69		
N3	Apollo Ismenios	Thebes	5	2.03				2.32				
N5	Hera	Plataia	2	2.99								
N6	Apollo Daphnephoros	Eretria	2	2.33				2.72				
N7	Dionysos	Eretria	5	1.85				2.48				
N9	Zeus Ammon	Aphytis (Kallithea)	6	1.88								
N10	Apollo	Ambrakia (Arta)	3	2.12								
N12	Unknown	Kassope	6									
N13	Zeus	Stratos	6	1.86	1.95	0.91	0.95	2.14	0.58	0.63	2.95	2.45
N14	Zeus	Passaron	6									

Appendix IV.1: Ratios between the Plan Element Measurements

Cat No.	Name	Location	Date Group	FoL/FoW	SL/SW	SW/FoW	SL/FoL	CeL/CeW	CeW/SW	CeL/SL	SL/FlC	FlS/LD
N15	Fourth c. Apollo	Delphi	6	2.53	2.68	0.91	0.96	3.31	0.62	0.76	3.88	2.28
N16	Sixth c. Apollo	Delphi	2	2.50				3.31				
N17	Athena	Delphi	2	2.00	2.07	0.93	0.97	2.67	0.58	0.75	2.29	2.48
N18	Athena Kranaia	Elateia	3	2.39	2.39	1.00	1.00				2.12	3.00
N19	Apollo	Kalapodi (Hyampolis)	2	1.90	1.93	0.96	0.98					
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4	2.39				3.13				
N21	Apollo	Metropolis	2			1.00		2.90	0.60			
N22	Unknown	Pherai	6									
N23	Artemis	Korkyra	1	2.09	2.14	0.96	0.98	3.56	0.44	0.73		
N24	Kardaki	Korkyra	2			0.94			0.62			3.71
N25	Hera (Mon Repos)	Korkyra	5									
O1	Athena	Assos	2	2.12	2.16	0.96	0.98	2.80	0.57	0.74	2.33	2.68
O8	Apollo	Delos	3	2.17	2.29	0.91	0.96	2.85	0.58	0.72	2.19	2.42
O11	Zeus	Cyrene	3	2.19	2.24	0.96	0.98	2.96	0.57	0.75	4.02	2.16
O12	Apollo	Cyrene	2									
O13	Unknown	Apollonia	6	1.85								
P1	Athena	Alipheira	3	2.78	2.83	0.97	0.99	4.44	0.50	0.79		
P2	Hera	Argive Heraion	4	1.98				2.95				
P3	Unknown	Agios Elias	3	2.13	2.45	0.79	0.90	3.25	0.57	0.76		
P4	Apollo Epikourios	Bassai	4	2.50	2.64	0.92	0.97	3.25	0.59	0.73	2.56	2.40
P5	Unknown	Orchomenos	2			1.00		4.47	0.44			
P6	Athena Alea	Tegea	6	2.35				2.94				

Appendix IV.1: Ratios between the Plan Element Measurements												
Cat No.	Name	Location	Date Group	FoL/FoW	SL/SW	SW/FoW	SL/FoL	CeL/CeW	CeW/SW	CeL/SL	SL/FlC	FlS/LD
P7	Apollo	Corinth	1	2.44	2.49	0.95	0.97	3.43	0.57	0.78	3.59	2.28
P8	Apollo	Sikyon	6	3.30	3.30	1.00	1.00		0.55			
P9	Asklepios	Epidauros	5	1.85	1.94	0.91	0.95	2.42	0.57	0.71	2.12	2.46
P10	Asklepios	Gortys	5	1.78				2.20				
P11	Akropolis Temple	Gortys	5	2.00								
P12	Poseidon	Hermione	2	2.03				2.90				
P13	Poseidon	Isthmia	3	2.52								
P14	Poseidon	Kalaureia (Poros)	2	1.91								
P15	Demeter	Lepreon	5	1.81	1.94	0.87	0.93	2.01	0.61	0.63	1.84	2.36
P16	Athena	Makiston	3	2.19	2.32	0.90	0.95	2.82	0.58	0.70	2.53	2.77
P17	Zeus	Nemea	6	2.02	2.12	0.91	0.96	2.68	0.58	0.73	3.55	2.30
P18	Hera	Olympia	1	2.54	2.67	0.93	0.98	3.79	0.57	0.81	3.13	2.61
P19	Metroon	Olympia	5	1.85	1.95	0.89	0.94	1.94	0.67	0.67	1.88	2.36
P20	Zeus	Olympia	3	2.21	2.32	0.92	0.96	3.04	0.58	0.76	4.93	2.36
P21	Athena	Prasidaki	3	2.23	2.27	0.93	0.94	2.78	0.59	0.72	2.56	2.49
P22	Unknown	Troizen	6	1.83				2.15				
P23	Athena	Vigla	2	2.11								
P24	Temple C	Pallantion	3	2.19				3.40				
P25	Unknown	Kalavryta	2	2.50								
S1	Temple F (Concord)	Akragas	4	2.15	2.33	0.86	0.94	3.04	0.57	0.75	3.03	2.26
S2	Temple G (Hephaisteion)	Akragas	4	2.11	2.29	0.86	0.94	2.80	0.60	0.74	3.03	2.04
S3	Temple I (Dioskouroi)	Akragas	4	2.08				2.48				

Appendix IV.1: Ratios between the Plan Element Measurements												
Cat No.	Name	Location	Date Group	FoL/FoW	SL/SW	SW/FoW	SL/FoL	CeL/CeW	CeW/SW	CeL/SL	SL/FlC	FlS/LD
S4	Temple A (Herakles)	Akragas	2	2.49	2.65	0.91	0.97	3.43	0.55	0.71	4.47	2.21
S5	Temple D (Hera Lacinia)	Akragas	4	2.07	2.25	0.86	0.93	2.89	0.58	0.75	2.93	2.23
S6	Temple E (Athena)	Akragas	3									
S7	Temple L	Akragas	4	2.10								
S8	Zeus Olympios (Temple B)	Akragas	3	2.02	2.09	0.94	0.97	2.30	0.83	0.92	7.86	1.90
S9	Aphrodite	Akrai	2	2.16								
S10	Temple B (Athena)	Gela	1	1.98								
S11	Temple C	Gela	3									
S12	Victory	Himera	3	2.34	2.49	0.89	0.95	3.55	0.50	0.71	4.00	2.20
S13	Unknown	Segesta	4	2.33	2.51	0.88	0.95				4.15	2.25
S15	Temple A	Selinous	3	2.33	2.50	0.89	0.96	3.26	0.55	0.71	2.88	2.14
S16	Temple C	Selinous	2	2.70	2.66	0.91	0.90	3.97	0.44	0.65	3.75	1.99
S17	Temple D	Selinous	3	2.13	2.36	0.84	0.93	3.98	0.42	0.71	4.28	2.69
S18	Temple E	Selinous	3	2.54	2.68	0.92	0.97		0.56		4.52	2.10
S19	Temple F	Selinous	3	2.32	2.54	0.86	0.94		0.38		4.42	2.53
S20	Temple G	Selinous	3	2.13	2.20	0.94	0.97				6.48	2.23
S21	Temple O	Selinous	3									
S22	Apollo	Syracuse	1	2.38	2.55	0.88	0.94	3.16	0.55	0.68	3.23	1.80
S23	Athena	Syracuse	3	2.37	2.50	0.91	0.96		0.56		3.96	2.11
S24	Zeus	Syracuse	1	2.56	2.77	0.88	0.95				3.65	2.03
S25	Temple A	Megara Hyblaia	2	2.36				3.66				

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	**Name**	**Location**	**Date Group**	**CH/LD**	**LD/UD**	**SW/CH**	**SL/CH**	**CH/FS**	**CH/FlS**	**SW/EntH**	**CH/EntH**	**ArH/FrH**	**MW/FrH**	**TW/FrH**
A2	Olympieion	Athens	2											
A3	Athena Polias	Athens	2							8.15		0.953	0.87	0.56
A4	First Temple of Poseidon	Sounion	3											
A5	Old Parthenon	Athens	3											
A6	Hephaisteion	Athens	4	5.61	1.29	2.4	5.56	2.21	2.21	8.24	3.43	1.01	0.94	0.62
A7	Apollo Delphinios	Athens	4											
A8	Parthenon	Athens	4	5.43	1.27	2.96	6.66	2.43	2.43	11.64	3.93	1.032	0.98	0.65
A9	Second Temple of Poseidon	Sounion	4	6.02	1.31	2.19	5.07	2.43	2.43	8.1	3.69	1.006	0.89	0.63
A10	Athena	Pallene	4											0.66
A11	Nemesis	Rhamnous	4	5.74	1.3	2.43	5.23	2.15	2.15	8.71	3.59	0.984	0.99	0.65
A12	Artemis	Loutsa	6											
A13	Apollo	Aigina	2										1.00	
A14	Aphaia	Aigina	3	5.33	1.34	2.61	5.47	2.01	2.06	8.3	3.18	1.024	0.98	0.62
A15	Athena	Megara	2											
A16	Athena	Karthaia (Keos)	2		1.3									
I1	Unknown	Hipponion	2											
I2	Unknown	Kaulonia	4											
I3	Hera	Kroton	3	4.66	1.34									

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	**Name**	**Location**	**Date Group**	**CH/LD**	**LD/UD**	**SW/CH**	**SL/CH**	**CH/FS**	**CH/FlS**	**SW/EntH**	**CH/EntH**	**ArH/FrH**	**MW/FrH**	**TW/FrH**
I4	Casa Marafioti	Locri Epizephyrioi	2		1.24								0.84	0.73
I5	Hera	Tavole Palatine	2	4.88	1.36	3.08	6.39	1.77	1.79					
I6	Temple Aii (Apollo Lykeios)	Metaponto	2		1.32									
I7	Temple Bii	Metaponto	2											
I8	Athena	Poseidonia	2	4.85	1.5	2.37	5.37	2.33	2.33	7.43	3.13	1.126	0.83	0.60
I9	Hera I (Basilica)	Poseidonia	2	4.45	1.48	3.79	8.41	2.25	2.08					
I10	Heraion	Foce del Sele	2		1.51							1.193	0.71	
I11	Hera II (Poseidon)	Poseidonia	4	4.33	1.37	2.74	6.75	1.99	1.97	8.32	3.04	1.038	0.92	0.64
I12	Unknown	Taranto	1	4.46	1.23									
I13	Minerva	Pompeii	2											
N1	Artemis	Kalydon	5											
N2	Poseidon	Velvina (Molykreion)	6											
N3	Apollo Ismenios	Thebes	5											
N5	Hera	Plataia	2											
N6	Apollo	Eretria	2											

Appendix IV.2: Ratios between the Elevation Element Measurements

Cat No.	Name	Location	Date Group	CH/LD	LD/UD	SW/CH	SL/CH	CH/FS	CH/FlS	SW/EntH	CH/EntH	ArH/FrH	MW/FrH	TW/FrH
	Daphnephoros													
N7	Dionysos	Eretria	5											0.75
N9	Zeus Ammon	Aphytis (Kallithea)	6											
N10	Apollo	Ambrakia (Arta)	3											
N12	Unknown	Kassope	6											
N13	Zeus	Stratos	6	6.13	1.28	2.1	4.1	2.5	2.5	9.4	4.46	0.872	1.01	0.66
N14	Zeus	Passaron	6											
N15	Fourth c. Apollo	Delphi	6	5.91	1.29	2.05	5.49	2.56	2.59				0.87	0.58
N16	Sixth c. Apollo	Delphi	2		1.36							1.031	0.88	0.60
N17	Athena	Delphi	2	4.72	1.31	2.88	5.97	1.85	1.9					
N18	Athena Kranaia	Elateia	3		1.38									
N19	Apollo	Kalapodi (Hyampolis)	2											
N20	Artemis Elaphebolos	Kalapodi (Hyampolis)	4											
N21	Apollo	Metropolis	2											
N22	Unknown	Pherai	6											
N23	Artemis	Korkyra	1										0.84	0.56
N24	Kardaki	Korkyra	2	4.88	1.33	4		1.31	1.31					

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	Name	Location	Date Group	CH/LD	LD/UD	SW/CH	SL/CH	CH/FS	CH/FlS	SW/EntH	CH/EntH	ArH/FrH	MW/FrH	TW/FrH
N25	Hera (Mon Repos)	Korkyra	5											
O1	Athena	Assos	2	5	1.46	3.07	6.63	1.79	1.87	8.79	2.86	1.055	1.02	0.67
O8	Apollo	Delos	3	5.5	1.31	2.4	5.49	2.27	2.27	8.23	3.43	1.034	0.90	0.64
O11	Zeus	Cyrene	3	4.61	1.34	3.42	7.65	2.13	2.13	9.18	2.68	1.25		
O12	Apollo	Cyrene	2		1.29								0.72	0.55
O13	Unknown	Apollonia	6											
P1	Athena	Alipheira	3							7.61		0.997	0.84	0.63
P2	Hera	Argive Heraion	4		1.29								0.92	0.61
P3	Unknown	Agios Elias	3		1.36									0.73
P4	Apollo Epikourios	Bassai	4	5.36	1.25	2.44	6.43	2.2	2.23	8.71	3.57	1	0.96	0.64
P5	Unknown	Orchomenos	2											
P6	Athena Alea	Tegea	6	6.16	1.28						4.64	0.89	0.99	0.65
P7	Apollo	Corinth	1	4.4	1.34	2.98	7.43	1.8	1.93					
P8	Apollo	Sikyon	6											
P9	Asklepios	Epidauros	5		1.52					9.27		0.887	1.00	0.64
P10	Asklepios	Gortys	5											
P11	Akropolis Temple	Gortys	5											
P12	Poseidon	Hermione	2											

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	**Name**	**Location**	**Date Group**	**CH/LD**	**LD/UD**	**SW/CH**	**SL/CH**	**CH/FS**	**CH/FlS**	**SW/EntH**	**CH/EntH**	**ArH/FrH**	**MW/FrH**	**TW/FrH**
P13	Poseidon	Isthmia	3											
P14	Poseidon	Kalaureia (Poros)	2											
P15	Demeter	Lepreon	5		1.3					8.89		0.975	0.99	0.64
P16	Athena	Makiston	3		1.31								0.90	0.60
P17	Zeus	Nemea	6	6.34	1.25	1.95	4.12	2.75	2.76	9.21	4.74	0.895	0.99	0.63
P18	Hera	Olympia	1	4.18	1.26	3.59	9.58	1.47	1.6					
P19	Metroon	Olympia	5		1.31					8.25		0.952	0.89	0.61
P20	Zeus	Olympia	3	4.72	1.32	2.65	6.15	2	2	7.89	2.97	1.016	0.89	0.61
P21	Athena	Prasidaki	3							8.96		1.05	0.98	0.75
P22	Unknown	Troizen	6											
P23	Athena	Vigla	2											
P24	Temple C	Pallantion	3											
P25	Unknown	Kalavryta	2											
S1	Temple F (Concord)	Akragas	4	4.73	1.28	2.52	5.88	2.1	2.09	7.62	3.02	0.991	0.86	0.57
S2	Temple G (Hephaisteion)	Akragas	4											
S3	Temple I (Dioskouroi)	Akragas	4	4.78	1.26						3.14	0.999	0.82	0.55
S4	Temple A (Herakles)	Akragas	2	4.83	1.42	2.52	6.65	2.18	2.18	8.13	3.23	1.056	0.86	0.66
S5	Temple D	Akragas	4	4.6	1.29	2.68	6.03	2.03	2.06	7.86	2.94	1.111	0.90	0.60

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	Name	Location	Date Group	CH/LD	LD/UD	SW/CH	SL/CH	CH/FS	CH/FlS	SW/EntH	CH/EntH	ArH/FrH	MW/FrH	TW/FrH
	(Hera Lacinia)													
S6	Temple E (Athena)	Akragas	3											
S7	Temple L	Akragas	4	4.69	1.33									
S8	Zeus Olympios (Temple B)	Akragas	3		1.39					8.16		1.084	0.74	0.58
S9	Aphrodite	Akrai	2											
S10	Temple B (Athena)	Gela	1											
S11	Temple C	Gela	3											
S12	Victory	Himera	3											
S13	Unknown	Segesta	4	4.83	1.25	2.48	6.21	2.15	2.14	7.98	3.22	1.001	0.90	0.60
S15	Temple A	Selinous	3		1.37					7.48		1.042	0.82	0.60
S16	Temple C	Selinous	2	4.44	1.29	2.78	7.39	1.96	2.23	7.42	2.67	1.209	0.71	0.67
S17	Temple D	Selinous	3	5	1.4	2.83	6.67	1.91	1.86	7.69	2.72	1.064	0.81	0.71
S18	Temple E	Selinous	3	4.61	1.27	2.45	6.56	2.19	2.19	7.23	2.95	1.04	0.81	0.55
S19	Temple F	Selinous	3	5.01	1.46	2.68	6.79	2.04	1.98	8.1	3.03	1.02	0.85	0.69
S20	Temple G	Selinous	3		1.55					8.88		1.442	0.85	0.58
S21	Temple O	Selinous	3											
S22	Apollo	Syracuse	1	4.31	1.23	2.69	6.88	2.12	2.4					
S23	Athena	Syracuse	3	4.44	1.33	2.53	6.31	2.12	2.11	7.69	3.04	1.061	0.90	0.59
S24	Zeus	Syracuse	1		1.3									

Appendix IV.2: Ratios between the Elevation Element Measurements														
Cat No.	**Name**	**Location**	**Date Group**	**CH/LD**	**LD/UD**	**SW/CH**	**SL/CH**	**CH/FS**	**CH/FlS**	**SW/EntH**	**CH/EntH**	**ArH/FrH**	**MW/FrH**	**TW/FrH**
S25	Temple A	Megara Hyblaia	2											

Appendix V: Catalogue

A2: The Olympieion at Athens

Region:	Attica		
Date Range:	530 – 510	**Date Group:**	2
Reasons for Date:			
Vitruvius (Preface to 7.15) states that the architects Antistates, Callaeschros, Antimachides, and Porinos laid the foundations of the temple for Peisistratos (566-527). Aristotle (*Politics* 1313b) speaks of the "building of the Olympieion" by the Peisistratids (527-510). Wycherley (1964: 163; 1978: 156) does not believe, however, that this is a contradiction, as Peisistratos may have conceived the design, appointed the architects; and saw the site prepared. His sons then pursued the project. The filling thrown into the temple while it was under construction, contained sherds dating to 530. Travlos (1971: 402) and Boersma (1970: 25) believe that the evidence from the pottery, as well as from Aristotle and Vitruvius, suggests the building was begun under the younger Peisistratos in 515. Shapiro (1989: 112) dates the start of construction to the 520's; whilst, Lawrence (1996: 80) dates the temple to 520.			
Deity:	Olympieion Zeus		
Evidence for Deity:			
Pausanias (1.18.6-8) and Strabo (9.4.2).			
Brief Description of Remains:			
Only the temple's foundations, the two lowest krepidoma steps and several dozen limestone column drums were ever produced. The column drums indicate that the temple would have been Doric. Suggestions for the size of the foundations vary between 30.50m by c.70m (Travlos 1971: 402) to 40.99m by 107.747m (Dinsmoor 1950: 91).			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Dinsmoor 1950: 91; Wycherley 1964: 163-166; 1978: 156; Boersma 1970: 25; Shear Jr. 1978: 10; Travlos 1971: 402; Shapiro 1989: 112; Lawrence 1996: 80; Camp 2001: 36.

A3: The Temple of Athena Polias at Athens

Region:	Attica		
Date Range:	520 – 500	**Date Group:**	2

Reasons for Date:

It has been suggested that the temple foundations belong to two building phases; the first was a simple cella structure of early sixth century date, with a peristyle added towards the end of the sixth century (Plommer 1960: 130; Boersma 1970: 20; Robertson 1979: 88). However, it is now generally agreed that the foundations belong to a single building phase, associated with either the Peisistratids (Travlos 1971: 143; Dinsmoor 1950: 90) or the democracy (Childs 1993: 404-405; 1994: 3; Hurwit 1999: 121; Camp 2001: 43, 54).
Thus, based upon an assumption that the temple should be associated with the Peisistratids, the temple has traditionally been dated to the 520's (Dinsmoor 1950: 90; Boersma 1970: 20; Travlos 1971: 143). However, it has recently been suggested that both the sculpture and the design of the temple indicate a date closer to the end of the century (Camp 1994; Childs 1994: 3).

Deity:	Athena Polias

Evidence for Deity:

Pausanias (1.27).

Brief Description of Remains:

The foundations of the Temple of Athena Polias survive in place near the centre of the Akropolis, just south of the later Erechtheion (Camp 2001: 43). The use of large sections of the temple's entablature to help construct the Akropolis' North Wall has resulted in a remarkable level of preservation (Plommer 1960: 133 n.24). The temple also appears to have one of the earliest instances of pedimental sculpture carved in the round, rather than in relief (Dinsmoor 1950: 90). The cella measurements reported by Plommer (1960: 129) have been used; however, Robertson (1979: 326) suggests cella measurements of 12.3m by 33.5m. Although Wiegand (1904: 121, 122) publishes dimensions for the temple's capitals, these are now felt to be wrong (Ferrari 2002: 22 n.56). Although Childs (1994: 2 n.21, Figure 1b) publishes a new drawing of the capital, unfortunately, no new measurements are included.

Key Measurements:

FoW:	21.85	**FoL:**	43.95	**SW:**	21.3	**SL:**	43.15
KrSt:	1	**CeW:**	13.45	**CeL:**	34.7		
FC:	6	**FlC:**	12	**FS:**	4.042	**FlS:**	3.834
Rmp:		**DF:**					
LD:	1.55	**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:	1.275	**FrH:**	1.338	**MW:**	1.167	**TW:**	0.753
ScuM:		**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Wiegand 1904: 121, 122; Dinsmoor 1950: 90, 337; Plommer 1960: 129-134; Boersma 1970: 20; Robertson 1979: 88, 326; Travlos 1971: 143; Childs 1994; Hurwit 1999: 121-123; Camp 2001: 43, 54; Spawforth 2006: 138.

A4: The First Temple of Poseidon at Sounion

Region:	Attica		
Date Range:	490 – 480	**Date Group:**	3

Reasons for Date:

Boersma (1970: 36) dates the temple to 500, due to the use of poros, suggesting that if construction were begun after 490, Pentelic marble would have been used. However, Boersma continues, the temple was constructed using local, marble-like limestone, and the colonnade added to the Temple of Athena at Sounion in about 450 was also made of the same local stone, and so it is difficult to date the initiation of construction upon the temple. Dinsmoor (1950: 107), Robertson (1979: 327) and Camp (2001: 308) date the temple on Cape Sounion to around 490-480. Building was interrupted before the roof was added and the columns fluted, Boersma (1970: 36) and Camp (2001: 308) presume the Persians destroyed the temple in 480/79.

Deity:	Poseidon

Evidence for Deity:

Inscriptions found near the temple indicate that the temple building belongs to Poseidon (Goette 2001: 203).

Brief Description of Remains:

The temple's poros krepidoma is preserved up to the second step, under the marble krepidoma of the second temple (Doerpfeld 1884: 329). Numerous fragments of its limestone Doric capitals, wall blocks, column drums and architraves were built into the foundations of the later temple of Poseidon or reused in the Sanctuary of Athena on the lower hill (Camp 2001: 308).

Key Measurements:

FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**	0.74	**TW:**	0.52
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Doerpfeld 1884: 329-335; Dinsmoor 1950: 107; Boersma 1970: 36; Robertson 1979: 327; Lawrence 1996: 99-131; Goette 2001: 203; Camp 2001: 308; Spawforth 2006: 145.

A5: The Old Parthenon at Athens

Region:	Attica		
Date Range:	490 – 480	**Date Group:**	3

Reasons for Date:

The Old Parthenon has been variously dated between the late sixth century and the middle of the fifth century (see Dinsmoor 1934: 408-416 for late 19th/ early 20th century discussions of the date). However, the oldest potsherds within the terrace fill date to 490, thus, providing the date after which the temple was begun (Indeed, Dinsmoor (1934) proposed a very specific date for the commencement of construction of the 31st August 448). The traces of fire on the marble indicate that construction probably stopped with the Persian invasion of 480 (Dinsmoor 1934: 416-441; 1950: 150; Whitley 2001: 342). Further to this, Seki (1984: 77) argues that the Old Parthenon must have been built between 490 and 480 when "the golden section" was most preferred by the artists in Athens.

Deity:	Athena Parthenos

Evidence for Deity:

See the Parthenon (entry A8).

Brief Description of Remains:

Inside the krepidoma of the present Parthenon and at the same level there exists the substantial remains of a krepidoma of three steps. The lowest step was of kara stone, the 2 upper steps were of marble, like the column drum (Plommer 1960: 135). Unfortunately, the foundations are not preserved to their full extent, on the most complete side (the south) the south-east corner is missing and as such, the foundation measurements reported by Hill (1912: 545-546) as 69.616m by 26.190m are based upon the assumption that the relationship between the poros platform and the kara step is the same on all sides.

Due to the Persian invasion, the temple was never completed and consequently, nothing survives above the column shafts and even these are unfinished (Plommer 1960: 135; Seki 1984: 77).

Key Measurements:

FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:	3	**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.903	**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Hill 1912; Dinsmoor 1950: 150 n.1; Plommer 1960: 135; Coulton 1974; Hurwit 1999: 132; Whitley 2001: 342.

A6: The Hephaisteion at Athens

Region:	Attica		
Date Range:	450 – 440	**Date Group:**	4
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.7.			
Deity:	Hephaistos		
Evidence for Deity:			
The temple has been assigned to a number of deities, notably Theseus, Eukleia (Artemis), or Theseus and Herakles (Wycherley 1978: 68; Camp 2001: 82). Camp (1986: 82; 2001: 103) and Delivorrias (1997: 83) argue, however, that Hephaistos was worshipped in the temple with Athena (as Athena Hephaistia). The identification comes from Pausanias (1.14.6) who described the Hephaisteion as above the Agora and the Royal Stoa. Berve and Gruben (1963: 391) further highlight that the workshops of smiths and bronze founders, discovered nearby also provides evidence for the attribution to Hephaistos.			
Brief Description of Remains:			
The Hephaisteion is very well preserved, having been converted into a church in the seventh century A.D. (Camp 2001: 103). Unusually, the capital measurements reported for this temple include the height of the annulets in the echinus height, rather than the necking height, as such, the respective ratios have been taken from the capital drawing and applied to the reported measurements to ensure that they are comparable to the other capitals in the study. Furthermore, a number of different measurements are reported for the frieze elements:			

FrH	**TW**	**MW**	**Reference**
0.813	0.507	0.761	Holland 1917: 144
0.828	0.515 0.53 (Corner)	0.775 0.795 (Corner)	Koch 1955: Tafel 53
0.828	0.519	0.772	Miles 1989: 184

The difference between the measurements provided by Miles and Koch only differ on the mm scale, whereas those reported by Holland are significantly different. As the most widely utilised measurements in later temple reports (see Coulton 1974 and Wilson Jones 2001: 702), the measurements provided by Koch are utilised in this study.

Key Measurements:							
FoW:	15.42	**FoL:**	33.48	**SW:**	13.708	**SL:**	31.769
KrSt:	3	**CeW:**	7.948	**CeL:**	22.559		
FC:	6	**FlC:**	13	**FS:**	2.583	**FlS:**	2.581
Rmp:		**DF:**					
LD:	1.018	**CH:**	5.712	**UD:**	0.79	**Flts:**	20
AbH:	0.2	**AbW:**	1.141	**EH:**	0.154	**NH:**	0.149
ArH:	0.836	**FrH:**	0.828	**MW:**	0.775	**TW:**	0.515
ScuM:	TRUE	**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:
Dinsmoor 1939: 28; 1941; 1950: 180, 338; Plommer 1950: 67-78; Koch 1955; Berve and Gruben 1963: 391; Meiggs 1963: 39; Boersma 1970: 59; Wycherley 1978: 68; Mertens 1984: 219; Camp 1986: 82-87; 2001: 102, 103; Miles 1989: 169, 222; Lawrence 1996: 129, 133; Delivorrias 1997: 83, 93; Wilson Jones 2001: 702; Boardman 2005: 146.

A7: The Temple of Apollo Delphinios at Athens

Region:	Attica		
Date Range:	450 – 440	**Date Group:**	4
Reasons for Date:			
The date of the building is indicated by the pottery from the foundations, the excellent workmanship of the architecture and the use of Parian marble for the simas and the central acroteria on the pediments (Travlos 1971: 83). Wycherley (1978: 166) and Travlos (1971: 83) date the building to the mid-fifth century and Lawrence (1996: 129) dates the temple as similar to the Hephaisteion (450-440).			
Deity:	Apollo Delphinios		
Evidence for Deity:			
The first letters of Apollo's name are preserved on four potsherds, suggesting that the foundations should be associated with the Temple of Apollo Delphinios mentioned by Pausanias (1.19.1) as being near the Olympieion (Travlos 1971: 83; Goette 2001: 101).			
Brief Description of Remains:			
The temple's foundations are preserved *in situ*; however, evidence for the elevation is limited to 4 fragments, including a stylobate block, a column drum and an anta capital (Travlos 1971: 83).			

Key Measurements:							
FoW:	15.26	**FoL:**	33.08	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Vanderpool 1962: 389; Wycherley 1978: 166; Travlos 1971: 83, 84, Figure 107; Lawrence 1996: 129; Goette 2001: 101; Spawforth 2006: 135.

A8: The Parthenon

Region:	Attica		
Date Range:	447 – 432	**Date Group:**	4

Reasons for Date:

Building accounts are preserved on stone; these demonstrate that construction began in 447 and that the work had progressed sufficiently for the chryselephantine statue of Athena to be dedicated in 438. Further work, primarily on the ornamental sculpture of the temple, continued until 433/2 (Camp 2001: 74; Rhodes 2005: 62; Barringer 2008: 62).

Deity:	Athena Parthenos

Evidence for Deity:

Although the building housed a statue, it need not be thought of as an expression of Athenian religious fervour; there is no known priestess of Athena Parthenos, and no altar was built to accompany the temple nor was it connected to any of the great festivals. Throughout antiquity the focal point of cult activity on the Akropolis was to be found on the north side, the area occupied in the fifth century by the Erechtheion (Herington 1955: 37; Burkert 1988: 29; Camp 2001: 81). Herington (1955: 37) further suggests that the chryselephantine statue of Athena Parthenos should be seen as a large votive. The Parthenon served primarily as the repository of state funds and other offerings belonging to the Athenians (Camp 2001: 80, 81; Barringer 2008: 62).

Brief Description of Remains:

The Parthenon’s various elements are well preserved, allowing for their dimensions to be included within the database. The metopes of the temple’s exterior frieze vary in width between 1.23m and 1.33m (1.175m at the corners), however, the width of 1.284m was used in the database as the measurement recorded by Holland (1917: 144).

Key Measurements:

FoW:	33.69	**FoL:**	72.32	**SW:**	30.88	**SL:**	69.503
KrSt:	3	**CeW:**	22.34	**CeL:**	59.06		
FC:	8	**FlC:**	17	**FS:**	4.2965	**FlS:**	4.2915
Rmp:		**DF:**					
LD:	1.922	**CH:**	10.433	**UD:**	1.513	**Flts:**	20
AbH:	0.345	**AbW:**	2.01	**EH:**	0.285	**NH:**	0.225
ArH:	1.348	**FrH:**	1.306	**MW:**	1.284	**TW:**	0.845
ScuM:	TRUE	**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Holland 1917; Dinsmoor 1950: 338; Herington 1955; Robertson 1979: 328; De Waele 1984; Mertens 1984: 219; Burkert 1988: 29; Camp 2001: 74-81; Rhodes 2005: 62; Berletta 2005: 72; Barringer 2008: 62.

A9: The Second Temple of Poseidon at Sounion

Region:	Attica		
Date Range:	450-430	**Date Group:**	4

Reasons for Date:

Aristophanes in *Clouds* (401), which was produced in 423, says that Zeus struck his own temple, and Sounion with lightning, which Boersma (1970: 77) believes, indicates that a temple was present on the site in that year. Dinsmoor (1950: 182) dates the temple to 444 due to its similarity to the Hephaisteion. Lawrence (1996: 130) and Goette (2001: 203) date the temple to about 440 Boardman (2005: 146) dates the pieces of frieze and pediment sculpture to the 430's.

Deity:	Poseidon

Evidence for Deity:

Inscriptions found near the temple indicate that the temple building belongs to Poseidon (Goette 2001: 203).

Brief Description of Remains:

The marble temple is well preserved, with sixteen columns remaining *in situ* and 15 of the original 64 frieze blocks still on the site (Miles 1989: 184; Spawforth 2006: 145). Dinsmoor (1940: 22; 1950: 338) records a lower diameter of 1.043m; however, Plommer (1950: 82) argues that this cannot be correct and states that the lower diameter measure 1.02m, which is very similar to the 1.01m lower diameter, reported by Doerpfeld (1884: 335) and so has been used in this study. Thereby, allowing for all the necessary measurements to be included within the analysis.

Key Measurements:

FoW:	15.2	**FoL:**	32.8	**SW:**	13.47	**SL:**	31.124
KrSt:	3	**CeW:**	8.32	**CeL:**	21.2		
FC:	6	**FlC:**	13	**FS:**	2.522	**FlS:**	2.522
Rmp:		**DF:**					
LD:	1.02	**CH:**	6.14	**UD:**	0.779	**Flts:**	16
AbH:	0.198	**AbW:**	1.108	**EH:**	0.158	**NH:**	0.133
ArH:	0.834	**FrH:**	0.829	**MW:**	0.737	**TW:**	0.521
ScuM:		**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Doerpfeld 1884; Dinsmoor 1940: 21, 22; 1950: 182, 338; Plommer 1950: 78-94; Boersma 1970: 77; Coulton 1974; Mertens 1984: 219; Miles 1989: 169, 184; Lawrence 1996: 130; Camp 2001: 109, 308; Goette 2001: 203; Wilson Jones 2001: 704; Boardman 2005: 146, 147; Spawforth 2006: 145.

A10: The Temple of Athena at Pallene

Region:	Attica		
Date Range:	440 – 420	**Date Group:**	4

Reasons for Date:

Comparisons to the Hephaisteion and the Temple of Poseidon at Sounion suggest a date around 440 (Dinsmoor 1950: 182; Camp 1986: 184). Freyer (cited in Boersma 1970: 77) dates the sculpture between 430 and 420. Boersma (1970: 77) suggests however, that this is unlikely given the political circumstances, as from 431 onwards the Attic countryside was overrun yearly by the Spartans and the epidemics of 430/29 and 427/6 could hardly have encouraged temple-building.

Deity:	Athena

Evidence for Deity:

Pausanias' (1.8.4) account of this part of the Agora, suggests the temple belongs to Ares (Camp 1986: 185). Wycherley (1978: 84) believes the dedication to Ares suggests the temple may have originally stood on the Areopagus, although there is no record of a temple there. In contrast, Boersma (1970: 77) suggests the temple originally stood in Acharnai. However, the sanctuary was only of local importance, for no reference is made to it in ancient literature and its treasury was not included among those of the other gods. Goette (2001: 237), Camp (2001: 117) and Spawforth (2006: 137, 144) suggest that the architecture may have once belonged to the abandoned foundations of the right date and size found at Pallene, and the building may be the temple of Athena Pallenis.

Brief Description of Remains:

The discovery of the temple's foundations in Pallene means that they can be included in the analysis; however, the poor state of survival in relation to the krepidoma steps means that the number of krepidoma steps and the stylobate dimensions cannot. Likewise, only small fragments of the elevation have survived, meaning that most measurements cannot be included in the data-set. Dinsmoor (1950: 182) speculated that the temple may have had sculpted metopes; however, McAllister (1959: 21) highlights that there is no evidence to suggest this. More recently, Travlos (1971: 104), Wycherley (1978: 85) and Boardman (2005: 147) have argued that a number of sculpted fragments belong to a pronaos frieze.

Key Measurements:

FoW:	16.32	**FoL:**	32.25	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**	0.838	**MW:**		**TW:**	0.555
ScuM:		**ScuP:**		**ScuC:**	TRUE	**ScuO:**	

References:

Dinsmoor 1940; 1950: 182, 338; McAllister 1959; Boersma 1970: 77; Coulton 1974; Wycherley 1978: 84; Camp 1986: 184, 185; 2001: 117; Miles 1989: 184; Blackman 1999-2000: 17; Goette 2001: 237; Boardman 2005: 146; Spawforth 2006: 136, 137, 144.

A11: The Temple of Nemesis at Rhamnous

Region:	Attica		
Date Range:	430 – 420	**Date Group:**	4

Reasons for Date:

The carved mouldings suggest that work was being done on the temple in the 430s and perhaps in the 420s, though it was clearly left unfinished (Camp 2001: 112). Boardman (2005: 147) dates the cult statue to around 425. Miles (1989: 226) suggests that the date of the Parthenon (A8; 447-438) provides a *terminus post quem* for the Temple of Nemesis as the form of the sima, the decoration on the coffer lids, and the anta capitals were inspired by those on the Parthenon. Therefore, Miles (1989: 227) proposes that from the style of the capitals, and cult statue, as well as the decorative elements, the temple was built between 430 and 420.

Deity:	Nemesis

Evidence for Deity:

Pausanias (1.33.2).

Brief Description of Remains:

When Gandy visited the site, the steps and stylobate were completely preserved in place. Today the lowest step is preserved except at the south-east and north-east corners; the second step is missing along the entire east front and at the north-west corner; and the stylobate step is preserved only along two-thirds of the south side and a small part of the west end (Miles 1989: 153). Fifty column drums and fragments of drums were found on the site, five of them were bottom drums almost in place on the stylobate (Miles 1989: 157). Holland (1917: 144) reported that the frieze height was 0.566m, the triglyph width was 0.373m and the metope width was 0.516m; however, as the most recent analysis, Miles' (1989: 170) measurements have been used in the data-set.

Key Measurements:

FoW:	11.58	**FoL:**	22.76	**SW:**	9.96	**SL:**	21.431
KrSt:	3	**CeW:**	6.5	**CeL:**	15.045		
FC:	6	**FlC:**	12	**FS:**	1.904	**FlS:**	1.904
Rmp:		**DF:**					
LD:	0.714	**CH:**	4.101	**UD:**	0.551	**Flts:**	20
AbH:	0.13	**AbW:**	0.754	**EH:**	0.1	**NH:**	0.083
ArH:	0.567	**FrH:**	0.5765	**MW:**	0.5725	**TW:**	0.377
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Dinsmoor 1950: 339; Coulton 1974; Robertson 1979: 328; Miles 1989; Camp 2001: 112; Boardman 2005: 147; Spawforth 2006: 147.

A12: The Temple of Artemis at Loutsa

Region:	Attica		
Date Range:	400 – 300	**Date Group:**	6
Reasons for Date:			
The treatment of such architectural details as clamps (double T) and anathyrosis, as well as pottery and small finds from Papadimitriou's partial excavations, does not yield a precise date for this temple, but range from the late sixth through the fourth centuries B.C (Hollinshead 1985: 435). A small sounding against the foundations produced no fragments of pottery older than the fourth century (Hood 1957: 6).			
Deity:	Artemis Tauropolos		
Evidence for Deity:			
Euripides (IT 1447-61).			
Brief Description of Remains:			
On the south side the temple is preserved to the level of the stylobate; above this, nothing is conserved *in situ*, with only a few small fragments of the elevation surviving.			

Key Measurements:							
FoW:	14.11	**FoL:**	21.16	**SW:**	12.56	**SL:**	19.6
KrSt:	3	**CeW:**	7.23	**CeL:**	12.87		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	16
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Hood 1957: 6; Knell 1983a: 230; 1983c; Hollinshead 1985: 435; Goette 2001: 226; Spawforth 2006: 147.

A13: The Temple of Apollo on Aigina

Region:	Attica		
Date Range:	520 – 510	**Date Group:**	2
Reasons for Date:			
The sculpture and the proportions of the opisthodomos capital date the temple to the period 520-510 (Wurster 1974: 78; Spawforth 2006: 148).			
Deity:	Apollo		
Evidence for Deity:			
Aigina's patron deity (Spawforth 2006: 147).			
Brief Description of Remains:			
The temple is badly preserved having been used as a quarry. As such, no stylobate sections remain *in situ* (Wurster 1974; Goette 2001: 335). A relief panel in the Museum of Aigina may have been a metope belonging to the temple (Wurster 1974: 62).			

Key Measurements:							
FoW:	18.872	**FoL:**	34.325	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**	0.938	**MW:**	0.938	**TW:**	
ScuM:	TRUE	**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Dinsmoor 1950: 107; Bookidis 1967: 116-120; Wurster 1974; Goette 2001: 335; Spawforth 2006: 147, 148.

A14: The Temple of Aphaia on Aigina

Region:	Attica		
Date Range:	480-470	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.5.			
Deity:	Aphaia		
Evidence for Deity:			
Pausanias (2.30.3).			
Brief Description of Remains:			
The temple is extraordinarily well preserved, with enough fragments to include all the temple's measurements in the data-set. The most notable absence is the peristyle metopes. These were carved as slabs and inserted in grooves behind the triglyphs, it is assumed that these were marble and given carved decoration; however, no fragment of them has survived (Lawrence 1996: 99). Despite their absence, controversy rages as to the existence of a sculpted Doric frieze on this temple. Indeed, it has been suggested that the temple bore sculpted metopes, both above the pronaos and the peristyle, the metopes being of such high quality that they were stolen from the site by the Romans (Dinsmoor 1960: 314; Lawrence 1996: 99; Spawforth 2006: 148; Pfaff 2003a: 104). Pfaff (2003a: 104) suggests that the use of a 'slot' metope on the Temple of Aphaia indicates the presence of sculpted metopes; however, both the Hephaisteion and the Propylaia on the Athenian Akropolis have slot metopes that do not bear sculpture. Consequently, the lack of on-site evidence must exclude the existence of any sculpted frieze belonging to the Temple of Aphaia from the data-set.			

Key Measurements:							
FoW:	15.5	**FoL:**	30.5	**SW:**	13.77	**SL:**	28.815
KrSt:	3	**CeW:**	8.01	**CeL:**	22.54		
FC:	6	**FlC:**	12	**FS:**	2.618	**FlS:**	2.5605
Rmp:	2	**DF:**					
LD:	0.989	**CH:**	5.272	**UD:**	0.736	**Flts:**	20
AbH:	0.19	**AbW:**	1.22	**EH:**	0.227	**NH:**	0.158
ArH:	0.84	**FrH:**	0.82	**MW:**	0.8	**TW:**	0.505
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Furtwangler *et al*. 1906; Holland 1917; Dinsmoor 1950: 106, 107, 338; Coulton 1974; Winter 1978: 158; Robertson 1979: 327; Mertens 1984: 219; Lawrence 1996: 99, 100; Goette 2001: 343; Spawforth 2006: 148, 149.

A15: The Temple of Athena at Megara

Region:	Attica		
Date Range:	599 – 500	**Date Group:**	2
Reasons for Date:			
Finds indicate a date in the sixth century (Spawforth 2006: 149).			
Deity:	Athena		
Evidence for Deity:			
Pausanias (1.42.4)			
Brief Description of Remains:			
Only the rock cut trenches for the foundations survive (Payne 1934: 189; Robinson *et al*. 1936: 525).			

Key Measurements:							
FoW:	14.5	**FoL:**	35.5	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Payne 1934: 189; Robinson *et al*. 1936: 525; Spawforth 2006: 149.

A16: The Temple of Athena at Karthaia (Keos)

Region:	Attica		
Date Range:	520 – 500	**Date Group:**	2

Reasons for Date:

The plan, the capital and sima profiles appear to indicate a date in the final decades of the sixth century (Østby 1980: 211).

Deity:	Athena

Evidence for Deity:

The discovery of a large Athena torso possibly from the centre of the pediment or a central Akroterion (Østby 1980: 280; Spawforth 2006: 180).

Brief Description of Remains:

The stylobate is perfectly preserved, with no damage or dislocation of the blocks, and numerous column drums still *in situ* and preserved traces of all remaining columns on the stylobate blocks give a precise lay-out of the entire peristyle (Østby 1980: 190).

Key Measurements:

FoW:	12.76	**FoL:**	23.58	**SW:**	11.98	**SL:**	23.19
KrSt:	2	**CeW:**	6.66	**CeL:**	15.98		
FC:	6	**FlC:**	11	**FS:**	2.24	**FlS:**	2.25
Rmp:		**DF:**					
LD:	0.91	**CH:**		**UD:**	0.7	**Flts:**	20
AbH:	0.2	**AbW:**	1.17	**EH:**	0.23	**NH:**	0.155
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Østby 1980; Spawforth 2006: 180.

I1: The Unknown Temple at Hipponion

Region:	Italy		
Date Range:	525 – 500	**Date Group:**	2

Reasons for Date:

The roof terracottas appear to indicate a late sixth century date for the temple (Spawforth 2006: 116).

Deity:	Possibly Persephone

Evidence for Deity:

A number of votive statuettes of a seated goddess, possibly Persephone, may indicate the identity of the temple's deity (Giudo 1972: 187).

Brief Description of Remains:

Only the foundation measurements of the temple are preserved well enough to be included within this study (Guido 1972: 186). However, a few stone chips of columns and triglyphs indicate that the building was constructed of stone and built in the Doric order (Van Buren 1923: 24).

Key Measurements:

FoW:	20.5	**FoL:**	37.45	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Orsi 1921a: 480; Van Buren 1923: 24; Guido 1972: 186, 187; Spawforth 2006: 116.

I2: The Unknown Temple at Kaulonia

Region:	Italy		
Date Range:	430 – 420	**Date Group:**	4
Reasons for Date:			
The shape of the capital and the terracotta's indicate a date for the temple between 430 and 420 (Van Buren 1923: 9; Mertens 1984: 125; Barello 1995: 91; Spawforth 2006: 118).			
Deity:	Unknown		
Evidence for Deity:			
It has been suggested that the temple may be that of Apollo Katharsios (Guido 1972: 164).			
Brief Description of Remains:			
Of the ground-plan, only the foundations of the temple remain, the rest having been smashed up to make lime, meaning that very little of its ground plan can be ascertained (Orsi 1914: 844; Van Buren 1923: 9; Guido 1972: 164; Barello 1995: 88). One fragment of a column capital survives, possibly from the north-east part of the temple, whilst multiple architrave blocks survive, but, only one small fragment of triglyph is preserved (Orsi 1914: 847; Mertens 1984: 126).			

Key Measurements:							
FoW:	18.2	**FoL:**	41.2	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.902	**Flts:**	20
AbH:	0.264	**AbW:**	1.424	**EH:**	0.253	**NH:**	0.167
ArH:	1.01	**FrH:**		**MW:**		**TW:**	0.61
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Orsi 1914: 844-853; Van Buren 1923: 9; Guido 1972: 164; Robertson 1979: 327; Mertens 1984: 125, 126; Barello 1995: 88-91; Spawforth 2006: 118.

I3: The Temple of Hera at Kroton

Region:	Italy		
Date Range:	475 – 450	**Date Group:**	3
Reasons for Date:			
The refinements (curvature of the platform and columns inclined inwards) as well as the fragments of Parian marble pedimental sculpture indicate that this temple belonged to the second quarter of the fifth century (Dinsmoor 1950: 110; Spawforth 2006: 118).			
Deity:	Hera		
Evidence for Deity:			
Livy, *The History of Rome* 24.3			
Brief Description of Remains:			
Only individual elements of this temple remain to be measured, the rest having been torn up and carried away by Bishop Lucifero of Crotone at the beginning of the sixteenth century (Frothingham 1887: 181, 182). Only one column, from the north-east corner, remains standing, allowing for the column and capital measurements to be included in the data-set (Dinsmoor 1950: 110). The capital measurements used in the data-set are from Mertens (1984: 82), however, the earlier measurements by Abatino (1903: 357) are slightly different from those of Mertens (AbH: 0.425; AbW: 2.124; EH: 0.405; NH: 0.26). Marble statuary (now lost) once felt to belong to the metopes (Guido 1972: 168) is now assigned to the pediments (Spawforth 2006: 118). Only the foundations from the north-east corner survive; however, they suggest that the temple had a double front (Frothingham 1887: 182; Dinsmoor 1950: 110).			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**	2				
LD:	1.779	**CH:**	8.299	**UD:**	1.326	**Flts:**	20
AbH:	0.422	**AbW:**	2.222	**EH:**	0.38	**NH:**	0.273
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Frothingham 1887: 181, 182; Abatino 1903; Van Buren 1923: 14, 15; Dinsmoor 1950: 110; Guido 1972: 168; Mertens 1984: 82, 216; Spawforth 2006: 118.

I4: Casa Marafioti Temple at Locri Epizephyrioi

Region:	Italy		
Date Range:	540 – 530	**Date Group:**	2

Reasons for Date:

The drum built, 20-fluted, columns, the shapes of the pentaglyph arches, and its overall proportions, would appear to place the Casa Marafioti Temple at Epizephyrioi in the second half of the sixth century (Østby 1978: 34). A couple of surviving marble figures, either akroteria or pedimental figures, appear to have been added to the temple in the second half of the fifth century (Pedley 1993: 275; Spawforth 2006: 118).

Deity:	Possibly Olympian Zeus

Evidence for Deity:

Olympian Zeus was the subject of an archive of documents on bronze dated between 350 and 250 were found a short distance away from the temple (Spawforth 2006: 118).

Brief Description of Remains:

In 1830 the Duc de Luynes was able to inspect the ruins of a temple at the Casa Marafioti. However, by 1910, the ruins had almost completely disappeared, having been destroyed by vandals (Van Buren 1923: 32). Dinsmoor (1950: 98) felt that the temple was non-peripteral tri-style in antis, however, due to the size of the temple's foundations it is now believed to be peripteral, a foundation trench indicating that the temple also had a double front (Østby 1978: 28-29). The temple's foundation width was preserved; however, it has proved impossible to establish the length of the temple, since the Marafioti house was constructed over its eastern end. Furthermore, no traces of the cella were preserved. A number of elements of the elevation were recovered, including a couple of capital fragments as well as elements of the frieze, composed of pentaglyphs rather than the standard triglyphs (Østby 1978: 25). More blocks were available when Capialbi visited the site in the 1840's and he was able to record lower diameter of the peristyle columns (Østby 1978:30).

Key Measurements:

FoW:	20.1	**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**	2				
LD:	0.915	**CH:**		**UD:**	0.735	**Flts:**	20
AbH:	0.235	**AbW:**		**EH:**	0.184	**NH:**	
ArH:		**FrH:**	1.32	**MW:**	1.11	**TW:**	0.97
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Van Buren 1923: 32; Dinsmoor 1950: 98; Shoe 1952: 39; Østby 1978; Barletta 1990: 63; Pedley 1993: 275; Spawforth 2006: 118.

I5: The Temple of Hera at Tavole Palatine

Region:	Italy		
Date Range:	520 – 510	**Date Group:**	2
Reasons for Date:			
The design of the capitals, triglyphs and especially the terracotta roof, lead to the temple being dated to 520-510 (Mertens 1985: 600; Spawforth 2006: 120), although Barletta (1990: 49) preferred a slightly earlier date of 530-525.			
Deity:	Hera		
Evidence for Deity:			
An archaic inscription upon a pithos confirms the temple's deity as Hera (De Juliis 2001: 87).			
Brief Description of Remains:			
The temple is relatively well preserved, retaining 10 columns with capitals on the north flank and five on the south (Dinsmoor 1950: 97; Gruben 2001: 280). Despite the excellent state of preservation, there is a slight discrepancy in the reported measurements. Dinsmoor (1950: 338) and Coulton (1974) measure the stylobate length as 33.46m; whilst, Mertens (1973: 213) and De Juliis (2001: 87) report that the length is only 33.3m, the difference also has an implication for the axial spacing measurements. As the most recent assessment, the measurements reported by Mertens and De Juliis are used in this analysis. Similarly, the column measurements reported in De Juliis (2001: 87) have been utilised over those reported by Koldewey and Puchstein (CH: 5.14; LD: 1.06; UD: 0.76). The architrave was created in two separate sections, with a smooth lower part and a seperate taenia; whilst a number of smooth sections remain *in situ*, little is known about the taenia (Dinsmoor 1950: 98), leading Barletta (1990: 69) and Gruben (2001: 680) to suggest that it may have taken the form of Ionic mouldings rather than a standard Doric taenia. Van Buren (1923: 41) suggests that the temple may have had sculpted metopes, although this was based upon a misunderstanding of the Duc de Luynes' text, the foot was actually found among the rubble of Temple Aii (Apollo Lykeios) at Metaponto (Bookidis 1967: 246 n.1).			

Key Measurements:							
FoW:	18.46	**FoL:**	35.69	**SW:**	16.06	**SL:**	33.3
KrSt:	3	**CeW:**	8.02	**CeL:**	23.26		
FC:	6	**FlC:**	12	**FS:**	2.948	**FlS:**	2.908
Rmp:		**DF:**					
LD:	1.068	**CH:**	5.21	**UD:**	0.785	**Flts:**	20
AbH:	0.26	**AbW:**	1.49	**EH:**	0.226	**NH:**	0.126
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 36, 37; Van Buren 1923: 41, 125; Dinsmoor 1950: 97, 98; Krauss 1951: 107; Shoe 1952: 68; Guido 1972: 130; Mertens 1973: 213-215; 1985: 660; Coulton 1974; Barletta 1990: 49, 63, 69; De Juliis 2001: 87, 88; Gruben 2001: 280; Spawforth 2006: 120.

I6: Temple Aii (Apollo Lykeios) at Metaponto

Region:	Italy		
Date Range:	540 - 520	**Date Group:**	2

Reasons for Date:

The parallel alignment to the eastern front of Temple B would suggest that the temples were erected at a similar time in the second half of the sixth century (Mertens 1985: 658; Barletta 1990: 49; Spawforth 2006: 119). Also, the similarity of the temple's plan to the Temple of Hera I (Basilica) at Poseidonia (I9), suggest that the temple should be dated around a decade later (Dinsmoor dated the Temple of Hera I to 530, which would place Temple Aii around 520; Dinsmoor 1950: 98; Bookidis 1967: 246).

Deity:	Apollo Lykaios

Evidence for Deity:

The identity of the deity is known from a seventh-century inscription on a statue of a sphinx (Guido 1972: 132; Gruben 2001: 280; Spawforth 2006: 119).

Brief Description of Remains:

The foundations of the temple survive *in situ* and most of the elevation stone was taken away for reuse; however, a few column drums, capitals and architrave blocks are preserved (Van Buren 1923: 39; Mertens 1973: 206). A number of sculptural fragments found when the temple was excavated, now lost, may indicate that the temple bore sculpted metopes; however, the evidence is far from conclusive (Bookidis 1967: 245-247).

Key Measurements:

FoW:	22.21	**FoL:**	51.15	**SW:**		**SL:**	
KrSt:		**CeW:**	10.375	**CeL:**	32.5		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.44	**CH:**		**UD:**	1.09	**Flts:**	20
AbH:	0.46	**AbW:**	1.91	**EH:**	0.3	**NH:**	0.17
ArH:	1.2	**FrH:**		**MW:**		**TW:**	0.66
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Koldewey and Puchstein 1899: 38-39; Van Buren 1923: 39; Dinsmoor 1950: 97; Guido 1972: 132; Mertens 1973: 206-209; 1985: 658; Barletta 1990: 49, 63 n.119, 68 n.148, 69; Gruben 2001: 280; De Juliis 2001: 147; Spawforth 2006: 119.

I7: Temple Bii at Metaponto

Region:	Italy		
Date Range:	530 - 520	**Date Group:**	2
Reasons for Date:			
See above entry I6 (Temple Aii (Apollo Lykeios) at Metaponto).			
Deity:	Hera		
Evidence for Deity:			
Inscriptions on the back of some of the architectural terracottas indicate that the temple was dedicated to Hera (Trendall 1969: 39).			
Brief Description of Remains:			
The foundations of the temple survive *in situ*, allowing for their dimensions to be included within the data-set. The fragments of the elevation are in a poor state and the existence of half-columns, which would suggest a peristyle with a smooth wall pierced by columns, and a capital conducted in the round makes any reconstruction difficult (Mertens 1973: 203, 204). A few fragments of triglyphs have been discovered allowing for the triglyph width to be accurately measured (Mertens 1973: 205).			

Key Measurements:							
FoW:	19.85	**FoL:**	41.6	**SW:**		**SL:**	
KrSt:		**CeW:**	10.5	**CeL:**	25.5		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**	2				
LD:		**CH:**		**UD:**		**Flts:**	
AbH:	0.318	**AbW:**	1.48	**EH:**	0.22	**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	0.61
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Trendall 1969: 39; Mertens 1973: 203-205; 1985: 658; Barletta 1990: 60, 63 n.119, 69, 70; Gruben 2001: 280; Spawforth 2006: 119, 120.

I8: The Temple of Athena at Poseidonia

Region:	Italy		
Date Range:	520 – 500	**Date Group:**	2

Reasons for Date:

The temple's date is discussed in detail in Appendix III.1.

Deity:	Athena

Evidence for Deity:

A votive deposit found to the south of the temple, miraculously undisturbed, yielded terracotta figurines datable to the late 6th and early 5th, recognizable as Athena and a fragment of Roman pottery bearing the inscription MENERVA all suggest that the temple was dedicated to Athena (Trendall 1955: 54; Pedley 1990: 59).

Brief Description of Remains:

The temple is very well preserved, including all the dimensions of the entablature.

Key Measurements:

FoW:	16.127	**FoL:**	34.52	**SW:**	14.53	**SL:**	32.883
KrSt:	3	**CeW:**	7.814	**CeL:**	23.627		
FC:	6	**FlC:**	13	**FS:**	2.629	**FlS:**	2.625
Rmp:	2	**DF:**					
LD:	1.262	**CH:**	6.122	**UD:**	0.841	**Flts:**	20
AbH:	0.289	**AbW:**	1.769	**EH:**	0.297	**NH:**	0.195
ArH:	1.036	**FrH:**	0.92	**MW:**	0.7625	**TW:**	0.55
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Dinsmoor 1950: 93, 94; Krauss 1959; Coulton 1974; Winter 1978: 158; Robertson 1979: 78; Symeonoglou 1985a: 56-59; Pedley 1990: 54-59; Skele 2002: 29; Spawforth 2006: 114.

I9: The Temple of Hera I (Basilica) at Poseidonia

Region:	Italy		
Date Range:	550 – 520	**Date Group:**	2
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.1.			
Deity:	Hera and/or Zeus		
Evidence for Deity:			
The vast amount of votive figurines appear to be dedicated to Hera (Pedley 1990: 53; Ammerman 1991: 227; Skele 2002: 28; Spawforth 2006: 112); however, the existence of a silver plaque identifying the cult as belonging to Zeus and Hera (Pedley 1990: 54; Skele 2002: 28) Dinsmoor's (1950: 92) claim that the temple belonged to Poseidon is no longer considered accurate (Pedley 1990: 53).			
Brief Description of Remains:			
The temple is well preserved, the entire peristyle remains standing. However, the entablature is missing above the architrave, only backing blocks remain, not a single triglyph or metope has been preserved (Symeonoglou 1985a: 55; Pedley 1990: 49). A sculpted metope that had been attributed to the temple has subsequently been shown to be far too small (Bookidis 1967: 234-238).			

Key Measurements:							
FoW:	25.983	**FoL:**	55.722	**SW:**	24.49	**SL:**	54.258
KrSt:	3	**CeW:**	13.37	**CeL:**	42.95		
FC:	9	**FlC:**	18	**FS:**	2.871	**FlS:**	3.102
Rmp:		**DF:**					
LD:	1.45	**CH:**	6.454	**UD:**	0.982	**Flts:**	20
AbH:	0.43	**AbW:**	2	**EH:**	0.285	**NH:**	
ArH:	1.17	**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 13, 15; Dinsmoor 1950: 92-94; Krauss 1951; Coulton 1974; Robertson 1979: 76; Symeonoglou 1985a: 52-55; Pedley 1990: 43, 49, 52-54; Skele 2002: 28, 29; Spawforth 2006: 112, 113; Barletta 1990: 49, 68, 69; 2009a: 79.

I10: The Heraion at Foce del Sele

Region:	Italy		
Date Range:	540 – 500	**Date Group:**	2
Reasons for Date:			
It is generally agreed that the shape of the capitals and the style of the sculpture in the metopes dates to the second half of the sixth century; however, the exact date is debated, with Dinsmoor (1950: 86) and Lawrence (1996: 87) preferring a date closer to the middle of the century, whilst, Montuoro and Zanotti-Bianco (1938: 443), Bookidis (1967: 227-230) and Pedley (1990: 71) prefer a date towards the end of the century.			
Deity:	Argive Hera		
Evidence for Deity:			
According to the tradition referred to by Strabo (6.252) and Pliny (3.9), near this river Jason founded a sanctuary dedicated to the Argive Hera (Sestieri 1960: 30). Terracotta votives dating back to the seventh century appear to confirm this identification (Sestieri 1960: 31; Edlund 1987: 103).			
Brief Description of Remains:			
The foundations of the peristyle are still in place on the eastern side, and in places on the north and south. However, the foundations of the west side were demolished to make lime. Likewise, most of the elevation elements were destroyed; however, enough examples survive to include the individual elements measurements within the data-set (Krauss 1951: 83). The fact that most of the column drums were not grooved all around suggests that the axial spaces were enclosed by walls; however, uncertainties about the size and location of these partitions in the colonnade meant that they were omitted in the reconstruction plan (Krauss 1951: 92). The sculpted metopes of the temple vary in width between 0.614 to 0.664, however, for the analysis the width of the well preserved metope 2 from Krauss (1951: XIII) has been used.			

Key Measurements:							
FoW:	18.615	**FoL:**	38.95	**SW:**		**SL:**	
KrSt:		**CeW:**	6.14	**CeL:**	14.92		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:	2	**DF:**					
LD:	1.047	**CH:**		**UD:**	0.694	**Flts:**	18
AbH:	0.286	**AbW:**	1.394	**EH:**	0.22	**NH:**	0.144
ArH:	1.031	**FrH:**	0.864	**MW:**	0.614	**TW:**	
ScuM:	TRUE	**ScuP:**		**ScuC:**		**ScuO:**	

References:
Zancani and Zanotti-Bianco 1936: 186; Zanotti-Bianco 1936: 229; Montuoro and Zanotti-Bianco 1938: 443; Dinsmoor 1950: 86, 96; Krauss 1951: 83-95; Sestieri 1960: 31; Bookidis 1967: 227-230; Barletta 1990: 49, 63, 68, 69; Pedley 1990: 71; Lawrence 1996: 87; Spawforth 2006: 115.

I11: The Temple of Hera II (Poseidon) at Poseidonia

Region:	Italy		
Date Range:	470 – 430	**Date Group:**	4
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.1.			
Deity:	Zeus and/or Hera		
Evidence for Deity:			
Same sanctuary as the temple of Hera I (Basilica) discussed above (I9).			
Brief Description of Remains:			
All the columns of the peristyle are preserved, as well as most of the building's superstructure, including the frieze elements. However, the roof and most of the cella walls and interior arrangement have disappeared (Pedley 1990: 81). Barletta (2011: 629) lists this temple amongst others that require further study due to 'inadequate' current documentation.			

Key Measurements:							
FoW:	26.06	**FoL:**	61.7	**SW:**	24.316	**SL:**	59.961
KrSt:	3	**CeW:**	13.485	**CeL:**	46		
FC:	6	**FlC:**	14	**FS:**	4.471	**FlS:**	4.503
Rmp:		**DF:**					
LD:	2.052	**CH:**	8.88	**UD:**	1.493	**Flts:**	24
AbH:	0.495	**AbW:**	2.602	**EH:**	0.427	**NH:**	0.306
ArH:	1.488	**FrH:**	1.433	**MW:**	1.325	**TW:**	0.918
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 29; Dinsmoor 1950: 110, 111; Shoe 1952: 33, 57; Gottlieb 1953; Coulton 1974; Symeonoglou 1985a: 61-64; Winter 1978: 158; Robertson 1979: 327; Mertens 1984: 56, 218; Pedley 1990: 81-88; 1993: 226; Lawrence 1996: 103; Skele 2002: 42, 43; Spawforth 2006: 113.

I12: The Unknown Temple at Taranto

Region:	Italy		
Date Range:	600 – 550	**Date Group:**	1
Reasons for Date:			
The capital shape is compared by Wuilleumier (1939: 253) is compared to those belonging to the Temple of Apollo at Syracuse and C at Selinous places the Taranto temple around 575.			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
Two peristyle columns survive standing on their section of stylobate, the drum of a third column and the south east corner of the temple have also been found (Coulson 1976b).			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.9	**CH:**	8.47	**UD:**	1.55	**Flts:**	24
AbH:	0.51	**AbW:**	2.7	**EH:**	0.418	**NH:**	0.292
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 55; Wuilleumier 1939: 253; Dinsmoor 1950: 84; Coulson 1976b; Lawrence 1996: 87; Spawforth 2006: 120.

I13: The Temple of Minerva at Pompeii

Region:	Italy		
Date Range:	525 – 500	**Date Group:**	2

Reasons for Date:

The temple is placed in the late sixth century based upon the shape of the doric capitals and the design of the terracotta revetments (De Waele 1994: 105, 113; Spawforth 2006: 110; Ling 2009: 107). A late fourth or early third-century metope, column drums of a different material and architectural terracottas attest to a refurbishment (Barletta 1996: 50; Ling 2009: 36).

Deity:	Minerva

Evidence for Deity:

Based upon the decoration for the architectural terracottas from the temple roof and an incomplete Oscan inscription, it has been suggested that the temple may have been jointly dedicated to Hercules and Minerva (Berry 2007: 188). However, De Waele (1994: 115) argues that there is no positive evidence for the attribution to Hercules.

Brief Description of Remains:

The original podium remains *in situ*, as well as a few capitals of the Greek Doric order (Gusman 1900: 63; Spawforth 2006: 110). De Waele (1994) argues that the temple should be considered alongside temples of the 'Campanian tradition', such as Temple B at Pyrgi, however, the presence of a Doric peristyle as well as a cella composed of a pronaos and cella suggests that the temple was designed in the 'Greek' style and as such, should be included in this study.

Key Measurements:

FoW:	20.39	**FoL:**	29.69	**SW:**	17.2	**SL:**	27.24
KrSt:	4	**CeW:**	6.4	**CeL:**	15.88		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	18
AbH:	0.32	**AbW:**	1.5	**EH:**	0.2	**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Gusman 1900: 63, 64; Dinsmoor 1950: 84; Barletta 1996; De Waele 1994; 2001; Berry 2007: 72, 188; Spawforth 2006: 110; Ling 2009: 35, 36, 107.

N1: The Temple of Artemis at Kalydon

Region:	N. Greece		
Date Range:	400-350	**Date Group:**	5

Reasons for Date:

The suggested dates for this temple range between 400 (Heffner 1927: 124) and 350 (Knell 1983a: 230) and in between (Dinsmoor 1950: 218; Spawforth 2006: 175). The only available dating evidence comes from the use of double-T clamps and the proportions of the architectural elements.

Deity:	Artemis

Evidence for Deity:

Pausanias (4.31.7).

Brief Description of Remains:

The foundations of the temple are well preserved, with some of the stylobate blocks remaining *in situ* (Heffner 1927: 124; Dyggve 1948). Despite this, the foundation and stylobate measurements reported by Dyggve (1948: 256; FoW: 14.94m; FoL: 32.55m; SW: 14.02m; SL: 31.63m) differ from those suggested by Knell (1983a: 230; see below). As the most recent analysis of the temple (see Knell 1973), the plan measurements provided by Knell have been used in this study. Four small capital fragments survive along with a number of triglyph fragments and an architrave block, which preserves its height (Dyggve 1948).

Key Measurements:

FoW:	14.85	**FoL:**	32.29	**SW:**	13.28	**SL:**	30.63
KrSt:	3	**CeW:**	7.5	**CeL:**	21.55		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	20
AbH:	0.185	**AbW:**		**EH:**		**NH:**	
ArH:	0.768	**FrH:**		**MW:**		**TW:**	0.498
ScuM:		**ScuP:**		**ScuC:**	TRUE	**ScuO:**	

References:

Heffner 1927: 124; Shoe 1936: 112; Dyggve 1948; Dinsmoor 1950: 218; Knell 1973; 1983a: 230; Spawforth 2006: 175.

N2: The Temple of Poseidon at Velvina (Molykreion)

Region:	N. Greece		
Date Range:	400 – 300	**Date Group:**	6

Reasons for Date:

The temple is dated variously from the first half of the fourth century (Knell 1983a: 230) to the late fourth (Spawforth 2006: 173). Gavrili (1976) suggests that the careful workings on the joints of the blocks, the double block system in the stylobate, arranged so that each column rests on every second block, and the use of 6 by 13 columns, suggests that the temple dated to the fourth century.

Deity:	Poseidon

Evidence for Deity:

Thucydides (2.84.4).

Brief Description of Remains:

Sections of the stylobate remain *in situ*; however, only half a column drum and a corner triglyph were found from the superstructure (Gavrili 1976).

Key Measurements:

FoW:	14.254	**FoL:**	31.416	**SW:**	12.87	**SL:**	30.032
KrSt:	3	**CeW:**	7.9	**CeL:**	20.825		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Heffner 1926: 508; Gavrili 1976; Knell 1973: 456; 1983a: 230; Spawforth 2006: 173.

N3: The Temple of Apollo Ismenios at Thebes

Region:	N. Greece		
Date Range:	400 – 350	**Date Group:**	5

Reasons for Date:

The temple is ascribed to the first half of the fourth century based upon a mason's inscription on a capital and the style of the preserved architectural elements (Symeonoglou 1985b: 239).

Deity:	Apollo Ismenios

Evidence for Deity:

A number of inscriptions found on the site, including bronze votives and stone bases, dating in range from the sixth to the second centuries, as well as a passage in Pausanias (9.10.2) identify the deity as Apollo Ismenios (Symeonoglou 1985b: 238).

Brief Description of Remains:

Only the deep foundations preserve the temple's layout (Symeonoglou 1985b: 239).

Key Measurements:

FoW:	22.82	**FoL:**	46.25	**SW:**		**SL:**	
KrSt:		**CeW:**	9.3	**CeL:**	21.6		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Dinsmoor 1950: 218; Robertson 1979: 329; Knell 1983a: 230; Symeonoglou 1985b: 132, 238, 239; Spawforth 2006: 168.

N5: The Temple of Hera at Plataia

Region:	N. Greece		
Date Range:	550-500	**Date Group:**	4
Reasons for Date:			
The presence of double-T clamps, the restored column ratio of 6 by 18, as well as the arrangement of the cella, suggest that the remaining foundations belong to the sixth century. This temple was subsequently destroyed and rebuilt by the Thebans after 427; however, as only the foundations survive, the early date is utilised (Waldstein and Washington 1891: 399; Spawforth 2006: 168).			
Deity:	Hera		
Evidence for Deity:			
A small votive figurine found within the temple may be a votive statue of Hera (Waldstein and Washington 1891: 402). The temple was also mentioned in Pausanias (9.2.5): "They have a Temple of Hera at Plataia, worth seeing for its size and fine statues" and Herodotus (9.52).			
Brief Description of Remains:			
With the exception of two fragments of the krepidoma, only the foundations are left, the discovery of a small fragment of a Doric column suggests that the temple was of the Doric order (Waldstein and Washington 1891: 397). Unfortunately, when the temple came to be investigated recently, the area was completely covered with debris and subsequent agricultural use has destroyed the building's ground plan (Aravantinos *et al.* 2003: 304).			

Key Measurements:							
FoW:	16.7	**FoL:**	49.9	**SW:**		**SL:**	
KrSt:		**CeW:**	9.5	**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Waldstein and Washington 1891; Aravantinos *et al*. 2003: 304; Spawforth 2006: 168.

N6: The Temple of Apollo Daphnephoros at Eretria

Region:	N. Greece		
Date Range:	530-490	**Date Group:**	2
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.6.			
Deity:	Apollo Daphnephoros		
Evidence for Deity:			
Epigraphical evidence (*IG* XII^{9} 202.12-14).			
Brief Description of Remains:			
No stylobate remains in place; however, two capital fragments and two triglyph fragments have been discovered (Auberson 1968: 18, 19). Nearby were discovered remnants of marble sculpture from the temple's west pediment (depicting Theseus and Antiope, Amazons and Athena), piously buried after the Persian sack of Eretria (490) (Bookidis 1967: 113-116; Spawforth 2006: 167).			

Key Measurements:							
FoW:	20.55	**FoL:**	47.8	**SW:**		**SL:**	
KrSt:		**CeW:**	9.6	**CeL:**	26.1		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:	0.26	**AbW:**	1.6	**EH:**	0.24	**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	0.645
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Bookidis 1967: 113-116; Auberson 1968; Spawforth 2006: 167.

N7: The Temple of Dionysos at Eretria

Region:	N. Greece		
Date Range:	350	**Date Group:**	5
Reasons for Date:			
Based upon a fragment of a black figure lekythos and a small marble head found under the foundations, the design of the foundations, and the relationship to the theatre, place the temple's construction in the middle of the fourth century (Auberson 1976: 64). Further to this, the shape of the triglyph's glyphs suggest a date in the first half of the fourth century, rather than the second (Auberson 1976: 64).			
Deity:	Dionysos		
Evidence for Deity:			
Inscriptions and proximity to the theatre confirm the attribution to Dionysos (Auberson 1976: 59).			
Brief Description of Remains:			
None of the temple's stylobate remains *in situ*; with almost the entire superstructure being used in the lime kilns found near the theatre (Richardson 1895: 330). However, three triglyph blocks were found nearby (Auberson 1976: 59). Two of the triglyphs (1402 and 1404) measure 0.45m wide, whilst one (1403) measures 0.42m, consequently, 0.45m has been used as the TW in the analysis.			

Key Measurements:							
FoW:	12.45	**FoL:**	23.05	**SW:**		**SL:**	
KrSt:		**CeW:**	6	**CeL:**	14.9		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**	0.6	**MW:**		**TW:**	0.45
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Richardson 1895; Auberson 1976.

N9: The Temple of Zeus Ammon at Aphytis

Region:	N. Greece		
Date Range:	350-300	**Date Group:**	6
Reasons for Date:			
A well preserved capital, comparable in shape to those of the Temple of Athena Alea at Tegea (P6), indicates that this temple dates to the second half of the fourth century (Knell 1983a: 219).			
Deity:	Zeus Ammon		
Evidence for Deity:			
Inscriptions indicate that the temple was dedicated to Zeus Ammon (Knell 1983a: 218; Spawforth 2006: 178).			
Brief Description of Remains:			
A number of elements of the temple are preserved, including a complete Doric capital as well as fragments of the entablature and pediment (Juri 1976).			

Key Measurements:							
FoW:	12.38	**FoL:**	23.33	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.87	**Flts:**	
AbH:	0.148	**AbW:**	0.99	**EH:**	0.115	**NH:**	0.123
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Juri 1976; Knell 1983a: 218, 219, 230; Spawforth 2006: 178.

N10: The Temple of Apollo at Ambrakia

Region:	N. Greece		
Date Range:	500	**Date Group:**	3

Reasons for Date:

The similarity of the capital to those belonging to the second Temple of Athena Pronaia at Delphi, as well as the presence of a terracotta antefix identical to one at Olympia, would suggest that this temple dates to the beginning of the fifth century (Vocotopoulou 1969: 43).

Deity:	Apollo

Evidence for Deity:

Inscription (Spawforth 2006: 176).

Brief Description of Remains:

The temple is preserved up to the euthynteria having been used as a quarry since the early Christian period (Vocotopoulou 1969: 42; Caskey 1971: 307). A number of poros architectural elements have been found, among which are a Doric capital (total height: 0.42m) and part of a Doric column drum (Vocotopoulou 1969: 43; Caskey 1971: 307).

Key Measurements:

FoW:	20.75	**FoL:**	44	**SW:**		**SL:**	
KrSt:		**CeW:**	8.2	**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**	0.8	**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Vocotopoulou 1969; Caskey 1971: 307; Spawforth 2006: 176.

N12: The Unknown Temple at Kassope

Region:	N. Greece		
Date Range:	400-300	**Date Group:**	6
Reasons for Date:			
The temple's plan would suit the fourth century (Spawforth 2006: 176).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
The entire temple's superstructure is missing (Spawforth 2006: 176).			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Spawforth 2006: 176.

N13: The Temple of Zeus at Stratos

Region:	N. Greece		
Date Range:	320 – 300	**Date Group:**	6

Reasons for Date:

The temple is generally dated to the end of the fourth century and Shoe (1936: 72) dates the mouldings to ca.320 (Knell 1983: 230; Lawrence 1996: 151; Spawforth 2006: 176).

Deity:	Zeus

Evidence for Deity:

Inscription (Spawforth 2006: 175).

Brief Description of Remains:

The temple was never finished, the krepidoma steps retaining their protective surfaces and the columns remaining unfluted (Dinsmoor 1950: 220). A representative sample of all the elevation elements have been discovered, including 113 column drums and 7 capitals. Pakannen (2004: 10) argues that despite the number of column drums, the column height can only be narrowed down to a range of 7.88-7.93m, however, the median height of 7.905m is significantly accurate for this study.

Key Measurements:

FoW:	18.32	**FoL:**	34.12	**SW:**	16.64	**SL:**	32.44
KrSt:	3	**CeW:**	9.59	**CeL:**	20.49		
FC:	6	**FlC:**	11	**FS:**	3.16	**FlS:**	3.16
Rmp:		**DF:**					
LD:	1.29	**CH:**	7.905	**UD:**	1.01	**Flts:**	20
AbH:	0.202	**AbW:**	1.36	**EH:**	0.136	**NH:**	0.167
ArH:	0.825	**FrH:**	0.946	**MW:**	0.955	**TW:**	0.625
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Shoe 1936: 72, 133, 159; Dinsmoor 1950: 220, 339; Robertson 1979: 330; Knell 1983a: 210, 230; Lauter 1983; Lawrence 1996: 151; Pakkanen 2004; Spawforth 2006: 175, 176.

N14: The Temple of Zeus at Passaron

Region:	N. Greece		
Date Range:	325 – 300	**Date Group:**	6
Reasons for Date:			
Doric and Ionic capitals indicate that the temple belonged to the late fourth century (Spawforth 2006: 176).			
Deity:	Zeus		
Evidence for Deity:			
Not Clear			
Brief Description of Remains:			
Parts of the foundations of a small limestone and marble temple survive (Spawforth 2006: 176).			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Spawforth 2006: 176.

N15: The Fourth-Century Temple of Apollo at Delphi

Region:	N. Greece		
Date Range:	370 – 325	**Date Group:**	6

Reasons for Date:

The shape of the mouldings (Shoe 1936: 70, 112).

Deity:	Apollo

Evidence for Deity:

Pausanias (10.5.5).

Brief Description of Remains:

The temple only remains at the level of the euthynteria, having been damaged by natural disasters and looters (Courby 1927: 3). One hundred and seven poros column drums are still scattered on the temple terrace (including one for every position in the column), as well as a number of surviving poros capitals. The elements of the frieze survive carved onto metope-trigylyph blocks (Courby 1927: 15, 18). The temple also appeared to have sculpted pediments, including figures Apollo, Artemis and Leto (Courby 1927: 21).

Key Measurements:

FoW:	23.82	**FoL:**	60.32	**SW:**	21.68	**SL:**	58.18
KrSt:	3	**CeW:**	13.34	**CeL:**	44.14		
FC:	6	**FlC:**	15	**FS:**	4.138	**FlS:**	4.083
Rmp:	2	**DF:**					
LD:	1.791	**CH:**	10.59	**UD:**	1.384	**Flts:**	20
AbH:	0.31	**AbW:**	1.91	**EH:**	0.173	**NH:**	0.242
ArH:		**FrH:**	1.405	**MW:**	1.22	**TW:**	0.82
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Courby 1927; Shoe 1936: 70, 112; Dinsmoor 1950: 339; Coulton 1974; Spawforth 2006: 170, 171.

N16: The Sixth-Century Temple of Apollo at Delphi

Region:	N. Greece		
Date Range:	520 – 510	**Date Group:**	2

Reasons for Date:

The temple's association with the Alkmaionidai has led to the suggestion that the temple was built around 513 (Dinsmoor 1950: 91). However, the style of the temple's architecture and sculpture have led to suggestions that the Alkmaionidai connection mentioned by Herodotus (5.62-3) may in fact be a later fabrication and that the temple in fact dates to the period 530-520 (Tomlinson 1976: 67; Childs 1993).

Deity:	Apollo

Evidence for Deity:

See above entry (N15).

Brief Description of Remains:

A large proportion of the temple survives, including over 150 column drums, two capital fragments, along with architrave and frieze blocks, that preserve their full height and width (Courby 1927). Despite the abundance of column drums belonging to this temple, it is still difficult to restore an accurate column height. Courby (1927: 100) suggests that the columns could have been between 7.4m and 8.9 metres tall, as such, the height is not included in the analysis.

The temple's east pediment contained sculpture depicting the arrival of Apollo at Delphi, containing a quadriga (Marconi 2007: 193). Although the best preserved metope is blank, a number of possible sculpted metopes, of the correct size and age to belong to the Temple of Apollo have been discovered. Unfortunately, as highlighted by Bookidis (1967: 189-192), due to the poor state of preservation, it cannot be certain whether these belonged to the peristyle or the porches and have consequently been left out the analysis.

Key Measurements:

FoW:	23.8	**FoL:**	59.5	**SW:**		**SL:**	
KrSt:		**CeW:**	13.34	**CeL:**	44.14		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.8	**CH:**		**UD:**	1.324	**Flts:**	20
AbH:	0.374	**AbW:**	2.203	**EH:**	0.395	**NH:**	0.253
ArH:	1.415	**FrH:**	1.372	**MW:**	1.21	**TW:**	0.822
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Courby 1927; Shoe 1936: 34, 104; Dinsmoor 1950: 91, 92; Bookidis 1967: 189-192; Tomlinson 1976: 67; Childs 1993; Østby 2000; Marconi 2007: 193.

N17: The Temple of Athena at Delphi

Region:	N. Greece		
Date Range:	550-500	**Date Group:**	2
Reasons for Date:			
The architecture dates the building to the second half of the sixth century (Demangel 1923: 2).			
Deity:	Athena		
Evidence for Deity:			
Herodotus (8.36-39) and Pausanias (10.8.6).			
Brief Description of Remains:			
Columns still remain standing *in situ* on the peristyle, some to their full height with capitals. However, only a small piece of the architrave and only a very small element of a triglyph exists (Demangel 1923: 10). There also appears to have been limestone pedimental sculpture (Spawforth 2006: 172).			

Key Measurements:							
FoW:	14.25	**FoL:**	28.45	**SW:**	13.25	**SL:**	27.464
KrSt:	2	**CeW:**	7.71	**CeL:**	20.57		
FC:	6	**FlC:**	12	**FS:**	2.485	**FlS:**	2.421
Rmp:		**DF:**					
LD:	0.975	**CH:**	4.6	**UD:**	0.746	**Flts:**	20
AbH:	0.202	**AbW:**	1.228	**EH:**	0.238	**NH:**	0.165
ArH:		**FrH:**		**MW:**		**TW:**	0.511
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Demangel 1923; Dinsmoor 1950: 92, 338; Coulton 1974; Robertson 1979: 326; Østby 2000; Spawforth 2006: 172.

N18: The Temple of Athena Kranaia at Elateia

Region:	N. Greece		
Date Range:	500-475	**Date Group:**	3
Reasons for Date:			
The clay roof ornaments indicate an early fifth century date (Spawforth 2006: 169).			
Deity:	Athena Kranaia		
Evidence for Deity:			
Inscription (Paris 1892: 82).			
Brief Description of Remains:			
The foundations and parts of the stylobate remain in place, including some lower column drums being preserved *in situ* (Paris 1892: 102). However, no cella foundations were discovered. A capital, a geison block and a fragment of a metope-triglyph block were preserved (Paris 1892).			

Key Measurements:							
FoW:	11.5	**FoL:**	27.5	**SW:**	11.5	**SL:**	27.5
KrSt:	1	**CeW:**		**CeL:**			
FC:	6	**FlC:**	13	**FS:**	2.25	**FlS:**	2.25
Rmp:		**DF:**					
LD:	0.75	**CH:**		**UD:**	0.545	**Flts:**	20
AbH:	0.15	**AbW:**		**EH:**	0.13	**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	0.5
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Paris 1892; Spawforth 2006: 169.

N19: The Temple of Apollo at Kalapodi (Hyampolis)

Region:	N. Greece		
Date Range:	600 – 500	**Date Group:**	2

Reasons for Date:

Not Clear

Deity:	Apollo

Evidence for Deity:

An inscription discovered in 2007, identifies the temple as belonging to Apollo (Niemeier 2007-2008: 47; Also see below entry: N20).

Brief Description of Remains:

Sections of the temple stylobate remain *in situ*, demonstrating burning from the Persian destruction in 480. It is suggested that only the columns on the east side of the temple and the first columns of the north and south side were of stone, the rest being made of wood (Whitley *et al*. 2006-2007: 41).

Key Measurements:

FoW:	14.12	**FoL:**	26.88	**SW:**	13.6	**SL:**	26.3
KrSt:	1	**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:	2	**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Whitley *et al*. 2006-2007: 41; Niemeier 2007-2008: 47.

N20: The Temple of Artemis Elaphebolos at Kalapodi (Hyampolis)

Region:	N. Greece		
Date Range:	425 – 395	**Date Group:**	4

Reasons for Date:

Felsch (1975: 15-17) highlights that the use of 6 by 14 columns and the restored 2:5 ratio of the stylobate, would suggest that the temple was constructed in the archaic period; however, the lining up of the cella front with the third flank column is not possible before the Periklean period. Furthermore, the closest parallel to the capital profiles are found on the Argive Heraion (Felsch 1975: 15). Therefore, the temple is dated to the period 425-395.

Deity:	Artemis Elaphebolos

Evidence for Deity:

Plutarch (*Moralia* 2: The Women of Phokis) describes a Phokian celebration to commemorate a victory in the vicinity of Kleonai, held each year at the great festival of the Elapheboleia, held in honour of Artemis. Furthermore, an inscription found near Hyampolis details the terms on which land sacred to Artemis and Apollo was leased to local farmers. As the sanctuary contains two temples, it is argued that the sanctuary is jointly dedicated to both Artemis and Apollo (McInerney 1999: 289).

Brief Description of Remains:

Only the foundations of this temple remain *in situ*, none of the stylobate remains in place having been plundered (Felsch 1975). Felsch (1975: 12) and Knell (1983a: 230) have published different measurements for the foundation length (45.8m and 46.12m respectively), as with other temples, the measurement reported by Knell has been used in the analysis. Twenty column drums, three capital fragments, an architrave fragment and one glyph as well as a metope, have also been discovered (Felsch 1975: 13-15).

Key Measurements:

FoW:	19.26	**FoL:**	46.12	**SW:**		**SL:**	
KrSt:		**CeW:**	10.14	**CeL:**	31.7		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	1	**Flts:**	20
AbH:	0.2165	**AbW:**	1.35	**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Felsch 1975; Knell 1983a: 230; McInerney 1999: 289; Spawforth 2006: 170.

N21: The Temple of Apollo at Metropolis

Region:	N. Greece		
Date Range:	560 – 540	**Date Group:**	2
Reasons for Date:			
The typology of the antefixes and the sima fragments indicate that the temple belonged to the mid-sixth century (Intzesiloglou 2002: 115).			
Deity:	Apollo		
Evidence for Deity:			
A 4th century dedicatory inscription found in the cella and a Bronze cult statue of Apollo as a hoplite found on a cult statue base (Intzesiloglou 2002: 115).			
Brief Description of Remains:			
From the position of the surviving lower column drums, it is suggested that the temple had 5 columns on the facade ends (although the axial spacings are not reported in Intzesiloglou's preliminary report), surmounted by capitals with different relief decoration on each capitals' echinus. Due to the absence of any architrave or frieze blocks it is suggested that the temple may have had a wooden entablature (Intzesiloglou 2002: 112).			

Key Measurements:							
FoW:	13.75	**FoL:**		**SW:**	13.75	**SL:**	
KrSt:	1	**CeW:**	8.2	**CeL:**	23.8		
FC:	5	**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Intzesiloglou 2002.

N22: The Unknown Temple at Pherai

Region:	N. Greece		
Date Range:	300	**Date Group:**	6
Reasons for Date:			
The profiles of the mouldings suggest that the temple was constructed around 300 (Østby 1994a: 140).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
Not much of the foundations still remain today; however, the lower foundations of the eastern front do survive intact (Østby 1994a: 139).			

Key Measurements:							
FoW:	16.4	**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**	0.81	**TW:**	0.54
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Østby 1994a.

N23: The Temple of Artemis at Korkyra

Region:	N. Greece		
Date Range:	580 – 570	**Date Group:**	1

Reasons for Date:

The sculpture belonging to the west pediment provides the evidence for the temple's date. The sculptures have been dated variously between 580 and 570 (Lawrence 1996: 77; Spivey 1996: 97; Spawforth 2006: 177).

Deity:	Artemis

Evidence for Deity:

Inscription (Spawforth 2006: 177).

Brief Description of Remains:

A single complete column drum and capital allow for the inclusion of these dimensions in the data-set. However, only a fragment of the architrave has been found and this does not preserve the height. Seven triglyphs and three metopes were found (Schlief *et al*. 1940; Klein 1998: 359 n.71). The visible widths of the three preserved (non-sculpted) metopes vary between 0.887m and 0.949m, as the middle size, the measurements of metope 2 have been used in the analysis (the height of metope 2 has also been used as the FrH, which varies between 1.090 and 1.095 on the various frieze elements). Likewise, the triglyph widths vary between 0.613m and 0.618m, as a middle measurement and due to the presence of two triglyphs of this size, a TW of 0.615m is used in the analysis.
Robertson (1979: 69 n.4) proposes that the temple had a sculpted Ionic frieze over the pronaos; whilst, Bookidis (1967: 177-182) and Marconi (2007: 12) suggest that the sculpted metopes that were discovered belong above the temple's peristyle, probably on the west front of the temple.

Key Measurements:

FoW:	23.45	**FoL:**	48.96	**SW:**	22.41	**SL:**	47.89
KrSt:	2	**CeW:**	9.81	**CeL:**	34.96		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.962	**Flts:**	24
AbH:	0.309	**AbW:**	1.685	**EH:**	0.217	**NH:**	0.13
ArH:		**FrH:**	1.093	**MW:**	0.922	**TW:**	0.615
ScuM:	TRUE	**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Shoe 1936: 91, 102, 103, 106, 151; Schlief *et al.* 1940; Dinsmoor 1950: 75; Bookidis 1967: 177-182; Robertson 1979: 69 n.4, 324; Lawrence 1996: 77; Spivey 1996: 97; Klein 1998; Spawforth 2006: 177; Marconi 2007: 12-13; Barletta 2009a: 78.

N24: The ‘Kardaki’ Temple at Korkyra

Region:	N. Greece		
Date Range:	525 – 500	**Date Group:**	2
Reasons for Date:			
The capital profiles, the similarity of the flank geison profile to that of the raking sima replacement of the Temple of Artemis at Korkyra (N23), place the temple in the last quarter of the sixth century (Johnson 1936: 54; Dinsmoor Jr. 1973: 173).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
The temple stands on the shore; however, the eastern end of the temple had fallen into the sea by 1825 (Johnson 1936: 46; Dinsmoor Jr. 1973: 166). Several monolithic column shafts remain *in situ* on the stylobate. Numerous column capitals and various blocks of the entablature were found, which indicate, uniquely, that this temple was constructed without a Doric frieze of triglyphs and metopes (Johnson 1936; Dinsmoor Jr. 1973).			

Key Measurements:							
FoW:	12.64	**FoL:**		**SW:**	11.91	**SL:**	
KrSt:	2	**CeW:**	7.38	**CeL:**			
FC:	6	**FlC:**		**FS:**	2.264	**FlS:**	2.264
Rmp:		**DF:**					
LD:	0.61	**CH:**	2.975	**UD:**	0.457	**Flts:**	20
AbH:	0.146	**AbW:**	0.819	**EH:**	0.148	**NH:**	0.101
ArH:	0.46	**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Dinsmoor 1936; 1950: 92; Johnson 1936; Shoe 1936: 92; Dinsmoor Jr. 1973; Robertson 1979: 326; Spawforth 2006: 177.

N25: The Hera (Mon Repos) Temple at Korkyra

Region:	N. Greece		
Date Range:	400	**Date Group:**	5
Reasons for Date:			
The marble sima may be dated on grounds of style to around 400 (Chase 1916: 204; Spawforth 2006: 176).			
Deity:	Hera		
Evidence for Deity:			
An inscription mentioning Akria (Hera) may identify the cult (Spawforth 2006: 177).			
Brief Description of Remains:			
Little more than the foundation trenches exist but the dimensions were established and some fragments of poros drums and other parts of the superstructure were recovered (Megaw 1965: 14).			

Key Measurements:							
FoW:	20.6	**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Chase 1916: 204; Megaw 1965: 14; Spawforth 2006: 176, 177.

O1: The Temple of Athena at Assos

Region:	Other		
Date Range:	540 – 500	**Date Group:**	2

Reasons for Date:

The temple is dated variously to both the first (Robertson 1979: 85) and the second halves of the sixth century (Dinsmoor 1950: 88). Robertson's dating of the temple to the first half of the sixth century depends upon the style of the architecture and the sculpture, which he suggests was imitative and provincial. Meanwhile, Dinsmoor suggests that the use of mutules of equal width would make a date before 540 improbable. This date is also purported by Sartiaux (1915: 147) and Maggidis (2009: 91) who argue that the iconography and style of the frieze belong to the third quarter of the sixth century. Wescoat (2012: 235-239) supports a date of c.540 for the temple, suggesting that the idiosyncrasies in the temple's design is linked to the inexperienced builders, rather than an early date.

Deity:	Athena

Evidence for Deity:

As the patron of the city, Athena represents the greatest possibility, although there is no positive evidence (Sartiaux 1915: 24).

Brief Description of Remains:

The temple is very well preserved, including a number of sculpted metopes and a sculpted architrave. No block above the stylobate remains *in situ*; however, extensive evidence survives for virtually every part of the building (Wescoat 2012: 4).

As discussed by Wescoat (1987; 2012: 43-56) a number of different capital designs are used on the temple and these are analysed separately in the capital analysis. For the analysis, three representative capitals were selected (one from each group), Capital C1 (Group A), Capital C6 (Group B) and Capital C3 (Group C). One capital (C4) has 18 flutes, whereas the vast majority utilise 16 (Wescoat 1987: 558; 2012: 41). The sculpted metopes vary considerably in width between 0.735m and 0.845m (the un-sculpted metopes range between 0.715m and 0.815m), as a mid-range example, the dimensions of M1 (Chase Scene) has been used.

Key Measurements:

FoW:	14.59	**FoL:**	30.875	**SW:**	14.03	**SL:**	30.31
KrSt:	2	**CeW:**	7.97	**CeL:**	22.33		
FC:	6	**FlC:**	13	**FS:**	2.56	**FlS:**	2.447
Rmp:		**DF:**					
LD:	0.914	**CH:**	4.57	**UD:**	0.624	**Flts:**	16
AbH:	0.201	**AbW:**	1.184	**EH:**	0.199	**NH:**	0.106
ArH:	0.82	**FrH:**	0.777	**MW:**	0.796	**TW:**	0.52
ScuM:	TRUE	**ScuP:**		**ScuC:**		**ScuO:**	TRUE

References:

Sartiaux 1915; Dinsmoor 1950: 88; Coulton 1974; Robertson 1979: 85; Wescoat 1987; 2012; Lawrence 1996: 81; Maggidis 2009.

O8: The Temple of Apollo on Delos

Region:	Other		
Date Range:	478 – 450	**Date Group:**	3
Reasons for Date:			
The temple was begun sometime after the foundation of the Delian League in 478/7 but abandoned later and completed only in the latter part of the fourth century. The temple appeared to serve as the treasury for the league, but when this was transferred to Athens in 454/3 the temple lost its purpose and the project was allowed to lapse (Rhodes 2005: 64; Berve and Gruben 1963: 364; Boersma 1970: 62; Tomlinson 1976: 75; Robertson 1979: 327), although Coulton (1984: 44) has suggested that it may have continued with “decreasing energy”.			
Deity:	Apollo		
Evidence for Deity:			
Homeric Hymn 3 (To Delian Apollo).			
Brief Description of Remains:			
Discussions of this temple are generally focussed upon two areas: the order of the architecture and the extent to which the temple was completed before the Delain League treasury was moved from Delos to Athens. The general concensus suggests that the temple was originally conceived as Ionic, but was completed as Doric (Dinsmoor 1950: 184; Berve and Gruben 1963: 364; Tomlinson 1976: 75), although this has recently been thought improbable (Miles 1998: 56). Dinsmoor (1950: 184) argues that only the lowest two steps were completed prior to the cessation of construction, with the remainder being completed following the Delian independence from Athens. However, Courby (1931), Coulton (1984: 44), Miles (1998: 56; 2000) and Osborne (1999: 324) argue that the temple was atleast completed to the level of the frieze before building work ceased. As discussed in Chapter 8, the similarities between the architecture of the Delos temple and the temples of fifth century Attica (including the capital shape) makes it likely that the upper elements were completed at the time of Athenian interest in the sanctuary. The preserved column drums suggest that the columns were 5.2m high. Furthermore, the lower diameters of the preserved columns (identifiable by a fluted band at the bottom) range between 0.936m and 0.97m; the average measurement of 0.945m cited by Courby (1931: 15) is used in this analysis. The flank metope dimensions are taken from block 270 (Courby 1931: Figure 32).			

Key Measurements:							
FoW:	13.72	**FoL:**	29.78	**SW:**	12.47	**SL:**	28.53
KrSt:	3	**CeW:**	7.2	**CeL:**	20.55		
FC:	6	**FlC:**	13	**FS:**	2.2905	**FlS:**	2.2905
Rmp:		**DF:**					
LD:	0.945	**CH:**	5.2	**UD:**	0.72	**Flts:**	20
AbH:	0.201	**AbW:**	1.113	**EH:**	0.181	**NH:**	0.148
ArH:	0.77	**FrH:**	0.745	**MW:**	0.67	**TW:**	0.48
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Courby 1931; Dinsmoor 1950: 184, 221, 339; Berve and Gruben 1963: 364; Boersma 1970: 62, 170; Tomlinson 1976: 75; Robertson 1979: 327; Osborne 1999: 267, 324; Rhodes 2005: 64.

O11: The Temple of Zeus at Cyrene

Region:	Other		
Date Range:	500 – 480	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.4.			
Deity:	Zeus		
Evidence for Deity:			
A monumental Latin inscription on the east façade indicates the temple's dedication to Jupitor Augustus (Spawforth 2006: 225).			
Brief Description of Remains:			
The east façade is now almost entirely lost, while the West has almost completely all the elements, including those of the back wall of the pediment, thus, allowing for the inclusion of all the element's dimensions in the data-set (Stucchi 1975: 24).			

Key Measurements:							
FoW:	31.766	**FoL:**	69.681	**SW:**	30.58	**SL:**	68.39
KrSt:	3	**CeW:**	17.3	**CeL:**	51.25		
FC:	8	**FlC:**	17	**FS:**	4.197	**FlS:**	4.197
Rmp:		**DF:**					
LD:	1.94	**CH:**	8.94	**UD:**	1.45	**Flts:**	24
AbH:	0.43	**AbW:**	2.7	**EH:**	0.55	**NH:**	0.34
ArH:	1.85	**FrH:**	1.48	**MW:**		**TW:**	
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Pesce 1947; Dinsmoor 1950: 86-88; Buttle 1956: 31, 32; Stucchi 1975: 20-29; Spawforth 2006: 225.

O12: The Temple of Apollo at Cyrene

Region:	Other		
Date Range:	550 – 500	**Date Group:**	2

Reasons for Date:

The cella and adyton date to the middle of the sixth century (Stucchi 1975: 16). During the last quarter of the fifth century, the temple was surrounded with a peristyle of 6 by 11 columns. The pediments were also given sculpture, dating in style around 500 B.C (Stucchi 1975: 18). Although, Dinsmoor (1950: 86) suggests that the peristyle may be contemporary with the cella.

Deity:	Apollo

Evidence for Deity:

Not Clear

Brief Description of Remains:

The stylobate measurements and foundation measurements are not retained having been built over by the second temple (Pernier 1935). Capital and frieze elements survive allowing for their inclusion within the database (Stucchi 1975: 19).

Key Measurements:

FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:	2	**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.1	**CH:**		**UD:**	0.85	**Flts:**	16
AbH:		**AbW:**		**EH:**	0.23	**NH:**	
ArH:		**FrH:**	1.09	**MW:**	0.78	**TW:**	0.6
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Pernier 1935: 36-43; Dinsmoor 1950: 86; Buttle 1956: 32; Stucchi 1975: 18-19; Robertson 1979: 324.

O13: The Unknown Temple at Apollonia

Region:	Other		
Date Range:	300	**Date Group:**	6
Reasons for Date:			
The capital indicates that the temple dates to around 300 (Spawforth 2006: 227).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
After excavation, the lowest course of the temple's krepidoma was discovered. Furthermore, an almost complete capital was found (Pedley 1967: 142).			

Key Measurements:							
FoW:	17.3	**FoL:**	31.93	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.96	**Flts:**	20
AbH:	0.188	**AbW:**	1.35	**EH:**	0.155	**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Pedley 1967; Spawforth 2006: 227.

P1: The Temple of Athena at Alipheira

Region:	Peloponnese		
Date Range:	500 – 480	**Date Group:**	3

Reasons for Date:

The sixteen flutes of the peristyle columns and the regulae without guttae indicate an early date. However, the capital, the sima and the triglyphs suggest a later date. Furthermore, the undercut under the geison nose, which is concave, and the upper definition of the triglyph slits, which are horizontal, would indicate a date between 500 and 480 (Østby 1995b: 369; Forsén *et al*. 1999: 177).

Deity:	Athena

Evidence for Deity:

After a mention by Pausanias (8.26.6).

Brief Description of Remains:

The stylobate rests directly upon the foundations, which were well preserved. In addition, limestone column drums, capitals, marble roof tiles, and antefixes were found. Unfortunately, a lot of material and important parts of the foundation were lost during the occupation of 1941-44 (Payne 1933: 281; Østby 1995b: 364, 371).

Key Measurements:

FoW:	10.65	**FoL:**	29.58	**SW:**	10.37	**SL:**	29.3
KrSt:	1	**CeW:**	5.2	**CeL:**	23.1		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.535	**Flts:**	16
AbH:	0.148	**AbW:**	0.905	**EH:**	0.157	**NH:**	0.13
ArH:	0.68	**FrH:**	0.682	**MW:**	0.575	**TW:**	0.43
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Payne 1933: 281; Østby 1995b: 364-371; 2005: 501; Forsén *et al*. 1999: 174, 177; Pfaff 2003b: 100; Spawforth 2006: 158.

P2: The Temple of Hera in the Argive Heraion

Region:	Peloponnese		
Date Range:	423 – 410	**Date Group:**	4

Reasons for Date:

The temple is generally assigned a date between the accidental destruction of the older temple in 423. The architectural details appear to corroborate this, placing the construction between 423 and the late fifth century (Pfaff 2003a: 191-193).
Both Shoe (1936: 110) and Dinsmoor (1950: 183) have suggested more precise dates. Shoe dated the mouldings between 423 and 410 but prefers a date closer to 410. Meanwhile, Dinsmoor suggests that the only time that the temple could have been erected would have been during the peace of Nicias, suggesting that it must have been erected in 416.

Deity:	Hera

Evidence for Deity:

Indications in Pausanias (2.17.7) and Thucydides (4.133).

Brief Description of Remains:

The temple is well preserved, with almost all the measurements recorded. The notable exception being the height of the architrave, with only two small fragments of the exterior architrave surviving (Pfaff 2003a: 99). The surviving capitals demonstrate a (small) range of measurements (for example, AbH: 0.228m-0.234m; Pfaff 2003a: 92), for the analysis, the measurements of the most complete capital (CC-1; Pfaff 2003a: 92) have been used. Pfaff (2003a: 102, 106, 155, 155n.26) places sculpted metopes over both the peristyle and the cella on the basis of their being two distinct metope series.
The height of the columns have not been included, even though Dinsmoor (1950: 339) states that the columns were 7.4m tall, only 22 of the original 256 column drums survive. However, the drum sections are of varying heights, meaning that any reconstruction of the heights varies between 7.1m and 7.43m in height, making any confident assertions regarding height impossible (Pfaff 2003a: 84).

Key Measurements:

FoW:	20.1	**FoL:**	39.75	**SW:**		**SL:**	
KrSt:		**CeW:**	9.05	**CeL:**	26.74		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:	2	**DF:**					
LD:	1.308	**CH:**		**UD:**	1.016	**Flts:**	20
AbH:	0.232	**AbW:**	1.36	**EH:**	0.169	**NH:**	0.159
ArH:		**FrH:**	1.065	**MW:**	0.981	**TW:**	0.645
ScuM:	TRUE	**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Shoe 1936: 100; Dinsmoor 1950: 183, 339; 1960: 314; Robertson 1979: 328; Pfaff 2003a; Spawforth 2006: 164.

P3: The Unknown Temple on Agios Elias

Region:	Peloponnese		
Date Range:	500 – 490	**Date Group:**	4
Reasons for Date:			
Østby's (2000) suggestion that the capital is a precise citation of the capitals belonging to the Temple of Apollo at Delphi, indicates that the temple on Agios Elias must be significantly later. Furthermore, Forsén *et al.* (1999: 176-7) suggests that the triglyph slits, the geison undercut, the clamps and the similarities to the temples at Vigla and Alipheira suggest that the temple on Agios Elias dates between 500 and 490.			
Deity:	Pan		
Evidence for Deity:			
Spawforth (2006: 159) suggests that this may have been the Sanctuary of Pan in ancient Peratheis, subsumed into Megalopolis in 369/368.			
Brief Description of Remains:			
Many of the measurements of the temple's elements are preserved in at least one example, including one complete capital. However, the number of columns, the architrave height and the metope width cannot be restored (Forsén *et al*. 1999: 174).			

Key Measurements:							
FoW:	15.3	**FoL:**	32.64	**SW:**	12.04	**SL:**	29.51
KrSt:	4	**CeW:**	6.92	**CeL:**	22.47		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	0.66	**CH:**		**UD:**	0.485	**Flts:**	
AbH:	0.138	**AbW:**	0.815	**EH:**	0.149	**NH:**	0.091
ArH:		**FrH:**	0.574	**MW:**		**TW:**	0.42
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Forsén *et al*. 1999; Østby 2000; 2005: 500; Spawforth 2006: 159.

P4: The Temple of Apollo Epikourios at Bassai

Region:	Peloponnese		
Date Range:	429 – 400	**Date Group:**	4
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.8.			
Deity:	Apollo Epikourios		
Evidence for Deity:			
The offerings found in the sanctuary suggest that Apollo was worshipped in the sanctuary long before the plague that Pausanias (8.41.7) suggested was the reason for the temple's erection (Lawrence 1996: 133). A number of inscriptions found near the temple provide further evidence for the identity of the deity (Cooper 1975).			
Brief Description of Remains:			
The temple is really well preserved; however, there is significant debate regarding the existence of pediment sculptures. Dinsmoor (1939) suggested that a number of statues in Rome may have come from the Temple of Apollo, perhaps depicting the scene of Niobe and four daughters and sons. In contrast, Cooper (1996a: 8, 244) highlights that the pediment floor is barren of cuttings for the securing of statuary. Three capital types are observed by Cooper (1996a: 233; 1996b: Plate 40): Type A: 6 examples, Type B: 8 examples and Type C: 24 examples. Although, these utilise slightly different designs, on a Panhellenic scale, they all utilise the same underlying capital design (see Chapter 5), as such, only the measurement of a capital of Type C are included in the analysis.			

Key Measurements:							
FoW:	15.84	**FoL:**	39.57	**SW:**	14.548	**SL:**	38.342
KrSt:	3	**CeW:**	8.653	**CeL:**	28.084		
FC:	6	**FlC:**	15	**FS:**	2.714	**FlS:**	2.673
Rmp:		**DF:**					
LD:	1.112	**CH:**	5.959	**UD:**	0.889	**Flts:**	20
AbH:	0.191	**AbW:**	1.172	**EH:**	0.153	**NH:**	0.105
ArH:	0.835	**FrH:**	0.835	**MW:**	0.802	**TW:**	0.535
ScuM:		**ScuP:**		**ScuC:**	TRUE	**ScuO:**	

References:

Holland 1917; Shoe 1936: 93, 109, 128, 159; Dinsmoor 1933; 1939; 1950: 154 n.2, 155; Coulton 1974; Robertson 1979: 328; Mertens 1984; Cooper 1975; 1996a; 1996b; Lawrence 1996: 133, 134; Wilson Jones 2001: 703; Spawforth 2006: 156-158.

P5: The Unknown Temple at Orchomenos

Region:	Peloponnese		
Date Range:	530 – 500	**Date Group:**	2
Reasons for Date:			
Plassart and Blum (1914: 84) suggest that the plan and the building's proportions place it in the late sixth century; whilst, Østby (2000: 253; 2005: 498) further suggests that the capitals date the temple more precisely to 530. However, Spawforth (2006: 160) prefers a later date of 500.			
Deity:	Perhaps Poseidon or Aphrodite		
Evidence for Deity:			
Plassart and Blum (1914: 84) suggested that the temple should be identified with the Temple of Poseidon or Aphrodite mentioned by Pausanias (8.13.2). However, Jost (1985: 118) suggests that there is no clear evidence identifying this temple with either deity and the chronological gap between the remains and the evidence relating to the deities must urge caution.			
Brief Description of Remains:			
The temple's foundations were discovered; however, the foundations stretch underneath a church, meaning that their length cannot be included in this analysis. Østby (2005: 498) argues that the columns and entablature of this temple may have been wooden, although, the existence of ten marble capitals on the site confirms that this temple was of the Doric order (Plassart and Blum 1914: 82; Jost 1985: 118; Østby 1995b). Of the eight capitals illustrated in Østby (1995b: Figure 184), only seven preserve all the capital measurements. Although all of the capitals have different measurements, the capitals appear to belong to three clear groups A (Capitals 1,4,6,8), B (3) and C (2,7); as such, only three of the capitals are included in the analysis, 1, 3 and 7.			

Key Measurements:							
FoW:	13.33	**FoL:**		**SW:**	13.33	**SL:**	
KrSt:	1	**CeW:**	5.93	**CeL:**	26.5		
FC:	6	**FlC:**		**FS:**	2.358	**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.652	**Flts:**	20
AbH:	0.184	**AbW:**	1.18	**EH:**	0.187	**NH:**	0.115
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Plassart and Blum 1914; Jost 1985: 118; Østby 1995b: 368; 2005: 498; Spawforth 2006: 160.

P6: The Temple of Athena Alea at Tegea

Region:	Peloponnese		
Date Range:	350 – 335	**Date Group:**	6
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.9.			
Deity:	Athena Alea		
Evidence for Deity:			
Mentioned in Pausanias (8.45.4-7).			
Brief Description of Remains:			
The foundation dimensions remain *in situ*; however, the krepidoma steps are not preserved to their full height. Despite this, more than 83 column drums of the peristyle survive, allowing for the inclusion of the temple's column height in the data-set. Despite Dugas' (Dugas *et al.* 1924: 19) belief that the temple's columns measured 9.474m in height, Pakkanen (1998: 76) suggests that actually, the columns measured between 9.544m and 9.58m. Unlike the columns of the Argive Heraion (P2), whose drums allow for the columns to be restored anywhere between 7.1m and 7.43m high and are not included, the relatively small amount of variation between the Tegea measurements means that a column height has been included. A number of column capitals preserve all the measurements for this study (Pakkanen 1998: Appendix B), these do not demonstrate the same amount of variation as those at Orchomenos and so only one capital's measurements have been included (Block Number 562).			

Key Measurements:							
FoW:	21.04	**FoL:**	49.4	**SW:**		**SL:**	
KrSt:		**CeW:**	11.92	**CeL:**	35.08		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:	2	**DF:**					
LD:	1.55	**CH:**	9.544	**UD:**	1.21	**Flts:**	20
AbH:	0.248	**AbW:**	1.616	**EH:**	0.158	**NH:**	0.184
ArH:	0.968	**FrH:**	1.088	**MW:**	1.081	**TW:**	0.71
ScuM:		**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:
Dugas *et al.* 1924; Shoe 1936: 70, 79, 111, 159; Dinsmoor 1950: 219; Coulton 1974; Norman 1984; Pakkanen 1998; Spawforth 2006: 160.

P7: The Temple of Apollo at Corinth

Region:	Peloponnese		
Date Range:	570 – 540	**Date Group:**	1

Reasons for Date:

Evidence from the shape of the capitals suggests that the temple should be dated post-560 (Williams 1984: 69). However, the stratigraphic evidence, the architectural terracottas and potsherds found in the masons' dump of the temple suggest that it was constructed between 570 and 540 (Dinsmoor 1950: 89 n.2; Robinson 1976b: 218; Pfaff 2003b: 112). Although Weinberg (1939) dated the temple to the third quarter of the sixth century from the pottery discovered in the foundation interspaces, subsequent excavations by Robinson (1976b: 217, 217 n.36) suggest that the pottery from the interspace provides a date c. 570-560.

Deity:	Apollo

Evidence for Deity:

The identity of this temple is not known with certainty; but it would appear that it should be associated with the Temple of Apollo mentioned by Pausanias (2.3.6). Using literary, epigraphic and archaeological evidence, Bookidis and Stroud (2004) have further documented the evidence relating to this identification.

Brief Description of Remains:

Seven columns remain standing, with a portion of the architrave *in situ*. Several excavations have revealed that the remainder of the plan may be traced from the cuttings in the rock made to receive the foundations (Stillwell 1932: 115). Østby (2000: Figure 10) and Stillwell (1932: Plate IX) report slightly different capital measurements (for example: EH: 0.36m (Østby), 0.351m, 0.37m (Stillwell)), for this study the most recently reported dimensions, those of Østby, have been utilised. One small triglyph fragment survives; however, it does not preserve the height of the frieze (Pfaff 2003b: 101). A terracotta horse once thought to belong to a peristyle metope is now assigned to one of the porch metopes (Bookidis and Stroud 2004: 412 n.48). Despite an intriguing reference by Pindar (*Olympian Odes* XIII.29) to the 'twin eagles,' and the arguments of Capps (1950: 265-266), no evidence for pedimental sculpture has been uncovered (Bookidis 1967: 136-141; Robinson 1976b: 236).

Key Measurements:

FoW:	22.79	**FoL:**	55.7	**SW:**	21.58	**SL:**	53.8
KrSt:	4	**CeW:**	12.26	**CeL:**	42		
FC:	6	**FlC:**	15	**FS:**	4.028	**FlS:**	3.744
Rmp:		**DF:**					
LD:	1.645	**CH:**	7.24	**UD:**	1.232	**Flts:**	20
AbH:	0.31	**AbW:**	2.18	**EH:**	0.36	**NH:**	0.233
ArH:	1.34	**FrH:**		**MW:**		**TW:**	0.83
ScuM:		**ScuP:**		**ScuC:**	TRUE	**ScuO:**	

References:

Stillwell 1932; Weinberg 1939; Dinsmoor 1949: 106; 1950: 89 n.2, 337; Capps 1950: 265-266; Bookidis 1967: 136-141; Robinson 1976a; 1976b; Winter 1978: 158; Robertson 1979: 88, 326; Williams 1984: 68-69; Østby 2000; Pfaff 2003b; Bookidis and Stroud 2004; Cotterill 2004: 160; Spawforth 2006: 162.

P8: The Temple of Apollo at Sikyon

Region:	Peloponnese		
Date Range:	303 - 300	**Date Group:**	6
Reasons for Date:			
The temple's date is based upon its location in the early Hellenistic square that was created by the urbanistic rearrangements of 303 as well as the date of the temple's capitals and mouldings (c.300; Krystalli-Votsi and Østby 2010: 57).			
Deity:	Apollo		
Evidence for Deity:			
Krystalli-Votsi and Østby (2010: 54, 56) argue that the temple was dedicated to Apollo, based upon Pausanias' description (2.7.8-9) and the layout of the cella. Although it may also be dedicated to Artemis Limnaia, also mentioned by Pausanias (2.7.6).			
Brief Description of Remains:			
Although the Euthynteria is preserved *in situ*, Krystalli-Votsi and Østby (2010: 55) only report the stylobate dimensions, which sat directly on top of the euthynteria. Unfortunately, the length of the cella is not preserved, although the retained elements indicate that it had an unusual layout. As with the ground-plan dimensions, Krystalli-Votsi and Østby (2010: 55) only report the UD and AbW of the peristyle columns.			

Key Measurements:							
FoW:	11.4	**FoL:**	37.6	**SW:**	11.4	**SL:**	37.6
KrSt:	1	**CeW:**	6.25	**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.44	**Flts:**	
AbH:		**AbW:**	0.57	**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	0.31
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Krystalli-Votsi and Østby 2010.

P9: The Temple of Asklepios at Epidauros

Region:	Peloponnese		
Date Range:	400 – 366	**Date Group:**	5

Reasons for Date:

The capital profile places the temple within the first third of the fourth century (Roux 1961: 93). However, other scholars have suggested narrower dating ranges, for example, Dinsmoor (1950: 218) dated to the temple to 380, whilst, Spawforth (2006: 165) dates the temple to the period 375-370.

Deity:	Asklepios

Evidence for Deity:

Pausanias (2.26.1 – 2.27.7).

Brief Description of Remains:

The foundations of the temple survive *in situ;* with evidence for three krepidoma steps (although the stylobate is not *in situ* evidence from the dowels demonstrate the presence of 3 krepidoma steps (Tomlinson 1983: 56)). Likewise, the elevation is represented by a number of fragments, allowing for most of the element's measurements to be included in the data-set; however, the column drums are not preserved well enough for an accurate restoration of their height, with the surviving drums varying in height between 0.51m and 0.57m.

Key Measurements:

FoW:	13.2	**FoL:**	24.45	**SW:**	12.03	**SL:**	23.28
KrSt:	3	**CeW:**	6.81	**CeL:**	16.45		
FC:	6	**FlC:**	11	**FS:**	2.26	**FlS:**	2.26
Rmp:	2	**DF:**					
LD:	0.92	**CH:**		**UD:**	0.606	**Flts:**	20
AbH:	0.122	**AbW:**	0.811	**EH:**	0.083	**NH:**	0.099
ArH:	0.61	**FrH:**	0.688	**MW:**	0.688	**TW:**	0.441
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Kabbidas 1891: 16; Lechat 1895: 55; Holland 1917: 144; Shoe 1936: 111, 159; Dinsmoor 1950: 218; Roux 1961: 90-95; Coulton 1974; Tomlinson 1983: 56-59; Knell 1983a: 230; Pakkanen 1998: Appendix D; Spawforth 2006: 165.

P10: The Temple of Asklepios at Gortys

Region:	Peloponnese		
Date Range:	400 – 350	**Date Group:**	5

Reasons for Date:

The letter shapes on the blocks in the foundations, the toichobate moulding and a clay antefix attribute the construction of this building to the first half of the fourth century (Martin and Metzger 1942: 338).

Deity:	Asklepios

Evidence for Deity:

A reference in Pausanias (8.28.1) and an inscription identifies the deity as Asklepios (Martin and Metzger 1942: 336; Blegen 1946: 372).

Brief Description of Remains:

Only the foundations of the temple are preserved (Martin and Metzger 1942: 338; Metzger 1951: 130).

Key Measurements:

FoW:	13.25	**FoL:**	23.6	**SW:**		**SL:**	
KrSt:		**CeW:**	7.15	**CeL:**	15.75		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Martin and Metzger 1942: 336-338; Blegen 1946: 372; Metzger 1951: 130; Knell 1983a: 215, 230; Spawforth 2006: 159.

P11: The 'Akropolis' Temple at Gortys

Region:	Peloponnese		
Date Range:	425 – 375	**Date Group:**	5
Reasons for Date:			
The profile of the mouldings and the use of double T clamps date the building to the late fifth or early fourth centuries (Martin and Metzger 1940: 280).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
Apart from a few fragments of Doric columns, nothing is preserved above the *in situ* limestone foundations (Martin and Metzger 1940: 280).			

Key Measurements:							
FoW:	13.55	**FoL:**	27.09	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Martin and Metzger 1940: 280.

P12: The Temple of Poseidon at Hermione

Region:	Peloponnese		
Date Range:	525 – 480	**Date Group:**	2

Reasons for Date:

The use of polygonal masonry in the foundations leads McAllister and Jameson (1969: 179-180, 183) to date the temple to the late archaic period, but probably, more specifically to the close of the fifth century.

Deity:	Poseidon

Evidence for Deity:

When Pausanias (2.34.9-11) visited Hermione, he noted no less than seven temples and sanctuaries in the area of this temple. McAllister and Jameson (1969: 170) identify this structure with Poseidon as it was the first to be mentioned by Pausanias, thus, it is likely to be the most visible and secondly, being built on the headland, the building is located on the perfect place for a Sanctuary of Poseidon.

Brief Description of Remains:

Only the foundations of the building remain *in situ*, with no trace of the building's superstructure being identified on the site (McAllister and Jameson 1969: 174, 183).

Key Measurements:

FoW:	16.25	**FoL:**	32.98	**SW:**		**SL:**	
KrSt:		**CeW:**	8.39	**CeL:**	24.35		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

McAllister and Jameson 1969; Spawforth 2006: 160.

P13: The Temple of Poseidon at Isthmia

Region:	Peloponnese		
Date Range:	470 – 460	**Date Group:**	3
Reasons for Date:			
The similarities in plan, proportions and moulding profiles to the Temple of Zeus at Olympia, suggests that the two buildings were constructed around the same time (Broneer 1971: 101).			
Deity:	Poseidon		
Evidence for Deity:			
Pausanias (2.1.7) indicates that the temple was dedicated to Poseidon.			
Brief Description of Remains:			
The temple is poorly preserved, most of the superstructure is missing and in many places the shape of the foundations can only be determined from the shallow trenches cut into the rock to take the foundation blocks (Broneer 1971; Tomlinson 1976: 95).			

Key Measurements:							
FoW:	22.05	**FoL:**	55.65	**SW:**		**SL:**	
KrSt:		**CeW:**	15	**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	1.476	**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Broneer 1971; Tomlinson 1976: 95; Spawforth 2006: 162.

P14: The Temple of Poseidon at Kalaureia (Poros)

Region:	Peloponnese		
Date Range:	525 – 500	**Date Group:**	2

Reasons for Date:

A surviving capital from the temple's cella, dates the temple to the last quarter of the sixth century (Welter 1941: 44).

Deity:	Poseidon

Evidence for Deity:

Pausanias (2.33.3) indicates that this sanctuary was dedicated to Poseidon.

Brief Description of Remains:

Only the trenches cut for the temple foundations are preserved as the stone has been removed by pirates from Hydra around 1760 (Welter 1941: 43; Winter 1978: 155; Pakkanen 2009: 3). No architectural elements of the elevation were recovered, a geison fragment assigned to the building by the excavators is now felt to belong to a much smaller building (Welter 1941: 43).

Key Measurements:

FoW:	14.4	**FoL:**	27.5	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Welter 1941; Winter 1978: 155; Spawforth 2006: 160; Pakkanen 2009: 3.

P15: The Temple of Demeter at Lepreon

Region:	Peloponnese		
Date Range:	400 – 370	**Date Group:**	5
Reasons for Date:			
The use of twisted-r clamps, the style of the capitals, triglyphs and the architrave guttae, as well as the similarity in the proportions to particular buildings at Olympia all indicate that the temple belongs to the early years of the fourth century (Knell 1983a: 230; 1983b: 139-142; Spawforth 2006: 155).			
Deity:	Demeter		
Evidence for Deity:			
Pausanias (5.5.6)			
Brief Description of Remains:			
A number of pieces of the krepidoma steps survive, indicating that the krepidoma was composed of 3 steps (the top step is easily identifiable due to the addition of a decorative fascia), allowing for the restoration of the stylobate dimenstions (the calculations are corroborated using the measurements of the elevation elements (Knell 1983b: 122). The survival of a number of column drums, capitals, architrave and frieze blocks allow for the inclusion of most elements' dimensions.			

Key Measurements:							
FoW:	11.98	**FoL:**	21.69	**SW:**	10.445	**SL:**	20.226
KrSt:	3	**CeW:**	6.32	**CeL:**	12.72		
FC:	6	**FlC:**	11	**FS:**	1.956	**FlS:**	1.956
Rmp:		**DF:**					
LD:	0.83	**CH:**		**UD:**	0.64	**Flts:**	20
AbH:	0.14	**AbW:**	0.837	**EH:**	0.112	**NH:**	0.123
ArH:	0.58	**FrH:**	0.595	**MW:**	0.59	**TW:**	0.38
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Knell 1983a: 230; 1983b; Spawforth 2006: 155.

P16: The Temple of Athena at Makiston

Region:	Peloponnese		
Date Range:	500 – 490	**Date Group:**	5

Reasons for Date:

The temple has been variously dated to between 500 and 350 (Cook 1952: 99; Knell 1983a: 230; Spawforth 2006: 155). Cook (1952: 99) argued that the form of the triglyphs and the double-T clamps suggest that the temple was erected around 400. However, Nakasēs' (2004: 284) reassessment of the architecture, the temple's proportions, the masons' marks and the history of the region, suggests that the temple belongs to the period 500-490. The marble pedimental sculpture appears to belong to a fourth century upgrade (Nakasēs 2004: 282, 284).

Deity:	Skillountian Athena

Evidence for Deity:

In the course of excavations, the marble sculptures from the pediments were recovered, one of which depicted a gigantomachy, for this reason, it is thought that this temple may be that of Skillountian Athena mentioned in Strabo (8.3.14; Hood 1960-1961: 14). A bronze inscription also identified the temple as belonging to Athena (Pritchett 1989: 67).

Brief Description of Remains:

In places the temple has been pillaged right down to the lowest course of the foundations. However, as well as the fragments of pedimental sculpture, a complete triglyph-and-metope block, pieces of geison and 20 column drums have been discovered (Cook 1952: 99; Hood 1959-1960: 11).

Key Measurements:

FoW:	15.79	**FoL:**	34.55	**SW:**	14.18	**SL:**	32.94
KrSt:	3	**CeW:**	8.19	**CeL:**	23.07		
FC:	6	**FlC:**	13	**FS:**	2.68	**FlS:**	2.68
Rmp:		**DF:**					
LD:	0.966	**CH:**		**UD:**	0.739	**Flts:**	20
AbH:	0.205	**AbW:**	1.229	**EH:**	0.233	**NH:**	0.152
ArH:		**FrH:**	0.903	**MW:**	0.816	**TW:**	0.54
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Luce and Blegen 1940: 539; Cook 1952: 99; Hood 1959-1960: 11; 1960-1961: 14; Knell 1983a: 230; 1983b: 140; Pritchett 1989: 67; Nakasēs 2004; Spawforth 2006: 154-155.

P17: The Temple of Zeus at Nemea

Region:	Peloponnese		
Date Range:	340 – 320	**Date Group:**	6
Reasons for Date:			
The similarities to the Temple of Athena Alea at Tegea (P6), the temple's proportions, and the shape of the mouldings suggest that the two temples are of a similar date. It was once felt that a Corinthian coin found in the kiln to make the temple's tiles, would indicate that the temple was begun and completed between 340 and 320 (Hill 1966: 44-46); however, it now appears that the kiln was used for longer than previously thought and is not, therefore, directly related to the date of the temple (Miller 1976: 72).			
Deity:	Zeus		
Evidence for Deity:			
Evidence for the temples dedication comes from Pausanias (2.14.2) and a bronze hydria found in the sanctuary, which bears a dedication to Zeus (Miller 1978: 84).			
Brief Description of Remains:			
The temple was well preserved, with a number of stylobate blocks and a single column remaining *in situ* (Hill 1966: 5; Miller 1990: 142). The elevation elements are well preserved, meaning that their dimensions can be included within the analysis. The level of preservation means that a project is currently underway to re-erect parts of the temple, including a number of the peristyle columns (Miller 1990: 147). The capital measurements are derived from Hill (1966: 9, 10; Plate XIII).			

Key Measurements:							
FoW:	21.957	**FoL:**	44.421	**SW:**	20.085	**SL:**	42.549
KrSt:	3	**CeW:**	11.6	**CeL:**	31.1		
FC:	6	**FlC:**	12	**FS:**	3.75	**FlS:**	3.746
Rmp:	2	**DF:**					
LD:	1.628	**CH:**	10.325	**UD:**	1.3065	**Flts:**	20
AbH:	0.25	**AbW:**	1.76	**EH:**	0.1675	**NH:**	0.2075
ArH:	1.03	**FrH:**	1.1505	**MW:**	1.142	**TW:**	0.7301
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Holland 1917: 144; Shoe 1936: 71, 111, 159; Dinsmoor 1949: 109; 1950: 220; Hill 1966; Coulton 1974; Miller 1976; 1978: 84; 1990; Knell 1983a: 230; Spawforth 2006: 161.

P18: The Temple of Hera at Olympia

Region:	Peloponnese		
Date Range:	600 – 590	**Date Group:**	1
Reasons for Date:			
Sherds found beneath the temple and the style of the roof terracottas indicate that the temple was constructed around 600 (Dinsmoor 1950: 53, 53 n.2; Spawforth 2006: 151).			
Deity:	Hera		
Evidence for Deity:			
Possibly originally dedicated to Zeus, but reconsecrated after the construction of Libon's Temple of Zeus (Dinsmoor 1950: 53; Spawforth 2006: 151).			
Brief Description of Remains:			
The stone krepidoma and the stone columns of the peristyle remain *in situ* as well as the first few courses of the cella walls (Lawrence 1996: 77). It is argued that the stone columns were not contemporary with the original structure, as they replaced the original wooden columns. The varying shape and date of the columns is also reflected in the differing shapes of the capitals (Dörpfeld 1935: 168; Dinsmoor 1950: 54). However, it has also been suggested that the first and earliest stone Doric capitals on the temple belonged to the original structure, with the remainder being added by different donors (Williams 1984: 69; Østby 2000: 240). According to William's (1984: 69 n.11) discussion, S5, S6, S7, N5, N6 and N8 (N8 is an unusual capital as the width of the echinus is significantly smaller than the AbW and as such, has been excluded from the analysis as an anomaly (Adler *et al*. 1892-96: Tafel XXII)) are the earliest columns. Consequently, the lower diameter that is utilised in the data-set belongs to one of the earliest columns, that with capital S7.The capitals identified by Williams as being early, utilise similar underlying designs (see Chapter 4 for a discussion of the technique used to analyse this) and so only capital S7 has been included in the analysis, the only exception being capital N6, which is included in the analysis separately with the code P18a.			

Key Measurements:							
FoW:	20.15	**FoL:**	51.11	**SW:**	18.75	**SL:**	50.01
KrSt:	2	**CeW:**	10.72	**CeL:**	40.62		
FC:	6	**FlC:**	16	**FS:**	3.56	**FlS:**	3.26
Rmp:		**DF:**					
LD:	1.25	**CH:**	5.22	**UD:**	0.995	**Flts:**	20
AbH:	0.21	**AbW:**	1.712	**EH:**	0.248	**NH:**	0.062
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Adler *et al*. 1892-96; Dörpfeld 1935: 168; Dinsmoor 1950: 47, 53-55, 53 n.2; Coulton 1974; Goldberg 1982: 215; Williams 1984: 69; Lawrence 1996: 77; Østby 2000: 240; Spawforth 2006: 151; Barletta 2009a: 78.

P19: The Metroon at Olympia

Region:	Peloponnese		
Date Range:	410 – 388	**Date Group:**	5
Reasons for Date:			
The architectural details of the Metroon appear to date between the high classical and the Temples of Nemea and Tegea. Furthermore, the statue bases to the east of the temple were begun around 388, indicating that the temple must have been built prior to these, thus suggesting a date in the late fifth to early fourth century (Mallwitz 1972: 161).			
Deity:	Mother of the Gods		
Evidence for Deity:			
Pausanias (5.20.9).			
Brief Description of Remains:			
The building was heavily destroyed, with sections of the stylobate having completely disappeared, although the plan of the temples can be recovered in these sections from the preserved foundations. Furthermore, a number of architrave and frieze blocks, column drums and capitals were found in the fortress (Mallwitz 1972: 160).			

Key Measurements:							
FoW:	11.88	**FoL:**	21.93	**SW:**	10.62	**SL:**	20.67
KrSt:	3	**CeW:**	7.12	**CeL:**	13.8		
FC:	6	**FlC:**	11	**FS:**	2.01	**FlS:**	2.01
Rmp:		**DF:**					
LD:	0.85	**CH:**		**UD:**	0.65	**Flts:**	
AbH:	0.14	**AbW:**	0.89	**EH:**	0.096	**NH:**	0.108
ArH:	0.628	**FrH:**	0.66	**MW:**	0.585	**TW:**	0.405
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Adler *et. al.* 1892-1896; Dinsmoor 1950: 220, 333; Mallwitz 1972: 160-163; Robertson 1979: 329; Knell 1983a: 209 Abb.1, 230; 1983b: 140; Spawforth 2006: 154.

P20: The Temple of Zeus at Olympia

Region:	Peloponnese		
Date Range:	472 – 456	**Date Group:**	3

Reasons for Date:

The monuments buried beneath the temple, show that it must have been erected after 480 and so presumably after the time of the establishment of the Elean supremacy over the Olympiad 472-468, and such a date of 468 agrees with the architectural and sculptural style (Dinsmoor 1950: 151).

The temple must have been completed before 456 for in that year the Spartan allies dedicated a gold shield to commemorate the victory of Tanagra. This shield was placed over the eastern gable of the temple, into which an inscribed block was built to support it (this block was found bearing the inscription quoted by Pausanias (5.10.4); Gardiner 1925: 234).

The 12 years between 468-456 afforded ample time for the work. The architectural and sculptural remains, the letters used upon the roof tiles as builders' marks, the bases of the statues found buried under the rubble of the temple terrace, all agree with this date (Gardiner 1925: 234).

Deity:	Zeus

Evidence for Deity:

Pausanias (5.10).

Brief Description of Remains:

The stylobate still survives *in situ*, as well as a few blocks of the cella walls, which indicate the plan and size of the inner building (Gardiner 1925: 235; Rodenwaldt and Hege 1936: 29). Most of the elements survive intact, allowing for the inclusion of their dimensions within the data-set. The column dimensions reported by Gardiner (1925: 236) have been used, despite slightly different measurements being produced by Mallwitz (1972: 214), this is because, Mallwitz's CH of 10.53m has not been subsequently used, whilst the 10.43m reported in Gardiner is used in later publications (see Winter 1978: 158; Wilson-Jones 2001: 701).

Key Measurements:

FoW:	30.2	**FoL:**	66.64	**SW:**	27.68	**SL:**	64.12
KrSt:	3	**CeW:**	16.03	**CeL:**	48.68		
FC:	6	**FlC:**	13	**FS:**	5.2265	**FlS:**	5.221
Rmp:	2	**DF:**					
LD:	2.21	**CH:**	10.43	**UD:**	1.68	**Flts:**	20
AbH:	0.424	**AbW:**	2.65	**EH:**	0.418	**NH:**	0.387
ArH:	1.767	**FrH:**	1.74	**MW:**	1.55	**TW:**	1.06
ScuM:		**ScuP:**	S	**ScuC:**	TRUE	**ScuO:**	

References:

Holland 1917; Gardiner 1925: 234-238; Rodenwaldt and Hege 1936: 28-30; Shoe 1936: 35, 105, 108, 127, 158; Dinsmoor 1949: 109; 1950: 151, 152; Mallwitz 1972: 215; Coulton 1974; Winter 1978: 158; Robertson 1979; Mertens 1984; Wilson Jones 2001: 701; Spawforth 2006: 153.

P21: The Temple of Athena at Prasidaki

Region:	Peloponnese		
Date Range:	500 – 480	**Date Group:**	3
Reasons for Date:			
The finds and the style of the architecture indicate that the temple dates to the early fifth century (Arapogianni 2002: 226).			
Deity:	Athena		
Evidence for Deity:			
The surface finds which have been collected from the area of the temple, especially a bronze statuette of Athena (470-460) and an inscription, in the Elian alphabet on the rim of a bronze phiale confirms the deity as Athena (Arapogianni 2002: 225).			
Brief Description of Remains:			
The temple is relatively well preserved, including three peristyle columns *in situ*. Likewise, capitals and elements of the entablature were preserved, as well as parts of the sima; however, no elements of the pediment have been found and it appears that there were no pedimental sculptures (Arapogianni 2002: 226).			

Key Measurements:							
FoW:	15.85	**FoL:**	35.3	**SW:**	14.7	**SL:**	33.3
KrSt:	2	**CeW:**	8.65	**CeL:**	24.08		
FC:	6	**FlC:**	13	**FS:**	2.74	**FlS:**	2.74
Rmp:		**DF:**					
LD:	1.1	**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:	0.84	**FrH:**	0.8	**MW:**	0.78	**TW:**	0.6
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Yalouris 1971; Arapogianni 2002.

P22: The Unknown Temple at Troizen

Region:	Peloponnese		
Date Range:	350 – 300	**Date Group:**	6
Reasons for Date:			
The length of the temple and the extremely shallow rear porch have led to the suggestion that the temple dates to the second half of the fourth century (Knell 1978: 406; 1983a: 230; Spawforth 2006: 161).			
Deity:	Hippolytus		
Evidence for Deity:			
Possibly within the shrine of Hippolytus mentioned by Pausanias (2.32.1).			
Brief Description of Remains:			
The peristyle remains are preserved up to the level of the euthynteria; however, there is no evidence for the dimensions of the elevation (Knell 1978: 400).			

Key Measurements:							
FoW:	17.365	**FoL:**	31.783	**SW:**		**SL:**	
KrSt:		**CeW:**	9.59	**CeL:**	20.59		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Knell 1978; 1983a: 230; Spawforth 2006: 161.

P23: The Temple of Athena at Vigla

Region:	Peloponnese		
Date Range:	520 – 510	**Date Group:**	2
Reasons for Date:			
The fragments of the elevation indicate that the temple dates to the period 520-510 (Østby 1991: 49).			
Deity:	Athena		
Evidence for Deity:			
Not Clear			
Brief Description of Remains:			
Only parts of the foundations are preserved *in situ*. However, fragments of the elevation survive, including three capital fragments, a small section of the architrave (not preserving the height) and a number of triglyph tops, preserving their total width (Østby 1995b: 341). The temple may also have had a sculpted pediment, featuring a lion (Bookidis 1967: 108-110; Morgan 2003: 159; Nielsen and Roy 2009: 261).			

Key Measurements:							
FoW:	11.55	**FoL:**	24.33	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.54	**Flts:**	20
AbH:	0.125	**AbW:**	0.96	**EH:**	0.117	**NH:**	0.063
ArH:		**FrH:**		**MW:**		**TW:**	0.447
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Bookidis 1967: 108-110; Østby 1991: 49; 1995b: 340, 341, 348, 368; 2005: 498, 499; Forsén *et al*. 1999: 175; Morgan 2003: 159; Spawforth 2006: 159; Nielsen and Roy 2009: 261.

P24: Temple C at Pallantion

Region:	Peloponnese		
Date Range:	500	**Date Group:**	3
Reasons for Date:			
The cella and the peristyle appear to date from different periods, the cella appears to date from 600-550, whilst small finds in the foundations of the peristyle indicate that it was added around 500 (Østby 1991: 48, 49).			
Deity:	Unknown		
Evidence for Deity:			
The temple is in the Sanctuary of the "Pure Gods" mentioned by Pausanias (8.44.6; Østby 1991: 44).			
Brief Description of Remains:			
No trace of a stylobate or of a colonnade; however, column fragments and pieces of elevation have been found (Østby 1991: 50).			

Key Measurements:							
FoW:	11.4	**FoL:**	25	**SW:**		**SL:**	
KrSt:		**CeW:**	5.2	**CeL:**	17.68		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Østby 1991.

P25: The Unknown Temple at Kalavyrta

Region:	Peloponnese		
Date Range:	525 – 500	**Date Group:**	2
Reasons for Date:			
The elongated peristyle, the details of the Doric architectural elements and especially those of the Corinthian marble roof suggest that the temple was begun in the late sixth century (Whitley *et al*. 2006-2007: 31; Alexopoulou and Ladstetter 2007-2008: 44).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
The euthynteria survives *in situ*, constructed of clamp-linked limestone blocks (Alexopoulou and Ladstetter 2007-2008: 44). Broken column drums, architraves, triglyphs, metopes and geison blocks also survive (Whitley *et al*. 2006-2007: 31).			

Key Measurements:							
FoW:	13.9	**FoL:**	34.75	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**	0.55	**Flts:**	
AbH:		**AbW:**	1.02	**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Whitley *et al*. 2006-2007: 31; Alexopoulou and Ladstetter 2007-2008: 44.

S1: Temple F (Concord) at Akragas

Region:	Sicily		
Date Range:	450 – 420	**Date Group:**	4

Reasons for Date:

Dates for this temple range between 450 and 420 (Marconi 1929: 80; Dinsmoor 1950: 111; De Waele 1980: 237; Holloway 2000: 116; Spawforth 2006: 126), although Robertson (1979: 136) assigned the temple more broadly to the second half of the fifth century. The only available evidence to date this temple comes from the architecture itself with most commentators arguing that it dates later than the Athenian Propylaia but before the Temple at Segesta (Dinsmoor 1950: 111). The temple's date is further discussed in Appendix III.3.

Deity:	Unknown

Evidence for Deity:

It is not known to whom the temple is dedicated; it is called Concord due to an erroneous interpretation of a latin inscription found at the temple (Marconi 1929: 86).

Brief Description of Remains:

The temple is well preserved having been converted into a church, which was subsequently destroyed in the 18th century, leaving the original architecture standing (Marconi 1929: 81). The interior of the temple is so complete, that it still preserves the cornice running above the cella (Dinsmoor 1950: 111). The measurements for the elevation elements provided by Mertens (1984) and Marconi (1929) differ slightly, for example, FrH: 1.115m (Mertens 1984: 217), 1.29m (Marconi 1929: 83, 84), in these instances Merterns' measurements have been used. Barletta (2011: 629) lists this temple, amongst others, that require further study due to 'inadequate' current documentation.

Key Measurements:

FoW:	19.57	**FoL:**	41.98	**SW:**	16.92	**SL:**	39.44
KrSt:	4	**CeW:**	9.665	**CeL:**	29.41		
FC:	6	**FlC:**	13	**FS:**	3.195	**FlS:**	3.206
Rmp:		**DF:**					
LD:	1.42	**CH:**	6.712	**UD:**	1.11	**Flts:**	20
AbH:	0.312	**AbW:**	1.74	**EH:**	0.288	**NH:**	0.189
ArH:	1.105	**FrH:**	1.115	**MW:**	0.961	**TW:**	0.64
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Holland 1917; Marconi 1929: 81 - 84; Dinsmoor 1950: 111; Shoe 1952: 59, 142; Coulton 1974; Robertson 1979: 328; Mertens 1984: 113 – 116; Wilson Jones 2001: 708.

S2: Temple G (Hephaisteion) at Akragas

Region:	Sicily		
Date Range:	433-406	**Date Group:**	4
Reasons for Date:			
Marconi (1929: 87; 1933: 122) dates the temple to the last third of the fifth century. This is primarily due to the fact that, in comparison with the other temples of Akragas, Temple G appears to make greater use of Ionicizing elements, which Marconi (1933: 122) then compares with late fifth-century temples of Attica.			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
Two columns remain *in situ*, one on the north and one on the south side. These columns correspond with the preservation of the stylobate in two sections (Marconi 1933: 118-120). The capital reported by Marconi (1933: 121) may belong to the pronaos (Mertens 1984: 218). For the rest of the temple, the foundations remain in place (Marconi 1933: 116). In the 19th century a block of architrave with taenia, regulae and guttae and a cornice with dentils and kymation were recorded (Marconi 1929: 87). However, nothing now remains of the architrave, frieze, geison or sima (Marconi 1933: 121).			

Key Measurements:							
FoW:	19.955	**FoL:**	42.138	**SW:**	17.25	**SL:**	39.43
KrSt:	4	**CeW:**	10.38	**CeL:**	29.06		
FC:	6	**FlC:**	13	**FS:**	3.162	**FlS:**	3.162
Rmp:		**DF:**					
LD:	1.55	**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Marconi 1929: 87; 1933: 116, 118, 120, 121, Figure 69; Dinsmoor 1950: 111; De Waele 1980: 239; Mertens 1984: 127-130; Spawforth 2006: 128.

S3: Temple I (Dioskouroi) at Akragas

Region:	Sicily		
Date Range:	450-406	**Date Group:**	4

Reasons for Date:

The sima would indicate that the temple dates to the second half of the fifth century (Marconi 1929: 98; 1933: 80; Spawforth 2006: 128).

Deity:	Unknown

Evidence for Deity:

It is not positively known. However, the temple is inside the sanctuary of the underworld deities, possibly dedicated to the Dioskouroi (Marconi 1929: 98; Spawforth 2006: 128). However, Dunbabin (1948: 323 n.4) argues that the sanctuary should instead be seen as being dedicated to Demeter and Kore, "although not proved by the finds, [it] is more probable".

Brief Description of Remains:

The temple is in a poor condition of preservation (Marconi 1929: 96). A section of the temple was reconstructed in 1836. However, this was rebuilt with "pictorial and aesthetic affect rather than scientific rigour and accuracy" (Marconi 1929: 96). Despite the reconstruction, Marconi (1929: 96) and Mertens (1984: 121, 125) record different heights for the columns, 5.98m and 5.83m respectively. Due to the presence of multiple columns, the measurement can be included, and consequently, the measurements of Mertens have been utilised. Likewise, they both report different capital and frieze dimensions (Marconi 1929: 96; Mertens 1984: 121, 218) and as the most recent publication Mertens' measurements are used here.

Key Measurements:

FoW:	16.63	**FoL:**	34.59	**SW:**		**SL:**	
KrSt:		**CeW:**	9.52	**CeL:**	23.65		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.22	**CH:**	5.83	**UD:**	0.97	**Flts:**	20
AbH:	0.276	**AbW:**	1.51	**EH:**	0.255	**NH:**	0.161
ArH:	0.927	**FrH:**	0.928	**MW:**	0.764	**TW:**	0.51
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Marconi 1929: 96-98; 1933: 80; Mertens 1984: 121-125, 218; Spawforth 2006: 128.

S4: Temple A (Herakles) at Akragas

Region:	Sicily		
Date Range:	525-480	**Date Group:**	2

Reasons for Date:

Based on the style of the columns and the lion head water spouts, the temple is placed between the late sixth and early fifth centuries (Marconi 1929: 56; De Waele 1980: 236). However, most scholars prefer a date around 500 (Shoe 1952: 33; Robertson 1979: 326; Gruben 2001: 325; Spawforth 2006: 128). The temple's date is further discussed in Appendix III.3.

Deity:	Herakles

Evidence for Deity:

The identification of the temple as belonging to Herakles is based on Cicero's (*Verres* 2.4.94) mention of a temple to Herakles that stood near the Agora and has been identified as being near the south gate (Guido 1967: 121).

Brief Description of Remains:

The temple is preserved up to the stylobate and a number of columns remain *in situ*. Blocks remain from all the components. Thus, all the measurements from the various elements can be used in the study. Despite this excellent preservation, a number of reported measures differ; Marconi (1929: 53) reports that the total heights of the capitals were 1.25m (only providing the AbH: 0.46m); whilst Mertens (1984: 218) provides a total height of 1.199m, due to their more recent publication, Mertens' measurements have been used in the analysis. Likewise, the architrave and frieze dimensions reported by Marconi (1929: 55) and Mertens (1984: 217) differ slightly (FrH: 1.36m, 1.515m respectively), Mertens' measurements were used. Fragments of a head and torso indicate that the east pediment of the temple bore sculptural decoration, perhaps depicting a gigantomachy (Bell 1995: 14 n.77; Østby 2009: 160 n.66).

Key Measurements:

FoW:	27.77	**FoL:**	69.065	**SW:**	25.33	**SL:**	67.005
KrSt:	3	**CeW:**	13.9	**CeL:**	47.675		
FC:	6	**FlC:**	15	**FS:**	4.614	**FlS:**	4.614
Rmp:		**DF:**					
LD:	2.085	**CH:**	10.07	**UD:**	1.468	**Flts:**	20
AbH:	0.449	**AbW:**	2.68	**EH:**	0.452	**NH:**	0.298
ArH:	1.6	**FrH:**	1.515	**MW:**	1.31	**TW:**	1
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Marconi 1929: 52-55; Coulton 1974; Dinsmoor 1950: 105; Shoe 1952: 33; Guido 1967: 121; De Waele 1980: 191; Mertens 1984: 218; Robertson 1979: 326; Spawforth 2006: 126.

S5: Temple D (Hera Lacinia) at Akragas

Region:	Sicily		
Date Range:	470-420	**Date Group:**	3

Reasons for Date:

Dated on comparison with the Temple of Concord and commonly placed between 470-420 (Marconi 1929: 72, 76; Guido 1967: 117; Robertson 1979: 327; De Waele 1980: 237; Holloway 2000: 116; Spawforth 2006: 126). The temple's date is further discussed in Appendix III.3.

Deity:	Unknown

Evidence for Deity:

The attribution to Hera Lacinia is based upon a mistake with the temple at Croton (Marconi 1929: 76).

Brief Description of Remains:

Temple D (Hera Lacinia) at Akragas is complete up to and including the frieze in one section (Marconi 1929: 74). As with the other temples of Akragas, the measurements reported by Marconi (1929: 74) and Mertens (1984: 216) differ (CH: 6.44m, 6.322m respectively), as with the other temples the dimensions analysed by Mertens are used in this analysis. However, the geison and sima are not conserved (Marconi 1929: 76).

Key Measurements:

FoW:	19.74	**FoL:**	40.895	**SW:**	16.93	**SL:**	38.13
KrSt:	4	**CeW:**	9.883	**CeL:**	28.545		
FC:	6	**FlC:**	13	**FS:**	3.118	**FlS:**	3.064
Rmp:		**DF:**					
LD:	1.375	**CH:**	6.322	**UD:**	1.07	**Flts:**	20
AbH:	0.328	**AbW:**	1.72	**EH:**	0.287	**NH:**	0.231
ArH:	1.133	**FrH:**	1.02	**MW:**	0.921	**TW:**	0.614
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Marconi 1929: 72-76; Dinsmoor 1950: 338; Coulton 1974; Robertson 1979: 32; Mertens 1984: 100-104; Wilson Jones 2001: 707; Spawforth 2006: 126.

S6: Temple E (Athena) at Akragas

Region:	Sicily		
Date Range:	500-450	**Date Group:**	3

Reasons for Date:

The style of the temple's architecture is described as being between 'Mature Archaic' and 'Canonical Classical', placing it between 500 and 450 (Marconi 1929: 77; De Waele 1980: 237; Boardman 1999: 188; Spawforth 2006: 126). The temple's date is further discussed in Appendix III.3.

Deity:	Athena

Evidence for Deity:

Traces of two ancient temples are discernible on the Akropolis. The date of this structure, to the fifth century indicates that it is the Athenaion of Theron (Polybius 9.27.3; Van Buren 1923: 4).

Brief Description of Remains:

The ancient temple has been built over by the church of Santa Maria dei Greci, thus, very little of the temple remains. A section of the krepidoma is conserved on the north side preserving 3 krepidoma steps, whilst, a number of lower diameters are also preserved on the north side (Marconi 1929: 77). No elements of the frieze are presently preserved, but, the measurements of a preserved block are relayed by Serradifalco (Marconi 1929: 80).

Key Measurements:

FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:	3	**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.41	**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**	0.88	**TW:**	0.52
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Van Buren 1923: 4; Marconi 1929: 77; De Waele 1980: 237; Boardman 1999: 188; Spawforth 2006: 126.

S7: Temple L at Akragas

Region:	Sicily		
Date Range:	450 – 400	**Date Group:**	4
Reasons for Date:			
The details of the architecture appear to be later than the temples of Concord (S1) and Hephaistos (S2). Likewise, the stratigraphy contains objects dating to the second half of the fifth century, including pottery with the signature of Aristophanes (Marconi 1933: 98; De Waele 1980: 241).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
The temple was excavated by Marconi, what came to light, with the exception of the already known north-east corner, was in complete disarray. In the north-east corner, only the foundations and lowest step of the krepidoma survive (Mertens 1984: 92-93). The amount of column drums and capitals exposed by Marconi's excavations makes the height reconstruction reliable (Mertens 1984: 94). As with the other Akragantian temples, the architrave measurements reported by Marconi (1933: 94) and Mertens (1984: 96) differ slightly, 1.2m and 1.217m respectively, as such, Mertens' architrave height has been used. Nothing of the frieze was discovered, except for a small fragment of a metope headband (Marconi 1933: 92; Mertens 1984: 95).			

Key Measurements:							
FoW:	21.2	**FoL:**	44.6	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.405	**CH:**	6.589	**UD:**	1.06	**Flts:**	20
AbH:	0.328	**AbW:**	1.77	**EH:**	0.309	**NH:**	0.213
ArH:	1.217	**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Marconi 1933: 92-98; De Waele 1980: 237-241; Mertens 1984: 92-96.

S8: Temple of Zeus Olympios (Temple B) at Akragas

Region:	Sicily		
Date Range:	520 – 480	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.3.			
Deity:	Olympieion Zeus		
Evidence for Deity:			
Diodorus Siculus (13.82.3-4) and Polybius (9.27).			
Brief Description of Remains:			
The temple is in a ruinous state; however, due to the relatively good state of preservation of many of the elements, their measurements can be calculated in line with the criteria laid out in Chapter 4. For example, the stylobate remains *in situ* in some positions, allowing for the restoration of the stylobate dimensions, although, the differences between the various restored column heights 17.265m in Dinsmoor (1950: 338) and 19.2m in Mertens (1984: 216) indicate the problems associated with the restoration of the column heights of this temple and consequently, the measurement is not included in this analysis. As the peristyle was constructed with half columns, the drums only have half the number of flutes (9; Marconi 1929: 59); to make the measurement comparable to the other temples in the study the number of flutes has been doubled in the data-set. Despite Bookidis' (1967: 428) caution that the sculptures associated with this temple may belong to a group of statues located in the surrounding stoas, it has generally been believed that they belong to the temples sculpted pediments, in line with description of the temple given by Diodorus Siculus (13.82.4; Bell 1980: 359; Spawforth 2006: 128).			

Key Measurements:							
FoW:	56.3	**FoL:**	113.45	**SW:**	52.74	**SL:**	110.095
KrSt:	4	**CeW:**	44.01	**CeL:**	101.16		
FC:	7	**FlC:**	14	**FS:**	8.042	**FlS:**	8.185
Rmp:		**DF:**					
LD:	4.3	**CH:**		**UD:**	3.1	**Flts:**	18
AbH:	0.88	**AbW:**	4.8	**EH:**	1.01	**NH:**	0.67
ArH:	3.36	**FrH:**	3.1	**MW:**	2.28	**TW:**	1.79
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 155; Holland 1917; Marconi 1929: 59; Dinsmoor 1950: 101 n.1, 104-105, 338; Shoe 1952: 42 Guido 1967: 123; Coulton 1974; Robertson 1979: 327; Bell 1980: 359-371; De Waele 1980: 237; Mertens 1984; Holloway 2000: 117-119; Spawforth 2006: 127-128.

S9: The Temple of Aphrodite at Akrai

Region:	Sicily		
Date Range:	525 - 500	**Date Group:**	2
Reasons for Date:			
The similarity of the capitals to those of Temple D at Selinous suggests that the temple belongs to the third quarter of the sixth century (Barletta 1983: 113). Spawforth (2006: 125) suggests that a similar date can also be assigned based upon the triglyph carving.			
Deity:	Aphrodite		
Evidence for Deity:			
Inscriptions and votive dedications suggest that Akrai's chief divinity, Aphrodite, was worshipped in this sanctuary (Brea 1986: 12; Spawforth 2006: 125).			
Brief Description of Remains:			
Most of the elevation has been used to make lime; only a few small flakes of the columns survive, as well as four fragments of Doric capitals, with one preserving the complete profile of the echinus, three decorated triglyph fragments and possibly a number of unattributed geison fragments (Brea 1986: 26, 27; Barletta 1983: 112, 113, 116).			

Key Measurements:							
FoW:	18.3	**FoL:**	39.5	**SW:**		**SL:**	
KrSt:		**CeW:**	8.2	**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**	2				
LD:		**CH:**		**UD:**	0.98	**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	0.59
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Barletta 1983: 112, 113, 116; Brea 1986; Spawforth 2006: 125.

S10: Temple B (Athena) at Gela

Region:	Sicily		
Date Range:	600 – 550	**Date Group:**	1
Reasons for Date:			
The poor state of preservation makes it difficult to accurately date this temple. The temple is famous for the series of architectural terracottas attributed to the building. The terracottas suggest that the temple was initially constructed in the early sixth century (Orsi 1907: 40; Van Buren 1923; Spawforth 2006: 125; Marconi 2007: 58). During the temple's excavation a few Guttae that had become detached from the geison were discovered. Brea (1952: 15, 17) uses the inclination of the guttae to ascribe a sixth century date to the temple. A capital fragment, which may belong to the pronaos, would also suggest an archaic date (Orsi 1907: 38; Brea 1952: 15).			
Deity:	Athena		
Evidence for Deity:			
Graffiti to Athena on the lip of a clay pithos and the small helmeted head of Athena appear to confirm the identity of the temple's deity (Orsi 1907: 39).			
Brief Description of Remains:			
Nothing of the temple survives except for the lowest level of the foundations (Brea 1952: 12). Van Buren (1923: 16) suggests that the temple was destroyed by the Geloans themselves in order that their new temple 'C' "might have an unimpeded outlook".			

Key Measurements:							
FoW:	17.75	**FoL:**	35.22	**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Orsi 1907: 38-40; Van Buren 1923; Brea 1952: 12-17; Spawforth 2006: 125; Marconi 2007: 58.

S11: Temple C at Gela

Region:	Sicily		
Date Range:	500 – 475	**Date Group:**	3
Reasons for Date:			
The shape of the capital's echinus and the proportions of the columns' lower diameters and the axial spaces would suggest an early fifth century date; this temple has consequently been associated with the victory over the Carthaginians at Himera in 480 (Orsi 1906: 551; Brea 1952: 21; Rhodes 2010: 82).			
Deity:	Unknown		
Evidence for Deity:			
Brief Description of Remains:			
One column drum survives in place, with four further drums discovered nearby; however, the extreme destruction of the temple makes any plan measurements purely theoretical (Orsi 1906: 551; Brea 1952: 19, 20). A capital belonging to the temple appears to be preserved (Orsi 1906: 552; Koldewey and Puchstein 1899: 137); although it does not conserve its AbH. Both Orsi (1906: 552) and Koldewey and Puchstein (1899: 137) disagree about the capital's measurements and, as such, they have not been included (for example; Orsi reports that the UD is 1.35m; whilst Koldewey and Puchstein have 1.23m). Furthermore, Orlandini (1976b) believes that the column actually belongs to the temple's opisthodomos rather than the peristyle. However, the size of the surviving, heavily mutiliated, geison block demonstrates that this temple was significantly larger than Temple B.			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:	1.7	**CH:**		**UD:**		**Flts:**	20
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 137; Orsi 1906: 550-552; Brea 1952: 19, 20; Spawforth 2006: 68, 125.

S12: The Temple of Victory at Himera

Region:	Sicily		
Date Range:	480	**Date Group:**	3

Reasons for Date:

The temple is understood to be a monument to celebrate the Greek victory over the Carthaginians at the Battle of Himera in 480 (Mertens 1984: 65; Holloway 2000: 112; Spawforth 2006: 133). Furthermore, Marconi (1931: 53) suggests that the ratio between length and width as well as the number of columns also ascribe the temple to the period around 480, whilst, Shoe (1952: 41: IV.8) dates the hawksbeak mouldings between 480 and 460.

Deity:	Unknown

Evidence for Deity:

Although the cult is uncertain, the temple is commonly associated with Victory (Spawforth 2006: 133).

Brief Description of Remains:

The *in situ* building remains include the lowest column drums, which allow for an accurate reconstruction of the number of peristyle columns. However, it is not possible to include the column heights in the analysis as the remaining drums are of varying heights and no complete columns remain (Marconi 1931: 44). A capital fragment and an architrave block once thought to belong to the pronaos, but now believed to belong to the peristyle, are also preserved (Marconi 1931: 46; Mertens 1984: 65). Despite Marconi's (1931: 46) assertions that the capital dimensions were not retrievable, Mertens (1984: 65) disagrees; however, the upper diameter measurement was not preserved. Fragments from the site suggest that the temple had both sculpted metopes and stone sculpture in the pediments (Holloway 2000: 114).

Key Measurements:

FoW:	25.09	**FoL:**	58.61	**SW:**	22.455	**SL:**	55.955
KrSt:	4	**CeW:**	11.176	**CeL:**	39.718		
FC:	6	**FlC:**	14	**FS:**	4.175	**FlS:**	4.198
Rmp:		**DF:**					
LD:	1.91	**CH:**		**UD:**		**Flts:**	20
AbH:	0.415	**AbW:**	2.336	**EH:**	0.41	**NH:**	0.27
ArH:	1.457	**FrH:**		**MW:**	1.255	**TW:**	0.842
ScuM:	TRUE	**ScuP:**	S	**ScuC:**		**ScuO:**	

References:

Marconi 1931; Shoe 1952: 41: IV.8; Mertens 1984: 65; Holloway 2000: 112; Spawforth 2006: 133.

S13: The Unknown Temple at Segesta

Region:	Sicily		
Date Range:	426-409	**Date Group:**	4

Reasons for Date:

The style of the architecture would appear to indicate a date in the last quarter of the fifth century (Lawrence 1996: 135; Spawforth 2006: 132). Dinsmoor (1950: 112) suggests that the temple was begun during the alliance with Athens after 426 and stopped with the stagnation from the subjection of the Island by the Carthaginians in 409.

Deity:	Unknown

Evidence for Deity:

Brief Description of Remains:

The unfinished temple at Segesta is remarkably well preserved, with all the peristyle columns and entablature remaining *in situ*. Given the remarkable state of preservation, the apparent complete absence of a cella is noteworthy. It was previously felt that the temple was not intended to contain a cella (Dinsmoor 1950: 112); however, excavations within the temple have revealed that foundations were made for a cella (Tomlinson 1986: 248; Lawrence 1996: 135).

Key Measurements:

FoW:	26.26	**FoL:**	61.17	**SW:**	23.12	**SL:**	58.035
KrSt:	3	**CeW:**		**CeL:**			
FC:	6	**FlC:**	14	**FS:**	4.334	**FlS:**	4.3595
Rmp:		**DF:**					
LD:	1.935	**CH:**	9.338	**UD:**	1.551	**Flts:**	
AbH:	0.388	**AbW:**	2.312	**EH:**	0.326	**NH:**	0.271
ArH:	1.449	**FrH:**	1.448	**MW:**	1.308	**TW:**	0.873
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Holland 1917; Dinsmoor 1950: 112; Coulton 1974; Mertens 1984; Tomlinson 1986: 248; Lawrence 1996: 135, 136; Wilson Jones 2001: 710; Spawforth 2006: 132.

S15: Temple A at Selinous

Region:	Sicily		
Date Range:	490 – 450	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Unknown (possibly Apollo and/or Artemis)		
Evidence for Deity:			
The similar layout of temples A and O, enclosed by a peribolos wall may be taken as evidence for a sanctuary dedicated to two divinities (Fischer-Hansen 2009: 220).			
Brief Description of Remains:			
The temple is relatively well preserved; with the stylobate and a number of lower column drums remaining *in situ*. Likewise, evidence for most of the temple's elevation measurements are preserved; however, the column height is not included as there is significant difference between the restorations (7.042m: Koldewey and Puchstein 1899: 113-115; 6.235m: Marquand 1894: 525; Dinsmoor 1950: 338). There are variations between the entablature elements reported by Marquand (1894: 524), Koldewey and Puchstein (1899: 113-115) and Mertens (1984: 217), for example, the reported metope widths are 0.902m, 0.845m and 0.868m respectively; as such, the measurements provided by Mertens have been used.			

Key Measurements:							
FoW:	18.063	**FoL:**	42.109	**SW:**	16.133	**SL:**	40.31
KrSt:	4	**CeW:**	8.8	**CeL:**	28.7		
FC:	6	**FlC:**	14	**FS:**	2.997	**FlS:**	2.9975
Rmp:		**DF:**					
LD:	1.398	**CH:**		**UD:**	1.02	**Flts:**	20
AbH:	0.268	**AbW:**	1.628	**EH:**	0.263	**NH:**	0.27
ArH:	1.1	**FrH:**	1.056	**MW:**	0.868	**TW:**	0.629
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Marquand 1894: 524, 525; Koldewey and Puchstein 1899: 113-115; Holland 1917; Dinsmoor 1950: 110; Shoe 1952: 42; Coulton 1974; Robertson 1979; Mertens 1984: 83-86; Blandi 2000: 95-97; Spawforth 2006: 130; Fischer-Hansen 2009: 220.

S16: Temple C at Selinous

Region:	Sicily		
Date Range:	550-520	**Date Group:**	2
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Unknown (possibly Artemis and Apollo)		
Evidence for Deity:			
Offerings, the central position of the temple and an inscription suggest that this temple may have been dedicated to Apollo (Marconi 2007: 132; Salt 2008: 147). Although, Bookidis (1967: 213 n.1) has argued that the lack of knowledge regarding the original purpose and location of the inscription means that it should be disregarded as evidence. Consequently, Fischer-Hansen (2009: 219-220) and Østby (2009: 158) further argue that the prominence of the siblings in the sculptural embellishment of the temple and the existence of two altars in the sanctuary could suggest that the temple was dedicated to both deities.			
Brief Description of Remains:			
The temple is well preserved, preserving all the measurements for this analysis. The reconstruction is aided through the preservation of all the architectural elements *in situ*, following the collapse of the temple. The majority of the temple's columns have 16 flutes, however, the columns of the east façade had 20 (Dinsmoor 1950: 80; Blandi 2000: 101). The triglyph and metope widths vary, for example, the triglyphs range between 0.87 and 1.08. The triglyph width of 0.975 has been used in the data-set as the width used in Coulton's 1974 study of Doric temple design.			

Key Measurements:							
FoW:	26.357	**FoL:**	71.15	**SW:**	23.937	**SL:**	63.72
KrSt:	4	**CeW:**	10.48	**CeL:**	41.63		
FC:	6	**FlC:**	17	**FS:**	4.399	**FlS:**	3.86
Rmp:		**DF:**	2				
LD:	1.94	**CH:**	8.62	**UD:**	1.5	**Flts:**	16
AbH:	0.386	**AbW:**	2.522	**EH:**	0.324	**NH:**	0.326
ArH:	1.765	**FrH:**	1.46	**MW:**	1.04	**TW:**	0.975
ScuM:	TRUE	**ScuP:**	M	**ScuC:**		**ScuO:**	

References:

Koldewey and Puchstein 1899: 103; Marquand 1894: 524, 525; Holland 1917; Van Buren 1923: 56, 57; Dinsmoor 1950: 78-83; Shoe 1952: 31, 38, 172, 178; Martienssen 1956: 72; Bookidis 1967: 208-214; Coulton 1974; Robertson 1979: 71-73; Goldberg 1982: 211; Barletta 1983: 202-205; 1990: 63, 64, 68 n.151; Østby 1995a: 89-92; Lawrence 1996: 84; Holloway 1971; 2000: 70; Blandi 2000: 101-105; Guidoboni *et al.* 2002; Martin 2003: 67; Spawforth 2006: 129; Marconi 2007; Fischer-Hansen 2009: 219-220.

S17: Temple D at Selinous

Region:	Sicily		
Date Range:	490	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Unknown (possibly Athena)		
Evidence for Deity:			
Marconi (2007: 132) suggests that the temple may have been dedicated to Athena, based upon the presence of an inscription found between Temple's C and D that contains a dedication to Apollo and Athena. Although, as discussed above, Bookidis (1967: 213 n.1) argues that the inscription should be disregarded as evidence for the two temples' deities, as such, the identification should be regarded with appropriate caution.			
Brief Description of Remains:			
As with Temple C, the temple was brought down in a series of earthquakes, resulting in the excellent preservation of the temple's individual elements (albeit in a slightly less ordered state than those of Temple C). Marquand (1894: 524) and Robertson (1979: 325) record different dimensions for the cella (9.538m by 38.277m; 9.87m by 39.28m respectively), as the most recent publication, the measurements listed by Robertson (originally published in 1929) have been used in the data-set. Unlike the other temples of Selinous, the pronaos antae of Temple D take the form of engaged columns. It could be argued that these perform a similar role to a double colonnade of columns as on Temple C (Dinsmoor 1950: 98); however, the double colonnade is an established form, used on many temples before and the contemporary Temple F (S19), suggesting that the difference was intentional and was not intended to be a comparable double colonnade. Similar to the situation with the cella dimensions, the capital dimensions used by Marquand (1894: 525) differ from those of Koldewey and Puchstein (1899: 109), as such, the measurements of Koldewey and Puchstein have been used in the analysis. Similarly, Blandi (2000: 107) reports that the peristyle columns had 25 flutes, whereas, Wescoat (2012: Table 17b) states that they had 20; to this end, 20 flutes have been recorded in the data-set.			

Key Measurements:							
FoW:	28.096	**FoL:**	59.879	**SW:**	23.626	**SL:**	55.679
KrSt:	5	**CeW:**	9.87	**CeL:**	39.28		
FC:	6	**FlC:**	13	**FS:**	4.368	**FlS:**	4.491
Rmp:		**DF:**					
LD:	1.67	**CH:**	8.35	**UD:**	1.19	**Flts:**	20
AbH:	0.35	**AbW:**	2.28	**EH:**	0.316	**NH:**	0.296
ArH:	1.585	**FrH:**	1.489	**MW:**	1.2	**TW:**	1.05
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Marquand 1894: 524, 525; Koldewey and Puchstein 1899: 109; Holland 1917; Dinsmoor 1950: 98; Krauss 1951: 107; Shoe 1952: 39, 179; Bookidis 1967: 213 n.1; Coulton 1974; Robertson 1979; Barletta 1983: 207, 208; 1990: 68 n. 151; Østby 1995a: 96; Blandi 2000: 107; Guidoboni *et al.* 2002; Spawforth 2006: 130; Wescoat 2012: Table 17.

S18: Temple E at Selinous

Region:	Sicily		
Date Range:	500-480	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Hera		
Evidence for Deity:			
1st century inscription (*IG* XIV 271) in the temple's back room indicates that Temple E was probably dedicated to Hera (De Angelis 2003: 131; Østby 2009: 161).			
Brief Description of Remains:			
Owing to seismic activity, the temple's measurements are well preserved, having fallen in an orderly fashion, conserving all the measurements taken for this study. Indeed, the temple is so well preserved that the peristyle and parts of the entablature were re-erected in the mid-twentieth century. Neither Robertson (1979: 327) nor Mertens (1984: 214) report the exact cella length (Robertson uses c.49.7m) and as such, the length is not included. Similarly, the column dimensions used by Marconi (1967: 86), Mertens (1984: 215) and Blandi (2000: 82) contain a small amount of variation (UD: 1.69m, 1.76m, 1.8m respectively). To maintain consistency in reporting, Merten's measurements have been used in the data-set.			

Key Measurements:							
FoW:	27.582	**FoL:**	69.979	**SW:**	25.308	**SL:**	67.749
KrSt:	3	**CeW:**	14.234	**CeL:**			
FC:	6	**FlC:**	15	**FS:**	4.712	**FlS:**	4.712
Rmp:		**DF:**					
LD:	2.24	**CH:**	10.335	**UD:**	1.76	**Flts:**	20
AbH:	0.545	**AbW:**	2.765	**EH:**	0.445	**NH:**	0.385
ArH:	1.785	**FrH:**	1.716	**MW:**	1.384	**TW:**	0.95
ScuM:		**ScuP:**		**ScuC:**	TRUE	**ScuO:**	

References:
Koldewey and Puchstein 1899: 130; Holland 1917; Dinsmoor 1950: 109, 110; Shoe 1952: 40, 58, 178; Marconi 1967; Coulton 1974; Mertens 1984; Pedley 1993: 223; Blandi 2000: 81, 82; Guidoboni *et al.* 2002; Spawforth 2006: 130, 131.

S19: Temple F at Selinous

Region:	Sicily		
Date Range:	490-480	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Unknown		
Evidence for Deity:			
The temple is variously attributed to Athena or Artemis (see Salt 2008: 152-153 for an overview of the various attributions). However, Østby (2009: 161) argues that the temple may have been dedicated to Herakles, based upon the dedications of the other temples in the city.			
Brief Description of Remains:			
The temple has suffered a large amount of damage, largely due to earthquakes and being used as a quarry (Blandi 2000: 87). However, the measurements are preserved in the individual elements that are preserved on the site (Koldewey and Puchstein 1899: 119; Blandi 2000: 87). Indeed, a large number of column drums have remained *in situ* on the stylobate and the collapse was so structured that the remains of the frieze did not get rearranged, retaining the order of triglyph and metope (Guidoboni *et al.* 2002: 2971). The temple may also have had an Ionic frieze, although its position on the building has not been identified (Østby 2009: 160).			

Key Measurements:							
FoW:	28.39	**FoL:**	65.9	**SW:**	24.37	**SL:**	61.88
KrSt:	4	**CeW:**	9.2	**CeL:**			
FC:	6	**FlC:**	14	**FS:**	4.468	**FlS:**	4.604
Rmp:		**DF:**	2				
LD:	1.82	**CH:**	9.11	**UD:**	1.245	**Flts:**	20
AbH:	0.33	**AbW:**	2.42	**EH:**	0.305	**NH:**	0.205
ArH:	1.52	**FrH:**	1.49	**MW:**	1.26	**TW:**	1.03
ScuM:	TRUE	**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 119; Holland 1917; Dinsmoor 1950: 98, 99; Krauss 1951: 107; Shoe 1952: 39, 57; Hodge 1964; Coulton 1974; Holloway 1975: 18; Robertson 1979: 325; Barletta 1983: 211, 212; Østby 1995a: 96, 97; 2009; Blandi 2000: 87; Guidoboni *et al.* 2002; Spawforth 2006: 130.

S20: Temple G at Selinous

Region:	Sicily		
Date Range:	520 – 470	**Date Group:**	3
Reasons for Date:			
The temple's date is discussed in detail in Appendix III.2.			
Deity:	Apollo (possibly Zeus)		
Evidence for Deity:			
An inscription found close to the temple in 1871 would suggest that the temple was dedicated to Apollo; however, it has recently been attributed to Zeus (Blandi 2000: 89; Fischer-Hansen 2009: 218).			
Brief Description of Remains:			
The temple is in a heap of ruins, having been overturned by an earthquake (Dinsmoor 1950: 99). However, a number of measurements are still preserved, the blocks being too large to be removed from the site (Guidoboni *et al.* 2002: 2972). As such, the capitals and the entablature measurements can be utilised (Koldewey and Puchstein 1899: 124, 125; Barletta 1990: 68 n.151); whilst, other measurements can be safely restored according to the criteria outlined in Chapter 4. The pediment of the small naiskos inside the temple's cella may reasonably be seen as the original location of the bearded giant figure (Østby 2009: 160).			

Key Measurements:							
FoW:	53.31	**FoL:**	113.36	**SW:**	50.07	**SL:**	110.12
KrSt:	3	**CeW:**		**CeL:**			
FC:	8	**FlC:**	17	**FS:**	6.61	**FlS:**	6.61
Rmp:		**DF:**					
LD:	2.97	**CH:**		**UD:**	1.92	**Flts:**	20
AbH:	0.55	**AbW:**	3.91	**EH:**	0.57	**NH:**	0.33
ArH:	3.33	**FrH:**	2.31	**MW:**	1.96	**TW:**	1.34
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Koldewey and Puchstein 1899: 124, 125; Holland 1917; Dinsmoor 1950: 98-100; Shoe 1952: 40, 58; Coulton 1974; Robertson 1979: 86; Barletta 1983: 212; 1990: 54, 68 n.151; Blandi 2000: 89-92; Spawforth 2006: 130, 131; Fischer-Hansen 2009: 218.

S21: Temple O at Selinous

Region:	Sicily		
Date Range:	490 – 450	**Date Group:**	3
Reasons for Date:			
Similarity of the temple's design to Temple A (S15).			
Deity:	Unknown (Apollo and/or Artemis)		
Evidence for Deity:			
The similar layout of temples A and O, enclosed by a peribolos wall may be taken as evidence for a sanctuary dedicated to two divinities (Fischer-Hansen 2009: 220).			
Brief Description of Remains:			
The foundations of the temple are preserved; however, the temple may never have been finished (Blandi 2000: 109; Spawforth 2006: 130). Dinsmoor (1950: 79) and Blandi (2000: 109) suggest that the temple is very similar in design to Temple A.			

Key Measurements:							
FoW:		**FoL:**		**SW:**		**SL:**	
KrSt:		**CeW:**		**CeL:**			
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:
Dinsmoor 1950: 79, 110; Osborne 1996: 264; Blandi 2000: 109, 110; Spawforth 2006: 130; Fischer-Hansen 2009: 220.

S22: The Temple of Apollo at Syracuse

Region:	Sicily		
Date Range:	590 – 580	**Date Group:**	1

Reasons for Date:

The waterlogged ground around the temple makes it difficult to date the building archaeologically. Therefore, the dating of the temple has relied upon the shape of the capitals and the temple's various ratios. Whilst, most scholars agree on a date in the first half of the sixth century, there has been significant controversy as to whether the temple dates to the first quarter of the century (Holloway 1969: 288 n. 13; 1999; Marconi 2007: 50) or the second (Barletta 1983: 72; Spawforth 2006: 122).

Deity:	Apollo

Evidence for Deity:

Dedicatory inscription on the krepidoma (see the discussion of the Client in Chapter 7).

Brief Description of Remains:

A significant proportion of the (possibly) unfinished temple remains, allowing for a relatively safe restoration of the plan and most of the elevation (Dinsmoor 1950: 77). The stylobate remains *in situ*, bearing two monolithic columns and capitals still standing, supporting an architrave block (Lawrence 1996: 82; Spawforth 2006: 122). Although it is argued that the corner columns have larger lower diameters, the upper diameters of these columns is either not known or not reported; as such, only the flank columns' dimensions are included in the analysis.

A series of triglyphs and possible Gorgoneia metope sculptures that were once felt to belong to the temple are now thought to belong to smaller buildings (Cultrera 1951: 821; Wescoat 1989: 85; Marconi 2007: 40, 42).

Key Measurements:

FoW:	24.46	**FoL:**	58.32	**SW:**	21.5	**SL:**	54.9
KrSt:	4	**CeW:**	11.77	**CeL:**	37.2		
FC:	6	**FlC:**	17	**FS:**	3.772	**FlS:**	3.331
Rmp:		**DF:**	2				
LD:	1.85	**CH:**	7.98	**UD:**	1.5	**Flts:**	16
AbH:	0.6	**AbW:**	2.86	**EH:**	0.46	**NH:**	0.3
ArH:	2.425	**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**	M	**ScuC:**		**ScuO:**	

References:

Dinsmoor 1950: 77, 337; Cultrera 1951; Coulton 1974; Barletta 1983: 72-74; 1990: 68 n.151; Wescoat 1989: 85; Lawrence 1996: 82; Mertens 1996: 324; Holloway 1999; 2000: 69; Gruben 2001: 286; Spawforth 2006: 122; Marconi 2007: 38, 40, 50, 67.

S23: The Temple of Athena at Syracuse

Region:	Sicily		
Date Range:	478 – 475	**Date Group:**	3
Reasons for Date:			
The architectural similarities between this temple and the Temple of Victory at Himera (S12) suggest that they were conceived and constructed at around similar time (Dinsmoor 1950: 108; Spawforth 2006: 122).			
Deity:	Athena		
Evidence for Deity:			
Not Clear			
Brief Description of Remains:			
Having been incorporated into the local Cathedral, the Temple of Athena preserves the measurements for most of its elements. However, the incorporation into the church has resulted in the length and partitions of the cella being untraceable (Lawrence 1996: 102).			

Key Measurements:							
FoW:	24.308	**FoL:**	57.533	**SW:**	22.2	**SL:**	55.455
KrSt:	3	**CeW:**	12.37	**CeL:**			
FC:	6	**FlC:**	14	**FS:**	4.15	**FlS:**	4.165
Rmp:		**DF:**					
LD:	1.978	**CH:**	8.783	**UD:**	1.485	**Flts:**	20
AbH:	0.452	**AbW:**	2.47	**EH:**	0.439	**NH:**	0.309
ArH:	1.485	**FrH:**	1.4	**MW:**	1.253	**TW:**	0.831
ScuM:		**ScuP:**	S	**ScuC:**		**ScuO:**	

References:
Dinsmoor 1950: 108; Shoe 1952: 42, 88; Coulton 1974; Mertens 1984: 68-77; Wescoat 1989: 84, 85, 91; Lawrence 1996: 102; Holloway 2000: 113; Gruben 2001: 294; Spawforth 2006: 122, 123.

S24: The Temple of Zeus at Syracuse

Region:	Sicily		
Date Range:	580 – 555	**Date Group:**	1
Reasons for Date:			
The temple's heavy proportions place it in the first half of the sixth century; however, its longer plan and thinner, more widely and evenly spaced columns suggest that it was designed after the Temple of Apollo (S22, Orsi 1903: 392; Wescoat 1989: 85).			
Deity:	Zeus		
Evidence for Deity:			
Not Clear			
Brief Description of Remains:			
Only two stumps of monolithic columns are still standing *in situ* (Orsi 1903: 374; Dinsmoor 1950: 75). However, no elements of the capitals, architrave or frieze were uncovered by Orsi's (1903: 381) excavations within and around the temple.			

Key Measurements:							
FoW:	25.4	**FoL:**	65.05	**SW:**	22.4	**SL:**	62.05
KrSt:	3	**CeW:**		**CeL:**			
FC:	6	**FlC:**	17	**FS:**	4.08	**FlS:**	3.753
Rmp:		**DF:**	2				
LD:	1.85	**CH:**		**UD:**	1.42	**Flts:**	16
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**	M	**ScuC:**		**ScuO:**	

References:

Orsi 1903: 374-392; Dinsmoor 1950: 75-77; Coulton 1974; Wescoat 1989: 84, 85; Spawforth 2006: 124; Marconi 2007: 50; Barletta 1983: 78; 2009a: 79.

S25: Temple A at Megara Hyblaia

Region:	Sicily		
Date Range:	600-500	**Date Group:**	2

Reasons for Date:

The only evidence for a date comes from the architectural terracottas, in the form of three separate revetment types, which were discovered on the site and may have belonged to this structure. All three types are placed around the middle of the sixth century by Van Buren (1923) and slightly later by Marconi (2007: 56).

Deity:	Unknown

Evidence for Deity:

Brief Description of Remains:

Only the measurements relating to the foundations survive for Temple A at Megara Hyblaia. Having been torn down in the destruction of Megara Hyblaia at the beginning of the fifth century, it has been constantly mined for material (Marconi 2007: 55). An Archiaic metope once believed to belong to the temple (Van Buren 1923: 35) is now thought to be a stele (Bookidis 1967: 265).

Key Measurements:

FoW:	17.55	**FoL:**	41.4	**SW:**		**SL:**	
KrSt:		**CeW:**	7.75	**CeL:**	28.4		
FC:		**FlC:**		**FS:**		**FlS:**	
Rmp:		**DF:**					
LD:		**CH:**		**UD:**		**Flts:**	
AbH:		**AbW:**		**EH:**		**NH:**	
ArH:		**FrH:**		**MW:**		**TW:**	
ScuM:		**ScuP:**		**ScuC:**		**ScuO:**	

References:

Orsi 1921b: 157-161; Van Buren 1923: 35; Bookidis 1967: 265; Marconi 2007: 55, 56.

Appendix VI: Statistical Techniques

Throughout this thesis various statistical techniques have been used. For example, in Chapter 5, hierarchical cluster analysis was used to place the capitals into groups. What follows is an overview of the two main statistical techniques that were used in this thesis (hierarchical cluster analysis and T-tests) and how they were used to group the capitals (Chapter 5) and the temples in each region by size (Chapter 6).

Hierarchical Cluster Analysis – Identifying Capital Groups

As discussed in Chapter 5, the capitals from the temples have been assigned to 16 groups based upon their shape. The capitals were placed into groups using a statistical technique referred to as hierarchical cluster analysis. Hierarchical cluster analysis organises the data (in this case relating to capital shapes) into groups by matching capitals with similar designs to one another, and then similar groups with each other. Throughout this project, Microsoft Excel was used for the data manipulation and SPSS was used for the statistical analyses.

Inputting the un-manipulated capital measurement data discussed in Chapter 4 straight into SPSS it would simply group the capitals based upon their sizes, resulting in groups of large capitals and small capitals with little regard to their shape. In order to avoid this, the measurement data must be manipulated to reflect the differences in the capitals shapes rather than their size. In order to achieve this, the geometric means of the capitals' dimensions are calculated in Excel (Table 19). Each measurement is then divided by the geometric mean in order to produce a figure that relates to the shape of the element on the capital. For example, Temple C at Selinous (S16) has a relatively narrower UD to AbW than the Temple of Zeus at Ammon (N9) and these differences are reflected in their geometric means data, regardless of the fact that both capitals are different sizes (Table 19).

Cat No.	Name	Location	UD	AbH	AbW	EH	Geo Mean	Geo UD	Geo AbH	Geo AbW	Geo EH
N9	Zeus Ammon	Aphytis (Kallithea)	0.87	0.148	0.99	0.115	0.35	2.50	0.43	2.85	0.33
S16	Temple C	Selinous	1.5	0.386	2.522	0.324	0.83	1.81	0.47	3.04	0.39

Table 19 Showing how the shapes of capitals of different sizes can be compared using geometric means.

The geometric means data is then placed into SPSS and a hierarchical cluster analysis is completed. SPSS contains a number of clustering techniques, such as K-means clustering.

Hierarchical clustering was used as it does not require any prior knowledge about which capitals belong to which clusters (Burns and Burns 2008: 552).

Having input the manipulated into SPSS, hierarchical cluster analysis places the capitals into a number of groups based upon their shape. The hierarchical cluster analysis suggested that there may have been 10, 14 or 23 capital groups. Ultimately the selection of the amount of groups to use is subjective and 14 groups were used. 10 groups were not used as this was considered too few and did not reflect the differences in design that had been previously identified (see below). 23 groups were not used as this was considered too many and did not reflect the aim of the exercise, to group similar capitals. Indeed, if 23 groups had been used, the majority of the groups would only have contained one or two capitals. An example of the 14 groups is presented in Table 20, under the heading Geomean Group. In Table 20, under the Geomean Group heading, the capitals with the same number were placed by SPSS into the same group when 14 groups were used. For example, the capital from the Temple of Demeter at Lepreon (P15) is placed in the same group as the Parthenon (A8), which in this case is Group 4.

In order to help ensure that the correct numbers of groups were selected, the same technique was then completed using the ratios between the different capital elements (AbH/UD, AbW/UD and EH/UD; Table 20; Ratio Group). For example, using this technique, again both capitals from the Temple of Demeter at Lepreon (P15) and the Parthenon are placed in the same group, in this case Group 5. The fact that both techniques suggested they should be in the same group meant that they were placed in the same final group (CGE).

In some instances the two methods did not agree on the groups. This is largely because the capitals in these groups are not as similar to one another as those in the 'discrete groups' (E, F, H, I, J, K, L and M). The fact that the majority of capitals (47 of 60) belonged to the discrete groups highlights the underlying similarity in shape of these groups. In instances where the two methods disagreed it was felt prudent to combine groups, to make larger groups and clearly highlight in the text which groups were felt to be less discrete (A, C, D, O and P). For example, the Geomean hierarchical clustering placed the temples of Hera and Zeus at Olympia (P18d and P20) in different groups, but, the Ratio hierarchical clustering placed them in the same, thus, they were placed in the same group.

Cat No.	Name	Location	Ratio Group	Geomean Group	Capital Group
P4	Apollo Epikourios	Bassai	5	4	CGE

Cat No.	Name	Location	Ratio Group	Geomean Group	Capital Group
P15	Demeter	Lepreon	5	4	CGE
P2	Hera	Argive Heraion	5	4	CGE
A8	Parthenon	Athens	5	4	CGE
A11	Nemesis	Rhamnous	5	4	CGE
P18d	Hera	Olympia	14	3	CGO
P20	Zeus	Olympia	14	11	CGO
S15	Temple A	Selinous	14	9	CGO

Table 20 Showing the results from the two grouping methods (ratios and geomean). In the case of CGE (a cohesive group), both types of analysis placed the capitals in the same group. In the case of CGO the two types of analysis produced different results, suggesting that the eventual group is less cohesive.

Finally, the identified groups were compared to the results of investigations by earlier scholars. This ensured that previously observed similarities were also included in the analysis. For example, Stillwell (1932: 121) noted that the capitals from the Temple of Apollo at Corinth (P7) and the Temple of Hera II at Poseidonia (I11) were very similar and the analysis has also placed them both in the same group (CGJ). The groups were also compared with Coulton's capital groups (1979). The similarity of the groups with those recognized by Coulton provided further indication that the identified groups were significant.

T-Tests and ANOVA: Identifying Regional Groups

The stylobate widths of the temples from each region were also subject to a hierarchical cluster analysis. Unlike the capitals, the measurement data discussed in Chapter 4 did not need to be manipulated as the aim of the exercise was to group the temples according to their size. However, with such a difference in the sizes of the temples, it was important to remove the statistical outliers. The larger outliers, due to their size, would force the smaller temples into a single group, regardless of the differences between them. In order to ensure that this analysis was not skewed by outliers, the outliers were first identified using the "descriptive statistics" function in SPSS and then removed from the analysis. The stylobate widths of the temples from each region were then subject to the hierarchical cluster method described above. As discussed in Chapter 6, the results of the hierarchical cluster analysis on the stylobate widths was cross referenced with the results of a hierarchical cluster analysis on the foundation widths in order to confirm the regularity of the identified groups.

Once the temples had been placed into groups, they were then put through either an independent samples T-test (if there were only 2 identified groups) or an ANOVA (if there were more than two identified groups). It was felt necessary to add this extra stage for the stylobate size groups (and not the capitals) as there was no previous scholarly work in this area to provide a check for the groups and so it was important to ensure that the identified groups were statistically significant (Pallant 2005: 206). Or, put another way, the difference between the groups is more than could be expected by chance. For example, in relation to the temples of Sicily, the two identified groups were subject to a t-test in order to confirm that the two groups were statistically significantly different from one another (Table 21).

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
FoW	Equal variances assumed	.648	.432	-10.311	17	.000	-7.311	.709	-8.807	-5.815
	Equal variances not assumed			-10.431	16.834	.000	-7.311	.701	-8.791	-5.831

Table 21 Output from an SPSS Independent Samples T-test completed using the FoW of the two Siclian temple groups. The .432 in the Sig. column indicates that the equal variances assumed row should be used, and the .000 in the Sig. (2-tailed) column indicates that the differences between the groups are significant (Pallant 2005: 208).

Bibliography

Abbreviations

AA	*Archäologischer Anzeiger*
AAA	*Athens Annals of Archaeology*
AJA	*American Journal of Archaeology*
AM	*Mitteilungen des Deutschen Archaologischen Instituts, Athenische Abteilung*
AR	*Archaeological Reports*
BAR	*British Archaeological Reports*
BCH	*Bulletin de Correspondance Hellenique*
BSA	*Annual of the British School of Archaeology at Athens*
CID	*Corpus des Inscriptions de Delphes*
GRBS	*Greek, Roman and Byzantine Studies*
IG	*Inscriptiones Graecae*
JDI	*Jahrbuch des Deutschen Archäologischen Instituts*
JHS	*Journal of the Hellenic Society*
MAAR	*Memoirs of the American Academy in Rome*
MonAnt	*Monumenti Antichi: Accademia Nazionale dei Lincei*
NSc	*Notizie degli Scavi di Antichita*
OJA	*Oxford Journal of Archaeology*
OpAth	*Opuscula Atheniensia*
PECS	STILLWELL, R. ed. 1976. *Princeton Encyclopedia of Classical Sites.* Princeton: Princeton University Press.
RM-EH	*Mitteilungen des Deutschen Archäologischen Instituts, Römische Abteilung. Ergänzungsheft*
SEG	*Supplementum Epigraphicum Graecum*
SIG	*Sylloge Inscriptionum Graecarum*

Ancient Sources

AESCHINES. *Aeschines*. Translated by C.D. Adams, 1919. London: William Heinemann.

ANTIPHON. *Antiphon the Sophist*. Translated by G.J. Pendrick, 2002. Cambridge: Cambridge University Press.

APOLLODORUS. *Apollodorus: The Library in Two Volumes*. Translated by J. G. Frazer, 1921. London: William Heinemann.

ARISTOPHANES. *The Acarnians, The Knights, The Clouds, The Wasps*. Translated by B.B. Rogers, 1924. London: Harvard University Press.

ARISTOTLE. *Politics*. Translated by B. Jowett, 1905. Oxford: Clarendon Press.

CICERO. *The Orations of Marcus Tullius Cicero*. Translated by C.D. Yonge, 1903. London: George Bell & Sons.

DEMOSTHENES. *Demosthenes*. Translated by C.A. Vince and J.H. Vince, 1926. London: William Heinemann.

DIODORUS SICULUS. *Diodorus of Sicily in Twelve Volumes,* Volumes 4-8. Translated by C.H. Oldfather, 1989. London: William Heinemann.

DIOGENES LAERTIUS. *Lives of Eminent Philosophers*. Translated by R.D. Hicks, 1972. Cambridge: Harvard University Press.

EURIPIDES. *Iphigenia in Tauris*. Translated by R. Potter, 1938. New York: Random House.

HERODOTUS. *The Histories*. Edited by J. Marincola, translated by A.D. Selincourt, 2003. London: Penguin Books.

ISOCRATES. *Isocrates*. Translated by G. Norlin, 1980. London: William Heinemann.

LYCURGUS. *Minor Attic Orators in Two Volumes*. Translated by J.O. Burtt, 1962. London: William Heinemann.

LYSIAS. *Lysias*. Translated by W.R.M. Lamb, 1930. London: William Heinemann.

PAUSANIAS. *Description of Greece in Four Volumes*. Translated by W.H.S. Jones and H.A. Omerod, 1918. London: William Heinemann.

PAUSANIAS. *Guide to Greece: Central Greece*. Translated by P. Levi, 1979. London: Penguin Books.

PAUSANIAS. *Guide to Greece: Southern Greece*. Translated by P. Levi, 1979. London: Penguin Books.

PINDAR. *The Olympian and Pythian Odes.* Translated by B.L. Gildersleeve, 1885. New York: Harper and Brothers.

PLATO. Vol. III: *The Statesman and Philebus*. Translated by H.N. Fowler, 1925. London: William Heinemann.

PLATO. *Plato in Twelve Volumes*, Volumes 10 and 11. Translated by R.G. Bury, 1967. London: William Heinemann.

PLINY. *The Natural History*. Translated by J. Bostock, 1855. London: Taylor and Francis.

PLUTARCH. *Kimon*. Translated by B. Perrin, 1914. Cambridge: Harvard University Press.

PLUTARCH. *Moralia*. Translated by F.C. Babbitt, 1931. Cambridge: Harvard University Press.

PLUTARCH. *Perikles*. Translated by B. Perrin, 1914. Cambridge: Harvard University Press.

PLUTARCH. *Themistokles*. Translated by B. Perrin, 1914. Cambridge: Harvard University Press.

POLYAINOS. *Stratagems of War*. Translated by E. Shepherd, 1793. London: Ares.

POLYBIUS. *Histories*. Translated by S. Shuckburgh, 1962. New York: Macmillan.

STRABO. *The Geography of Strabo*. Translated by H.L. Jones, 1924. London: William Heinemann.

TITUS LIVIUS (LIVY). *The History of Rome, Books XXIII-XXV*. Translated by F.G. Moore, 1940. London: William Heinemann.

The Homeric Hymns and Homerica. Translated by H.G. Evelyn-White, 1914. London: William Heinemann.

THUCYDIDES. *History of the Peloponnesian War*. Translated by R. Warner, 1972. London: Penguin Books.

VITRUVIUS. *On Architecture*. Translated by R. Schofield, 2009. London: Penguin Books.

XENOPHON. *Xenophon in Seven Volumes*, Volume 3. Translated by C.L. Brownson, 1922. London: William Heinemann.

XENOPHON. *Xenophon in Seven Volumes*, Volume 4. Translated by E.C. Marchant, 1923. London: William Heinemann.

Modern Sources

ABATINO, G. 1903. Note sur la Colonne du Temple de Héra Lacinia à Capo Colonna. *Mélanges d'Archéologie et d'Histoire* 23: 353-361.

ADAM, R. 1990. *Classical Architecture: A Complete Handbook*. New York: Harry N. Abrams.

ADAMESTEANU, D. 1976. Santuari Metapontini. In *Neue Forschungen in Griechischen Heiligtümern: Internationales Symposium in Olympia vom 10-12 Oktober 1974 anlässlich der Hundertjahrfeier der Abteilung Athen und der Deutschen Ausgrabungen in Olympia*, edited by U. Jantzen, 151-166. Tübingen: Verlag Ernst Wasmuth.

ADLER, F., R. BORRMANN, W. DÖRPFELD, F. GRAEVER, AND P. GRAEF. 1892-96. *Olympia: Vol. 2: Die Baudenkmäler von Olympia.* Berlin: A. Asher & Co.

ADSHEAD, K. 1986. *Politics of the Archaic Peloponnese: The Tradition from Archaic to Classical Politics*. Aldershot: Avebury.

ALCOCK, S.E., 2007. The Essential Countryside: The Greek World. In *Classical Archaeology,* edited by S.E. Alcock and R. Osborne, 120-138. Malden: Blackwell.

ALEXOPOULOU, G., AND G. LADSTETTER. 2007-2008. Gremoulias. In *Archaeology in Greece 2007-2008*, edited by Evely, D., H. Hall, C. Morgan, and R.K., Pitt, 44. *AR* 54: 1-113.

AMMERMAN, R.M., 1991. The Naked Standing Goddess: A Group of Archaic Terracotta Figurines from Paestum. *AJA* 95 (2): 203-230.

AMMERMAN, R.M., 2007. Children at Risk: Votive Terracottas and the Welfare of Infants at Paestum. *Hesperia Supplements* 41: 131-151.

ANDERSON, W.J., AND R.P. SPIERS. 1903. *The Architecture of Ancient Greece and Rome: A Sketch of its Historic Development*. London: Batsford.

ARAFAT, K.W. 2004. *Pausanias' Greece: Ancient Artists and Roman Rulers.* Cambridge: Cambridge University Press.

ARAPOGIANNI, X. 2002. The Doric Temple of Athena at Prasidaki. In *Studies in Classical Archaeology I: Excavating Classical Culture: Recent Archaeological Discoveries in Greece*. British Archaeological Reports International Series 1031, edited by M. Stamatopoulou and M. Yeroulanou, 225-228. Oxford: Archaeopress.

ARAVANTINOS, V., A. KONECNY, AND R.T. MARCHESE. 2003. Plataiai in Boiotia: A Preliminary Report of the 1996-2001 Campaigns. *Hesperia* 72 (3): 281-320.

ASHMOLE, B. 1972. *Architect and Sculptor in Classical Greece*. New York: New York University Press.

ATHANASSOPOULOS, E. F. 2002. An "Ancient" Landscape: European Ideals, Archaeology, and Nation Building in Early Modern Greece. *Journal of Modern Greek Studies* 20 (2): 273-305.

AUBERSON, P. 1968. *Eretria I: Temple d'Apollon Daphnéphoros*. Bern: Éditions Franke.

AUBERSON, P. 1976. *Eretria V: Le Temple de Dionysos.* Bern: Éditions Franke.

BAHN, P. 2002. *The Penguin Archaeological Guide*. London: Penguin Books.

BAKHUIZEN, S.C. 1985. *Studies in the Topography of Chalcis on Euboea: A Discussion of the Sources*. Studies of the Dutch Archaeological and Historical Society 11. Leiden: E.J. Brill.

BARELLO, F. 1995. *Architettura Greca a Caulonia: Edilizia Monumentale e Decorazione Architettonica in una Città della Magna Grecia*. Università di Torino: Studi e Materiale di Archeologia 9. Firenze: Casa Editrice Le Lettere.

BARLETTA, B.A. 1983. *Ionic Influence in Archaic Sicily: The Monumental Art.* Studies in Mediterranean Archaeology: Pocket Book 23. Gothenburg: Paul Åströms Förlag.

BARLETTA, B.A. 1990. An "Ionian Sea" Style in Archaic Doric Architecture. *AJA* 94 (1): 45-72.

BARLETTA, B.A. 1996. The Campanian Tradition in Archaic Architecture. *MAAR* XLI: 1-68.

BARLETTA, B.A. 2005. Architecture and Architects. In *The Parthenon: From Antiquity to the Present,* edited by J. Neils, 67-100. Cambridge: Cambridge University Press.

BARLETTA, B.A. 2009a. *The Origins of the Greek Architectural Orders*. Cambridge: Cambridge University Press.

BARLETTA, B.A. 2009b. The Greek Entablature and Wooden Antecedents. In *Koine: Mediterranean Studies in Honor of R. Ross Holloway,* edited by D.B. Counts and A.S. Tuck, 154-166. Oxford: Oxbow Books.

BARLETTA, B.A. 2011. State of the Discipline: Greek Architecture. *AJA* 115 (4): 611-640.

BARRINGER, J.M. 2008. *Art, Myth, and Ritual in Classical Greece*. Cambridge: Cambridge University Press.

BELL, M. 1980. Stylobate and Roof in the Olympieion at Akragas. *AJA* 84 (3): 359-372.

BELL, M. 1995. The Motya Charioteer and Pindar's *Isthmian* 2. *MAAR* XL: 1-42.

BERGQUIST, B. 1967. *The Archaic Greek Temenos: A Study of Structure and Function*. Lund: CWK Gleerup.

BERRY, J. 2007. *The Complete Pompeii*. London: Thames and Hudson.

BERVE, H., AND GRUBEN, G. 1963. *Greek Temples, Theatres and Shrines*. London: Thames and Hudson.

BIERS, W.R. 1992. *Art, Artefacts, and Chronology in Classical Archaeology*. London: Routledge.

BLACKMAN, D. 1999-2000. Archaeology in Greece 1999-2000. *AR* 46: 3-151.

BLACKMAN, D. 2001-2002. Archaeology in Greece 2001-2002. *AR* 48: 1-115.

BLANDI, G. 2000. *I Templi di Agrigento, Segesta e Selinunte: Storia – Architettura – Tecnica.* Palermo: Edizioni Axon Sicilia.

BLEGEN, E.P. 1946. News Items from Athens. *AJA* 50 (3): 370-377.

BOARDMAN, J. 1984. Signa Tabulae Priscae Artis. *JHS* 104: 161-163.

BOARDMAN, J. 1999. *The Greeks Overseas: Their Early Colonies and Trade.* 4th ed. London: Thames and Hudson.

BOARDMAN, J. 2005. *Greek Sculpture: The Classical Period*. London: Thames and Hudson.

BOERSMA, J.S. 1970. *Athenian Building Policy from 561/0 to 405/4B.C.* Groningen: Wolters-Noordhoff.

BOOKIDIS, N. 1967. A Study of the Use and Geographical Distribution of Architectural Sculpture in the Archaic Period (Greece, East Greece and Magna Graecia). Ph.D. diss., Bryn Mawr.

BOOKIDIS, N., AND R.S. STROUD. 2004. Apollo and the Archaic Temple at Corinth. *Hesperia* 73 (3): 401-426.

BREA, B. 1952. L'Athenaion di Gela e le sue Terrecotte Architettoniche. *Annuario della Scuola Archeologica di Atene e delle Missinoi Italiane in Oriente* 11-13: 7-103.

BREA, B. 1986. *Il Tempio di Afrodite di Akrai*. Naples: Jean Bérard.

BREMMER, J.N. 1994. *Greek Religion*. Greece and Rome: New Series in the Classics 24. Oxford: Oxford University Press.

BRONEER, O. 1971. *Isthmia I: The Temple of Poseidon*. Princeton: American School of Classical Studies at Athens.

BRONEER, O. 1976. ISTHMIA (Corinthia, Greece). *PECS: 417-418.*

BROWN, F.C. 1906. *Study of the Orders.* Chicago: American School of Correspondence.

BUNDGAARD, J.A. 1957. *Mnesicles: A Greek Architect at Work*. Copenhagen: Scandinavian University Books.

BURFORD, A. 1961. Temple Building at Segesta. *The Classical Quarterly,* New Series 11 (1): 87-93.

BURFORD, A. 1963. The Builders of the Parthenon. *Greece & Rome,* Second Series Supplement 10: 23-35.

BURFORD, A. 1969. *The Greek Temple Builders at Epidauros.* Toronto: University of Toronto Press.

BURFORD, A. 1996. Patronage. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 373-375. London: Macmillan.

BURKERT, W. 1988. The Meaning and Function of the Temple in Classical Greece. In *Temple in Society,* edited by M.V. Fox, 27-48. Winona Lake: Eisenbrauns.

BURNS, R., AND R. BURNS. 2008. *Business Research Methods and Statistics using SPSS.* London: SAGE Publications Ltd.

BUTTLE, D. 1956. The Architecture and Planning of the City of Cyrene. In *Cyrenaican Expedition of the University of Manchester 1952*, edited by A. Rowe, 27-42. Manchester: University of Manchester Press.

BUTZ, P. 2009. Inscription as Ornament in Greek Architecture. In *Structure, Image, Ornament: Architectural Sculpture in the Greek World. Proceedings of an International Conference held at the American School of Classical Studies, 27-28 November 2004*, edited by P. Schultz and R. Von den Hoff, 30-39. Oxford: Oxbow Books.

CAMBITOGLOU, A. 2002. Military, Domestic and Religious Architecture at Torone in Chalkidike. In *Studies in Classical Archaeology I: Excavating Classical Culture: Recent Archaeological Discoveries in Greece*. British Archaeological Reports International Series 1031, edited by M. Stamatopoulou and M. Yeroulanou, 12-20. Oxford: Archaeopress.

CAMP, J.M. 1986. *The Athenian Agora: Excavations in the Heart of Classical Athens*. London: Thames and Hudson.

CAMP, J.M. 1994. Before Democracy: The Alkmainonidai and Peisistratidai. In *The Archaeology of Athens and Attica under the Democracy: Proceedings of an International Conference Celebrating 2500 Years since the Birth of Democracy in Greece, held at the American School of Classical Studies at Athens, December 4-6 1992*, W.D.E. Coulson, O. Palagia, T.L. Shear Jr., H.A. Shapiro and F.J. Frost, 7-12. Oxford: Oxbow Books.

CAMP, J.M. 2001. *The Archaeology of Athens*. New Haven: Yale University Press.

CAPPS, E. 1950. Gleanings from Old Corinth. *AJA* 54 (3): 265-266.

CARPENTER, R. 1970. *The Architects of the Parthenon*. Middlesex: Penguin Books.

CARTER, J.C. 1994. Sanctuaries in the Chora of Metaponto. In *Placing the Gods: Sanctuaries and Sacred Space in Ancient Greece*, S.E. Alcock and R. Osborne, 161-198. Oxford: Clarendon Press.

CARTER, J.C. 2006. *Discovering the Greek Countryside at Metaponto*. Jerome Lectures 23. Ann Arbor: The University of Michigan Press.

CARTLEDGE, P. 1985. The Greek Religious Festivals. In *Greek Religion and Society*, P.E. Easterling and J.V. Muir, 98-127. Cambridge: Cambridge University Press.

CASKEY, M.E. 1971. News Letter from Greece. *AJA* 75 (3): 295-317.

CHASE, G.H., 1916. Archaeology in 1914. *The Classical Journal* 11 (4): 196-207.

CHERSTICH, L. 2006. Homesickness and Greek Architecture in a Colony: The Example of Cyrene. In *SOMA 2004: Symposium on Mediterranean Archaeology: Proceedings of the Eighth Annual Meeting of Postgraduate Researches.* British Archaeological Reports International Series 1514, edited by J. Day, 25-32. Oxford: Archaeopress.

CHILDS, W.A.P. 1993. Herodotus, Archaic Chronology, and the Temple of Apollo at Delphi. *JDI* 108: 399-441.

CHILDS, W.A.P. 1994. The Date of the Old Temple of Athena on the Athenian Acropolis. In *The Archaeology of Athens and Attica under the Democracy: Proceedings of an International Conference Celebrating 2500 Years since the Birth of Democracy in Greece, held at the American School of Classical Studies at Athens, December 4-6 1992,* W.D.E. Coulson, O. Palagia, T.L. Shear Jr., H.A. Shapiro and F.J. Frost, 1-6. Oxford: Oxbow Books.

CLARKE, M.L. 1963. The Architects of Greece and Rome. *Architectural History* 6: 9-22.

COLDSTREAM, J.N. 1985. Greek Temples: Why and Where? In *Greek Religion and Society*, P.E. Easterling and J.V. Muir, 67-97. Cambridge: Cambridge University Press.

CONNOR, W.R. 1987. Tribes, Festivals and Processions; Civic Ceremonial and Political Manipulation in Archaic Greece. *JHS* 107: 40-50.

COOK, J.M. 1952. Archaeology in Greece, 1951. *JHS* 72: 92-112.

COOK, R.M. 1970. The Archetypal Doric Temples. *BSA* 65: 17-19.

COOK, R.M. 1989. The Francis-Vickers Chronology. *JHS* 109: 164-170.

COOPER, F.A. 1975. Two Inscriptions from Bassai. *Hesperia* 44 (2): 224-233.

COOPER, F.A. 1996a. *The Temple of Apollo at Bassitas I: The Architecture*. Princeton: The American School of Classical Studies at Athens.

COOPER, F.A. 1996b *The Temple of Apollo at Bassitas III: The Architecture: Illustrations*. Princeton: The American School of Classical Studies at Athens.

COOPER, F.A. 1996c. *The Temple of Apollo at Bassitas IV: Folio Drawings*. Princeton: The American School of Classical Studies at Athens.

COOPER, F.A. 1996d. Architecture: Archaic. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 396-400. London: Macmillan.

COOPER, F.A. 1996e. Architecture: Classical. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 400-403. London: Macmillan.

COOPER, N.K. 1989. *The Development of Roof Revetment in the Peloponnese*. Studies in Mediterranean Archaeology and Literature: Pocket Book 88. Jonsered: Paul Åströms Förlag.

COTTERILL, H.B. 2004. *Ancient Greece: Myth and History*. New Lanark: Geddes & Grosset.

COULSON, W.D.E. 1976a. PAESTUM or Pesto (Campania, Italy). *PECS:* 663-665.

COULSON, W.D.E. 1976b. TARAS or Taranto, later Tarentum (Apulia, Italy). *PECS*: 878-880.

COULTON, J.J. 1974. Towards Understanding Doric Design: The Stylobate and the Intercolumnations. *BSA* 69: 61-88.

COULTON, J.J. 1975. Towards Understanding Greek Temple Design: General Considerations. *BSA* 70: 59-100.

COULTON, J.J. 1976a. *The Architectural Development of the Greek Stoa*. Oxford Monographs on Classical Archaeology. Oxford: Clarendon Press.

COULTON, J.J. 1976b. The Meaning of Ἀναγραφεύς. *AJA* 80 (3): 302-304.

COULTON, J.J. 1977. *Ancient Greek Architects at Work: Problems of Structure and Design*. Ithaca: Cornell University Press.

COULTON, J.J. 1979. Doric Capitals: A Proportional Analysis. *BSA* 74: 81 -153.

COULTON, J.J. 1983. Greek Architects and the Transmission of Design. In *Architecture et Société: de l'Archaïsme Grec à la fin de la République Romaine: Actes du Colloque International Organisé par le Centre National de la Recherche Scientifique de l'École Française de Rome (Rome 2-4 Decembre 1980.* Collection de l'école Française de Rome 66, 453-468. Paris: Centre National de la Recherche Scientifique.

COULTON, J.J. 1984. The Parthenon and Periklean Doric. In *Parthenon-Kongreß Basel: Referate und Berichte 4. Bis 8. April 1982 Band I,* edited by E. Berger, 40-44. Mainz: Philipp von Zabern.

COULTON, J.J. 1996. Drawings, Models and Specifications. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 409-410. London: Macmillan.

COURBY, F. 1927. *Fouilles de Delphes: T.2: Topographie et Architecture: La Terrasse du Temple*. Paris: de Boccard.

COURBY, F. 1931. *Exploration Archéologique de Délos faite par l'École Française d'Athènes XII: Les Temples d'Apollon.* Paris: de Boccard.

CULTRERA, G. 1951. L'Apollonion-Artemision di Ortigia in Siracusa. *MonAnt* XLI: 701-860.

DALY, L.W. 1939. An Inscribed Doric Capital from the Argive Heraion. *Hesperia* 8 (2): 165-169.

DANNER, P. 1997. Megara, Megara Hyblaia and Selinus: the Relationship between the Town Planning of a Mother City, a Colony and a Sub-Colony in the Archaic Period. In *Urbanization in the Mediterranean in the 9th to 6th Centuries BC,* edited by H.D. Anderson, W.H. Horsnæs, S. Houby-Nielsen and A. Rathje, 143-166. Copenhagen: Museum Tusculanum Press.

DAVIES, J.K. 2001. Rebuilding a Temple: The Economic Effects of Piety. In *Economies beyond Agriculture in the Classical World*. Leicester-Nottingham Studies in Ancient Society 9, edited by D.J. Mattingly and J. Salmon, 209 – 229. London: Routledge.

DAVIES, J.K. 2003. Greek Archives: From Record to Monument. In *Ancient Archives and Archival Traditions: Concepts of Record Keeping in the Ancient World*. Oxford Studies in Ancient Documents, edited by M. Brosius, 323-343. Oxford: Oxford University Press.

DE ANGELIS, F. 2003. *Megara Hyblaia and Selinous: The Development of Two Greek City-States in Archaic Sicily*. Oxford University School of Archaeology Monographs 55. Oxford: Oxford University School of Archaeology.

DELIVORRIAS, A. 1997. The Sculpted Decoration of the So-Called Theseion: Old Answers, New Questions. In *The Interpretation of Architectural Sculpture in Greece and Rome,* edited by D. Buitron-Oliver, 83-101. London: National Gallery of Art.

DEMANGEL, R. 1923. *Fouilles de Delphes: T.2: Topographie et Architecture: Le Sanctuaire d'Athéna Pronaia (Marmaria)*. Paris: de Boccard.

DE POLIGNAC, F. 1995. *Cults, Territory, and the Origins of the Greek City-State*. Translated by J. Lloyd. Chicago: The University of Chicago Press.

DE JULIIS, E.M. 2001. *Metaponto*. Città della Magna Grecia 12. Bari: Edipuglia.

DE WAELE, J.A.K.E. 1980. Der Entwurf der Dorischen Tempel von Akragas. *AA*: 180-241.

DE WAELE, J.A.K.E. 1984. Der Entwurf des Parthenon. In *Parthenon-Kongreß Basel: Referate und Berichte 4. Bis 8. April 1982 Band I,* edited by E. Berger, 99-118. Mainz: Philipp von Zabern.

DE WAELE, J.A.K.E. 1988. Reflections on the Design in Classical Greek Architecture. In *Praktika tou XII Diethnous Sunedriou Klasikes Archaiologias: Athena, 4-10 Septembriou 1983,* 205-210. Athenai: Tameio Archiologikon Poron kai Apallotrioseon.

DE WAELE, J.A.K.E. 1994. The 'Doric' Temple on the Forum Triangulare in Pompeii. *Opuscula Pompeiana III*: 105-118.

DE WAELE, J.A.K.E. 2001. La Descrizione. In *Il Tempio Dorico del Foro Triangolare di Pompei*. Studi della soprintendenza Archeologica di Pompei 2, edited by J.A.K.E. de Waele, B. D'Agostino, P.S. Lulof, L.A. Scatozza and R. Cantilena, 87-110. Rome: "L'Erma" di Bretschneider.

DILLA, G.P. 1932. Greek Temples at Paestum. *The Classical Journal* 27 (5): 343-351.

DINSMOOR, W.B. 1913. Studies of the Delphian Treasuries II: The Four Ionic Treasuries. *BCH* 37: 5-83.

DINSMOOR, W.B. 1933. The Temple of Apollo at Bassae. *Metropolitan Museum Studies* 4 (2): 204-227.

DINSMOOR, W.B. 1934. The Date of the Older Parthenon. *AJA* 38 (3): 408-448.

DINSMOOR, W.B. 1936. Additional Note on the Temple at Kardaki. *AJA* 40 (1): 55-56.

DINSMOOR, W.B. 1939. The Lost Pedimental Sculptures of Bassae. *AJA* 43 (1): 27-47.

DINSMOOR, W.B. 1940. The Temple of Ares at Athens. *Hesperia* 9 (1): 1-52.

DINSMOOR, W.B. 1941. Some Observations on the Hephaisteion. *Hesperia Supplements* 5: 1-171.

DINSMOOR, W.B. 1947. The Hekatompedon on the Athenian Acropolis. *AJA* 51 (2): 109-151.

DINSMOOR, W.B., 1949. The Largest Temple in the Peloponnesos. *Hesperia Supplements* 8: 104-115.

DINSMOOR, W.B. 1950. *The Architecture of Ancient Greece: An Account of its Historic Development*. 3rd ed. London: Batsford.

DINSMOOR, W.B. 1961. Rhamnoutine Fantasies. *Hesperia* 30 (2): 179-204.

DINSMOOR, W.B. Jr. 1973: The Kardaki Temple Re-Examined. *AM* 88: 165-174.

DINSMOOR, W.B. Jr. 1982. Anchoring Two Floating Temples. *Hesperia* 51 (4): 410-452.

DINSMOOR, W.B. Jr., AND A.N. DINSMOOR, 1996. Religion: Architecture. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 375-383. London: Macmillan.

DOERPFELD, W. 1884. Der Tempel von Sunion. *AM* 9: 324-337.

DOMÍNGUEZ, A.J. 2006. Greeks in Sicily. *Greek Colonisation: An Account of Greek Colonies and Other Settlements Overseas: Volume One.* Mnemosyne Bibliotheca Classica Batava 193, edited by G.R. Tsetskhladze, 253-357. Leiden: Brill.

DÖRPFELD, W. 1935. *Alt-Olympia: Untersuchungen und Ausgrabungen zur Geschichte des Ältesten Heiligtums von Olympia und der Älteren Griechischen Kunst.* 1. Bd. Berlin: E.S. Mittler & Sohn.

DUGAS, C., BERCHMANS, J., AND M. CLEMMENSEN. 1924. *Le Sanctuaire d'Aléa Athéna a Tégée au IV Siécle*. Paris: Librairie Orientaliste Paul Geuthner.

DUNBABIN, T.J. 1948. *The Western Greeks: The History of Sicily and South Italy from the Foundation of the Greek Colonies to 480 B.C.* Oxford: Clarendon Press.

DYER, L. 1905. Olympian Treasuries and Treasuries in General. *JHS* 25: 294-319.

DYGGVE, E. 1948. *Das Laphrion: Der Tempelbezirk von Kalydon*. Kongelige Danske Videnskabernes Selskab 1. København: Munksgaard.

EDLUND, I.E.M. 1987. *The Gods and the Place: Location and Function of Sanctuaries in the Countryside of Etruria and Magna Graecia (700-400 B.C.).* Stockholm: Paul Åströms Förlag.

FEHR, B. 1996. The Greek Temple in the Early Archaic Period: Meaning, Use and Social Context. *Hephaistos: New Approaches in Classical Archaeology and Related Fields* 14: 165-191.

FELSCH, R.C.S. 1975. Ein Heiligtum in Phokis. *AAA* 8 (1): 1-24.

FERGUSON, J., AND K. CHISHOLM, eds. 1978. *Political and Social Life in the Great Age of Athens: A Source Book.* London: Ward Lock.

FERRARI, G. 2002. The Ancient Temple on the Acropolis at Athens. *AJA* 106 (1): 11-35.

FINLEY, M.I. 1985. *The Ancient Economy*. 2nd ed. Hogarth History. London: Hogarth.

FISCHER-HANSEN, T. 2009. Artemis in Sicily and South Italy: A Picture of Diversity. In *From Artemis to Diana: The Goddess of Man and Beast.* Acta Hyperborea 12, edited by T. Fischer-Hansen and B. Poulsen, 207-260. Copenhagen: Museum Tusculanum Press.

FORNARA, C.A. ed. 1977. *Translated Documents of Greece and Rome: Archaic Times to the End of the Peloponnesian War*. Translated Documents of Greece and Rome 1. Baltimore: John Hopkins University Press.

FORSÉN, J., B. FORSÉN, AND E. ØSTBY. 1999. The Sanctuary of Agios Elias – Its Significance, and Its Relations to Surrounding Sanctuaries and Settlements. In *Defining Ancient Arkadia: Symposium, April 1-4 1998.* Acts of the Copenhagen Polis Centre Volume 6, edited by T.H. Nielson and J. Roy, 169-191. Copenhagen: Copenhagen Polis Centre.

FOXHALL, L. 1995. Monumental Ambitions: The Significance of Posterity in Greece. In *Time, Tradition and Society in Greek Archaeology: Bridging the "Great Divide".* Theoretical Archaeology Group, edited by N. Spencer, 132-149. London: Routledge.

FRANCIS E.D., AND M. VICKERS. 1983. Signa Priscae Artis: Eretria and Siphnos. *JHS* 103: 49-67.

FROTHINGHAM, A.L. 1887. Archaeological News. *The American Journal of Archaeology and of the History of the Fine Arts* 3: 136-204.

FUNKE, P. 2006. Western Greece (Magna Graecia). In *A Companion to the Classical Greek World.* Blackwell Companions to the Ancient World, edited by K.H. Kinzel, 153-173. Malden: Blackwell.

FURTWANGLER, A., E.R. FIECHTER, AND H. THIERSCH. 1906. *Aegina: Das Heiligtum der Aphaia*. München: Verlag der K.B. Akademie der wissenschaften in Kommission des G. Franz'schen Verlags.

GARDINER, E.N. 1925. *Olympia: Its History & Remains.* Oxford: Clarendon Press.

GARLAND, R. 1994. *Religion and the Greeks*. Classical World Series. London: Bristol Classical Press.

GAVRILI, M. 1976. Velvina (Helleniko). *PECS:* 961-962.

GEBHARD, E.R., AND F.P. HEMANS. 1992. University of Chicago Excavations at Isthmia, 1989: I. *Hesperia* 61 (1): 1-77.

GEBHARD, E.R. 2010. Archaic Temple at Isthmia. http://lucian.uchicago.edu/blogs/isthmia/publications/archaic-temple [Last Accessed: 6/1/12]. Originally published in M. Bietak, ed., *Archaische Griechischen Tempel und Altagypten* (Wien: Austrian Academy of the Sciences Press, 2001).

GEORGOPOULOU, M., AND N. PAPADAKIS. 1974. ΑΡΧΑΪΚΑ ΚΑΙ ΜΕΣΑΙΩΝΙΚΑ ΕΥΡΗΜΑΤΑ ΕΝ ΧΑΛΚΙΔΙ. *AAA* 7 (1): 35-43.

GILL, D.W.J. 1988. The Temple of Aphaia on Aegina: The Date of the Reconstruction. *BSA* 83: 169-177.

GILL, D.W.J. 1993. The Temple of Aphaia on Aegina: Further Thoughts on the Date of the Reconstruction. *BSA* 88: 173-181.

GIULIANI, C.F. 1976. Cora (Cori a Valle). *PECS:* 210-211.

GOETTE, H.R. 2001. *Athens, Attica and the Megarid: An Archaeological Guide*. London: Routledge.

GOLDBERG, M.Y. 1982. Archaic Greek Akroteria. *AJA* 86 (2): 193-217.

GOTTLIEB, C. 1953. The Date of the Temple of Poseidon at Paestum. *AJA* 57 (2): 95-101.

GRUBEN, G. 2001. *Griechische Tempel und Heiligtümer*. 5th ed. München: Hirmer Verlag.

GUARDUCCI, M. 1949. L'Iscrizione Dell'Apollonion di Siracusa. *Archeologia Classica* 1: 4-10.

GUARDUCCI, M. 1987. Il Tempio Arcaico di Apollo a Siracusa: Riflessioni Nuove. In *Saggi in Onore di G. De Angelis d'Ossat,* edited by S. Benedetti and G. M. Mariani, 43-45. Rome.

GUIDO, M. 1967. *Sicily: An Archaeological Guide: The Prehistoric and Roman Remains and the Greek Cities*. London: Faber.

GUIDO, M. 1972. *Southern Italy: An Archaeological Guide: The Main Prehistoric, Greek and Roman Sites.* London: Faber.

GUIDOBONI, E., A. MUGGIA, C. MARCONI, AND E. SOCHI. 2002. A Case Study in Archaeoseismology. The Collapses of the Selinuntine Temples (Southwest Sicily): Two Earthquakes Identified. *Bulletin of the Seismological Society of America* 92 (8): 2961-2983.

GULLINI, G. 1985. L'Architettura. In *Sikanie, Storia e Civiltà della Sicilia Greca,* edited by G. Pugliese Carratelli, 417. Milano.

GUSMAN, P. 1900. *Pompei: The City, its Life & Art*. Translated by F. Simmonds and M. Jourdain. London: William Heinemann.

HADJIMIHALI, V. 1973. Delos. In *Temples and Sanctuaries of Ancient Greece: A Companion Guide,* edited by E. Melas, 165-178. London: Faber and Faber.

HALL, J.M. 2006. *A History of the Archaic Greek World: ca. 1200-479 BCE*. Blackwell History of the Ancient World. Oxford: Blackwell.

HALL, J.M. 2007. The Creation and Expression of Identity: The Greek World. In *Classical Archaeology,* edited by S.E. Alcock and R. Osborne, 337-354. Malden: Blackwell.

HAMMOND, N.G.L. 1986. *A History of Ancient Greece to 322 B.C.* 3rd ed. Oxford: Clarendon.

HANSEN, M.H. 1994. Poleis and City-States, 600-323 B.C.: A Comprehensive Research Programme. In *The Ancient Greek City-State. Symposium on the Occasion of the 250th Anniversary of the Royal Danish Academy of Sciences and Letters, July 1-4 1992.* Acts of the Copenhagen Polis Centre 1, edited by M.H. Hansen, 9-17. Copenhagen: Copenhagen Polis Centre.

HANSEN, M.H., AND T. FISCHER-HANSEN. 1994. Monumental Political Architecture in Archaic and Classical Greek Poleis. In *The Ancient Greek City-State. Symposium on the Occasion of the 250th Anniversary of the Royal Danish Academy of Sciences and Letters, July 1-4 1992.* Acts of the Copenhagen Polis Centre 1, edited by M.H. Hansen, 23-90. Copenhagen: Copenhagen Polis Centre.

HARRISON, E.B. 1965. *The Athenian Agora XI: Archaic and Archaistic Sculpture*. Princeton: American School of Classical Studies at Athens.

HASELBERGER, L. 1985. The Construction Plans for the Temple of Apollo at Didyma. *Scientific American* 253 (6): 114-122.

HASELBERGER, L. 1996. Measurement. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 410-412. London: Macmillan.

HASELBERGER, L. 2005. Bending the Truth: Curvature and other Refinements of the Parthenon. In *The Parthenon: From Antiquity to the Present*, edited by J. Neils, 101-157. Cambridge: Cambridge University Press.

HEFFNER, E.H. 1926. Archaeological Discussions. *AJA* 30 (4): 485-508.

HEFFNER, E.H. 1927. Archaeological News. *AJA* 31 (1): 99-127.

HEMANS, F.P. 1994. Greek Architectural Terracotta from the Sanctuary of Poseidon at Isthmia. *Hesperia Supplements* 27: 61-83.

HERINGTON, C.J. 1955. *Athena Parthenos and Athena Polias: A Study in the Religion of Periclean Athens.* Publications of the Faculty of Arts of the University of Manchester 7. Manchester: Manchester University Press.

HERSEY, G. 1988. *The Lost Meaning of Classical Architecture: Speculations on Ornament from Vitruvius to Venturi*. Cambridge: MIT Press.

HEURGON, J. 1966. The Inscriptions of Pyrgi. *The Journal of Roman Studies* 56: 1-15.

HILL, B.H. 1912. The Older Parthenon. *AJA* 16 (4): 535-558.

HILL, B.H. 1966. *The Temple of Zeus at Nemea*. Princeton: American School of Classical Studies at Athens.

HODGE, A.T. 1964. Notes on Three Western Greek Temples. *AJA* 68 (2): 179-184.

HODGE, A.T., AND R.A. TOMLINSON. 1969. Some Notes on the Temple of Nemesis at Rhamnous. *AJA* 73 (2): 185-192.

HOLLAND, L.B. 1917. The Origin of the Doric Entablature. *AJA* 21 (2): 117-158.

HOLLINSHEAD, M.B. 1985. Against Iphigeneia's Adyton in Three Mainland Temples. *AJA* 89 (3): 419-440.

HOLLOWAY, R.R. 1969. Architect and Engineer in Archaic Greece. *Harvard Studies in Classical Philology* 73: 821-290.

HOLLOWAY, R.R. 1971. The Reworking of the Gorgon Metope of Temple C at Selinus. *AJA* 75 (4): 435-436.

HOLLOWAY, R.R. 1975. *Influences and Styles in the Late Archaic and Early Classical Greek Sculpture of Sicily and Magna Graecia*. Publications d'Hitoire de l'Art et d'Archéologie de l'Université Catholique de Louvain 6. Louvain: Institut Supérieur d'Archéologie et d'Historie de l'Art.

HOLLOWAY, R.R. 1978. *Art and Coinage in Magna Graecia*. Bellinzona: Edizioni Arte e Moneta.

HOLLOWAY, R.R. 1988. Early Greek Architectural Decoration as Functional Art. *AJA* 92 (2): 177-183.

HOLLOWAY, R.R. 1992. Why Korai? *OJA* 11 (3): 267-74.

HOLLOWAY, R.R. 1999. *The Hand of Daedalus*. The Center for Old World Archaeology and Art: Brown University.

http://brown.edu/Departments/Joukowsky_Institute/publications/papers/daedalus/index.html [Last Accessed: 22/8/11].

HOLLOWAY, R.R. 2000. *The Archaeology of Ancient Sicily*. London: Routledge.

HOLMES, A.M. 1995. Regional Variations of Early Archaic Greek Doric Temples in the Peloponnese, c.675-550 BC. Ph.D. diss., Kings College London.

HÖLSCHER, T. 1998. Images and Political Identity: The Case of Athens. In *Democracy, Empire, and the Arts in Fifth-Century Athens.* Center for Hellenic Studies Colloquia 2, edited by D. Boedeker and K.A. Raaflaub, 153-184. Cambridge: Harvard University Press.

HÖLSCHER, T. 2007. Urban Spaces and Central Places: The Greek World. In *Classical Archaeology,* edited by S.E. Alcock and R. Osborne, 164-181. Malden: Blackwell.

HÖLSCHER, T. 2011. Myths, Images, and the Typology of Identities in Early Greek Art. In *Cultural Identity in the Ancient Mediterranean,* edited by E.S. Gruen, 47-66. Los Angeles: Getty Research Institute.

HOOD, M.S.F. 1957. Archaeology in Greece. *AR* 4: 3-25.

HOOD, M.S.F. 1959-1960. Archaeology in Greece 1959. *AR* 6: 3-26.

HOOD, M.S.F. 1960-1961. Archaeology in Greece, 1960-1. *AR* 7: 3-35.

HOOD, S. AND D. SMYTH. 1981. *Archaeological Survey of the Knossos Area*. 2nd ed. Supplementary Volumes BSA 14. London: Thames and Hudson.

HORNBLOWER, S. 1982. *Mausolus*. Oxford: Clarendon Press.

HURWIT, J.M. 1985. *The Art and Culture of Early Greece: 1100-480 B.C.* Ithaca: Cornell University Press.

HURWIT, J.M. 1999. *The Athenian Acropolis: History, Mythology and Archaeology from the Neolithic Era to the Present*. Cambridge: Cambridge University Press.

HURWIT, J.M. 2004. *The Acropolis in the Age of Pericles*. Cambridge: Cambridge University Press.

HURWIT, J.M. 2005. Space and Theme: The Setting of the Parthenon. In *The Parthenon: From Antiquity to the Present*, edited by J. Neils, 9-34. Cambridge: Cambridge University Press.

INTZESILOGLOU, B. 2002. The Archaic Temple of Apollo at ancient Metropolis (Thessaly). In *Studies in Classical Archaeology I: Excavating Classical Culture: Recent Archaeological Discoveries in Greece*. British

Archaeological Reports International Series 1031, edited by M. Stamatopoulou and M. Yeroulanou, 109-116. Oxford: Archaeopress.

JEFFERY, L.H. 1990. *The Local Scripts of Archaic Greece: A Study of the Origin of the Greek Alphabet and its Development from the Eighth to the Fifth Centuries B.C.* Oxford Monographs on Classical Archaeology. Oxford: Clarendon Press.

JENKINS, I. 2006. *Greek Architecture and its Sculpture in the British Museum*. London: British Museum Press.

JOHNSON, F.P. 1936. The Kardaki Temple. *AJA* 40 (1): 46-54.

JOST, M. 1985. *Sanctuaires et Cultes d'Arcadie*. Études Péloponnésiennes/ École Française d'Athènes IX. Paris: Librairie Philosophique J. Vrin.

JURI, E. 1976. Το εν Αφύτει ιερόν του Διονύσου και το ιερόν του Άμμωνος Διός. In *Neue Forschungen in Griechischen Heiligtümern: Internationales Symposium in Olympia vom 10-12 Oktober 1974 anlässlich der Hundertjahrfeier der Abteilung Athen und der Deutschen Ausgrabungen in Olympia,* edited by U. Jantzen, 135-150. Tübingen: Verlag Ernst Wasmuth.

KABBADIAS, P. 1891. *Fouilles d'Épidaure*. Athènes.

KALLET, L. 2005. Wealth, Power, and Prestige: Athens at Home and Abroad. In *The Parthenon: From Antiquity to the Present,* edited by J. Neils, 35-66. Cambridge: Cambridge University Press.

KELLY, N. 1995. The Archaic Temple of Apollo at Bassai: Correspondences to the Classical Temple. *Hesperia* 64 (2): 227-277.

KENT, J.H. 1948. The Temple Estates of Delos, Rheneia, and Mykonos. *Hesperia* 17 (4): 243-338.

KLEIN, N.L. 1991. A Reconsideration of the Small Poros Buildings on the Athenian Acropolis. *AJA* 95 (2): 335.

KLEIN, N.L. 1997. Excavation of the Greek Temples at Mycenae by the British School at Athens. *BSA* 92: 247-322.

KLEIN, N.L. 1998. Evidence for West Greek Influence on Mainland Greek Roof Construction and the Creation of the Truss in the Archaic Period. *Hesperia* 67 (4): 335-374.

KNELL, H. 1973. Der ArtemisTempel in Kalydon und der PoseidonTempel in Molykreion. *AA*: 448-461.

KNELL, H. 1978. Troizen: Tempel des Hippolytos. *AA*: 397-406.

KNELL, H. 1983a. Dorische Ringhallentempel in Spät und nach Klassicher Zeit. *JDI* 98: 203-233.

KNELL, H. 1983b. Lepreon: Der Tempel der Demeter. *AM* 98: 113-147.

KNELL, H. 1983c. Der Tempel der Artemis Tauropolos in Lutsa. *AA*: 39-43.

KOCH, H. 1955. *Studien zum Theseustempel in Athen*. Abhandlungen der Sächsischen Akademie der Wissenschaften zu Leipzig, Philologisch-Historische Klasse, Bd. 47. Berlin: Akademie-Verlag.

KOLDEWEY, R., AND O. PUCHSTEIN. 1899. *Die Griechischen Tempel in Unteritalien und Sicilien*. Berlin: A. Asher & Co.

KORRES, M. 1988. The Geological Factor in Ancient Greek Architecture. In *The Engineering Geology of Ancient Works, Monuments and Historical Sites. Preservation and Protection,* edited by P.G. Marinos and G.C. Koukis, 1779-1783. Rotterdam: A.A. Balkema.

KORRES, M. 2000. *The Stones of the Parthenon.* Athens: Melissa Publishing House.

KOSTOF, S. 1977. The Practice of Architecture in the Ancient World: Egypt and Greece. In *The Architect: Chapters in the History of the Profession,* edited by S. Kostof, 3-27. Oxford: Oxford University Press.

KRAUSS, F. 1951. L'Architettura del Tempio. In *Heraion alla Foce del Sele,* edited by P.Z. Montuoro and U. Zanotti-Bianco, 81-119. Roma: La Libreria dello Stato.

KRAUSS, F. 1959. *Die Tempel von Paestum*. Berlin: Verlag Walter de Gruyter & co.

KRIZHITSKIY, S.D. 2010. Hellenic Temples in the Northern Black Sea Region. In *Ancient Sacral Monuments in the Black Sea,* edited by E.K. Petropoulos and A.A. Maslennikov, 93-126. Thessaloniki: Kyriakidis Brothers' Publishing House.

KRYSTALLI-VOTSI, K. AND ØSTBY, E., 2010. The Temples of Apollo at Sikyon. *Bollettino di Archeologia On Line: Volume Speciale: Roma 2008 – International Congress of Classical Archaeology*: 54 – 62.

KYRIELEIS, H. 1993. The Heraion at Samos. In *Greek Sanctuaries: New Approaches,* edited by N. Marinatos and R. Hägg, 125-153. London: Routledge.

LATTIMORE, S. 2006. From Classical to Hellenistic Art. In *A Companion to the Classical Greece World,* edited by K.H. Kinzel, 456-479. Malden: Blackwell.

LAUTER, H. 1983. Künstliche Unfertigkeit: Hellenistiche Bossensäulen. *JDI* 98: 287-310.

LAWRENCE, A.W. 1996. *Greek Architecture*. 5th ed. New Haven: Yale University Press.

LECHAT, H. 1895. *Épidaure: Restauration et Description des Principaux Monuments du Sanctuaire d'Asclépios*. Paris: Quantin.

LINDERS, T. 1992. Sacred Finances: Some Observations. In *Economics of Cult in the Ancient World: Proceedings of the Uppsala Symposium 1990.* Acta Universitatis Upsaliensis Boreas 21, edited by T. Linders and B. Alroth, 9-13. Uppsala: S. Academiae Ubsaliensis.

LING, R. 2009. *Pompeii: History, Life and Afterlife.* Brimscombe Port: The History Press.

LUCE, S.B., AND E.P., BLEGEN. 1940. Archaeological News and Discussions. *AJA* 44 (4): 521-542.

MAGGIDIS, C. 2009. Between East and West: A New Reconstruction of the Decorated Architrave Frieze of the Athena Temple at Assos and the Regional Tradition of Unconventional Architectural Decoration in East Greece. In *Koine: Mediterranean Studies in Honor of R. Ross Holloway,* edited by D.B. Counts and A.S. Tuck, 78-95. Oxford: Oxbow Books.

MALLWITZ, A. 1972. *Olympia und Seine Bauten*. München: Prestel-Verlag.

MARCONI, P. 1929. *Agrigento: Topografia ed Arte*. Firenze: Vallecchi.

MARCONI, P. 1931. *Himera: Lo Scavo del Tempio della Vittoria e del Temenos*. Roma: "Societá Magna Grecia".

MARCONI, P. 1933. *Agrigento Arcaica: Il Santuario delle Divinità Chtonie e il Tempio detto di Vulcano.* Roma: "Societá Magna Grecia".

MARCONI, J.B. 1967. Problemi di Restauro e Difficoltà dell'Anastylosis del Tempio E di Selinunte. *Palladio NS*: 85-96.

MARCONI, C. 2007. *Temple Decoration and Cultural Identity in the Archaic Greek World: The Metopes of Selinous*. Cambridge: Cambridge University Press.

MARCONI, C. 2009. Early Greek Architectural Decoration in Function. In *Koine: Mediterranean Studies in Honor of R. Ross Holloway,* edited by D.B. Counts and A.S. Tuck, 4-17. Oxford: Oxbow Books.

MARÉ, E.A. 2008. Mnesikles: The Second Architect on the Athenian Acropolis. *South African Journal of Art History* 23 (2): 1-13.

MARINATOS, N. 1993. What were Greek Sanctuaries? A Synthesis. In *Greek Sanctuaries: New Approaches,* edited by N. Marinatos and R. Hägg, 228-233. London: Routledge.

MARQUAND, A. 1894. A Study in Greek Architectural Proportions: The Temples of Selinous. *The American Journal of Archaeology and of the History of the Fine Arts* 9 (4): 521-532.

MARSH, A.R. 1885. Ancient Crude-Brick Construction and its Influence on the Doric Style. *The American Journal of Archaeology and the History of the Fine Arts* 1: 46-53.

MARTIENSSEN, R.D. 1964. *The Idea of Space in Greek Architecture: With Special Reference to the Doric Temple and its Setting*. 2nd ed. Johannesburg: Witwaterstand University Press.

MARTIN, R., AND H. METZGER. 1940. Gortys (Arcadie). *BCH* 64/65: 274-286.

MARTIN, R., AND H. METZGER. 1942. Gortys d'Arcadie. *BCH* 66/67: 334-339.

MARTIN, R. 1967. *Living Architecture: Greek*. Translated by K. Martin. Living Architecture. London: Oldbourne.

MARTIN, R. 1976. L'Atelier Ictinos-Callicratès au temple de Bassae. *BCH* 100: 427-442.

MARTIN, R. 2003. *History of World Architecture: Greek Architecture.* Milano: Electa.

MAURIZIO, L. 1998. The Panathenaic Procession: Athens' Participatory Democracy on Display? In *Democracy, Empire, and the Arts in Fifth-Century Athens.* Center for Hellenic Studies Colloquia 2, edited by D. Boedeker and K.A. Raaflaub, 297-317. Cambridge: Harvard University Press.

McALLISTER, M.H. 1959. The Temple of Ares at Athens: A Review of the Evidence. *Hesperia* 28 (1): 1-64.

McALLISTER, M.H., AND M.H. JAMESON. 1969. A Temple at Hermione. *Hesperia* 38 (3): 169-185.

McCREDIE, J.R. 1979. The Architects of the Parthenon. In *Studies in Classical Art and Archaeology: A Tribute to Peter von Blanckenhagen*, edited by G. Kopcke and M.B. Moore, 69-74. New York: J.J. Augustin.

McINERNEY, J. 1999. *The Folds of Parnassos: Land and Ethnicity in Ancient Phokis*. Austin: University of Texas Press.

MEE, C. 2011. *Greek Archaeology: A Thematic Approach.* Oxford: Wiley-Blackwell.

MEGAW, A.H.S. 1965. Archaeology in Greece 1965-66. *AR* 12: 3-24.

MEIGGS, R. 1963. The Political Implications of the Parthenon. *Greece and Rome* 10: 36-45.

MEIGGS, R., AND D. LEWIS. eds. 1969. *A Selection of Greek Historical Inscriptions to the End of the Fifth Century B.C.* Oxford: Clarendon Press.

MELLO, M. 1985. Paestum: A City, a Civilization, a Heritage. *Journal of Aesthetic Education* 19 (1): 9-22.

MERTENS, D. 1973. L'Architettura. In *Metaponto: Atti del Tredicesimo Convegno di Studi sulla Magna Grecia, Taranto, 14-19 Ottobre,* 187-236. Napoli: Arte Tipografica.

MERTENS, D. 1984. *Der Tempel von Segesta und die Dorische TempelBaukunst des Griechischen Westens in Klassischer Zeit.* Deutsches Archäologisches Institut, Römische Abteilung: Sonderschriften 6. Mainz am Rhein: Verlag Philipp von Zabern.

MERTENS, D. 1985. Ein Neuer Plan des Stadtentrums. Ein Kurzbericht über die Arbeiten des DAI Rom im Rahmen der gemeinsam mit der Soprintendenz der Basilicata durchgeführten Ausgrabung. *AA*: 645-675.

MERTENS, D. 1996. Greek Architecture in the West. In *The Western Greeks: Classical Civilization in the Western Mediterranean*, edited by G.P. Carratelli, 315-346. London: Thames and Hudson.

METZGER, H. 1951. Gortys d'Arcadie. *BCH* 75: 130-134.

MIKALSON, J.D. 1983. *Athenian Popular Religion*. Chapel Hill: University of North Carolina Press.

MILES, M.M. 1989. A Reconstruction of the Temple of Nemesis at Rhamnous. *Hesperia* 58 (2): 133-249.

MILES, M.M. 1998. The Propylon to the Sanctuary of Demeter Malophoros at Selinus. *AJA* 102 (1): 35-57.

MILES, M.M. 1998/1999. Interior Staircases in Western Greek Temples. *MAAR* 43/44: 1-26.

MILES, M.M. 2000. Panhellenic Exchange of Architectural Ideas. *AJA* 95: 298.

MILLER, S.G. 1976. New Problems at Nemea. In *Neue Forschungen in Griechischen Heiligtümern: Internationales Symposium in Olympia vom 10-12 Oktober 1974 anlässlich der Hundertjahrfeier der Abteilung Athen und der Deutschen Ausgrabungen in Olympia,* edited by U. Jantzen, 63-76. Tübingen: Verlag Ernst Wasmuth.

MILLER, S.G. 1978. Excavations at Nemea, 1977. *Hesperia* 47 (1): 58-88.

MILLER, S.G. ed. 1990. *Nemea: A Guide to the Site and Museum*. Berkeley: University of California Press.

MONTUORO, P.Z., AND U. ZANOTTI-BIANCO. 1938. Excavations at the Heraeum of Lucania. *AJA* 42 (4): 441-444.

MORGAN, C. 1993. The Origins of Pan-Hellenism. In *Greek Sanctuaries: New Approaches,* edited by N. Marinatos and R. Hägg, 18-44. London: Routledge.

MORGAN, C. 1999. Cultural Subzones in Early Iron Age and Archaic Arkadia. In *Defining Ancient Arkadia: Symposium, April 1-4 1998.* Acts of the Copenhagen Polis Centre Volume 6, edited by T.H. Nielson and J. Roy, 382-456. Copenhagen: Copenhagen Polis Centre.

MORGAN, C. 2003. *Early Greek States beyond the Polis*. London: Routledge.

MORRIS, I. 2006. Classical Archaeology. In *A Companion to Classical Archaeology*. Blintiff, J. 253-271. Malden: Blackwell.

MUSTONEN, S., AND J. PAKKANEN. 2004. Partially Preserved Colonnades in Greek Architecture: The Probability of Matching Column Drums. In *Making the Connection to the Past. CAA 99: Computer Applications and Quantitative Methods in Archaeology. Proceedings of the 27th Conference, Dublin, April 1999,* edited by K. Fennema and H. Kamermans, 57-59. Leiden: Faculty of Archaeology Leiden University.

NAKASĒS, A. 2004. *Ho Naos tēs Athēnas Makistou.* Dēmosieumata tou Archaiologikou Deltiou 87. Athēna: Ekdosē tou Tameiou Archaiologikōn Porōn kai Apallotriōseōn.

NIELSEN, T.H. 2002. *Arkadia and its Poleis in the Archaic and Classical Periods*. Hypomnemata 140. Göttingen: Vandenhoeck & Ruprecht.

NIELSEN, T.H., AND J. ROY. 2009. The Peloponnese. In *A Companion to Archaic Greece,* edited by K.A. Raaflaub and H. van Wees, 255-272. Malden: Wiley-Blackwell.

NIEMEIER, W.D. 2007-2008. Kalapodi. In *Archaeology in Greece 2007-2008*, edited by D. Evely, H. Hall, C. Morgan and R.K. Pitt, 47-49. *AR* 54: 1-113.

NORMAN, N. 1984. The Temple of Athena Alea at Tegea. *AJA* 88 (2): 169-194.

NORTON, C.E. 1877. The Dimensions and Proportions of the Temple of Zeus at Olympia. *Proceedings of the American Academy of Arts and Sciences* 13: 145-170.

ORLANDINI, P. 1976a. AKRAGAS later AGRIGENTUM or Agrigento (Sicily). *PECS*: 23-26.

ORLANDINI, P. 1976b. GELA Sicily. *PECS:* 346-347.

ORSI, P. 1903. L’Olympieion di Siracusa: Scavi del 1893 e 1902. *MonAnt* XIII: 369-392.

ORSI, P. 1906. Gela: Scavi del 1900-1905. *MonAnt* XVII: 1-766.

ORSI, P. 1907. Gela: Nuovo Tempio Greco Arcaico in Contrada Molino a Vento. *NSc*: 38-40.

ORSI, P. 1914. Caulonia: Campagne Archeologiche del 1912, 1913 e 1915. *MonAnt* XXIII: 699-944.

ORSI, P. 1921a. Monteleone Calabro: Nuove Scoperte. *NSc* 18: 473-485.

ORSI, P. 1921b. Megara Hyblaea 1917-1921. Villagio Neolitico e Tempio Greco Arcaico. *MonAnt* XXVII: 109-180.

OSBORNE, R. 1985. *Demos: The Discovery of Classical Attika*. Cambridge: Cambridge University Press.

OSBORNE, R. 1994a. Archaeology, the Salaminoi, and the Politics of Sacred Space in Archaic Attica. In *Placing the Gods: Sanctuaries and Sacred Space in Ancient Greece*, edited by S.E. Alcock and R. Osborne, 143-160. Oxford: Clarendon Press.

OSBORNE, R. 1994b. Democracy and Imperialism in the Panathenaic Procession: The Parthenon Frieze in its Context. In *The Archaeology of Athens and Attica under the Democracy: Proceedings of an International Conference Celebrating 2500 Years since the Birth of Democracy in Greece, held at the American School of Classical Studies at Athens, December 4-6 1992*, W.D.E. Coulson, O. Palagia, T.L. Shear Jr., H.A. Shapiro and F.J. Frost, 143-150. Oxford: Oxbow Books.

OSBORNE, R. 1996. *Greece in the Making: 1200-479 BC*. Routledge History of the Ancient World. London: Routledge.

OSBORNE, R. 1999. Archaeology and the Athenian Empire. *Transactions of the American Philological Association* 129: 319-332.

OSBORNE, R. 2007. Cult and Ritual: The Greek World. In *Classical Archaeology*, edited by S.E. Alcock and R. Osborne, 246-262. Malden: Blackwell.

ØSTBY, E. 1978. The Temple of Casa Marafioti at Locri and Some Related Buildings. *Acta ad Archaeologiam et Artium Historiam Pertinentia* VII: 25-47.

ØSTBY, E. 1980. The Athenaion of Karthaia. *OpAth* XIII: 189-223.

ØSTBY, E. 1986. The Archaic Temple of Athena Alea at Tegea. *OpAth* XVI: 75-102.

ØSTBY, E. 1991. The Temples of Pallantion: Archaeological Collaboration in Arcadia. In *The Norwegian Institute at Athens: The First Five Lectures*, edited by Ø. Anderson and H. Whittaker, 41-55. Athens: The Norwegian Institute at Athens.

ØSTBY, E. 1994a. A Reconsideration of the Classical Temple at Pherai. *La Thessalie II*: 139-142.

ØSTBY, E. 1994b. Recent Excavations in the Sanctuary of Athena Alea at Tegea (1990-93). In *Archaeology in the Peloponnese: New Excavations and Research*. Oxbow Monographs 48, edited by A. Sheedy, 39-64. Oxford: Oxbow Books.

ØSTBY, E. 1995a. Chronological Problems of Archaic Selinus. *Ancient Sicily*. Acta Hyperborea 6, edited by T. Fischer-Hansen, 83-101. Copenhagen: Museum Tusculanum Press.

ØSTBY, E. 1995b. Templi di Pallantion e dell'Arcadia: Confronti e Sviluppi. *Annuario Della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente* LXVIII-LXIX: 285-393.

ØSTBY, E. 2000. Delphi and Archaic Doric Architecture in the Peloponnese. In *Delphes Cent ans Après la Grande Fouille: Essai de Bilan: Actes du Colloque International Organisé par l'École Française d'Athènes, Athènes-Delphes, 17-20 Septembre 1992*. BCH Supplement 36, edited by A. Jacquemin, 239-261. Athènes: École Française d'Athènes.

ØSTBY, E. 2005. Archaic Temple Architecture in Arcadia. In *Ancient Arcadia: Papers from the Third International Seminar on Ancient Arcadia, held at the Norwegian Institute at Athens, 7-10 May 2002.* Papers of the Norwegian Institute at Athens 8, edited by E. Østby, 493-506. Athens: The Norwegian Institute at Athens.

ØSTBY, E. 2009. The Relief Metopes from Selinus: Programs and Messages. In *Structure, Image, Ornament: Architectural Sculpture in the Greek World. Proceedings of an International Conference held at the American School of Classical Studies, 27-28 November 2004,* edited by P. Schultz and R. Von den Hoff, 154-173. Oxford: Oxbow Books.

PAKKANEN, J. 1994. Accuracy and Proportional Rules in Greek Doric Temples. *OpAth* XX: 144-156.

PAKKANEN, J. 1998. *The Temple of Athena Alea at Tegea: A Reconstruction of the Peristyle Column*. Publications by the Department of Art History at the University of Helsinki 18. Helsinki: The Department of Art History at the University of Helsinki.

PAKKANEN, J. 2004. The Temple of Zeus at Stratos: New Observations on the Building Design. *Arctos: Acta Philologica Fennica* 38: 95-121.

PAKKANEN, J. 2006. The Erechtheion Construction Work Inventory (IG I^3 474) and the Dörpfeld Temple. *AJA* 110 (2): 275-281.

PAKKANEN, J. 2009. Documentation and Computer Reconstruction Strategies in the Study of Architecture at the Sanctuary of Poseidon at Kalaureia, Greece. In *Archäologie und Computer. Workshop 13: Kulturelles Erbe und Neue Technologien 03-05 November 2008,* edited by W. Börner and S. Uhlirz. Wien: Museen der Stadt Wien-Stadtarchäolgie.

PALLANT, J. 2005. *SPSS Survival Manual: A Step by Step Guide to Data Analysis using SPSS for Windows.* Crows Nest: Allen and Unwin.

PARIS, P. 1892. *Élatée: La Ville, Le Temple d'Athéna Cranaia*. Paris: E. Thorin.

PAYNE, H.G.G. 1933. Archaeology in Greece 1932-1933. *JHS* 53 (2): 266-299.

PAYNE, H.G.G. 1934. Archaeology in Greece 1933-34. *JHS* 54 (2): 185-200.

PEARSON, L. 1960. Pausanias on the Temple of Poseidon at Isthmia (2,1,7). *Hermes* 88: 498-502.

PEDLEY, J.G. 1967. Excavations at Apollonia, Cyrenaica Second Preliminary Report. *AJA* 71 (2): 141-147.

PEDLEY, J.G. 1990. *Paestum: Greeks and Romans in Southern Italy*. New York: Thames and Hudson.

PEDLEY, J.G. 1993. *Greek Art and Archaeology*. New York: H.N. Abrams.

PEDLEY, J.G. 2005. *Sanctuaries and the Sacred in the Ancient Greek World*. Cambridge: Cambridge University Press.

PERNIER, L. 1935. *Il Tempio e l'Altare di Apollo a Cirene: Scavi e Studi dal 1925 al 1934.* Africa Italiana 5. Bergamo: Istituto Italiano d'Arti Grafiche.

PESCE, G. 1947. Il Gran Tempio in Cirene. *BCH* LXXI: 307-358.

PFAFF, C.A. 2003a. *The Argive Heraion: The Architecture of the Classical Temple of Hera.* Princeton: The American School of Classical Studies at Athens.

PFAFF, C.A. 2003b. Archaic Corinthian Architecture, ca. 600 to 480 B.C. *Corinth* 20: 95-140.

PLASSART, A., AND G. BLUM. 1914. Orchomène d'Arcadie Fouilles de 1913: Topographie, Architecture, Sculpture, Menus Objets. *BCH* 38: 71-88.

PLOMMER, W.H. 1950. Three Attic Temples. *BSA* 55: 66-112.

PLOMMER, H. 1960. The Archaic Acropolis: Some Problems. *JHS* 80: 127-159.

PRICE, S.R.F. 2008. *Religions of the Ancient Greeks*. Key Themes in Ancient History. Cambridge: Cambridge University Press.

PRITCHETT, W.K. 1989. *Studies in Ancient Greek Topography: Part VI.* University of California Publications 33. Berkeley: University of California Press.

PROKKOLA, T. 2011. *The Optical Corrections of the Doric Temple: Form and Meaning in Greek Sacred Architecture.* Minneapolis: Two Harbors Press.

RHODES, R.F. 1995. *Architecture and Meaning on the Athenian Acropolis*. Cambridge: Cambridge University Press.

RHODES, P.J. 2005. *A History of the Classical Greek World 478 – 323 B.C.* Blackwell History of the Ancient World. Malden: Wiley-Blackwell.

RICHARDSON, R.B. 1895. A Temple in Eretria. *The American Journal of Archaeology and of the History of the Fine Arts*. 10 (3): 326-337.

ROBERT, L. 1957a. Fouilles de Klaros et Mission Robert 1954. Türk Arkeoloji Dergisi VII: 5-6.

ROBERT, L. 1957b. Fouilles de Klaros et Mission Robert 1955. Türk Arkeoloji Dergisi VII: 7-8.

ROBERT, L. 1958. Rapport sur les Fouilles de Claros en 1957. Türk Arkeoloji Dergisi VIII (1): 28-30.

ROBERT, L. 1959. Rapport sur les Fouilles de Claros en 1958. Türk Arkeoloji Dergisi IX (1): 35-36.

ROBERT, L. 1960. Fouilles de Claros 1959. Türk Arkeoloji Dergisi X (1): 58-59.

ROBERTS, J. 2005. *The Oxford Dictionary of the Classical World*. Oxford: Oxford University Press.

ROBERTSON, D.S. 1979. *Greek and Roman Architecture*. 2nd ed. Cambridge: Cambridge University Press.

ROBINSON, D.M., E.P. BLEGEN, AND C.R. WILLIAMS. 1936. Archaeological News and Discussions. *AJA* 40 (4): 522-556.

ROBINSON, E.W. 2011. *Democracy beyond Athens: Popular Government in Classical Greece*. Cambridge: Cambridge University Press.

ROBINSON, H.S. 1976a. CORINTH or Korinthos (Corinthia, Greece). *PECS:* 240-243.

ROBINSON, H.S. 1976b. Excavations at Corinth: Temple Hill, 1968-1972. *Hesperia* 45 (3): 203-239.

ROCCA, E. 2006. Symbols of Superiority: Western Greek Votive Offerings at Delphi. In *SOMA 2004: Symposium on Mediterranean Archaeology: Proceedings of the Eighth Annual Meeting of Postgraduate Research.* British Archaeological Reports International Series 1514, edited by J. Day, 25-32. Oxford: Archaeopress.

RODENWALDT, G., AND W. HEGE. 1936. *Olympia*. London: Sidgwick and Jackson.

ROEBUCK, M.C. 1955. Excavation at Corinth: 1954. *Hesperia* 24 (2): 147-157.

ROUSE, W.H.D. 1902. *Greek Votive Offerings: An Essay in the History of Greek Religion.* Cambridge: Cambridge University Press.

ROUX, G. 1961. *L'Architecture de l'Argolide aux IVe et IIIe Siecles Avant J.-C.* Paris: Editions E. de Boccard.

SALMON, J. 2001. Temples the Measures of Men: Public Building in the Greek Economy. In *Economies Beyond Agriculture in the Classical World*, edited by D.J. Mattingly and J. Salmon, 195-208. London: Routledge.

SALT, A.M. 2008. Creating Collective Identities through Astronomy? A Study of Greek Temples in Sicily. Ph.D. diss., University of Leicester.

SARTIAUX, F. 1915. *Les Sculptures et la Restauration du Temple d'Assos en Troade.* Revue Archologique. Paris: Ernest Leroux.

SCHLIEF, H., K.A. RHOMAIOS, AND G. KLAFFENBACH. 1940. *Korkyra: Archaische Bauten und Bildwerke,* Bd.1, *Der Artemistempel: Architektur, Dachterrakotten, Inschriften*. Berlin: Verlag Gebr Mann.

SCHULTZ, P. 2009. Accounting for Agency at Epidauros: A Note on *IG* IV^2 102 AI-BI and the Economies of Style. In *Structure, Image, Ornament: Architectural Sculpture in the Greek World. Proceedings of an International Conference held at the American School of Classical Studies, 27-28 November 2004*, edited by P. Schultz and R. Von den Hoff, 70-78. Oxford: Oxbow Books.

SCOTT, M. 2010. *Delphi and Olympia: The Spatial Politics of Panhellenism in the Archaic and Classical Periods*. Cambridge: Cambridge University Press.

SCRANTON, R.L. 1946. Interior Design of Greek Temples. *AJA* 50 (1): 39-51.

SCRANTON, R.L. 1964. *Greek Architecture*. Great Ages of World Architecture. London: Readers Union.

SCULLY, V. 1979. *The Earth, the Temple, and the Gods: Greek Sacred Architecture.* New Haven: Yale University Press.

SEKI, T. 1984. The Relationship Between the 'Older' and the 'Periclean' Parthenon. In *Parthenon-Kongreß Basel: Referate und Berichte 4. Bis 8. April 1982 Band I,* edited by E. Berger, 75-79. Mainz: Philipp von Zabern.

SENSENEY, J.R. 2011. *The Art of Building in the Classical World: Vision, Craftsmanship, and Linear Perspective in Greek and Roman Architecture*. Leiden: Cambridge University Press.

SESTIERI, P.C. 1960. *Paestum: The City, the Prehistoric Necropolis in Contrada Gaudo, The Heraion at the Mouth of the Sele*. 5th ed. Guide-Books to the Museums, Galleries, and Monuments of Italy 84. Roma: Instituto Poligrafico Dello Stato.

SHAPIRO, H.A. 1989. *Art and Cult under the Tyrants in Athens*. Mainz: Verlag Philipp Von Zabern.

SHAPIRO, H.A. 1994. Religion and Politics in Democratic Athens. In *The Archaeology of Athens and Attica under the Democracy: Proceedings of an International Conference Celebrating 2500 Years since the Birth of Democracy in Greece, held at the American School of Classical Studies at Athens, December 4-6 1992*, W.D.E. Coulson, O. Palagia, T.L. Shear Jr., H.A. Shapiro and F.J. Frost, 123-129. Oxford: Oxbow Books.

SHAYA, J. 2005. The Greek Temple as Museum: The Case of the Legendary Treasure of Athena from Lindos. *AJA* 109 (3): 423-442.

SHEAR, I.M. 1963. Kallikrates. *Hesperia* 32 (4): 375-424.

SHEAR, T.L. Jr. 1978. Tyrants and Buildings in Archaic Athens. In *Athens Comes of Age: From Solon to Salamis: Papers of a Symposium Sponsored by the Archaeological Institute of America, Princeton Society and the Department of Art and Archaeology*, 1-15. Princeton: Princeton University Press.

SHEAR, T.L. Jr. 1994. Ισονομους τ'Αθηνας εποιησατην. The Agora and the democracy. In *The Archaeology of Athens and Attica under the Democracy: Proceedings of an International Conference Celebrating 2500 Years since the Birth of Democracy in Greece, held at the American School of Classical Studies at Athens, December 4-6 1992*, W.D.E. Coulson, O. Palagia, T.L. Shear Jr., H.A. Shapiro and F.J. Frost, 225-248. Oxford: Oxbow Books.

SHEFTON, B.B. 1962. Herakles and Theseus on a Red-Figured Louterion. *Hesperia* 31 (4): 330-368.

SHOE, L.T. 1936. *Profiles of Greek Mouldings*. Cambridge: Harvard University Press.

SHOE, L.T. 1952. *Profiles of Western Greek Mouldings*. Rome: American Academy in Rome.

SJÖQVIST, E. 1973. *Sicily and the Greeks: Studies in the Inter-Relationship between the Indigenous Populations and the Greek Colonists*. Jerome Lectures 9th Series. Ann Arbour: The University of Michigan Press.

SKELE, M. 2002. *The Poseidonian Chora: Archaic Greeks in the Italic Hinterland*. British Archaeological Series 1094. Oxford: Archaeopress.

SMALL, A. 2004. Some Greek Inscriptions on Native Vases from South East Italy. In *Greek Identity in the Western Mediterranean: Papers in Honour of Brian Shefton*. Mnemosyne, Biblioteca Classica Batava 246, edited by K. Lomas, 267-286. Leiden: Brill.

SMITH, R.R.R. 2002. The Use of Images: Visual History and Ancient History. In *Classics in Progress: Essays on Ancient Greece and Rome*. British Academy Centenery Monographs, edited by T.P. Wiseman, 59-102. Oxford: Oxford University Press.

SNODGRASS, A. 1986. Interaction by Design: The Greek City State. In *Peer Polity Interaction and Socio-Political Change.* New Directions in Archaeology, edited by C. Renfrew and J.F. Cherry, 47-58. Cambridge: Cambridge University Press.

SNODGRASS, A. 2007. What is Classical Archaeology? Greek Archaeology. In *Classical Archaeology*, edited by S.E. Alcock and R. Osborne, 13-29. Malden: Blackwell.

SOURVINOU-INWOOD, C. 1993. Early Sanctuaries, the Eighth Century and Ritual Space: Fragments of a Discourse. In *Greek Sanctuaries: New Approaches,* edited by N. Marinatos and R. Hägg, 1-17. London: Routledge.

SOWERBY, R. 1995. *The Greeks: An Introduction to Their Culture*. London: Routledge.

SPAWFORTH, T. 2006. *The Complete Greek Temples*. London: Thames and Hudson.

SPENCER, N. 1995. Multi-Dimensional Group Definition in the Landscape of Rural Greece. In *Time, Tradition and Society in Greek Archaeology: Bridging the 'Great Divide'*. Theoretical Archaeology Group, edited by N. Spencer, 28-42. London: Routledge.

SPIVEY, N., AND S. STODDART. 1990. *Etruscan Italy.* London: Batsford.

SPIVEY, N. 1996. *Understanding Greek Sculpture: Ancient Meanings, Modern Readings*. London: Thames and Hudson.

STEVENSON, G. 2001. *Power and Place: Temple and Identity in the Book of Revelation*. Beihefte zur Zeitschrift für die neutestamentliche Wissenschaft und die Kunde der älteren Kirche 107. Berlin: de Gruyter.

STEWART, A.F. 1977. *Skopas of Paros.* Park Ridge: Noyes Press.

STEWART, A.F. 1978. The Canon of Polykleitos: A Question of Evidence. *JHS* 98: 122-131.

STEWART, A. 2008. The Persian and Carthaginian Invasions of 480 B.C.E. and the Beginnings of the Classical Style: Part 2, The Finds from Other Sites in Athens, Attica, Elsewhere in Greece, and on Sicily; Part 3, The Severe Style: Motivations and Meaning. *AJA* 112 (4): 581-615.

STIEGLITZ, R.R. 2006. Classical Greek Measures and the Builder's Instruments from the Ma'agan Mikhael Shipwreck. *AJA* 110 (2): 195-203.

STILLWELL, R. 1932. The Temple of Apollo. In *Introduction – Topography – Architecture*. Corinth 1.1, edited by H.N. Fowler and R. Stillwell, 115-134. Cambridge: Harvard University Press.

STRATEN, F.V. 1992. Votives and Votaries in Greek Sanctuaries. In *Le Sanctuaire Grec: Huit Exposés Suivis de Discussions.* Entretiens sur L'Antiquité Classique 37, edited by A. Schachter and J. Bingen, 247-290. Geneva: Fondation Hardt.

STRØM, I. 1989. The Early Sanctuary of the Argive Heraion and its External Relations (8th-Early 6th Cent. B.C.): The Monumental Architecture. *Acta Archaelogica* 59 – 1988: 173-203.

STUART, J., AND N. REVETT. 1968. Reprint. *The Antiqvities of Athens: Volume the First*. New York: Benjamin Blom. Original Edition, Princeton Architectural Press, 1762.

STUCCHI, S. 1975. *Architettura Cirenaica.* Monografie di Archeologia Libica 9. Roma: L'Erma di Bretschneider.

SYMEONOGLOU, S. 1985a. The Doric Temples of Paestum. *Journal of Aesthetic Education* 19 (1): 49-66.

SYMEONOGLOU, S. 1985b. *The Topography of Thebes from the Bronze Age to Modern Times*. Princeton: Princeton University Press.

TANNER, J. 2006. *The Invention of Art History in Ancient Greece: Religion, Society and Artistic Rationalisation.* Cambridge Classical Studies. Cambridge: Cambridge University Press.

TAVERNOR, R. 2009. Introduction. In *Vitruvius: On Architecture*. Trans. R. Schofield, 2009. London: Penguin Books.

THOMPSON, H.A. 1951. Excavations in the Athenian Agora: 1950. *Hesperia* 20 (1): 45-60.

THOMPSON, H.A. 1958. Activities in the Athenian Agora: 1957. *Hesperia* 27 (2): 145-60.

THOMPSON, P., G. PAPADOPOULOU, AND E. VASSILIOU. 2007. The Origins of Entasis: Illusion, Aesthetic or Engineering? *Spatial Vision* 20 (6): 531-543.

TOBIN, R. 1981. The Doric Groundplan. *AJA* 85 (4): 379 – 427.

TOD, M.N. 1933. Greek Inscriptions. *Greece & Rome* 2 (6): 175-177.

TOMLINSON, R.A. 1963. The Doric Order: Hellenistic Critics and Criticism. *JHS* 83: 133-145.

TOMLINSON, R.A. 1976. *Greek Sanctuaries.* London: Book Club Associates.

TOMLINSON, R.A. 1983. *Epidauros.* Archaeological Sites. London: Granada.

TOMLINSON, R.A. 1986. Review of *Der Tempel von Segesta und die dorische Tempelbaukunst des griechischen Westens inklassischer Zeit*, by D. Mertens. *JHS* 106: 247-248.

TOMLINSON, R.A. 1989. *Greek Architecture*. Bristol: Bristol Classical Press.

TOMLINSON, R. 2006. Buildings and Architecture. In *The Edinburgh Companion to Ancient Greece and Rome.* edited by E. Bispham, T. Harrison and B.A. Sparkes, 160-172. Edinburgh: Edinburgh University Press.

TOULOUPA, E. 1970. The Sanctuaries of Mount Ptoion in Boeotia. In *Temples and Sanctuaries of Ancient Greece*, E. Melas, 117-123. London: Thames and Hudson.

TOWNSEND, R.F. 1986. The Fourth-Century Skene of the Theatre of Dionysos at Athens. *Hesperia* 55 (4): 421-438.

TOWNSEND, R.F. 1995. *The Athenian Agora: Volume XXVII, the East Side of the Agora, the Remains beneath the Stoa of Attalos.* Princeton: The American School of Classical Studies at Athens.

TOWNSEND, R.F. 2004. Classical Signs and Anti-Classical Signification in 4th-Century Athenian Architecture. *Hesperia Supplement* 33: 305-326.

TRAVLOS, J. 1971. *Pictorial Dictionary of Ancient Athens*. London: Thames and Hudson.

TRAVLOS, J., AND E.L. SMITHSON. 1982. Παράδειγμα. *Hesperia Supplements* 19: 172.

TRENDALL, A.D. 1955. Archaeology in Sicily and Magna Graecia. *AR* 2: 47-62.

TRENDALL, A.D. 1969-1970. Archaeology in Sicily and South Italy 1967-69. *AR* 16: 32-51.

TSAKIRGIS, 1996. Theory and Design. In *The Dictionary of Art: Volume Thirteen,* edited by J. Turner, 408-409. London: Macmillan.

TUSA, V. 1976. SELINUS or Selinunte (Trapani, Sicily). *PECS:* 823-5.

UMHOLTZ, G. 2002. Architraval Arrogance? Dedicatory Inscriptions in Greek Architecture of the Classical Period. *Hesperia* 71 (3): 261-293.

VAN BUREN, E.D. 1923. *Archaic Fictile Revetments in Sicily and Magna Graecia*. London: J. Murray.

VANDERPOOL, E. 1962. News Letter from Greece. *AJA* 66 (4): 389-391.

VIKATOU, O. 2006. *Olympia: The Archaeological Site and the Museums*. Translated by M. Caskey. Athens: Ekdotike Athenon.

VOCOTOPOULOU, J.P. 1969. A Late Archaic Temple in Arta. *AAA* 2: 39-43.

VOYATZIS, M.E. 1999. The Role of Temple Building in Consolidating Arkadian Communities. In *Defining Ancient Arkadia: Symposium, April 1-4 1998.* Acts of the Copenhagen Polis Centre Volume 6, edited by T.H. Nielson and J. Roy, 130-168. Copenhagen: Copenhagen Polis Centre.

VOZA, G. 1976. SYRACUSE or Siracusa (Sicily). *PECS*: 871-874.

WADDELL, G. 2002. The Principal Design Methods for Greek Doric Temples and Their Modification for the Parthenon. *Architectural History* 45: 1-31.

WALDSTEIN, C., AND H.S. WASHINGTON. 1891. Excavations by the American School at Plataia in 1891: Discovery of a Temple of Archaic Plan. *The American Journal of Archaeology and of the History of the Fine Arts* 7 (4): 390-405.

WALDSTEIN, C. 1902-1905. *The Argive Heraion.* London.

WATERFIELD, R. 2004. *Athens, a History: From Ancient Ideal to Modern City.* London: Macmillan.

WEINBERG, S.S. 1939. On the Date of the Temple of Apollo at Corinth. *Hesperia* 8 (2): 191-199.

WELTER, G. 1941. *Troizen und Kalaureia*. Berlin: Verlag Gebr. Mann.

WESCOAT, B.D. 1987. Designing the Temple of Athena at Assos: Some Evidence from the Capitals. *AJA* 91 (4): 553-568.

WESCOAT, B.D. ed. 1989. *Syracuse: The Fairest Greek City: Ancient Art from the Museo Archeologico Regionale 'Paolo Orsi'.* Roma: De Luca Edizioni D'Arte.

WESCOAT, B.D. 2012. *The Temple of Athena at Assos.* Oxford Monographs on Classical Archaeology. Oxford: Oxford University Press.

WHITLEY, J. 2001. *The Archaeology of Ancient Greece*. Cambridge World Archaeology. Cambridge: Cambridge University Press.

WHITLEY, J. 2003-2004. Archaeology in Greece 2003-2004. *AR* 50: 1-92.

WHITLEY, J., S. GERMANIDOU, D. UREM-KOTSOU, A. DIMOULA, I. NIKOLAKPOULOU, A. KARNAVA, AND E. HATZAKI. 2005-2006. Archaeology in Greece 2005-2006. *AR* 52: 1-112.

WHITLEY, J., S. GERMANIDOU, D. UREM-KOTSOU, AND A. DIMOULA. 2006-2007. Archaeology in Greece 2006-2007. *AR* 53: 1-121.

WIEGAND, T. 1904. *Die Archaische Poros-Architektur der Akropolis zu Athen.* Leipzig: T.G. Fisher & Co.

WILLIAMS, C.K. II. 1984. Doric Architecture and Early Capitals in Corinth. *AM* 99: 67-75.

WILLIAMS, D. 1987. Aegina, Aphaia-Tempel XI: The Pottery and the Second Limestone Temple and the Later History of the Sanctuary. *AA*: 629-680.

WILSON JONES, M. 2000. Doric Measure and Architectural Design 1: The Evidence of the Relief from Salamis. *AJA* 104 (1): 73 – 93.

WILSON JONES, M. 2001. Doric Measure and Architectural Design 2: A Modular Reading of the Classical Temple. *AJA* 105 (4): 675-713.

WILSON JONES, M. 2002. Tripods, Triglyphs and the Origin of the Doric Frieze. *AJA* 106 (3): 353-90.

WILSON JONES, M. Forthcoming. *Origins of Classical Architecture.* London and New Haven: Yale University Press.

WINTER, F.E. 1976. Tradition and Innovation in Doric Design I: Western Greek Temples. *AJA* 80 (2): 139-145.

WINTER, F.E. 1978. Tradition and Innovation in Doric Design II: Archaic and Classical Doric East of the Adriatic. *AJA* 82 (2): 151-161.

WINTER, F.E. 1980. Tradition and Innovation in Doric Design III: The Work of Iktinos. *AJA* 84 (4): 399-416.

WINTER, F.E., AND E. JOAN. 1983. The Date of the Temples near Kourno in Lakonia. *AJA* 87 (1): 3-10.

WINTER, F.E. 1984. The Study of Greek Architecture. *AJA* 88 (2): 103 – 106.

WINTER, F.E. 2005. Arkadian Temple-Designs. In *Ancient Arcadia: Papers from the Third International Seminar on Ancient Arcadia, held at the Norwegian Institute at Athens, 7-10 May 2002.* Papers of the Norwegian Institute at Athens 8, edited by E. Østby, 483-492. Athens: The Norwegian Institute at Athens.

WINTER, N.A. 1990. Defining Regional Styles in Archaic Greek Architectural Terracottas. *Hesperia* 59 (1): 13-32.

WINTER, N.A. 1993. *Greek Architectural Terracottas: From the Prehistoric to the End of the Archaic Period*. Oxford Monographs on Classical Archaeology. Oxford: Clarendon Press.

WISEMAN, J. 1967a. Excavations at Corinth, the Gymnasium Area, 1965. *Hesperia* 36 (1): 13-41.

WISEMAN, J. 1967b. Excavations at Corinth, the Gymnasium Area, 1966. *Hesperia* 36 (4): 402-428.

WISEMAN, J. 1969. Excavations at Corinth, the Gymnasium Area, 1969. *Hesperia* 38 (1): 64-106.

WUILLEUMIER, P. 1939. *Tarante: des Origines à la Conquète Romaine*. Bibliothèque des Écoles Française d'Athènes et de Rome 148. Paris: E. de Boccard.

WURSTER, W.W. 1974. *Der Apollontempel.* Alt-Ägina Bd. 1.1. Mainz: Philipp von Zabern.

WYCHERLEY, R.E. 1951. Notes on Olynthus and Selinus. *AJA* 55 (3): 231-236.

WYCHERLEY, R.E. 1957. *The Athenian Agora Volume III: Literary and Epigraphical Testimonia*. Princeton: American School of Classical Studies at Athens.

WYCHERLEY, R.E. 1964. The Olympieion at Athens. *GRBS* 5 (1): 161-179.

WYCHERLEY, R.E. 1978. *The Stones of Athens*. Princeton: Princeton University Press.

YALOURIS, N. 1971. Κλασσικός ναός εις περιοχήν Λεπρέου. *AAA* 4 (2): 245-251.

ZAIDMAN, L.B., AND P.S. PANTEL. 1994. *Religion in the Ancient Greek City*. Cambridge: Cambridge University Press.

ZANCANI, P., AND U. ZANOTTI-BIANCO. 1936. The Discovery of the Heraion of Lucania. *AJA* 40 (2): 185-187.

ZANOTTI-BIANCO, U. 1936. Archaeological Discoveries in Sicily and Magna Graecia. *JHS* 56 (2): 216-233.