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# SCRIPTA CLASSICA ISRAELICA

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FOR THE  
PROMOTION OF CLASSICAL STUDIES

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## CONTENTS

	PAGE
RINA TALGAM, <i>The Ekphrasis on the Water Clock: Art, Rhetoric and Measurement of Time in Sixth-Century Gaza</i> .....	1
NOAM RYTWO, <i>Firmarent velut foedus</i> (Tac. <i>Ann.</i> 6.30): Prolegomenon to the Language of Compromise in Rome.....	33
ALON DEUTSCH, <i>Revisiting Virgil's Heroes' Parade: An Apocalyptic Historical Review</i> .....	57
Yael Young, <i>The Invention of the Strigil in Athenian Iconography</i> .....	73
ANDREW WOLPERT, <i>Sex, Lies, and Murder in Lysias 1</i> .....	93
ALAN JEFFREY NUSSBAUM, <i>Homeric γόοις 'bewailed' (Z 500)</i> .....	115
RIVKA GERSHT AND PETER GENDELMAN, <i>Sidewalk Inscriptions from Caesarea Maritima</i>	143
CHRISTOS TSAGALIS, <i>Proemic Bridges: An Intratextual Association Activating an Intertextual Reference</i> .....	157
ZOIA BARZAKH, <i>On the First Stasimon of Sophocles' OT</i> .....	175
ARI BELENKIY AND PAVEL KUZENKOV, <i>Ketubah of Antinoopolis, Letter of Resh Galuta and Aramaic Tombstone Inscriptions from Zoar, or: What was the Original Molad Calendar of Hillel Bar Yehuda?</i> .....	183
<b>BOOK REVIEWS</b>	
Guy Darshan, <i>Stories of Origins in the Bible and Ancient Mediterranean Literature</i> (by Johannes Haubold).....	217
Irad Malkin, Josine Blok, <i>Drawing Lots: From Egalitarianism to Democracy in Ancient Greece</i> (by Nina Roux).....	219
Abraham Arouetty, <i>Prolegomena ad Linguam Latinam: liber ad elementa Latinitatis discenda</i> (by Nir Stern).....	221
Melanie Racette-Campbell, <i>The Crisis of Masculinity in the Age of Augustus</i> (by Jaclyn Neel).....	224
Giulio Iovine (ed.) <i>Latin Military Papyri of Dura-Europos (P.Dura 55-145): A New Edition of the Texts, with Introduction and Notes</i> (by Haggai Olshanetsky).....	226
Walter Ameling, Hannah M. Cotton, Werner Eck, Avner Ecker, Johannes Heinrichs, Benjamin Isaac, Alla Kushnir-Stein (†), Jonathan Price, Peter Weiß, Ohad Abudraham, and Ada Yardeni (†) (eds.), <i>Corpus Inscriptionum Iudaeae/Palaestinae, Volume V: Galilaea and Northern Regions</i> (by Michael Zellmann-Rohrer).....	228
<b>OBITUARIES: DAVID KONSTAN (BY PHILLIP MITSIS)</b> .....	
JOHN GLUCKER (by RACHEL ZELNICK-ABRAMOVITZ AND YOSEF Z. LIBERSOHN).....	237
GABRIEL HERMAN (by ALEXANDER YAKOBSON).....	241
HANNAH ROSÉN (by DONNA SHALEV).....	245
<b>DISSERTATIONS IN PROGRESS</b> .....	
<b>PROCEEDINGS: THE ISRAEL SOCIETY FOR THE PROMOTION OF CLASSICAL STUDIES</b> .....	
	253
	261

# The *Ekphrasis* on the Water Clock: Art, Rhetoric and Measurement of Time in Sixth-Century Gaza

Rina Talgam

*Abstract:* This paper discusses *The Ekphrasis on the Water Clock*, composed in the sixth century C.E. by Procopius of Gaza. It inspects three facets: 1. The Gaza clock against the background of other clocks in antiquity 2. The artwork of the theatrical display presented in the Gaza clock 3. The rhetoric of Procopius' ekphrasis. *The Ekphrasis on the Water Clock* exemplifies how the character of *ekphrasis* is adapted to the item that is described. It appears that Procopius chose to convey his impressions in an objective tone, out of concern that readers might question his credibility and presume the water clock to be an imaginary object. *The Ekphrasis on the Water Clock* testifies to the great importance of Gaza in the preservation of classical knowledge in Late Antiquity and in fostering this importance within the fields of literature, art, and technology.

*Keywords:* School of Gaza, water clock, Heracles, *ekphrasis*, Procopius

## INTRODUCTION

Certain words written in ink have been known to withstand the ravages of time, while monuments of stone and bronze have succumbed and crumbled. In writing a detailed description of an exquisite object that stood in his city at the beginning of the sixth century, Procopius of Gaza—a metropolis on the southern coast of Palaestina—thereby rescued that object from oblivion.<sup>1</sup>

Procopius was one of the senior teachers in the famous school of rhetoric in 'the city beloved of the Muses', as it was termed in the *scholion* of his fellow teacher John of Gaza's *ekphrasis*.<sup>2</sup> Born a Christian, Procopius initially studied in Alexandria and then, at a relatively young age, relocated to Gaza as a teacher of rhetoric. He headed the School of Gaza until his death in 526 CE. Apart from his own writings, our knowledge of his biography is fueled primarily by the funeral oration given by Choricus, Procopius' pupil

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<sup>1</sup> This paper is a revised and updated version of a paper published in Hebrew: Talgam (2009), 105–20.

<sup>2</sup> The first sentence of the *scholion* of John of Gaza's *Tabula Mundi* reads: 'This city [i.e. Gaza] loved the Muses and had reached the highest pitch in eloquence. Famous in this city were John, Procopius, Timothy and the various [or "distinguished"] Anacreontic poets.' (Ciccolella (2007), 185–6). Already in the fourth century, the *Expositio totius mundi* 32 speaks of Gaza as having 'bonos auditores' and according to Libanius, Gaza aspired to be a 'workshop of eloquence' (Orat. 55.34); following Penella (2009), 2. On the School of Gaza and its teachers, see also: Geiger (2012), 47–51, 57–61, 112–21, 135–38, 160–62, 199–203, 227–29, 271–74.

and successor in the School of Gaza.<sup>3</sup> We know that he kept a large library, and that, of his writings, 167 letters, seven speeches, and two *ekphraseis* have survived.<sup>4</sup>

Procopius wrote on a variety of subjects, both pagan and Christian. Alongside works in which he exhibited his classical education (*παίδεια*), he composed works of biblical exegesis.<sup>5</sup> His well-known composition, titled *The Ekphrasis on the Water Clock* (*Ἐκφρασίς ὕρολογίου*), describes a complex and sophisticated water clock with a number of moving parts and sounds.<sup>6</sup> This *ekphrasis* was studied by Hermann Diels, who took an interest in the technological achievements of the ancient world.<sup>7</sup> After editing the Greek text and translating it into German, Diels proposed a reconstruction of the water clock's external appearance and even briefly discussed the history of such clocks in the Greco-Roman and medieval worlds. In the decades following its publication, Diels' work gathered dust; however, as a result of the new and intensive scholarly interest in Late Antique Gaza, the past two decades have seen the research on Procopius of Gaza immensely increased.<sup>8</sup> Worthy of special note here are the numerous critical editions and translations of Procopius, as well as commentaries on his work, brought to light by Eugenio Amato and his collaborators. *The Ekphrasis on the Water Clock* was also edited and translated by Eugenio Amato<sup>9</sup> and his edition was accompanied by an appendix by

<sup>3</sup> Corcella (2008), 153–78; Corcella (2010), 507–27.

<sup>4</sup> Wilson (1983), 31; Garzya and Loenertz (1963); Westberg (2019), 394–417; Amato (2009); Auwers (2011).

<sup>5</sup> ter Haar Romeny (2007), 173–90; Amato (2010), 1–45.

<sup>6</sup> The term *ekphrasis* signifies 'a speech that brings the subject matter vividly before the eyes.' This definition appears in Theon, *Progymnasmata*, 118, 1.7; Goldhill (2007), 1–19, esp. 3; Webb (2009), 14. For a comprehensive discussion of the art of describing works of art in Western culture, see Heffernan (1993). On the ancient and modern definitions of the term *ekphrasis*, see: Webb (1999a), 7–18. Ruth Webb rightly clarifies that in antiquity *ekphrasis* was not confined to a single category of subject matter; nor can every text about images be claimed as *ekphrasis*. Poetic descriptions of a work of art, aiming to conjure it up before the eyes of the audience, were among the subjects of *ekphrasis*; Webb (2009), 2. There are *ekphraseis* that have been included in broader literary works, for example the description of the shield of Achilles in the *Iliad* and some of the *ekphraseis* incorporated in the *Aeneid* or Catullus 64; Elsner (2007b), 20–44. There are also independent *ekphraseis*, such as those of the Gaza school and others. With regard to the first type, one should ask to what extent they were inspired by real works of art of their time; Snodgrass (1998), 40–66. This genre is of great importance to scholars nowadays, since it teaches us about the ideology of observing that was practiced in the past and can thus help prevent us from imposing our modern world of concepts onto historical artworks; Elsner (1995), 29.

<sup>7</sup> Diels (1917), 1–39.

<sup>8</sup> The renewed interest in Late Antique Gaza is reflected in the following volumes: Bitton-Ashkelony and Kofsky (2004); Bitton-Ashkelony and Kofsky (2006); Saliou (2005); Humbert (2000). To these works one may add also the following editions: Litsas (1981); Penella (2015). Also see (2020), 111–74. This is but a partial list.

<sup>9</sup> Amato (2010), 204–13. Amato's *Rose di Gaza* contains an Italian translation based on Amato's edition of Procopius's works for Teubner (2009). He re-edited those works, including the *Description of the Water Clock*, for Les Belles Lettres in 2014. This revised edition contains a French translation and notes.

Balbina Bäbler and Anette Schomberg.<sup>10</sup> The aim of the present paper is to expand these significant contributions by Diels, Amato, Bäbler and Schomberg, through the inspection of three facets: 1. The Gaza clock against the background of other clocks in antiquity 2. The artwork of the clock, and especially the selection of figures and their connotations to an erudite audience familiar with classical culture 3. Procopius' rhetorical gestures, including the use of *topoi* and of covert or overt references to classical literature. It seems to me that the last two facets in particular have not yet been given the attention they deserve.

#### THE DESCRIPTION OF THE CLOCK AND DIELS' PROPOSED RECONSTRUCTION

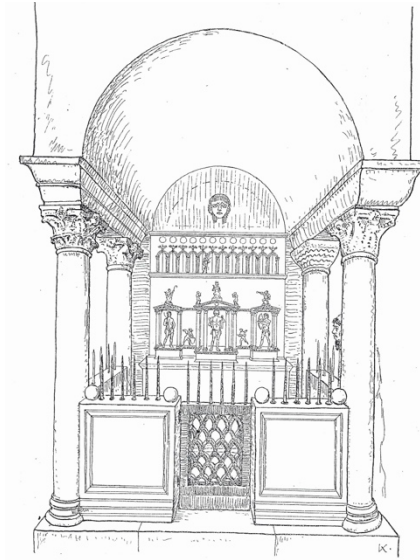
I will open with an admission: even prior to reading the text by Procopius and learning something about ancient water clocks, I was quick to criticize Diels' proposed reconstruction (Figs. 1 and 2). His proposal seemed excessively influenced by the appearance of European astronomical clocks (dated to the late Medieval period up to the nineteenth century). I arrogantly believed that my first contribution to the study would be a correct and more accurate proposed reconstruction. However, the more I progressed in my study of this matter, the more the extent of my error became apparent. It became evident that the reconstruction proposed by Diels closely follows Procopius' description and is based on a profound acquaintance with other early treatises describing water clocks.<sup>11</sup> Diels had not, in fact, imposed the aesthetics of his time on another period; rather, the European clocks had simply not changed much in appearance from their ancient predecessors. Moreover, and in a way that is not self-evident according to the rules of the genre of *ekphrasis*, Procopius' description makes possible an archaeological reconstruction and also contains detailed information on the exact relationship between the clock's components and even on its location in the city. This taste for detail is mentioned by the author in the prologue preceding his description of the clock. Further on I will deal separately with this part of the *ekphrasis*, since it provides a key to understanding the rhetoric of Procopius.

The following description of the clock is not a literal translation of the Greek text, but a summary of Procopius' words in order of appearance, while remaining true to their spirit. My explanatory notes will appear in parentheses. Later, I will return to those sentences of Procopius which are not exclusively descriptive and were meant to reconstruct the experience of observing the wonders of the clock.

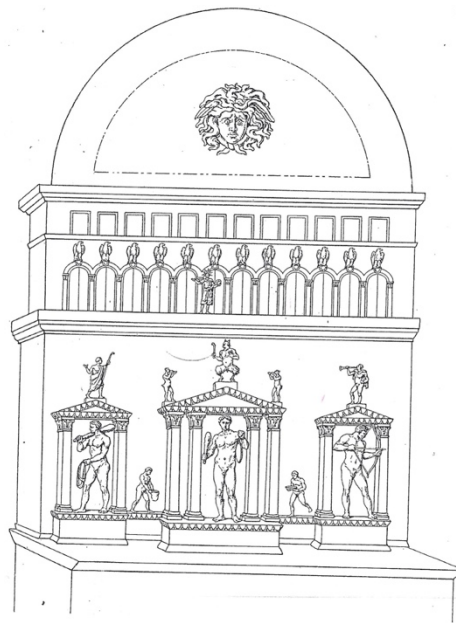
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<sup>10</sup> Bäbler and Schomberg (2010), 528–59.

<sup>11</sup> Bäbler and Schomberg hold a different view and maintain that Diels' proposed reconstruction needs a revision: see Bäbler and Schomberg (2010), 531, 550–1, 553–8, 686 fig. 20. I will outline Schomberg's main reservations below.



**Fig. 1.** *The water clock of Gaza within the building in which it stood, proposed reconstruction by Hermann Diels (Diels 1917, Pl. 1).*



**Fig. 2.** *Display of the water clock of Gaza, proposed reconstruction by Hermann Diels (Diels 1917, Pl. 2).*

Procopius opens by mentioning that the clock is located in a small building at the center of the city, on the corner of an open square thronging with people, opposite the royal stoa (τῆ βασιλείῳ στοᾷ), which was probably the municipal basilica that stood in the forum.<sup>12</sup> The building is fronted by two pairs of columns, one facing east and the other west. According to Procopius, this part of the building is meant to keep the viewers away from the clock and to prevent the possibility of a breakdown in its operation and a disturbance of the theatrical show. The intercolumniations feature marble panels or screens. The menacing face of a Gorgon, located at the top of the clock, is likewise meant to deter any intruder, rotating on the hour her monstrous blood-filled eyes (and thus also signaling the time for striking). Procopius goes on to describe two sets of openings, marking the twelve diurnal and twelve nocturnal hours respectively. The nocturnal openings are located horizontally above the diurnal ones, and Procopius apologizes for not starting with them despite his desire to be consistent in the order of description, since it is more appropriate to wait for evening, the time when a light will appear in them. Above the doors marking the diurnal hours is located a row of twelve eagles, each grasping a wreath in its claws and anxiously awaiting the moment when Heracles will burst forth from behind a concealing door. This door opens only when Helios, the measurer of the hours, passes before it. As the ruler of the hours, Helios is garbed in regal attire; in his left hand he holds an orb and his right arm is extended, instructing the doors to open—paralleling the order given to race horses to leap forth from the starting gates.

The first figure of Heracles to appear marks the first hour and each adjacent figure signals the following hour accordingly. Thus, Heracles appears twelve times in this part of the clock and his appearances represent, in order, the twelve Labors that the hero was obliged to perform for Eurystheus of Argos. Procopius lists them and adds, in brief, the story of the myth. The order of the Labors is as follows: the strangling of the Nemean lion; the killing of the Lernaean Hydra; the trapping of the Erymanthian boar; the capture of the hind of Ceryneia; the driving out of the Stymphalian birds; the cleaning of the stables of Augeas; the capture of the Cretan bull; the seizing of the horses of the Thracian Diomedes; the quest for the girdle of the Amazon queen; the search for the cattle of Geryon; the removal of Cerberus from Hades; and the retrieval of the golden apples of the Hesperides. Each time Heracles bursts through a doorway, the eagle above him spreads its wings and lays a wreath upon his head. After the bird folds its wings and returns to its place, Heracles bows toward the viewers and returns to his place.

At the center of the clock is a temple-like structure (aedicula) that draws attention of the viewers; and at the center of this structure stands another, much larger figure of Heracles. His appearance is that of a young beardless lad, with body unclad; draped upon one shoulder is the skin of the Nemean lion. In his left hand he holds a swinging gong in the form of a lion's head and in his right hand a club. The gong-lion roars and Heracles strikes it, the sound of the blow echoing over a distance as a mighty roar. On the first hour, this Heraclean figure strikes the lion once; on the second hour, twice; and so on, up to the number six, when, in order not to impair the audience's hearing, the count begins anew, with the seventh hour counted by a single strike, the eighth by two, and so on up to the twelfth hour. As mentioned, the sound of the clock can be heard from afar, such that even

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<sup>12</sup> For a meticulous discussion of the location of the clock in the city, see Bähler and Schomberg (2010), 529.

those unable to see it are conscious of the time. The god Pan, who stands above Heracles on the apex of the pediment of the central aedicula, hears the sound. He is in love with Echo but she has only been dallying with him, and now he yearns for her. Hence, on hearing the echo created by the clock's strike, Pan raises his hand and turns his face hither and thither, seeking her presence—the result of hapless love. One could also say that Pan is surprised by Heracles' gallantry. Two satyrs also appear, one on each side of Pan, to his left and right, on the pediment of the same aedicula.<sup>13</sup> They mockingly imitate his facial expression full of love and emotion; this mixture of refinement and coarseness (ἡμερόν τε καὶ ἀπηνέζ) makes them laugh. This group is located at the top of the structure, where the aforementioned Heracles stands.

The son of Tydeus (Diomedes) stands on the right side, at the apex of the pediment of the right aedicula, and blows on his trumpet in honor of Heracles who is beginning his final Labor just as he played at Scyros when he revealed the identity of the son of Peleus (Achilles).<sup>14</sup> Here too he blows 'a number of blasts in accordance with the time of the day' (τοσοῦτον γὰρ ἦσε καὶ τότε μέτρον ἴσον ἡμέρῃ).<sup>15</sup> Additionally, we see two servants flanking the figure of Heracles in the central aedicula: one nimbly carries the ablution vessel, while the other hastens to bring home food from the market. They must hurry, for they serve a very cruel master. On the other side, at the apex of the pediment of the left aedicula, a shepherd has found his place. His left hand grips a crook, and he waves his other arm, smiling joyfully.<sup>16</sup>

A figure of Heracles as bowman appears in the twelfth Labor, below the aforementioned Diomedes (within the right aedicula). The object of this Labor is the golden apples of the Hesperides.<sup>17</sup> The hero lays an arrow upon the bowstring and draws it with his right hand, his left hand holding the bow. He closes one eye and aims with the precision demanded by the small dimensions of the target.

Here the Greek text comes to an end. Its original length is unknown, but there is no doubt that the original text contained a description of the left-hand aedicula.<sup>18</sup> In his imagined clock, Diels places another figure of Heracles there, a solution called for by considerations of symmetry. He proposes that here too Heracles grips objects—in this case, his club and the girdle of Hippolyte. Diels' choice of a Labor taking place in the east seems to be logical in view of the fact that it is located below the doors marking the early

<sup>13</sup> Pan and the two satyrs constitute the acroteria at the apex and outer angles of the pediment of the central aedicula.

<sup>14</sup> Procopius follows the Homeric custom of referring to heroes by their parentage; thus, Heracles is called son of Alcmene, Diomedes is called son of Tydeus, and Achilles is called son of Peleus.

<sup>15</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), 12; Procop. *Ekphrasis on the water Clock* (Diels 1917), lines 310–12.

<sup>16</sup> Schomberg maintains that from the text it is not clear where the shepherd and the two servants stood; Bäbler and Schomberg (2010), 555.

<sup>17</sup> Schomberg is in doubt that the figure of Heracles the bowman (right aedicula) depicts the mission of fetching the golden apples of the Hesperides. Her chief argument is that the common iconography of this scene is different and the bow does not appear in any visual or textual presentation of this mission; Bäbler and Schomberg (2010), 550–54. Later on I will explain the rationale behind Diels' reconstruction of this part.

<sup>18</sup> Diels (1917), 19.

morning hours; but it should be recalled that this is only a supposition. Diels is not of the opinion that the hydraulic, pneumatic, and mechanical units of the clock were described in the *ekphrasis*. In his view, Procopius did not have an understanding of the technology involved, his description being nothing but a rhetorical exercise dealing only with the external appearance. This supposition indeed fits the characteristics of the *ekphrasis*. Diels' proposed reconstruction, which accurately follows Procopius' text, is also supported by his acquaintance with treatises dealing with ancient water clocks. The next part of our discussion is devoted to this subject.

#### THE GAZA CLOCK COMPARED WITH OTHER ANCIENT TIMEKEEPERS

The aim of this section is to contextualize the Gaza water clock within the history of timekeeping devices. This is necessary in order to demonstrate that Procopius was relating to a real object and in order to better understand the automatic display of the clock. Nevertheless, I will not discuss in detail the technology and engineering of ancient clocks, including the Gaza clock, because Procopius himself was not interested in the driving mechanism of the clock he described, but rather chose to focus on its display.

The transition from a day marking the time of light to a day divided into twelve hours of equal length took place during antiquity at different times in various places. The oldest sundials and outflow water clocks were found in Egypt<sup>19</sup>. In Greece, the first mention of a twelve-hour day is in Herodotus, who attributes this invention—as well as the use of the first instruments for the measurement of time—to the Babylonians.<sup>20</sup> Herodotus mentions the *polos* and the *gnomon*, but Turner holds the view that at that time he could not be referring to sundials in the full sense of the term.<sup>21</sup> The earliest Greek sundial dates to the third century B.C.E., and it seems that then, or perhaps even already at the end of the fourth century, the sundial was gradually becoming an accepted instrument for telling the time. Vitruvius lists sixteen types of sundials and it seems that they were fairly widespread throughout the Hellenistic world.<sup>22</sup> The water clock, measuring the twenty-four hours in a day, likewise made its appearance in the third century B.C.E. These means of measuring time were soon adopted in Rome, as detailed by Pliny.<sup>23</sup> In 293 B.C.E., the first sundial was installed in Rome and in 263 B.C.E. a second one was brought there; but since it had not been adjusted to the new latitude, it told the wrong time for ninety-nine years. In 164 B.C.E., a sundial specially adapted for Rome was built. It should be recalled that up to the mid-nineteenth century, each city was responsible for determining its own time. The transition to standard countrywide or national time was made possible by social and national agreements intended to meet the demand for uniform time dictated by the movement of trains.<sup>24</sup>

<sup>19</sup> Schomberg (2017), 301–40. The oldest outflow water clock ever found is dated to the time of Amenhotep III (1379–1342 BCE).

<sup>20</sup> Hdt. 2.4.

<sup>21</sup> Turner (1989), 303–18 (esp. 303–4); Turner (1993), 18–24, esp. 20.

<sup>22</sup> Vitr. *De arch.*, 9.8.1.

<sup>23</sup> Plin. *HN* 7.215.

<sup>24</sup> Rayment-Pickard (2004), 19.

Five years after the establishment of the first sundial specially adapted to Rome, P. Cornelius Scipio Nasica set up the first water clock in the city. The use of sundials and water clocks continued in the Byzantine and Muslim periods.<sup>25</sup> The advantage of the water clock over the sundial lay in its ability to measure the hours in darkness and on particularly cloudy days too, and therefore it was termed *horologium hibernum* (winter clock) or *horologium nocturnum* (night clock). One should distinguish between a water clock and a *clepsydra* which was meant to measure a fixed interval of time without any subdivision and served mainly in Greek law courts to set time limits on the length of speeches.

In early sources, the invention of the water clock is ascribed to Ctesibius of Alexandria. In his water clock, time was indicated visually by means of automatic displays and also the emission of sound. While Ctesibius' book has been lost, we can learn about his inventions and about other technological innovations described in it from the testimony of Vitruvius, who apparently read it.<sup>26</sup> In the second century C.E., the water clock of Ctesibius is also mentioned by Athenaeus<sup>27</sup>; however, in Drachmann's view, Vitruvius was the most reliable source.<sup>28</sup> This early water clock, as we will learn from the following excerpt from Vitruvius, is the prototype of the Gaza water clock:

Methods of making water clocks have been investigated by the same writers, and first of all by Ctesibius the Alexandrian, who also discovered the natural pressure of the air and pneumatic principles. It is worthwhile for students to know how these discoveries came about. Ctesibius, born at Alexandria, was the son of a barber. Preeminent for natural ability and great industry, he is said to have amused himself with ingenious devices...Hence, Ctesibius, observing that sounds and tones were produced by the contact between the free air and that which was forced from the pipe, made use of this principle in the construction of the first water organs. He also devised methods of raising water, automatic contrivances, and amusing things of many kinds, including among them the construction of water clocks. He began by making an orifice in a piece of gold, or by perforating a gem, because these substances are not worn by the action of water, and do not collect dirt so as to get stopped up. A regular flow of water through the orifice raises an inverted bowl, called by mechanics the 'cork' or 'drum.' To this are attached a rack and a revolving drum, both fitted with teeth at regular intervals. These teeth, acting upon one another, induce a measured revolution and movement. Other racks and other drums, similarly toothed and subject to the same motion, give rise by their revolution to various kinds of motions, by which figures are moved, cones revolve, pebbles or eggs fall, trumpets sound, and other incidental effects take place. The hours are marked in these clocks on a column or a pilaster, and a figure emerging from the bottom points to them with a rod throughout the whole day. Their decrease or increase in length with the different days and months, must be adjusted by inserting or withdrawing wedges...According to these rules, and by this mechanism, water clocks may be constructed for use in winter. But if it proves that the shortening or lengthening of the day is not in agreement with the insertion and removal of the wedges, because the wedges may very often cause errors, the following arrangement will have to be made. Let the hours

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<sup>25</sup> Turner (1989), 303–18.

<sup>26</sup> Vitr. *De arch.* 9.8.2–7; Armstrong (1974). See also the discussion by Schomberg (2017), 305–10.

<sup>27</sup> *Deipnosophistai* 4.174; 9.497.

<sup>28</sup> Drachmann, (1948), 1.

be marked off transversely on the column from the analemma,<sup>29</sup> and let the lines of the months also be marked upon the column. Then let the column be made to revolve, in such a way that, as it turns continuously towards the figure and the rod with which the emerging figure points to the hours, it may make the hours short or long according to the respective months'.<sup>30</sup>

From Vitruvius' final sentences here, one understands that, in antiquity, the length of an hour was not a fixed interval of time as it is today. Daylight was divided into twelve equal hours and dark likewise, and there was thus a need to lengthen or shorten the duration of the diurnal hour and nocturnal hour, in accordance with the periods of the year. Only on the equinoxes was the length of the diurnal hour equal to that of the nocturnal hour. The present-day method of measuring time, in which the day is divided into twenty-four equal parts throughout the year, was accepted as a framework for organizing the daily routine no earlier than the fourteenth century. Prior thereto it had been used by those interested in astronomy.<sup>31</sup>

Some of the inventions of Ctesibius are also reflected in the comprehensive treatise on technology penned by Philo of Byzantium, who was active one generation later. Of the nine books comprising this treatise, the fourth and parts of the seventh and eighth have been preserved in Greek. The fifth book, dealing with pneumatics, including siphons and other instruments operated by means of heated air and liquids, is known to us in its Arabic translation. The third book, which dealt with automation, has been lost.<sup>32</sup> Chapter 60 of the *Pneumatics* outlines how it is possible to create a whistling bird by means of a blast of air emitted from a closed vessel into which water is poured. Chapter 61 describes a water wheel that enables the production of protracted sounds (though in Drachmann's opinion, this is a later addition made at the time of the translation of the treatise into Arabic). Other chapters of the treatise (4, 31, 33, 35–36, 40, 45–47) are given over to description of still other pneumatic instruments, by means of which a host might entertain his guests as they washed their hands or while wine was being poured and drunk.<sup>33</sup> Heron of Alexandria (first century C.E.) also dealt with various aspects of pneumatics and automation, including a theater whose figures were operated by means of the movement of air and water. His discussion of these subjects has been preserved, but the part of his work dealing with water clocks is missing, so it is difficult to determine what innovations it contained.<sup>34</sup> Medieval Arabic sources attribute a book on water clocks to Archimedes, but it seems that we are, in fact, dealing here with a Muslim work, in which are interwoven—alongside genuine innovations of medieval Muslim clock-making—early sources including Philon of Byzantium and probably also Heron,<sup>35</sup> together with later ones

<sup>29</sup> An analemma is a curve in the shape of a figure eight that is obtained from the orbit of the sun in the sky as it is seen at a fixed time (according to an average sundial) from day to day.

<sup>30</sup> Vitruvius, *De arch.*, 8.8–15; transl. Morgan (1960). Vitruvius also describes another clock, but he does not attribute it to Ctesibius. This clock is called 'anaphoric' and supposedly imitates the movement of the sun.

<sup>31</sup> Turner (1993), 19–20.

<sup>32</sup> Drachmann (1948), 41.

<sup>33</sup> Drachmann (1948), 64–5.

<sup>34</sup> Drachmann (1948), 40–1.

<sup>35</sup> Drachmann (1948), 36–8.

originating in Iran and Byzantium.<sup>36</sup> Schomberg maintains that this book, supposedly authored by Archimedes, is actually an Arabic translation of a lost Hellenistic treatise on water clocks by Philo of Byzantium.<sup>37</sup> The clock described in this treatise, known from seven manuscripts, the earliest of which is from the thirteenth century, shows a great similarity to the one from Gaza.<sup>38</sup> Its upper part featured a face whose eyes changed color on the hour. In the automatic theater were twelve captives bound in chains and an executioner who decapitated them one after the other. It also featured twelve doors, from each of which a mounted horseman burst forth on the hour. Somewhere, probably in the lower part of the clock, a flautist played at midday. The trumpeting Diomedes has thus been replaced by a flautist and the twelve Labors of Heracles by twelve horsemen, while the face with changing eye color was inspired by the Gorgon. A group adorns the center of the clock, consisting of a tree standing between two hills, from each of which a snake bursts forth on every hour, causing the birds in the tree to twitter with fear. The closest parallel we have to this is depicted on the lid of a jar documented in great detail by Philo of Byzantium. Philo describes how the pouring of liquid from this jar causes the snakes to threaten the birds, who spread their wings to cover the fledglings in the nest.

Another water clock resembling the Gaza clock is described in minutest detail in the book of Ridwan ibn al-Sa‘ati.<sup>39</sup> Ibn al-Sa‘ati means ‘son of the clock-maker’, and this water clock, which stood close to the Umayyad mosque of Damascus, was indeed made by his father in 1166/7, to replace an earlier clock that had been in a fire.<sup>40</sup> Shortly after the father’s death, however, the new clock went out of order and attempts to repair it were unsuccessful. Only in 1203 did the son manage to fix it. The clock is briefly mentioned by Benjamin of Tudela who visited the city in the second half of the twelfth century and it is also described in the itinerary of Ibn Jubayr who visited Damascus in 1184.<sup>41</sup> From this description we learn, *inter alia*, that at the front of the clock stood twelve winged bronze doors, and these opened in accordance with the hour of day. The doors were flanked by two bronze falcons; on every hour, they stretched their necks above a basin in order to drop bronze balls into it, making the sound of a strike. Meanwhile, the nocturnal hours were represented by means of twelve round glass windows set in a bronze arch. Lamps driven by water lit the windows and thus signaled the hour. From the description of Benjamin of Tudela we learn that in addition to all the above, the clock also contained a wheel featuring the signs of the zodiac. The wheel completed a rotation once a day and, on each hour, half of it was visible. This component was absent from the Gaza clock.

In reconstructing the appearance of the Gaza clock, Diels relied mainly on a work by al-Jazari, who wrote it at Diyār Bakr in either 1204 or 1206.<sup>42</sup> This treatise, which deals with mechanics and describes, *inter alia*, the process of building and operating six water

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<sup>36</sup> Hill (1981), 15–35.

<sup>37</sup> Schomberg (2017), 315. Hill maintains that the treatise is probably an assembly of Greek, Iranian, Byzantine, and Arabic contributions; Hill (1981), 34.

<sup>38</sup> Bäßler and Schomberg (2010), 546; Schomberg (2017), 311.

<sup>39</sup> Hill (1981), 69–88.

<sup>40</sup> Flood, (2000), 159–63.

<sup>41</sup> Hill (1981), 71.

<sup>42</sup> Diels (1917), 7–9.

clocks, is superior in its clarity and precision to all its predecessors.<sup>43</sup> In 1976, three of al-Jazari's clocks were reconstructed at the Science Museum in London.<sup>44</sup> Like the Gaza clock, the clocks of al-Jazari that inspired Diels featured two horizontal sets of openings, for the diurnal and the nocturnal hours respectively. In the openings marking the daylight hours a warrior appeared on each hour, and along a track running in front of the warriors there passed a chariot with a vertical rod. In the openings marking the nocturnal hours lamps were lit, and in a sort of a niche in the lower part of the clock a group of musicians was placed. As in Ridwan ibn al-Sa'ati's clock, al-Jazari's featured two mechanical falcons dropping balls into bronze bowls beneath them, along with a wheel bearing the signs of the zodiac. Nevertheless, it was superior to its predecessor in the degree of its sophistication and it also served as an astronomical clock exhibiting the position of the sun in relation to the signs of the zodiac, as well as the gradual change of the moon over the course of the lunar month.<sup>45</sup>

Diels does not rule out the possibility that Procopius' *ekphrasis* included, in the part that has not survived, astronomical and calendrical components too; but these are not presented in his proposed reconstruction.<sup>46</sup> It is highly unlikely that the Gaza clock also featured the signs of the zodiac, as great caution was taken by Christians at the end of antiquity in all matters related to the zodiac; and also because, taking into account the location of the zodiac in the two aforementioned Arabic clocks, it would most likely have appeared at the start of Procopius' *ekphrasis*, which describes the clock's front systematically from the top downward, rather than at its close. On the other hand, the Arabic clocks do give us an idea of the size of the Gaza clock, and it would appear that its height was some 4m and its width some 3m. In its lower part lay a pedestal, which caused the theatrical display of the hours to be at viewer eye-level.

Diels cautiously refrains from reconstructing the mechanical and pneumatic structure of the Gaza clock on the basis of al-Jazari's. However, aside from the use of the water wheel, which was apparently an innovation of the Muslim clockmakers, all the other elements found in medieval Islamic clocks were known in antiquity too. It is also reasonable to assume that the mechanism was fairly similar. It is very doubtful whether the *ekphrasis* of Procopius, being a rhetorical essay centered on the reconstruction of the experience of viewing a work of art, dealt with the clock's technological aspects. The *ekphrasis* could serve as a way of conveying information about the clock's appearance and about the acoustic means signaling the time, but it is logical to assume that the engineering information that made possible its operation reached medieval Muslim clockmakers of the Middle Ages via another treatise. As we have seen, in the case of the builders of advanced water clocks, from Ctesibius to al-Jazari, the complex machines that they created were accompanied by treatises describing the technological aspects of their inventions. It is plausible that the builder of the Gaza clock likewise wrote such a treatise

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<sup>43</sup> Hill (1981), 89–124.

<sup>44</sup> Hill, (1981), 103–23.

<sup>45</sup> Remains of two fourteenth-century water clocks have been preserved in Fez, Morocco. Nothing is left of the internal pneumatic mechanism, but on the façade one can see a set of openings with wooden doors and a track along which balls moved, to then strike a gong; Hill (1981), 123–4.

<sup>46</sup> Diels (1917), 5.

and that it was translated into Arabic in the ninth century within the framework of the grand project of translating Greek masterpieces, and in the course of time was included in the technological treatises of Muslim authors. It is also possible that in the construction of the Gaza clock its builder relied on one of the existing treatises, such as that of Heron, which has not been preserved. The possibility that the Gaza water clock continued to operate after the Muslim conquest and thus influenced Islamic clockmaking seems to me to be less convincing. The complex mechanism was likely to have broken down long before, since its operation and maintenance called for the daily presence of an experienced clockmaker. Rather, I wish to suggest here that Gaza, which had fostered the classical heritage at the end of antiquity, was an important link in the transfer of information in the field of pneumatics and automation from the classical world and Byzantium to the Islamic world.

#### THE ARTWORK OF THE CLOCK AND THE CONNECTIONS OF ITS FIGURES

Now we turn to a deeper exploration of the artwork of the clock. The main hero of its show is Heracles, and one must ask why. We may wonder whether this choice is connected with the syncretism of Heracles with Melqart—he whom the Greeks called the Heracles of Tyre—and with the evidence regarding worship of this figure in the middle of the first millennium B.C.E. in the important coastal cities of Ashkelon and Gaza.<sup>47</sup> In his fifth century C.E. work *Dionysiaca*, well known to the learned public of Gaza, Nonnus of Panopolis in Egypt devoted a comprehensive description to this Heracles of Tyre/Melqart.<sup>48</sup> Heracles appears quite commonly on Gaza's coins in the Roman period, sometimes alongside Marnas, the chief deity of Gaza, though the former is not the most prevalent god on the city's coins.<sup>49</sup> Schomberg is of the opinion that the figure of Heracles was meaningful to the citizens of Gaza due to a foundation legend attributing the city's establishment to Azon, son of Heracles. This myth was known to Stephanus of Byzantium (probably a contemporary of Justinian), who writes the following: 'Even until now the Syrians call it Aza [the Hebrew name for Gaza] after Azon the son of Heracles.'<sup>50</sup> All this notwithstanding, it seems to me that this is not the sole reason for highlighting Heracles on the water clock. Immediately after describing the twelve doors from which Heracles bursts forth every hour, Procopius says explicitly: 'his old struggles continue to engage him, but not on account of Eurystheus but because of the art.' (οἱ πάλαι δὲ ἄθλοι καὶ νῦν ἔργον αὐτῷ οὐκ Εὐρυσθέως ἔτι, ἀλλὰ τέχνης ἀνάγκη)<sup>51</sup> The intent of this comment is to state that Heracles was reduced to an artistic artifact, and to stress that artistic considerations are what dictated the choice of his figure. Perhaps Procopius felt a special need to emphasize this, in order to provide his Christian audience with a key to the correct interpretation of the appearance of the praised Greek hero who became a god. The reason for the choice of Heracles is that the canonical number of his Labors, termed

<sup>47</sup> Daniels (2021), 464–81.

<sup>48</sup> Nonnus, *Dion.* 40.311–580.

<sup>49</sup> Bäbler and Schomberg (2010), 549.

<sup>50</sup> Bäbler and Schomberg (2010), 549; Mussies (1990), 2247–8.

<sup>51</sup> Procop., *Ekphrasis on the Water Clock* (Amato 2010), section 7; Procop., *Ekphrasis on the Water Clock* (Diels 1917), lines 166–71.

*dodecathlon*,<sup>52</sup> matches the twelve hours of the day.<sup>53</sup> But there is perhaps even a further cause for the choice of Heracles. In the classical literature, Heracles symbolized man contending obdurately with the challenges life presents to him.<sup>54</sup> Already in Euripides' tragedy *Heracles*, he appears as someone who accepts his fate as a simple man by saying:

But I, for all my piteous plight, reflected whether I should let myself be branded as a coward for giving up my life. For whoever does not withstand disasters will never be able to withstand even a man's weapon. I will be steadfast in living; I will go to your city, with grateful thanks for all you offer me. *He weeps*. But I have tasted of countless troubles, as is well known; never yet did I faint at any or shed a single tear; no, nor did I ever think that I should come to this, to let the tear-drop fall. But now, it seems, I must be fortune's slave.<sup>55</sup>

Earlier in the play he says:

For whom ought I to help rather than wife and children and aged father? Farewell my labors! for it was in vain I accomplished them rather than helping these.<sup>56</sup>

This humanization of the hero is also notable in other Greek sources from the fifth century B.C.E. onward.<sup>57</sup> The transformation of Heracles from an epic hero in the Archaic period into a philosophical model of a human steadfastly contending with his life's challenges explains his great popularity even in the early Byzantine period and later. It is likely that the choice of Heracles made by the clock's artist came about not only on account of the technical match of number of hours with number of Labors, but also due to the deep significance he held for the public.

Procopius lists the twelve Labors one by one, but the description of Heracles' figure emerging from the appropriate doorway on each hour makes it clear that he appeared alone and without any indication of a particular Labor. During the Late Roman period, the twelve Labors appeared many times on sarcophagi,<sup>58</sup> but were also given expression by other artistic means, including floor mosaics. In the Middle East, the entire cycle made its

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<sup>52</sup> Brommer (1986).

<sup>53</sup> From *Pap. Oxy.* 2450 we learn that the twelve Labors had already appeared in literature in Pindar who, in sentence 413, speaks about the *Dodecathlon*; but the precise list of the twelve Labors that became canonical made its first appearance in the mid-third century B.C.E., at a time when there was great interest in the collection and editing of myths. The order of the Labors remained fluid, however, until the final days of antiquity. The first canonical series appeared in art on the metopes of the Temple of Zeus at Olympia; see Vollkommer (1988), 1.

<sup>54</sup> Vollkommer (1988), 61. An emphasis on the humanity of a prominent mythological figure is also reflected in the way Theseus is portrayed in the *Ekphrasis Eikonos* by Procopius of Gaza and the painting it describes. Theseus is depicted in Gaza not as a majestic king and a glorious hero, but as an exhausted old man betrayed not only by his young wife but also by his servants. On the reinterpretation of the classical text in a way that would touch the hearts of the Christian audience, see Ciccolella (2018–2019), 37–56.

<sup>55</sup> Eur. *HF*, lines 1347–57; transl. E.P. Coleridge (1910).

<sup>56</sup> Lines 575–6. The *Ekphrasis Eikonos* and the painting it describes suggest the familiarity of the audience in Gaza with the tragedies of Euripides. On the high literary level of the Gazan, see Ciccolella (2006), 80–95 (esp. 86–7). Also see Ciccolella (2007), 181–201.

<sup>57</sup> Vollkommer (1988), 79–82.

<sup>58</sup> Jongste (1992).

appearance at the end of antiquity on Coptic textiles,<sup>59</sup> while a mosaic in a private home at Madaba shows a depiction of the first Labor.<sup>60</sup>

The placement of the large figure of Heracles holding his club in the central aedicula is readily identifiable, as the skin of the Nemean lion draped over his shoulder is the clearest attribute of the hero. The heroic club becomes a stick, while the head of the lion turns out to be a gong. Procopius' comment to the effect that in this Labor, the first in the series, Heracles appears as a beardless youth, suggests to us the possibility that in the two side aediculae he is depicted in more adult form.<sup>61</sup> Such gradual maturation from one Labor to the next first appears on the metopes of the Temple of Zeus at Olympia, as a way of marking the mental change undergone as he progressively overcomes obstacles, and as an expression of the irreversibly linear character of biological time within human life.<sup>62</sup>

The Heracleian figure standing at the center of the western aedicula holds a bow in his hand. Unlike the club, the bow is not a special attribute of Heracles, but it plays an important role in his life and in the lives of others living two generations after his deification, in the tragedy *Heracles* by Euripides. This weapon serves to symbolize his heroism at the beginning of the play (lines 64–158, 188–203) and aids him in carrying out some of his missions: his killing of the centaurs (366), Cycnus (392), and Geryon (423–24). In tragic contrast, this is also the weapon with which he murders his own family (942, 969–70, 991, 1000, 1062–63). The great importance of the bow is notable in the spine-chilling monologue delivered by Heracles after he recovers from the madness caused him by Iris and Lyssa, and comes to understand the enormity of the horror. Heracles imagines that the bow and arrows speak to him<sup>63</sup> and this unusual literary means serves to intensify the message:

[...] how sad my lot, cut off from wife and child! Ah! these kisses, bitter-sweet! these weapons which it is pain to own! I am not sure whether to keep or let them go; dangling at my side they thus will say, 'With us you destroyed children and wife; we are your children's slayers, and you keep us.' Shall I carry them after that? what answer can I make? Yet, am I to strip myself of these weapons, the comrades of my glorious career in Hellas, and put myself in the power of my foes, to die a death of shame? (lines 1375–85).<sup>64</sup>

Procopius' choice to link the bow in Heracles' hand with his final Labor (retrieval of the golden apples of the Hesperides) lies in total contrast to the manner in which the hero attains them according to the literary and artistic traditions.<sup>65</sup> The cause of this divergence is the placement, at the apex of the pediment above Heracles, of Diomedes, who declares the start of the last hour of the day—and from this it follows that Heracles is now fully engaged in the twelfth Labor of the canonical cycle. This final Labor brings him to the extremities of the west. The cardinal points of the compass are of significance in the Gaza clock, as may be understood from their early mention in the description of the building's

<sup>59</sup> Uhlenbrock (1986), fig. 61.

<sup>60</sup> Piccirillo (1993), 80.

<sup>61</sup> Procop., *Ekphrasis on the Water Clock* (Diels 1917), lines 244–51.

<sup>62</sup> Woodford (1986), 103.

<sup>63</sup> Kirkpatrick and Dunn (2002), 29–35.

<sup>64</sup> Transl. E.P. Coleridge (1910).

<sup>65</sup> It is interesting to note that in his brief description of the twelfth of Heracles' Labors, the bow and arrows are not mentioned.

general appearance. The figure of Helios on the Gaza clock traverses a course from east to west, and therefore the doors above Heracles the bowman open near sunset. Procopius describes in detail the laying of the arrow on the string, the drawing of the bow, and the closing of one of Heracles' eyes as he aims at the target. We are informed that the target that the bow seeks to strike is small: the intention might be an apple, or alternatively the sun sinking into the sea beyond the horizon. For his part, Diels did not reconstruct an apple tree next to Heracles the bowman because he rightly assumed that this is a poetic addition. As mentioned above, his proposal to place Heracles gripping the girdle of the Amazon queen—a Labor which, according to the Greek tradition, obliged the exalted hero to wander eastward—in the eastern aedicula is also convincing.

Yet another layer of meaning inherent in the display of Heracles in the Gaza clock becomes apparent as we return to his two servants, who hasten to serve their cruel master. We see one bringing an ablution vessel and the other hurrying back from market with the commodities necessary for the preparation of a feast (in a Roman city, the evening meal was generally eaten after bathing).<sup>66</sup> The presentation of Heracles here as cruel must be placed within the context of a broader question: should his depiction on the clock be regarded as a far-reaching step in the humanization of the mythical hero, testifying perhaps to a deviation by Christian society at the end of antiquity from the norms accepted in the classical world? The answer is certainly not; the opposite is true. This description actually refines the figure of Heracles radically depicted in Greek comedy as adhering to an earthly life of satisfying bodily pleasures without limits. (See, for example, in Aristophanes' comedy *The Frogs*, in which two angry female innkeepers rant about the damages Heracles has caused them: he consumed sixteen loaves of bread and twenty helpings of cooked meat at half an obol a slice, along with large quantities of pickles and fresh cheese; and when asked to pay, he ran wild like a madman and, upon departure, took the inn's mats with him [lines 549–78]).

Organizing a daily routine according to a clock also regiments the needs of the body: the times of rising and reclining, and mealtimes. The growing use of sundials in the second century B.C.E. brought some to complain of the tyranny of the clocks. Such a gripe, voiced by the figure of a sybaritic idler, was penned by Plautus and is cited by Aulus Gellius:<sup>67</sup>

The gods confound the man who first found out  
How to distinguish hours—confound him, too,  
Who in this place set up a sun-dial,  
To cut and hack my days so wretchedly  
Into small pieces! When I was a boy,  
My belly was my sun-dial—one more sure,  
Truer, and more exact than any of them.  
This dial told me when 'twas proper time  
To go to dinner, when I ought to eat;

<sup>66</sup> Carcopino (1943), 263–5.

<sup>67</sup> Gell. *NA*. 3.3; Levi (1947), 221; Wright (1968), 29.

But, now-a-days, why even when I have,  
 I can't fall to unless the sun gives leave.  
 The town's so full of these confounded dials...<sup>68</sup>

Those who spend their days watching a clock in tense anticipation of the evening meal were condemned in Late Roman literature, as indicated by the brief comments of Plutarch, Athenaeus, and Lucian.<sup>69</sup>

Prior to his descriptions of the servants, Procopius mentions Diomedes trumpeting in honor of Heracles as the latter sets out on his final Labor.<sup>70</sup> From this linkage, we might understand that the hour for ablutions followed by feasting is the eleventh hour. Yet the abundant historical evidence available to us clearly indicates that the evening meal was generally eaten at the end of the eighth hour in winter and during the ninth in summer; this, apparently, did not change in the Byzantine period. We can speculate that Procopius chose to describe things in this order out of a desire to connect them with the Roman custom whereby a servant would blow a trumpet to invite the guests to a meal and announce the time marked by timekeeping devices. Water clocks began to be used in the homes of the wealthy in the second century C.E., and they soon became a status symbol. The best known example—deriding these customs—is the story by Petronius about the liberated slave Trimalchio. Agamemnon's servant, too, makes the following sarcastic comment about the nouveau riche: 'And is there no clock in his dining room? And a trumpeter in livery who regularly informs him how much time of his life has passed and been lost?'<sup>71</sup> The trumpet of one of the audacious heroes in the *Iliad* (Books Five and Seven) changes, in Procopius' description, from a war trumpet summoning Achilles who is hiding in the harem of King Lycomedes on Scyros, and causing him to reveal his identity (Apollodorus, *Bibl.* 3:8), into a trumpet announcing the time of the evening meal. Procopius does not name Diomedes per se, but calls him the son of Tydeus—probably under the influence of the Homeric style, since Homer often called people by their fathers' names, but also to allude to his father's war trumpet, mentioned a number of times in classical literature (Aeschylus, *Septem*, 394; Aristophanes, *Peace*, 1265–1304). Of these, the key mention is that in Aristophanes' comedy *Peace*, dealing with the deferment of war in favor of peace and feasting.<sup>72</sup>

In antiquity, workers were wont to rise at dawn. Even in cities with artificial lighting the streets were rather dark after sunset, and both servants and masters did not draw out their sleep, in order to take full advantage of the daylight hours.<sup>73</sup> The shepherd waving his staff upward and greeting the rising sun balances the figure of Diomedes. The inspiration for this figure probably came from the trend termed 'realism' that began in the Hellenistic period and continued to exist as part of the Roman industry of replicas.<sup>74</sup>

<sup>68</sup> Gell., NA, 3.3; transl. J.C. Rolfe (1927).

<sup>69</sup> Levi (1947), 221, notes 8–10.

<sup>70</sup> Procop., *Ekphrasis on the Water Clock* (Amato 2010), section 12; Procop., *Ekphrasis on the Water Clock* (Diels 1917), lines 305–12.

<sup>71</sup> Petron. *Sat.* section. 26; transl. M. Heseltine (1922).

<sup>72</sup> Compton-Engle (1999), 324–9.

<sup>73</sup> Carcopino (1943), 151–2.

<sup>74</sup> Pollitt (1986), 141–7.

Depictions of shepherds and field laborers, as well as those connected with Dionysos and his entourage, were common. Pan and the pair of Satyrs decorating the corners of the pediment of the central aedicula fit in well with this world of images.

In the Gaza clock, the artist has skillfully linked the visible with the audible. Procopius has followed in his footsteps by incorporating the acoustic phenomena in his description of the visual aspect. For instance, in the Gaza clock, the story of Pan's wretched love for Echo is depicted without his beloved making an appearance in the form of a nymph.<sup>75</sup> Echo is represented in the clock solely as an acoustic phenomenon, by means of the echoing of the gong that declares the change of hours. Pan, who reacts by raising his hand and turning his head hither and thither, thereby indicates her elusive presence. The notion of Echo not being present but manifesting herself as an acoustic phenomenon has deep roots in the classical literature.<sup>76</sup> Already in the Homeric Hymn to Pan, Echo manifests through phonetic and structural means that reflect the phenomenon of echoing. Echo also presented a challenge to the authors of *ekphraseis*. One of these, Philostratus the Elder (third century C.E.), whose *Imagines* was well known to Procopius of Gaza, addresses this challenge by drawing pictures of her reflection in the minds of his audience, in three different ways: once she is a nymph, mentioned by her female friends but absent from the picture (*Imagines* 2.2); a second time, she is mentioned solely as an acoustic phenomenon (*Imagines* 2.17); and the third time, Philostratus presents a well-known bronze gong in the Temple of Zeus at Dodona by means of a personification of Echo, who lays a hand upon her lips (*Imagines* 2.33).<sup>77</sup>

Procopius' description of Pan's face suggests his familiarity with Philostratus' *ekphrasis* and possibly even with the poems that inspired it—two *Idylls* by the third-century B.C.E. Alexandrian poet Theocritus. Procopius states that the two Satyrs mock Pan for the fact that love and emotion confer upon his facial expression a ridiculous mixture of refinement and crudeness. We see Theocritus (*Idyll* 11) and Philostratus (*Imagines* 2.18) employing similar language in describing Polyphemus the Cyclop, in love with the nymph Galatea. The Alexandrian poets showed a great interest in the subject of love, primarily of the forlorn variety. Theocritus, in his *Idylls* 6 and 11, transformed Polyphemus from the monstrous creature described in Homer (*Odyssey* 9.105–542) into an ordinary lovesick rustic.<sup>78</sup> Paraphrasing this description, Procopius transfers it to another monstrous creature in love with a nymph who mocks him. He very likely found it proper to do so not only as a gesture to the two well-known authors and due to the basic similarity between the two stories, but also because his placement of Pan at the pediment's apex resembles how Polyphemus is depicted in literature and art as being seated atop a

<sup>75</sup> Procop., *Ekphrasis on the Water Clock* (Diels 1917), lines 295–304.

<sup>76</sup> The most up-to-date and comprehensive work on the myth and the nature of Echo in Greek and Latin culture is Bonadeo, (2003).

<sup>77</sup> 'The very place, my boy, is painted as fragrant with incense and replete with the divine voice; and in it honour is paid to a bronze Echo, whom I think you see placing her hand upon her lips, since a bronze vessel has been dedicated to Zeus at Dodona, that resounds most of the day and is not silent till someone takes hold of it.' Translated by Fairbanks (1931). Procopius of Gaza's familiarity with the *Imagines* of Philostratus is clearly reflected in the *Ekphrasis Eikonos*; Talgam (2004), 209–34, at 218.

<sup>78</sup> Betts (1971), 252–53; Griffin (1983), 190–7. In Ovid, Galatea describes how the monstrous creature tries to beautify itself and improve its ways (*Met.* 13.768–9).

cliff overlooking the water, while the pair of Satyrs in the pediment's corners are reminiscent of Galatea and her lover Acis swimming at Polyphemus' feet. It is also due to the similarity of the mocking figures of these Satyrs to those mocking the Cyclops in Euripides' play *The Cyclops*.

Returning to the upper section of the clock, we have the final two figures, Helios and the Gorgon. Helios' presence on the Gaza clock served to convey that the passing of the days and hours is not an arbitrary human decision, but is dictated by the movement of the heavenly bodies. Moreover, the practice of timekeeping by the sun was very deeply rooted, being the most natural and intuitive method and also in light of the more widespread popularity of sundials over water clocks.

Wary of the danger of the adoption of sun worship, late antiquity Christians acted with additional caution, necessitated by the strength of the cult of Sol Invictus, the invincible Roman sun god, which endured until the time of Constantine the Great and was revived in the days of Julian the Apostate. Hence, the figure of Helios vanished almost completely from the religious art of that time. An exception to this rule is seen in the Monastery of Lady Mary in Beth Shean (Scythopolis), dating to the third quarter of the sixth century, where Helios appears at the center of the wheel of the months in the entrance hall or courtyard (rather than in the church or chapel).<sup>79</sup> Nevertheless, we should note that Helios appears next to Selene and, like her, is depicted as a bust, without a chariot. Helios is also portrayed in the earliest surviving Christian mosaic from the mid-third century in Mausoleum M (Julii) beneath the Church of St. Peter in Rome.<sup>80</sup> Here he rides his chariot, his rays arranged in the form of a cross to recall the ascent of Jesus to heaven.<sup>81</sup>

Visual depictions of Helios in Byzantine Christian art are thus rare and, from Constantine's time onward, the symbol of the rising chariot metamorphosed to depict Elijah ascending to heaven.<sup>82</sup> The particular portrayal of the sun within a painting of the world, found on the interior of a Gazan bathhouse dome described in an *ekphrasis* by John of Gaza, is indicative of a greater degree of caution, intended to prevent the widespread pagan worship of the heavenly bodies instead of their creator.<sup>83</sup> As early as the fourth century, the Cappadocian Fathers protested against the error of confusing the celestial bodies with God; likewise, St. Basil stressed that even the sun does not point at itself but rather beyond itself to the *sophia* (Wisdom) of the Creator with the *techne* (i.e., with the talent of making).<sup>84</sup> The Gazan bathhouse depiction follows these Christian approaches and, in doing so, stands out in comparison to known depictions of the sun in Roman art. Atlas, wearing the garb of a porter, supports the disk of the sun, inside which stands a naked child. John explains that this is the sun at dawn, which at noon becomes a youth and at sunset an old man at death's door. The sun, he emphasizes, stands for both the righteous and the godless.<sup>85</sup> The young sun is led by twin figures: Sophia, the personification of Wisdom, and Arete, symbolizing excellence or virtue. John proceeds to

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<sup>79</sup> Fitzgerald (1939), 7.

<sup>80</sup> Jensen (2000), 42–4.

<sup>81</sup> Kessler (2000), 65–6, 69–70.

<sup>82</sup> MacCormack (1981), 122–7.

<sup>83</sup> Talgam (2008), 96–7, 104–6.

<sup>84</sup> Basil, *Hexaemeron* 6, 10; Pelikan (1993), 103–4.

<sup>85</sup> Talgam (2008), 96; Friedländer (1912), part I, 51–65.

elucidate Sophia's essence, mentioning her control of the first laws of the spirit and her proximity to God, uniting the separate parts of the universe. She is the personification of divine wisdom and is identified with the Logos.<sup>86</sup> Sophia and Arete inside the dome of the bathhouse are not symbols of the sun; the opposite is true: they were meant to refute its divinity and to allude to its creator.

This reference to God the Creator and the danger of an erroneous interpretation of the heavenly bodies appears already in the work of Clemens of Alexandria:

Therefore some are deceived, I know not how, and worship the divine creation, the sun and the moon and the rest of the starry host, irrationally assuming that these, the instruments of time, are gods. For by his word were they established and by the breath of his mouth is all their power... And let not any of you worship the sun, but let him desire the Maker of the sun; nor let him deify the cosmos, but let him seek the Creator of the cosmos. For it seems that the only refuge left for him who is to reach the gates of salvation is divine wisdom.<sup>87</sup>

In the Gaza clock, Helios is presented as the ruler of the hours, and hence, Procopius writes, he is adorned with royal attire. In his left hand he holds an orb and with his other hand he gestures an order to open the doors, 'as one instructs horses to exit from the starting gates' (ὡσπερ οἱ τοὺς ἵππους ἐξιέναι τῶν βαλβίδων κελεύοντες).<sup>88</sup> The symbols of governance are not likely to have led to any pagan-like misconstruing of the sun as a divine being: Helios' modest size in comparison to the other figures, along with his role in the clock, make it clear that he is no more than the hour hand on a large clock created by God. The hero of the clock, who draws most of the attention, is actually the human Heracles.

Though she is discussed here last, the figure first mentioned by Procopius, as he describes the work from the top downward, is actually the Gorgon. Her face, says the rhetor,

was intended to threaten anyone approaching with evil intent. And she rotates her eyes as she did when [...] Perseus cut off her head: everyone who looked at her turned to stone. She was called the virgin with the gaze of a blood-sated dragon. Every time she gave the sign for striking, the public viewing her was struck with shock.<sup>89</sup>

(Ἀλλὰ καὶ Γοργῶ ἀφ' ὕψους βλοσυρὸν ἀπειλεῖ τοῖς ὄσοι γνώμη προσελθεῖν αὐθαδεστέρα τολμῶσιν, ἐναλλάττουσα τοὺς ὀφθαλμοὺς ὀπόσα τῆς ἡμέρας [± 20] ἀποτεμῶν ὁ Περσεύς, εἴ τις ἐλύπει, λίθον ἔδει γενέσθαι φανείσης.<sup>90</sup>

The use of the Gorgon's head in Greek art has very early origins. Her face was considered the most menacing of all, and she was rapidly adopted as a magical means of deterrence and protection, appearing on shields, on the breastplate (*aegis*) of the goddess Athena, and on the pediments of temples from the Archaic period.<sup>91</sup> Her appearance on the Gaza clock signals a continuation of this tradition. Diels suggests that the Gorgon's image was made

<sup>86</sup> Talgam (2008) 96; Friedländer (1912), part I, lines 66–95.

<sup>87</sup> Clemens, *Protrept.* 4. 63, transl. Casey (1993), 100–1.

<sup>88</sup> Procop. *Ekphrasis on the Water Clock* (Diels 1917), lines 145–55.

<sup>89</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), paragraph 4; Diels (1917), lines 96–112. Translations of Procopius' work into English are mine.

<sup>90</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), lines 15–20.

<sup>91</sup> Wilk (2000); Howe (1954), 209–21.

of mosaic. Her figure persisted in floor mosaics of the eastern basin of the Mediterranean Sea at least up to the end of the fourth century C.E.<sup>92</sup>

Presumably both children and adults enjoyed the theatrical display presented in the Gaza clock. While even those unfamiliar with the depicted figures and ignorant of their significance and contexts might enjoy their automatic motions and the surprising sounds of the striking and the blast, a more informed audience would take pleasure in the artist's very tasteful choice of figures. Procopius, as we shall see below, enabled the experience of observing this clock to become even more illuminating and pleasurable for his listeners.

#### THE RHETORIC OF PROCOPIUS

The exquisite nature of the object described by Procopius should not divert attention from his rhetorical qualities. In the prologue preceding the description, he discusses the kind of rhetoric within whose framework he writes.<sup>93</sup> His first comment touches on the relation between the work of art and the *ekphrasis* itself, characterizing it with the term 'competition' (ἀμιλλωμένου).

The *ekphrasis* of the present works of art requires speech that competes with art. But if the latter were to lose, this would only increase the admiration of the creator, because he would prove himself stronger through his work than we are with mere words. Therefore, the struggle ends in triumph for him, and thus grants the giver of benevolence the seemly honor due to his creative power.

(Ἡ τῶν παρόντων ἔκφρασις ἔργων δεῖται μὲν λόγου πρὸς τὴν τέχνην ἀμιλλωμένου, εἰ δὲ τούτων ἐλάττων ὀφθείη, καὶ τοῦτο τοῦ ποιήσαντος θαῦμα, ὅτι κρείττων γέγονε πρᾶττων ἢ ψιλῶς εἰρηκότες ἡμεῖς. Ὅθεν εἰς ἔπαινον αὐτῷ τελευτᾷ καὶ τῷ ἀγαθῶν αἰτίῳ τὴν πρέπουσαν εἰς δύναμιν ἀποδίδωσιν εὐφημίαν.)

This view on the relation between the verbal and the visual creations has a long tradition,<sup>94</sup> originating in classical Greece.<sup>95</sup> In Procopius' opinion, in this competition visual art always has the upper hand, since even the 'victory' of the author of an *ekphrasis* enhances the power of the visual work of art. This accords with Jaś Elsner's observation that the *ekphrasis* in antiquity was not intended to supplement the real work of art, but intended to replace our observation of the object: "The truly triumphant *ekphrasis* was the one which brought to mind its subject so vividly that the subject was no longer necessary."<sup>96</sup>

<sup>92</sup> One of the later examples is the head of a Gorgon in the Ephesus mosaic, probably dating to the fourth century C.E.; Wilk (2000), 35.

<sup>93</sup> Procop. *Ekphrasis on the Water Clock* (Diels 1917), lines 1–13. The prologue is not included in the edition of Amato.

<sup>94</sup> Becker (1995), 5–6. The *Imagines* of Philostratus the Elder opens with a similar comment: "Whosoever scorns painting is unjust to truth; and he is also unjust to all the wisdom that has been bestowed upon poets—for poets and painters make equal contribution to our knowledge of the deeds and the looks of heroes..."; Translated by Fairbanks (1960). John of Gaza in the preface of his *Tabula Mundi* also uses the word contest to describe the relations between the *ekphrasis* and the visual work of art that he describes; On the struggle between poetry and painting in *ekphrasis*, see Bran (2012), 372–8.

<sup>95</sup> Pind., *Nem.* 5.1–6.

<sup>96</sup> Elsner (1995), 24.

Procopius' second comment, following on directly after the prologue, relates to two of the canonical texts of ancient Greece: the *Histories* of Herodotus and the *Iliad* of Homer.<sup>97</sup> Procopius opines that observers of the Wonders of the World are likely to describe and glorify them according to personal preference—choosing to praise the pyramids of Egypt, or the Temple of Bēl in Babel, or the enchanting works of Hephaestus (including the palaces of the gods that he built, the shield of Achilles, and the automatic watchdogs made of silver and gold in the court of Alcinous, mythological king of the Phaeacians). Of the Greek authors who mention the Egyptian pyramids, the first is Herodotus, the father of history and anthropology, and he also saw and described the great ziggurat of Bēl (Marduk); thus, in listing these wonders, Procopius is alluding to Herodotus' identity without explicitly mentioning his name. Likewise, in mentioning the works of Hephaestus he is, in fact, referencing Homer, who describes the former's metal works. Procopius' choice of Herodotus, who describes what he sees with his own eyes, and of Homer, who tells what he hears, is indicative of a profound understanding of the rhetorical characteristics of the *ekphrasis*, which lies between story and description.<sup>98</sup> The aim of the *ekphrasis* is not only to paint the view in words but also to reconstruct the experience of the encounter with the work of art. It does not suffice with a mere description of the work of art but narrates the mental process undergone by the author upon encountering it—to arouse in the readers a deep relationship to it, as well as an impression of vital and spontaneous observance.<sup>99</sup> Moreover, the preservation of the memory of praiseworthy deeds is an aspiration common to Greek epic poetry and historiography,<sup>100</sup> and the author of the *ekphrasis* wishes to do likewise, in his own way. Procopius speaks at length about Hephaestus, creator of the shield of Achilles and metal robotic statues, and ends with a surprising comment:

Up to this very moment I was of the opinion that this is a myth, since Homer took pleasure in relating about things that had never been, without being punished. However, the observation here and now of the works of our Hephaestus obliges me to admit that this happened in reality.

(Ταῦτα μὲν οὖν μῦθος τε ἦν ἔμοι καὶ λόγος ἐδόκει, καὶ Ὅμηρος ἐτρύφα τῇ τέχνῃ λέγων ἐπ' ἀδείας ἃ μήτε ἦν μήτ' ἐγένετο πώποτε δδδδ νυνὶ δὲ τοῦ παρόντος Ἡφαίστου ἔργα καὶ τέχνην ἰδὼν, [θαυμάζω] ταῦτα κάκεινοις ἀληθέσιν εἶναι συγχωρεῖν ἐπιτρέπω.)<sup>101</sup>

From this we deduce that the learned Gazan, notwithstanding his general fear of sounding like a fabricator, actually chose these two specifically on account of their blemished credibility even in antiquity.<sup>102</sup> While omitting direct mention of ancient authors' attacks upon Herodotus, his inclusion side by side with Homer indicates that the Gazan rhetor is

<sup>97</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), paragraph 1; Diels (1917), lines 15–57.

<sup>98</sup> On the close relationship between description and narration in the tradition of *ekphrasis*, see Elsner (1995), 31–2; D'Angelo (1998), 439–47.

<sup>99</sup> Elsner (1995), 28, 31–2; Fowler (1991), 25–35; Elsner (2002), 1–18; Koopman (2018), 5–14. Asheri (2004), 153.

<sup>101</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), 2; Diels (1917), lines 48–55.

<sup>102</sup> Baldwin (1964), 167–77, esp. 175–6; Evans, (1968), 11–17.

aware of the ancient debates surrounding the historian's credibility.<sup>103</sup> Doubts about the absolute veracity of Herodotus are notable even in Cicero, the very person who crowned him with the title 'father of history'. He remarks that in history everything must lead to the truth, while poetry is intended mainly to give pleasure; yet immediately, in the same sentence, goes on to express his reservations, noting that in Herodotus, *pater historiae*, and in Theopompus too, innumerable legends can be found.<sup>104</sup> Likewise, Diodorus Siculus (the quality of whose own knowledge is questioned by some) casts doubt upon the use of Herodotus as a source for teaching the history of Egypt: 'We shall omit from our history the stories invented by Herodotus and certain other writers on the affairs of Egypt, who deliberately prefer fables to facts, and who spin yarns merely for the purpose of amusement.'<sup>105</sup> Undoubtedly, the sharpest and most amusing attack on the credibility of both Herodotus and Homer is to be found in the parodic treatise of Lucian of Samosata (second century C.E.), titled *Vera Historia*.<sup>106</sup> This treatise comprises stories of envisioned journeys—*inter alia*, to the moon—and aims to criticize the authors of falsehoods such as the aforementioned celebrated ones, who present themselves as writers of history. Questions about the historical validity of the accounts of the 'father of history' continue to engage historians of our day.<sup>107</sup> Time and again in the research, the shield of Achilles has given rise to speculation as to the extent of its connection with works of art of its time and as to whence Homer received his inspiration.<sup>108</sup>

Procopius' mention of the pyramids of Egypt, the Temple of Bēl, Hephaestus' palaces and the shield of Achilles was also meant to place the Gaza clock on a par with the exquisite objects of the ancient world. However, it mainly serves as a rhetorical means for the learned Gazan to raise the question of the connection between literary imagination and reality within the rhetoric genre that he uses. Procopius is aware of the possibility that the audience or readers of his *ekphrasis* on the Gaza clock will suppose they are being presented with a fabrication, since an *ekphrasis* does not have to describe a real object and can be a literary invention.

Homer's description of the shield of Achilles (*Iliad* 18.478–608) influenced the key epic works of classical literature and a long tradition of objects that are regarded as an image of the world (*imago mundi*).<sup>109</sup> It was also considered by many authors as a paradigm for *ekphrasis* on works of art.<sup>110</sup> Procopius' reference to the Homeric description, although unsurprising, is indicative of his profound understanding of the text. At the center of the shield is depicted the life of man, while the frame grants it a cosmic dimension. Procopius does not deal with the subjects depicted on the shield of Achilles,

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<sup>103</sup> It is perhaps worth noting that according to Procopius's letter 161 (ed. Garzya-Loenertz) it is clear that in the school of Gaza Herodotus was a model of style together with Demosthenes and Thucydides. I would like to thank Prof. Rachel Zelnick-Abramovitz for this comment.

<sup>104</sup> Cic., *Leg.*, 1.5.

<sup>105</sup> *Diod. Sic.* 1.69; transl. Murphy (1990).

<sup>106</sup> Reardon (1989), 619–49.

<sup>107</sup> Brown (1965), 60–76.

<sup>108</sup> Byre (1992), 33–42; Snodgrass (1998), 40–55.

<sup>109</sup> Hardie (1985), 11–31.

<sup>110</sup> Becker (1995), 9–22. For an extensive bibliography on the Homeric description of the Shield of Achilles, see Squire (2013), 157–91. Koopman (2018), 68–128.

although a link with the clock could easily have been suggested; instead, he opts to underscore a different aspect of the Homeric text. In chapter 18 of *Laocoon*, Lessing claims that Homer's manner of describing the shield emphasized that it was crafted by Hephaestus.<sup>111</sup> And indeed, the start of each scene in the *Iliad* reverts to a description of the artisan god who creates the vivid picture and opens with the expression 'He made upon it'.<sup>112</sup> Beyond merely heaping words of praise upon the shield, Procopius proceeds to extol its creator and list the essential qualities of an artist of the same high class: first and foremost, an understanding of art; additionally, boldness, diligence, and persistence. Procopius finds it proper to mention not only the spiritual talents of the artist but also the physical aspects of his work. With regard to the creator of the clock, no praise is voiced directly by Procopius, yet it may be inferred from the fact that this individual is dubbed by him 'our Hephaestus.'

Another feature characteristic of Homer's description of the shield in the *Iliad*, noted by Lessing and others, is the transformation of the description of figures in space into one of actions in time. This is alluded to in Procopius' observation that the vitality and independent movement of the figures helps the creator, since the air they breathe sets ablaze the fire that serves him. Absent from the Homeric text, this notion is an original expansion by Procopius, inspired by the *automata*, the aforementioned robotic statues whose creation is ascribed to Hephaestus.<sup>113</sup> They include, *inter alia*, two golden maidens assisting Hephaestus in his housework (*Iliad*, 18.417–21):

And in support of their master moved his attendants. These are golden, and in appearance like living young women. There is intelligence in their hearts, and there is speech in them and strength, and from the immortal gods they have learned how to do things. These stirred nimbly in support of their master...<sup>114</sup>

This comment forms an organic link between the shield and another work in the series of the *automata* which is mentioned by Procopius directly, i.e., the gold and silver watchdogs created by Hephaestus to guard the threshold in the palace of Alcinous, king of the Phaeacians (*Odyssey* 7.91–94). The connection between the Gaza clock, with its row of moving metal figures that emit sound, and the *automata* of Hephaestus is fairly self-evident.

Procopius' third comment, the final part of the prologue preceding the descriptive part of the essay, indicates his awareness of the nature of the process of observing and of the pedagogical role of the *ekphrasis*, which not only provides a model for learned observation but at the same time reconstructs in words the experience of observing.<sup>115</sup> Procopius mentions the impatient and inconsistent characteristics of observation, which cause it to fail.<sup>116</sup> In contrast to the linear and gradual character of a text, which is revealed word after word and sentence after sentence, a work of art is often viewed in its entirety,

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<sup>111</sup> Lessing (2005), 113–6.

<sup>112</sup> Becker, (1990), 139–53.

<sup>113</sup> Faraone (1992), 18–21.

<sup>114</sup> Transl. R. Lattimore (1951); Francis (2009), 1–23.

<sup>115</sup> On the *ekphrasis* as a critical gaze regulating the viewing subject—both by selection of what to look at and how to look—see Goldhill (2007), 2.

<sup>116</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), paragraph 3; Diels (1917), lines 57–75.

all at once. Dazzled by the wealth of details, the viewer's eye makes do with a superficial glance and darts from one detail to another. Procopius likens the rotation of the eyes to the mental experience of Herodotus' encounter with the eastern labyrinth: not that of Crete, but rather the Egyptian labyrinth described by Herodotus (2.148). The historian starts out by saying: 'I saw it with my own eyes, and it is larger than any description.' Later he mentions that, in its ambitiousness, the building supersedes the pyramids. From the impatient and unorganized nature of art observation, and from the analogy to an ethnographer looking at a work without a beginning or an end, Procopius proceeds to the main part of his *ekphrasis* and asks: 'Where, my friends, is located the beginning and where the end of my words?' (Πόθεν οὖν ἀρκτέον ἄν εἶη; τί δὲ πέρας, ὃ φιλότις, ἐπιθή[σω τῷ λ]όγῳ;).<sup>117</sup> His answer is a description of the organized and logical observation of a complex artistic object. Procopius starts by mentioning the location of the clock in Gaza and continues with the general appearance of the building in which it stood. Only then does he move on to an orderly description of its parts, from the top downward. The purpose of the *ekphrasis* is thus didactic, as it provides the reader/audience with an educational and persistent model of viewing.

We find a similar remark regarding the agitated character of viewing and the didactic role of an *ekphrasis* in Choricus of Gaza's description of a wall mosaic in the Church of St. Sergius in that city (built early in the reign of Emperor Justinian, probably prior to 536 C.E., by Stephanos, governor of Palaestina Prima, and Marcianus bishop of Gaza):

When you enter [the church], you will be staggered by the variety of spectacle. Eager as you are to see everything at once, you will depart not having seen anything properly, since your gaze darts hither and thither in your attempt not to leave aught unobserved: for you will think that in leaving something out you will have missed the best (Choricus, *Laudatio Marciani* I, 23).<sup>118</sup>

We find Choricus making another remark evidencing an awareness of the spontaneous reaction of the viewer's eye, in a speech delivered, in all likelihood, on the occasion of the dedication of the Church of St. Stephen in Gaza (probably between the years 536 and 548). After describing the decorations and mentioning the first impression made by the church's nave, he states the following:

But the east side, with its elaborate craftsmanship, has drawn me in rather too quickly, not allowing me to dwell on the exterior [features], and has rightly attracted me to itself before I had gone through the other parts (Choricus, *Laudatio Marciani* II, 37).<sup>119</sup>

This time, the rapid reaction of the eye, skipping many details as it is drawn to the focal point where the portrait of Jesus is located, is found to be the correct activity. Webb rightly mentions the crossing of the church threshold as a dramatic moment marking not only a physical transition from the outside to the interior, but also a change in consciousness.<sup>120</sup>

Another insight to be gained by modern art scholars and archaeologists from the mentioned *ekphrasis* is that artists of the time, and connoisseurs who dealt with art education, were aware that the general composition of a complex building is grasped in

<sup>117</sup> Procop. *Ekphrasis on the Water Clock* (Amato 2010), paragraph 3; Diels (1917), lines 76–8.

<sup>118</sup> Mango (1986), 61.

<sup>119</sup> Mango (1986), 69–70.

<sup>120</sup> Webb (1999b), 59–74, esp. 68.

its entirety almost immediately. Even afterward, during the process of the decipherment of the various components, always present in the background of the viewer's consciousness is the work of art as a whole, serving as a key for understanding the details.

A comparison of the *ekphrasis* on the clock with another *ekphrasis* by Procopius of Gaza, known by the name *Ekphrasis Eikonos*,<sup>121</sup> illustrates the diversity of ways used for observing works of art, and the fact that the character of the *ekphrasis* is adapted to the subject that is described. *Ekphrasis Eikonos* reconstructs the experience of observing a painting whose subject was the tormented and fateful love of Phaedra for Hippolytus. The mimetic qualities of the painting and the painter's talent in heightening the drama bring Procopius to address Phaedra in direct speech, as if she were a real being existing in his own physical and psychological world:

But Phaedra does not sink into a pain-numbing sleep. Instead of deep sleep, burning love entraps her heart, but what will now happen to you, woman, you torture yourself uselessly and your love is not a happy one. Spoil yourself a bit and turn your gaze toward your husband and don't be angry about what there is. You are seeking someone who is not there. Be a bit ashamed on account of your old husband and turn your eyes from the picture at which you are gazing. Hippolytus, so it seems even from the picture, is not a man who will yield to love.<sup>122</sup>

After turning to Phaedra in direct speech, he returns to his readers/audience and says (closely echoing the words of Philostratus):

But what happened to me, the artistry of the painter led me astray. It seemed to me that all this was live. The eye forgets that the sight revealed is nothing but a painting. Therefore, we will talk about Phaedra and not to her.<sup>123</sup>

Procopius heightens this experience by relating to anecdotal details that strengthen the sense of authenticity, such as the stifling heat of the day, or particulars that relate to the human behavior of animals incorporated in the painting. The art so successfully imitates this world that it is difficult to distinguish the boundary between reality and illusion. The viewers react to the picture as they react to the world. This way of seeing art continued a tradition already well established from Roman times, whose representative *par excellence* is Philostratus. In his *Imagines*, Philostratus praises the ability of the artist to imitate reality in a way that causes the viewer to see in the work of art an extension of his world, and to experience a blurring of the boundaries between reality and the world reflected in the picture.<sup>124</sup> This is well demonstrated in a description of a picture of hunters, whose realistic nature causes Philostratus to address them initially as if flesh-and-blood figures, only a moment later to awaken from the illusion, return to reality, and declare:

Do not rush past us, ye hunters, nor urge on your steeds till we can track down what your purpose is and what the game is you are hunting. . . . But my own opinion is that, as you were hunting the beauty of yonder youth, you have been captured by him and are eager to run into danger for him. For why so near? Why do you touch him? Why have you turned toward him? Why do you jostle each other with your horses? How I have been deceived! I was

<sup>121</sup> Friedländer (1938); Amato (2010), 214–37; Balbina Bähler (2010), 560–618.

<sup>122</sup> Procop. *Ekphrasis Eikonos* (Amato 2010), paragraph 16.

<sup>123</sup> Procop. *Ekphrasis Eikonos* (Amato 2010), paragraph 17.

<sup>124</sup> Elsner (1995), 33–5.

deluded by the painting into thinking that the figures were not painted but were real beings, moving and loving—at any rate I shout at them as though they could hear and I imagine that I hear some response—and you did not utter a single word to turn me back from my mistake, being as much overcome as I was and unable to free yourself from the deception and the stupefaction induced by it. So let us look at the details of the painting; for it really is a painting before which we stand.<sup>125</sup>

In sharp contrast to these examples, in his *ekphrasis* on the clock Procopius remains reserved, and the emotions aroused by the clock are described by means of the reaction of the viewers who assembled to watch the wonder, not a reconstruction of the personal experience of its author. Procopius' description is rational, like that of an experienced documenter. It seems to me that underlying this choice is his fear that doubt might be cast on the credibility of his words, and the wonderful object he was describing might be perceived as a figment of the author's imagination. As in the *Ekphrasis Eikonos*, here too his words about the clock are directed at a friend, a well-known gesture in *ekphraseis*. A similarly logical description, without the blurring of the line separating the world of the viewer from that reflected in the painting, can be found in both *ekphraseis* of Choricus of Gaza, mentioned above. Nevertheless, in the description of the Church of St. Stephen, Choricus does not refrain from praising the mimetic qualities of the painter (*Laudatio Marciani* II, 34; II, 40), 'How faithful to nature is this art! What splendid, what charming execution! This rich adornment befits a sanctuary of such golden opulence.'<sup>126</sup> This positive attitude towards the illusionary aspect of a painting which seems realistic is surprising in light of the fact that Byzantine art is considered to have distanced itself intentionally in its style from the naturalistic approach and from mimetics in favor of art that was more conceptual. These sentiments are thus possibly empty rhetorical clichés, remains from the remote past;<sup>127</sup> but they could also be a faithful reflection of the classicist trend that characterized the Justinian period.

A third mode of observing is proposed by the *ekphrasis* of John of Gaza, which deals with a wall painting or mosaic at the winter baths in Gaza depicting a picture of the world.<sup>128</sup> John offers an allegoric, symbolic interpretation of a work of art that he observed.<sup>129</sup> By means of his *ekphrasis*, he seeks to pass on to the viewer a religious truth and to convey the power of art by revealing the sublime. In this approach, he exhibits a proximity to the *Tabula* of Cebes (written in the first century C.E.), which, unlike the works of Philostratus, is a religious-philosophical interpretation of a picture given as an offering to the Temple of Chronus, in which the allegorical interpretation is not an invention of the rhetor, but is attributed to an authority possessing superior knowledge.<sup>130</sup> According to Cebes, the real world is not the everyday earthly one; his aim was, in fact, to bring about a change in the ordinary assumptions about the reality in which he lived, propelling them toward an ethical and religious interpretation leading to redemption.<sup>131</sup>

<sup>125</sup> Philostr., *Imag.* I, 28; Elsner (1995), 33.

<sup>126</sup> Mango (1986), 69.

<sup>127</sup> Maguire (1995), 101–14.

<sup>128</sup> Friedländer (1912), 135–224; Krahmer (1920); Lauritzen (2015).

<sup>129</sup> Talgam (2008), 91–118.

<sup>130</sup> Elsner (1995) 39–46.

<sup>131</sup> Elsner (2007a), 185–90; Elsner (1995), 47.

The picture to be drawn from the prologue to the description of the water clock indicates not only the breadth of knowledge and learning of its author, but also the classical education of the sixth-century Gazan public, who were able to follow and enjoy the homages to (or the alluded criticism of) the canonical literary works of Greek culture. The poems by John of Gaza likewise expose the broad classical education of the local population at that time.<sup>132</sup>

An anonymous pilgrim from the town of Placentia (Piacenza) in Italy, visiting Gaza in the second half of the sixth century, summarized his impressions of the city and its inhabitants with the following superlatives: ‘Gaza is a wonderful and pleasant city, its people are very honest, all of them excel in their generosity and love wayfarers’ (*Travels of Antoninus* 33).<sup>133</sup>

The *ekphrasis* on the clock testifies to the great importance of Gaza in the preservation of classical knowledge and in fostering it in the fields of literature, art, and technology. Its citizens, more than those of any other city, understood that the acceptance of Christianity did not oblige them to forgo inalienable property from the classical culture; they recognized that a broad general culture and technological progress do not stand in contradiction to religious belief.

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<sup>132</sup> Ciccolella (2006), 80–95.

<sup>133</sup> It was with this ancient evidence that Downey chose to end his pioneering book on sixth-century Gaza; Downey (1963), 162. As a gesture to his work, but mainly in the hope that the city that is presently connected in our consciousness with refugees, shortages, and violent conflict, causing suffering to the innocent on both sides of the border, will revert to the wonderful Mediterranean city it once was in the Byzantine period, I have chosen to conclude my humble contribution with the same words.

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