FROM THE DIPTEROS OF POLYKRATES TO THE PSEUDODIPTEROS OF HERMOGENES

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In memory of Assoc. Prof. Emre Madran
with whom I discussed Hermogenes with all details comprehensively

Keywords: *Magnesia ● Hermogenes ● Pseudodipteros ● Pteroma*

Zusammenfassung: Man nähert sich dem 40. Jubiläum der Grabungen in Magnesia mit Ergebnissen von vielen neuentdeckten Bauten, ohne aber Wesentliches für die Erforschung von Hermogenes zu leisten. Es wurden nur einige Hypothesen aufgestellt, die sich auf seine Errungenschaften beziehen (s. Anm.). In diesem Artikel wird zum ersten Mal seine gepriesene Leistung, nämlich Licht und Schatteneffekt zu erzielen, abgelehnt. Das Argument dafür sind die dreidimensionalen Real Time Rekonstruktionen des Tempels, durch die man einwandfrei sehen kann, dass der Tempel nie dem Gedanken entsprechend durch das Sonnenlicht beleuchtet wird. Das Hauptaugenmerk seines Schaffens wird nun bei der weiten *Pteroma* des neuen Tempeltypus, des *Pseudodipteros* und seiner reichen Gestaltung der Bauglieder gesucht.

POLYKRATES'İN DİPTEROS'UNDAN HERMOGENES'İN PSEUDODİPTEROS'UNA

Anahtar Kelimeler: *Magnesia● Hermogenes ● Pseudodipteros ● Pteroma*

Özet: Magnesia kazılarının en büyük amacı Hermogenes'in yapılarını incelemek olmasına karşın 1984'den bu yana sürdürülen kazılarda bu amaç doğrultusunda fazla yol alındığı söylenemez. Buna karşın ortaya çıkarılan yeni yapılar üzerinde yapılan çalışmalarla önemli sonuçlara ulaşılmıştır. Hermogenes yapılarıyla olmasa da ona bağlanan yapılarda bu varsayım irdelenmiştir. Vitruvius'tan edindiğimiz verilere gore Hermogenes "*pseudodipteros*" olarak tanımlanan tapınağı ilk planlayan ve uygulayan mimardır ve bu yapı Vitruvius'a gore Magnesia'daki Artemis Tapınağı'dır. Çalışmalarımızda elde ettiğimiz veriler doğrultusunda, Hermogenes'in bu tapınak tipini belirleme nedenleri konusunda şimdiye kadar çeşitli bilim adamlarınca çeşitli yorumlar ortaya koyulmuş ve bu uygulama genellikle ışık/gölge karşıtlığının uygulanmasına dayandırılmıştır. Bu makalede de aynı nedenler sorgulanmakta ve ışık/gölge karşıtlığının geçerli bir varsayım olamayacağı gösterilmeye çalışılmaktadır. Gerçek zamana dayanan üç boyutlu görüntülerde tapınağın hiçbir zaman ve hiçbir şekilde varsayıldığı kadar ışık/gölge üretecek bir özelliğe sahip olmadığı gösterilmektedir. Bu durumda Vitruvius'un sözlerinden de anlaşılan "*pteron*'u güzelleştirmek" konusunda Hermogenes'in neler yaptığı konusu üzerinde durulmakta ve *pseudodipteros* tapınak planının bulunuş ve uygulanış nedeni bu sonuca bağlanmaktadır.

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From The Dipteros of Polykrates to The Pseudodipteros of Hermogenes[1]

The primary aim of the excavations which begun at Magnesia in 1984 was to re-examine the remains of structures that could belong to Hermogenes in order to reach concrete information and definite results about them. In the Hermogenes Colloquium held under the aegis of the Congress of Classical Archaeology a few years after the commencement of the work on the site, the same aim was reiterated[2]. It was stated at that time that these aims could only be reached in future years because of the paucity of our information on Hermogenes and his architecture. During the following period, work in Magnesia included the excavation and study of a newly found structure, named the *Theatron*.[3] Excavations took place at the Artemision, the *agora*, and other buildings around the Artemision, The results of these excavations and research were shared with the scientific world, but the collected data, especially that pertaining the Temple of Artemis, could not be brought up-to-date to the extent we would have liked.[4]

At first, it was thought that other structures in Magnesia, apart from the Artemis Temple, were also related to Hermogenes.[5] The validity of these perspectives were questioned in subsequent scientific papers as new research resulted in the re-evaluation of both the dating and the understanding of architectural details. For example, the information on the first assessment of the substructure of the *altar* of the temple of Artemis culminated with a PhD thesis.[6] We are currently working on the western part of Artemision, especially on the two long porticoes and the so-called "bases of the stylobate". In the western side of the Altar, the Area of Sacrifice, the Sacred Spring, the Processional Area, the *exedras* and the podiums of monumental statues were discovered.[7] Furthermore, the results of the excavations at the *Propylon* were discussed within the scope of a PhD thesis.[8] The results from the eastern *portico* of the Agora surpassed our predictions.[9] The outcome of these excavations and research is that if Hermogenes were an architect of the 2nd half of the 2nd century, none of these structures could be contemporary with him. The north and south *porticoes* in the western side of the Artemision, and at least the east *portico* of the *Agora*, as well as the *Propylon*, have been important architectural constituents of the intensive construction activity in Magnesia during the 1st century AD.

Hypotheses on the date of the Temple of Artemis have hitherto been based on stylistic comparisons with the capitals of the *Propylon*.[10] If Neo-Hellenistic style was not imitated during

1 I would like to thank to Prof. Dr. Fikret Yegül, Asst. Prof. Dr. Görkem Kökdemir, Heves Sökeli and Mert Ulutaş for their contributions to this paper.

2 Bingöl 1990.

3 Bingöl 2005.

4 Bingöl 1990, 1993, 1996, 1999, 2012.

5 Gerkan 1929.

6 Çetin 2003.

7 Bingöl 2007.

8 Kökdemir 2004, 2009, 2011.

9 Bingöl 2006; 2006a.

10 Bingöl 2012.

the Augustan period-as *Archaic* and *Classical* styles were-it would be hard to argue for a difference of nearly two centuries between the *Propylon* and Temple of Artemis.[11] The inadequacy of the methods used to assign a reliable date for Hermogenes, hence the Temple of Artemis, is reflected in the futility of endless discussions on the subject since the 19th century. Therefore, in order to tackle the problem only two methods are left for us to apply. One of these methods is to observe the technological and paleographic details on the architectural members and to determine time differences between the components. The second method is based on an archaeological evaluation of the remains by opening several test trenches. Therefore, before such investigations are undertaken and evaluated it would be too early to assign a later date for the temple.[12] Would it be possible to imagine Hermogenes also as the architect of the *theater* of Magnesia with its Greek style plan following Vitruvius? Or, could one ask if Hermogenes had a hand in the planning of the city of Magnesia just as Pytheos did for Priene.[13]

From time to time various assumptions have been made about the temple and its members.[14] However, any argument about the plan of the temple and other aspects of the building unknown to us would require a careful study of the stylobate after it is cleared of the fallen architectural members now cluttering the surface, as well as further consideration of these members in relation to the plan. Therefore, the first thing to do towards achieving these goals is to terminate the all too familiar sight of the temple as a romantic ruin which prevents a clear assessment of the building's architecture. So far the western pediment and the capitals of the western front of the temple have been moved out of the ruins and the pediments was arranged in a new mock-up (*anastylosis*) outside the excavation area.[15]

Hermogenes is a much debated architect of the antiquity. After thirty years from the 1st Colloquium of Hermogenes,[16] today we have not yet been able to progress beyond hypotheses.[17] As to be expected, the most important among these hypotheses is the interpretation of the passage in Vitruvius about the reasons behind the creation of the *pseudodipteros* style of Hermogenes.[18]

11 Bingöl 2012.
12 Bingöl 2012.
13 Koenigs 1984.
14 Haselberger 2012.
15 Bingöl 2007a.
16 Hoepfner – Schwandner 1990 (Hrsgr).
17 Schulz 2012 (Hrsgr).
18 Morgan 1914: Vitruvius 3. III. 8. We have no example of this in Rome, but at Teos in Asia Minor there is one which is *hexastyle*, dedicated to Father Bacchus. These rules for symmetry were established by Hermogenes, who was also the first to devise the principle of the *pseudodipteral octastyle*. He did so by dispensing with the inner rows of thirty-eight columns which belonged to the symmetry of the *dipteral temple*, and in this way he made a saving in expense and labour. He thus provided a much wider space for the walk round the *cella* between it and the columns, and without detracting at all from the general effect, or making one feel the loss of what had been really superfluous, he preserved the dignity of the whole work by his new treatment of it.
Morgan 1914: Vitruvius 3. III. 9. For the idea of the *pteroma* and the arrangement of the columns round a temple were devised in order that the

These comments starting with Schilikker and Drerup based on the light-shadow and black-white contrasts were expanded to and adopted by almost all other scholars working on the subject of visibility.[19] However, Wesenberg clearly stated his disagreement with this explanation in his recent article.[20] According to this view, the expanding *pteroma*, with the shadows of the columns on the *cella* wall, further enhanced by the light and dark contrasts created by white marble columns, might provide a viable explanation for Vitruvius' statement: "…*without feeling the absence of an element … the nobility of the entire structure is maintained with this new arrangement*." Even though Drerup agreed with these concepts, he nevertheless pointed out that the light-shadow contrast is realized only on the long southern side of the temple.[21]

Moreover the shade on the long southern side of the temple occurs only during the summer months. Since the sunlight is vertical and directly over head in the summer, the southern *cella* wall remains in shade enhancing the light-dark contrast of the marble columns. In the winter, the oblique sunlight illuminates more of the *cella* wall; therefore, such a contrasting effect is not observed. It is clear that the primary aim could not be to warm the southern *pteroma* like the practice of providing maximum sun exposure to the southern facing rooms of ancient houses. Furthermore, once it is realized that the other long side of the temple could hardly have any relation to the sun, any such argument will be even more untenable. It is also not convincing to maintain that this was an ingenious solution applied for the east façade till noon, for the long south façade till afternoon, and for the west façade till the sunset.

It cannot be assumed that this invention of Hermogenes predicates the source of light in a definite time limit accommodating particular weather conditions such as sunny, cloudy, rainy or misty. For this reason, it will be unfair to Hermogenes to assume that he considered the effect of the sun for only one side of the structure. Moreover, if this effect is dependent on light-and-dark contrasts, the hypothesis would have to be accepted either looking from outside of the structure (although this is a strange way of thinking according to Drerup), or as generally thought, looking from the inside of the *pteron*. If Hermogenes had been after such effects, would he not prefer the "*eustylos*" arrangement which would have emphasized the columnar shadows on the *cella* wall? But we know that according to Vitruvius, Hermogenes, who created rules based on the proportion between the

intercolumniations might give the imposing effect of high relief; and also, in case a multitude of people should be caught in a heavy shower and detained, that they might have in the temple and round the *cella* a wide free space in which to wait. These ideas are developed, as I have described, in the *pseudodipteral* arrangement of a temple. It appears, therefore, that Hermogenes produced results which exhibit much acute ingenuity, and that he left sources from which those who came after him could derive instructive principles.

19 Drerup 1964, esp. 15; Gruben 1991, 423-431 "Diese Disposition ist deshalb erfunden worden, damit die Ansicht durch den Kontrast (asperitas) der Intercolumnien (mit den Säulen) wirkungsvoll sei…".

20 Wesenberg 2012.

21 Drerup 1964.

intercolumniation and height of the columns, did not use the "*eustylos*" style that defined "the most beautiful" columnar intervals in his famous temple.[22] Another disadvantage of this assumption concerns the removal of the *pteron*'s interior columnar row, which therefore could not be a factor to influence such an application. Furthermore, the use of yellow and grey-blue marble in the temple, and the well-known tradition for the application of paint on ancient architecture, indicate that such *chiaroscuro* effects could not have been a factor to be exploited.

In that case, why did Hermogenes remove the interior columnar order of the *peristyle* and why did he achieve lasting reputation with this application? The answer of these questions again can be found in the lines of Vitruvius[23], in particular in his reference to "*a much wider space for the walk round the cella between it and the columns*". The particular spatial effect described in these lines must have influenced the decision to apply this principle of planning on all four sides of the temple.

During the Hellenistic period visitors found themselves favoring porticoes which could be a result of adopting the *Stoicism* philosophy. Following this tendency, Hermogenes could have enlarged the *pteroma* of his temple in order to create a wide and comfortable space that could function as a *stoa*. Hermogenes probably realized the further advantages of this generous space in offering the visitors the advantages of a magnificent architectural exhibition. Hermogenes, creation finds confirmation in the statement that "*without making concessions from the general effect, or making one feel the loss of an item, he preserved the dignity of the whole work by enlarging a walking area between the columns and the cella wall*". This magnificent architectural display begun at the bottom of the wall with the guilloche decoration on the *toichobat*, the meander decoration on the *cella* wall, and culminated by the floral frieze at the top of the wall, an important characteristic of Hellenistic ornament. The outer side of the *pteroma* was delimited by columns which carried by Attic Ionic bases, the first use of this type of base in Anatolia. To make the exhibition even more interesting the Ionic capitals displayed decorated bolsters, an area whose decoration had been neglected for many centuries. The wealth of decoration on view along the two long *pteroma* of the temple was crowned by the richness of the ornament of the wooden ceiling coffers.

This kind of a visual feast had already been introduced in decoration of the deep *pronaos* of the 6th century BC second *dipteros* at Samos (the "Polykrates temple").[24] Displayed on the inside the walls of the *pronaos* this visual feast was composed of the wall podium, the frieze on the wall crown, anta capitals, column bases, column necks with *anthemion* decoration, *echinus* capitals and as well as the wooden ceiling coffers. Later, Phidias carried this practice outside the *cella* of

22 Haselberger, 1990.
23 Morgan 1914, Vitruvius 3.III, 8.
24 Gruben 1991, Abb. 274.

the Parthenon and applied it around the entire structure. If he could have imagined Hermogenes's enlarged *pteroma* and convince Iktinos to do the same for the Parthenon, there would not have been any need to make a scaffold for the visitors to see the famous frieze because they could have seen it well while they were walking inside the *pteroma*.

Perhaps, Iktinos did not like this practice (even though he used it in the Hephaisteion) because the applied this system in the *naos* of the Temple of Bassai Apollon. Therefore, in later examples such as the temple of Tegea Athena in Alea the frieze is always represented inside the *naos*.[25]

Furthermore, the *pilaster* capitals and friezes at the Didymaion are represented in the *naos* because these can easily be seen within an enlarged space. Hermogenes' invention was also applied by others, especially in *pseudodipteros* temples; foremost the Augustus Temple at Ankara, the Zeus Temple at Aizanoi and the Hekate Temple at Lagina.[26]

If Humann's contribution in assessing the *pteroma*'s visuality by suggesting the use of wooden ceiling coffers is taken into consideration, the positive and striking effects of Hermogenes' *pseudodipteros* plan by omitting the interior order of the *peristasis* will be obvious.[27] The amazing visual effect of the *pteroma* covered by decorative wooden coffers can be appreciated from known examples such as the Erechtheion or they can be represented the reconstruction drawings.

According to Vitruvius (even though he does not name him), Hermogenes was the architect who also gave final shape to Ionic capitals. Although Hermogenes is credited for devising the proportions of the Ionic capital, the variously decorated bolsters of his capitals no doubt contributed to the visual feast of the *pteroma*. As we have long advocated Hermogenes not only ended the hegemony of Attic, Samian, Ephesian, and Attic-Anatolian *bolster* style of Ionic capitals but at his temple in Magnesia he also offered the first examples where different style *bolster* decorations are used together in the same structure with no less than seven different decorative motifs alternating. By enlarging the *bolster* compared to earlier examples, a more suitable surface for floral decorations was created. The richly decorated *bolster* types he initiated influenced the whole Hellenistic and Roman period capitals. In applying an alternating order of decoration, these *bolsters* contributed to the overall richness of the visual feast discussed above.

Thus, the *pteroma* was saved from monotony by differently decorated schema. This variety must have commanded the attention of the viewer and the visitor as soon as he/she made eye contact with it upon stepping into the *pteroma*. The enlarged space, with modestly tall columns at close intervals, must have provided a suitable setting to

25 Gruben 1991; Hoepfner 2012.

26 For the current literature on the Temple of Augustus in Ankara see: Görkay 2012; on the Temple of Hekate. see: Tırpan 2012; on the Temple of Zeus in Aizanoi see: Naumann 1979.

27 Humann 1904.

the visuality of the *bolsters*. Hermogenes appears to have culminated the grandeur of this display with decorated coffers and created a novel sense of "presentation" encompassing all four sides of the temple. His innovations and creativity deserved the praise it lavishly received from Vitruvius.

This view is not intended to disregard Hermogenes' mastery of light-and-shadow applications, which received wide support. On the contrary, we believe Hermogenes emphasized light-and-shadow in order to emphasize decoration and structure, to make them more visible, distinct, and memorable, thus to make his architectural display a dramatic visual feast. Previously publishes, the change in the design of the *volutes* from semicircular to angular profiles; or, the deep spaces between the Ionic *cymatium*; the generalized carving of the Lesbian *cymatium*; the partially finished or unfinished details of the sides not visible to the viewer—all can be the result of an effort to ensure an enhanced and sumptuous display.[28] Therefore, I support Drerup[29] who commented that "Hermogenes was not the beginning of a development, but its summit", and underline the views I presented above.[30] I trust the validity of these views will be further supported by the visual evidence of our reconstruction efforts.

28 See footnote 3.
29 Drerup 1964, 19.
30 See footnote 3.

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Figure 1

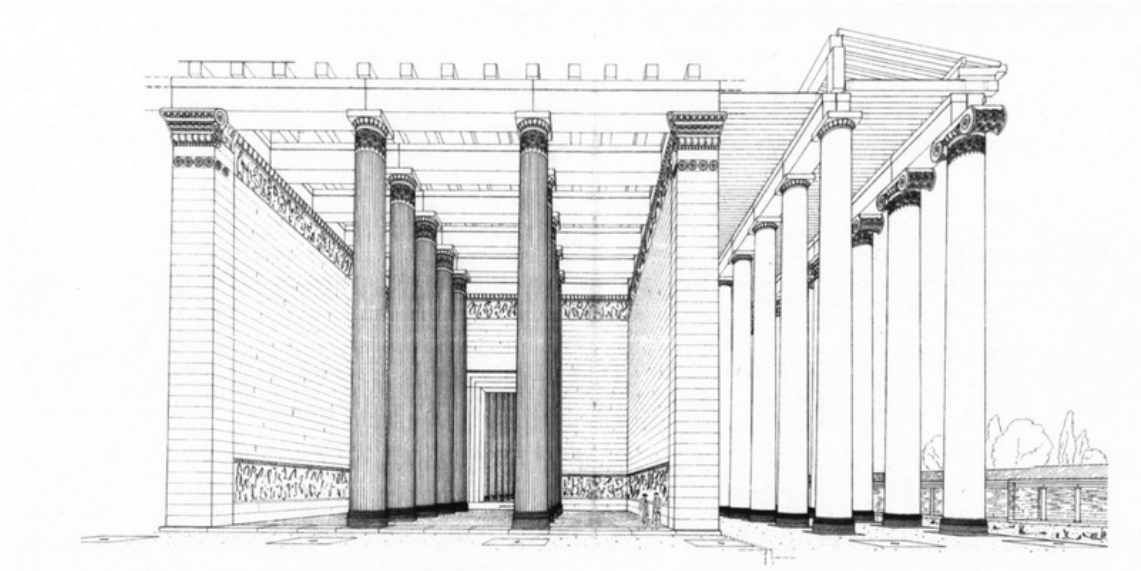


Figure 2

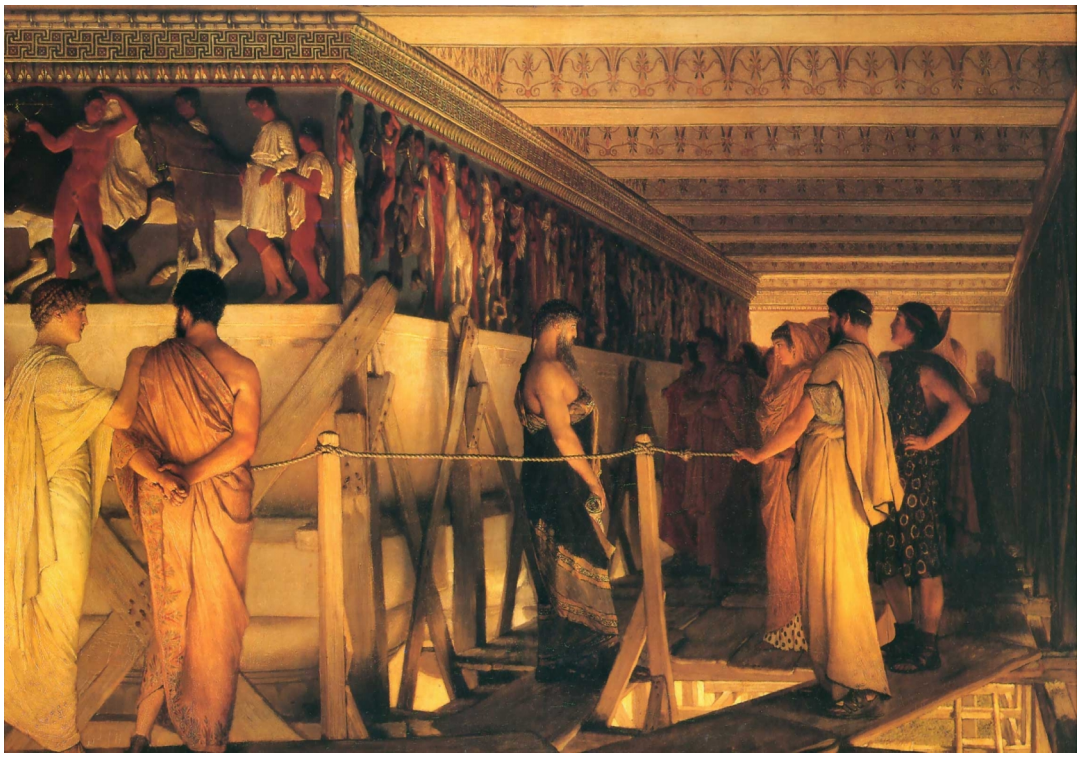


Figure 3



Figure 4



Figure 5