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The Riace bronzes: a comparative study in style and technique

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THE RIAE BRONZES:
A COMPARATIVE STUDY IN STYLE AND TECHNIQUE

A Thesis

Submitted to the Graduate Faculty of the
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Master of Arts

in

The School of Art

by

Jennifer A. Henrichs
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To Cheryl and Gladys
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ABSTRACT

Two monumental bronze statues were discovered by a diver in the remains of an ancient shipwreck in the Riace Marina off the coast of Calabria in 1972. After their recovery and extensive conservation in the Archaeological Museum in Florence, the Riace bronzes have now come to reside in the Reggio Calabria Museo Nazionale. Lacking any inscriptions and removed from their original context, the Riace bronzes have been the source of much conjectured debate throughout the art world.

This paper examines the Riace bronzes on both technical and stylistic grounds by addressing such matters as the method of construction, the physical state of the statues and their metallurgical makeup, and stylistic comparanda. Although the Riace bronzes initially seem indistinguishable, the stance and treatment of anatomy of the two statues differ significantly when comparatively studied. Despite ongoing controversy on the Riace bronzes, it is through this study of casting techniques and the stylistic subtleties employed by the artists that the distinctions between these two statues are truly communicated.
CHAPTER 1

INTRODUCTION

Two massive bronze statues were unexpectedly discovered along with remains of an ancient shipwreck in the Ionian Sea off the coast of southern Italy near the village of Riace by a diver in August of 1972.\(^1\) After the discovery was substantiated by the superintendent of antiquities, the careful process of their recovery from the shallow waters in which they were found promptly ensued.\(^2\) The two encrusted male nudes remained in the nearby region of Reggio di Calabria\(^3\) until they could be transported to the Archaeological Museum in Florence for extensive conservation in 1975.\(^4\) The pair first went on exhibition in 1981 for approximately six months in Florence before a short two week viewing in the Quirinal Palace in Rome.\(^5\) Often called the Riace bronzes, the two standing figures first went on permanent view in the Archaeological Museum in Reggio di Calabria the summer of that same year. The enigmatic appeal of these statues lay not only in their nearly perfect preservation, but also in the impressive manner in which they were executed. The news of their discovery and exhibition in Florence and Rome caused commotion in both public and scholarly spheres with much speculation arising in regards to where the statues originated, who created them, and for what purpose. Lack of evidence due to the transitory nature of the excavation site and an absence of inscriptions has made comparative study of the technical methods and stylistic subtleties employed by the artists critical in establishing distinctions between the two Riace statues and confirming their place within an art historical context.

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\(^3\) See the appendix for a map of Italy showing Riace and Reggio di Calabria.


\(^5\) Ibid.
Secured with rope, each statue was lifted from the sand and gravel in which it had been submerged, and brought to the water’s surface under the careful direction of Reggio di Calabria’s Dr. Pier Giovanni Guzzo. The statue commonly referred to as statue B was found lying face up with its left arm emerging from the seabed. Riace statue B was taken on the twenty-first of August from the beach of the Riace Marina by stretcher and transported to the National Museum of Calabria, and the recovery of the other Riace statue, statue A, proceeded in a similar manner the following day (Figs. 1, 2). Regardless of the fact that the statues were only about 300 meters from shore in a depth of approximately eight meters, the diving periods of immersion during the recovery process were intense owing to rough seas. Despite the need to keep the discovery of the statues hidden for reasons of security, crowds of locals gathered to watch the raising of the pair.

Recovered along with the Riace bronzes were twenty-eight lead rings (Fig. 3) that Professor Nino Lamboglia, Director of the Experimental Center of Undersea Archaeology of Albenga, explained to be associated with the ship’s sail. Lamboglia’s theory on the shipwreck was that over time the sea scattered the ship’s cargo and sails, while the overturned hull was likely swept ashore and disappeared from exposure to the elements. Along with the lead sail rings, ceramic shards of amphoras and a bronze shield handle (Fig.4) belonging to one of the

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7 Caroline Houser maintains that the area along the southern coast of Italy served as an ancient shipping lane between Greece and Rome. For further information see David Finn and Caroline Houser, *Greek Monumental Bronze Sculpture*, (New York: The Vendome Press, 1983).
9 Ibid., 11. According to Sabbione, Calabrian folklore speaks of the legendary arrival from the sea of two holy patrons of Riace, Cosma and Damiano. Many on-lookers gathering on the beach connected finding the two Riace bronzes with this local legend.
10 Ibid., 13. Another interpretation is that the ship’s load fell overboard during a storm which would explain the lack of debris on the site. For further information on this theory, see Houser, *Greek Monumental Bronze Sculpture*, 116.
Fig. 1. Frontal and back views of statue B after initial recovery.
Fig. 2. Frontal and back views of statue A after initial recovery.
Fig. 3. Twenty-eight lead sail rings found with the Riace bronzes.

Fig. 4. Bronze shield handle discovered with the Riace bronzes.
 statues were also unearthed from the site. Finds such as the shards, while useful in establishing the range for site excavation were not definitive resources for chronologically dating the statues.\textsuperscript{11} It is widely held that the ship whether wrecked or emptied of its cargo by a storm was en route from the original site of the statues in Greece to a new destination in Rome.\textsuperscript{12} 

The Center of Restoration in Florence received the two statues only after extensive documentation and photographing by restorers and laboratory technicians. The statues were submitted to radiation to determine uniformity of metal thickness, deformations, and/or the presence of any foreign materials.\textsuperscript{13} A vast amount of the encrustation was removed by means of skilled application of pressure and the use of percussion-based mechanics prior to the arrival of the statues from Reggio di Calabria.\textsuperscript{14} While in Florence, the cleaning of corrosions and baths in first ammonia and alcohol and then oxygenated water and alcohol to deionize the immersed figures were exhaustively repeated.\textsuperscript{15} Debris from the more fragile or complex areas of the statues including the curls of the hair, beards, and facial features were treated with extremely fine brushes. Portions of the lead tenons found projecting from the feet which served to affix the statues to their original bases were then extracted to allow further assessment of the physical condition and interior makeup of the figures.\textsuperscript{16} 

What remained after the extensive conservation were two over life-size bronze statues each weighing nearly a ton. Both of the standing figures bear most of their weight on their right foot which is flatly positioned on the ground, while the left leg is slightly bent at the knee so as to express imminent movement. Likewise, the left arm of each statue is raised torso level with

\textsuperscript{11} Ibid., 14. 
\textsuperscript{12} Finn and Houser, \textit{Greek Monumental Bronze Sculpture}, 116. 
\textsuperscript{13} Soprintendenza Archeologica per la Toscana-Centro de Restauro, “Intervento di restauro sui bronzi provenienti da Riace,” in \textit{Due bronzi}, 41. 
\textsuperscript{14} Sabbione, “Dal Rinvenimento All’Esposizione Museografica,” in \textit{Due bronzi}, 12. 
\textsuperscript{15} Soprintendenza Archeologica, “Intervento di restauro sui bronzi,” in \textit{Due bronzi}, 56. 
\textsuperscript{16} Ibid., 77.
the elbow lifted and forearm extended and the fingers closed inward toward the figure in a grasping gesture. The right arms of the two figures are lowered with the fingers clasped rather than freely hanging by their side. The heads of the Riace statues are turned to the right-hand side causing the right shoulder and upper body to unconsciously twist from the waist in that same direction, and yet the body is still in a frontal stance.

Positioned on the left forearm below the elbow of both statues is a looped cuff that has generally been described by scholars as the strap remaining from a shield. An accumulation of lead on the right has similarly been suggested as the remnants of what once held a spear or lance-like weapon in their right hands. Such attributes as the shield and spear have earned the statues the familiar title of warrior-heroes, a label which is further reinforced by the abnormally dome-shaped head of statue B. The unusual form of the head on statue B was not an error on the part of the sculptor, but a measure taken to support a helmet of which only the underlying cap now remains. By contrast, statue A (Fig. 5) exhibits a visible headband thought to be the crowning base for a victory wreath typically reserved for champions which may weaken the warrior classification.

18 Finn and Houser, *Greek Monumental Bronze Sculpture*, 125. Note that the position of the arms and attributes as described by Houser for statue A in the second paragraph of page 125 is erroneous. The accurate arrangement of the arms, shield, and spear is stated on page 119.
19 Fuchs suggests that statue A may have held a javelin and statue B, a sword rather than the suggested spears. See Werner Fuchs, *Die Skulptur der Griechen*. (München: Hirmer, 1983).
20 Ibid., 129.
21 Rolley, *Greek Bronzes*, 46. Some scholars have proposed that statue A wore a Chalkidian helmet whereas, statue B had a Corinthian helmet similar to that seen on a marble bust of Pericles. For further information see Mattusch, *Greek Bronze Statuary*, 203, n.89.
As mentioned earlier, the original site most commonly associated with the Riace bronzes is Greece. Scientists and scholars have exhaustively searched the literary works of ancient historians and explorers, e.g., Pausanius and Pliny the Elder, for descriptions of the Riace bronzes in their original context. Without any of their attributes or inscriptions, the statues have been dated from as early as 460 B.C. to the middle of the fifth century, to the time of Polykleitos and as late as the second century A.D.\textsuperscript{22} The majority of scholars place the two statues in the middle of the fifth century B.C. when the bronze hero type was common to the monumental

groups of Greek sanctuaries. Currently, two sanctuary groups are more frequently identified with the Riace bronzes than any others. The first group commemorated the Athenian battle of Marathon and was erected in Delphi by the master sculptor Phidias, and the second was a dedication at Olympia ca. 460 B.C. by the Achaeans. The latter is linked with the name of Onatas, a sculptor of Aegina. Another group association has largely been dismissed, that of the Eponymous Heroes set in the Athenian Agora, because of their use of drapery. If the Riace statues belonged to one of these monumental groups, they may plausibly represent either Athena with Apollo and the general Miltiades amid other Athenian eponymous heroes in Delphi, or if from Olympia, several Homeric Greeks preparing to encounter the Trojan prince Hector. The need for caution in constructing such associations without concrete evidence is seen in the following excerpt from Claude Rolley’s *Greek Bronzes*:

Pausanias writing between 120 and 150 A.D. describes both of these groups which he saw in situ, but Nero was the last Roman to carry off statues from Greece to the West, some time obviously before 68 A.D.; it is almost certain, therefore that by the time Pausanias was visiting Greece, the two statues in question were already at the bottom of the sea.

It is also important to note that many other Greek and Roman sculptors have been identified with the Riace bronzes, some which are known today only from descriptions. Besides the two masters mentioned in relation to Olympia and Delphi, artists including Myron, the school of Phidias, Polykleitos, and followers of Polykleitos have also been suggested as the principal sculptors of the Riace bronzes.

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25 Other names attributed to the thirteen figure group include, Erechtheus, Kekrops, Pandion, Leos, Antiochos, Aigeus Akamas, Kodros, Theseus and Philaios. For more information on the tribal orders, see Nigel Spivey, *Understanding Greek Sculpture Ancient Meanings, Modern Readings*, (London: Thames and Hudson Ltd, 1996).
While numerous comparisons have been made primarily between Roman marble copies and the Riace bronzes, evidence of an authentic copy of either Riace bronze has yet to be identified. If the Riace statues did in fact come from one of the great sanctuaries, the ability to generate copies would have been limited by the sacred nature of the site. Bronze was more valuable in ancient times than marble and was most often reserved for public locations with areas that were open to the surroundings. The grand scale and free standing character of the two statues would also support an outdoor setting that could more easily accommodate circumambulation than a private enclosed area.

That the Riace statues were discovered together and had been traveling on the same ship has led some to conclude that the pair were not only taken from the same monument but were created by the same workshop. Such assumptions, although possible, cannot presently be proven without further archaeological evidence. Rather than get lost in circular arguments for establishing name associations or the provenance, the statues themselves can serve as a means of communication on both individual and comparative grounds through the techniques used in their production as well as their individual styles. The Riace bronzes function as the end result of a combination of mechanical and stylistic preferences made by the metallurgist/artist. It is through careful investigation of these methods or preferences as incontrovertible evidence that the development of the human figure in Greek art is made perceptible.

30 Finn and Houser, Greek Monumental Bronze Sculpture, 125.
31 Ibid., 116. Houser argues that the similarity in scale, pose, and means of travel attests that the Riace statues were created at the same time and stood at the same site.
CHAPTER 2
TECHNICAL COMPARISON

The Riace bronzes exemplify a mutually dependent relationship between the metallurgist and the artist, a relationship where the artist is reliant on the technical skills of metalwork for realization of aesthetic vision, and the metallurgist is consequently challenged to rise and meet the artist’s ever increasing expectations. The level of refinement present in the two statues along with this symbiosis has led to speculation by some that the artist and metallurgist were one in the same. The implementation of certain techniques is clearly indicative of artistic preference, and yet the functionality of the Riace bronzes is considered equally as important as their aesthetics.

Cast in bronze using a ratio of copper to tin peculiar or specific to alloys used in monumental statues in Classical Greece, the Riace bronzes (Figs. 6, 7) would have been valued in antiquity for their large scale and chosen medium.\(^1\) At present the method by which the two statues were cast is the subject of debate among scholars. The majority maintain however, that the two statues were cast almost entirely using the hollow indirect lost wax method.\(^2\) Edilberto Formigli, one of two of the principal restorers of the statues from the Centro di Restauro of the

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2. See Carol Mattusch, *Greek Bronze Statuary*, 205 for a more detailed description of the indirect casting process. Also see Denys Haynes, “Casting: the Technical Options,” in *The Technique of Greek Bronze Statuary*, (Mainz am Rhein: von Zabern, 1992), 24-33. Piece-molds of the modeled clay figure are made and lined with wax. The figure is recast in parts and the molds are removed so that the wax can be reworked or added to. The figure is coated in a new clay mantle and cast by melting out the wax and pouring in the bronze.
Fig. 6. Final conservation of Riace statue A, frontal, Reggio di Calabria Museo Nazionale.
Fig. 7. Final conservation of Riace statue B, frontal, Reggio di Calabria Museo Nazionale.
Soprintendenza Archeologica per la Toscana, stresses that the indirect hollow lost wax method is seen as a “refinement” of the direct method and does not exclude the use of piece molds: “la tecnica a cera persa indiretta fa uso di calchi negativi ausiliari e rappresenta un raffinamento del metodo diretto.”

One piece of evidence in support of the Riace bronzes being cast by the indirect method takes the form of a long oxidized crack on the shin of the right leg of statue B (Fig. 8, arrow) which was eventually identified as pertaining to an original bar of iron that had been absorbed by the outer bronze wall. With the direct method, the occurrence of the crack is unlikely, as the clay of the core would have been packed around the bar until the moment of casting. A more plausible explanation is that the bar was set in a hollow space within wax prepared from the negative molds. Another argument in favor of the indirect hollow casting method is the pigmentation of the clay found within the Riace statues. With the direct method, the clay around the iron bars would have been a red color, evidence of an oxygen rich environment, but in fact, the clay was colored grey, suggesting instead a reducing environment and that the clay was likely fused while still malleable. Formigli argues that porous clay would have been used for both the model and core using the direct technique, whereas, with the indirect technique, two different clays would be present, a denser grey clay used for the model and a second, dry and permeable type for the core.

Although the indirect method is the principal method used to construct the two statues, smaller details such as separately made curls for the head and the beard of statue A were cast by

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4 Ibid., 108.
5 Ibid., 107.
6 Ibid.
7 Ibid., The thick grey clay of the model may have been used in a “green state” suitable for taking molds. Formigli states that the model would have been less disturbed by mold detachments in a malleable condition than if the clay were fully dry. According to Formigli, these clay models would have been built on wooden armatures to simplify their dissection for molding, see Formigli, “La Tecnica,” in Dui bronzi, 108.
the direct lost wax method and later soldered into place. The presence of traces on the cap of statue B left by the bristles of a brush on the outer surface first in wax and then bronze also attest to the direct technique. Several of the long tendril-like curls of statue A were solid-cast separately by the direct lost-wax method, some in groups and others singly according to their degree of intricacy. To have replaced them on the “inter-model” would have required more vents thus making the casting process more difficult. This practice of casting smaller features independently is demonstrated by a triangular cavity above the left ear of statue A, (Fig. 9) where a curl was torn out in ancient times, taking along with it a small portion of the headband to which it had been soldered.

As noted earlier, the lead tenons found on statue A and B were removed from the soles of the feet to allow the restorers access to the interior. It was determined that the middle toes of both statues did not drain from the same jet as the rest of the foot but were drained separately and then welded to the other metal. The removal of the middle toes (Fig.10) simplified the piece molding process by allowing the metallurgist to work on them separately and thus bypass the involved undercutting necessary, if the feet were made in one piece. The two statues underwent a series of x-rays to aid in analyzing the varying thickness and dispensing of wax throughout the figures.

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9 Formigli, “La Tecnica,” in *Due bronzi*, 109. The visibility of “brush strokes” on the cap of statue B would have originally been hidden by the presence of a helmet.
11 Ibid., 129.
12 Ibid. Haynes defines jets as the channels through which the metal is poured into the mold.
13 Ibid. Mattusch points out that the front of each of the statues’ feet were cast separately from the larger back portion. See Carol Mattusch, *Greek Bronze Statuary*, (Ithaca: Cornell University Press, 1988), 137.
14 Ibid., 112.
Fig. 8. Right cracked shin of statue B.

Fig. 9. Lost curl above the right ear of statue A.

Fig. 10. Image of an attached middle toe on the foot of Riace statue A.
From readings of the x-rays, it was determined that the noses of the statues, their testicles, and the index finger and thumb of the right hand were hollow.\textsuperscript{15} With the exception of their hair, beards, and the lost attributes (Figs. 11, 12) mentioned above, nearly all the finishing details of the Riace bronzes were executed in the wax models.\textsuperscript{16} It has been suggested that both of the statues were formed from the same generalized model and that any individuality was confined to the details in the wax.\textsuperscript{17} The thickness of the bronze of the Riace statues varies between 4 and 12 mm with statue A averaging approximately 8.5 mm, and statue B 7.5 mm, an average that Formigli asserts is typical of the Late Archaic and Classical age.\textsuperscript{18} The variance of only 4 to 12 millimeters in the thickness of the Riace bronzes which is not enough to account for the marked difference in the stance or posturing of various body parts, including the positioning of the feet or the turn of the head, maintains that although similar, the statues were formed from separate models.\textsuperscript{19}

The armature bars (Fig. 13), like the one that was found in the shin of statue B, were not of solid iron as first assumed but of carefully hammered sheets of iron that were shaped into hollow rods.\textsuperscript{20} Two bars run through statue A with the primary iron armature below the head descending through the center of the chest. After a slight shift to the right in the pelvic region, the armature continues through the right testicle and down the length of the inner right leg. Starting at the pelvic region of the center of the left leg another armature runs down the thigh and

\textsuperscript{15} Ibid.
\textsuperscript{16} Formigli, “La Tecnica,” in Due bronzi, 108. Also see Nigel Spivey, Understanding Greek Sculpture: Ancient Meanings, Modern Readings, (London: Thames & Hudson Ltd., 1996), 75.
\textsuperscript{17} Carol Mattusch, Classical Bronzes, 80. Mattusch argues that the statues were made in piece-molds taken from the same original model with any individuality resulting from details in the outer layers of wax.
\textsuperscript{18} Formigli, “La Tecnica,” in Due bronzi, 112. Formigli points out that bronze statuary progressively decreases in thickness from the Archaic to the Roman age. Bol states that a thickness of 10 mm was typical in bronzes of the Archaic age. This amount steadily decreased in the fifth century B.C. to a thickness of only 4 to 6 mm in the late Hellenistic period.
\textsuperscript{19} Haynes, The Technique of Greek Bronze Statuary, 41.
\textsuperscript{20} Formigli, “La Tecnica,” in Due bronzi, 113.
Fig. 11. Drawing of statue B with separate direct cast cap.

Fig. 12. Drawing of statue A with separate direct cast hair and beard.
Fig. 13. Drawing of the iron armatures in the Riace statues.
through the calf and ankle. Three armature bars were found in statue B, the bar supporting the upper body partially removed in antiquity, now starting in the center of the chest under the pectorals rather than at the joint to the head. 21 This armature runs much like the primary rod in statue A shifting slightly right through the pubic region and down the interior of the thigh to the ankle. Another bar begins in the center of the right hip and proceeds diagonally to the left crossing behind the bar of the inner leg, stopping just below the calf muscle. The final bar starts in the center of the left hip and continues unhindered to the left ankle of the statue.

The core was found intact in both of the Riace bronzes when examined by the restorers through the accesses in the soles of the feet and the top of the head. After analysis, it was determined that the clay was red clay like that found in the fields of the Mediterranean area. 22 Also discovered in the composition of the clay core were animal hairs and the charred remnants of straw which would retain moisture to prevent the core from drying out, and cracking. 23 Analysis of the core has led the restorers to believe that the core was poured in a semi-liquid state which would also attest to the indirect casting method. 24

Bronze nails were utilized so that once the wax was melted out the core would not shift, and after the pouring, the nails were typically removed. The holes from the nails were often plugged up, unless a nail became sealed in the surface, from the pouring, in which case, the nail head was removed on the outer surface and the nail body was allowed to remain. 25 Such is the case on the head of statue A, where two square-shaped areas are found above the front of the

21 Formigli, “La Tecnica,” in Due bronzi, 113. During cleaning, the upper space of the thorax was found to contain sea sand instead of the original clay. Also missing was a portion of the iron armature bar that proceeded from the lower chest to the head which Formigli suggests was removed in antiquity.
22 Formigli, “La Tecnica,” in Due bronzi, 115. The core of “terra rossa molto diffusa nel bacino del Mediterraneo” has been used to suggest that the Riace bronzes have a southern Italian origin which would argue against their association with any of the monumental heroic groups of Greece.
23 Haynes, The Technique of Greek Bronze Statuary, 29.
24 Ibid., 35.
25 Formigli, “La Tecnica,” in Due bronzi, 118.
headband, and another “dimple” is located above the statue’s left ear still containing the body of the bronze nail. A small hole from a nail is also visible on the left arm near the shield handle where the bronze was intentionally not patched, because the shield would have covered the area, and in the sea sand that was recovered from the head of statue B, a bronze nail was also discovered.

Besides the middle toes and the front of the feet, previously discussed, the hands, genitalia, both arms up to the shoulder, and the heads of both statues were cast separately from the torso and legs, which are the principal structure. D.E.L. Haynes explains the practical problem of casting the model in sections by means of the direct lost wax process:

All the statues known to us so far are composed of separately-cast sections, these usually comprising, in the case of the naked male figures, the head, the torso, the arms, and the legs. In the direct lost-wax process, as we have seen, the bronze is cast in a mold made over the bronze caster’s original model, and this incorporates the core. To cast the model in sections, it would, therefore, be necessary to dissect it with the core inside it. But to cut through, without causing irreparable damage, a delicately modeled layer of wax, a mass of friable baked clay and an iron armature would be a practical impossibility, which no bronze caster would be likely to attempt.

On the wrists, middle toes, and under the upper arms of both of the Riace statues, the sockets and edge-to-edge joints were reinforced by the presence of oval-shaped basins or *vaschetti*, encircling each joint in a bracelet-like formation that when filled with the melted bronze strengthened the site. Also, some time after their construction the arms of statue B were

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26 Ibid.
27 Ibid. Two small holes, one in each of the ears of statue B, have been used to argue the original presence of pins to attach the helmet. Claudio Sabbione, “La Statua B,” in *Due bronzi*, 189-90, 92.
28 The Riace statues share the method of casting the front of the feet separately with the Livadhostro Poseidon, the Cape Artemision Zeus, and the Selinus Youth. Mattusch, *Greek Bronze Statuary*, 137.
29 Concerning the genitals, Formigli states that the tin content of the penises was 2-3% greater than that of the testicles and a line of separation is visible to the naked eye. Formigli, “La Tecnica,” in *Due bronzi*, 127.
damaged and replaced with copies taken from statue A.\textsuperscript{32} According to Formigli, the arms of statue B have a high lead content in comparison to the rest of the statue as well as to statue A.\textsuperscript{33} Trace amounts of cobalt in the restored arms of statue B correspond to alloy compositions of the Hellenistic age. Formigli concluded that the statue was restored in antiquity.\textsuperscript{34} Mattusch observed a greater concentration of tin in the upper regions of the body in relation to the lower extremities; this concentration suggested that tin was added during the bronze pouring, possibly to improve fluidity.\textsuperscript{35} Evidence of an oxidized environment emerged in the observation of two clays found in the neck of statue A, separated by an area of emptiness in the neck.\textsuperscript{36} The red clay was like that found in the rest of the body without the refractory material, and the yellow clay served as a plaster for the mechanical joint for the head and the body. When the metal for the joint was poured, the yellow clay serving as plaster found an area with access to oxygen resulting in the clays retaining their original colors.\textsuperscript{37}

Part of the allure of the Riace bronzes derives from the application of contrasting metals and bone for the various physical features (Fig. 14). The lips of both statues are of reddish copper each cast separately and then applied to the wax model. The opening between the upper and lower lip served to connect the mouth with the core so that the copper remained when the

\textsuperscript{32} Rolley, \textit{Greek Bronzes}, 46. Rolley warns that the replication and use of the arms of statue A for statue B does not confirm that the Riace bronzes were originally made as a group.
\textsuperscript{33} Formigli, “La Tecnica,” in \textit{Due bronzi}, 127. Sources of lead in statue A included a nail found inserted in the head (possibly held a helmet or wreath in place), the handle of the shield, and small amount of lead soldered to the left hand.
\textsuperscript{34} Ibid.
\textsuperscript{35} Mattusch, Greek Bronze Statuary, 206. The greater concentration of tin in the upper body was also used as evidence of the Riace bronzes being cast in an upright position.
\textsuperscript{36} Ibid., 129.
\textsuperscript{37} Ibid.
wax melted. Under the layers of encrustation, restorers discovered the presence between the parted lips of statue A of a row of five silver inset upper teeth held in place by a ledge with slits at both ends. These silver teeth were the first discovered since the teeth found of the Delphi Charioteer. The pectoral nipples of each statue were fashioned out of a rosy copper and inset in wax much like the lips were. The whites of the eyes of statue A were of ivory affixed from the outside of the head (both irises are missing, and Formigli asserted that these may have been removed by force with breakage around the edges). The corneas were of calcite, and the eyebrows were incised. The process of separately inserting the eyes and lips from the outside was simplified in Roman times to insertion only of the iris, and lips were represented in the form of thin sheets rather than the thick copper of the Classical period. Statue B had a similar manufacture with the remaining right eye cut from white marble and a two-ringed iris with black and rose (the other eye was lost). The eyelashes probably were formed by repetitive indentation of the front edges of two hammered copper plates which were then bent around the eyeball and connected by sealing the overhanging projections on both ends.

As mentioned earlier, both statues had lead tenons on the bottom of their feet to attach them to their original bases (Fig. 15). The lead protrusions took a clog-shaped form underneath the feet and in statue A fill more than half of the interior; statue B, though, had double

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38 Haynes, *The Technique of Greek Bronze Statuary*, 110. See also Formigli, “La Tecnica,” in *Due bronzi*, 132. Haynes stresses that insertion from the outside of the lips would have damaged the modeling by the presence of a flange.
39 Ibid.
41 Formigli, “La Tecnica,” in *Due bronzi*, 133. There were also remnants of hard white cement and pink colored glue representative of tear ducts in the corners of the eyes. Mattusch, *Greek Bronze Statuary*, 204.
42 Rolley, *Greek Bronzes*, 40.
43 Formigli, “La Tecnica,” in *Due bronzi*, 133.
projections on each foot and lead throughout the entire inner cavities.\textsuperscript{45} It is argued that Riace statue A was mounted by placing the lower ends of the legs with the protruding iron armatures into the depressions of the original base, and that once the bars were correctly positioned, the base and feet cavities were filled with lead at levels flush with the top of the base.\textsuperscript{46} Statue B may have followed the socket attachment technique employed on bases at Olympia around the first half of the fifth century B.C. or that of the Athenian bases dated to 500 B.C. in which two holes in each foot were aligned with two holes in the stone base, and the entire bottoms of both feet were left exposed to the liquid lead which was poured into the holes.\textsuperscript{47} A sulphuric mixture was found on the exterior of statue A, which blackened the original bronze surface to create an artificial glossy patina finish (Fig. 16).\textsuperscript{48} The restorers in Florence found no evidence pointing to the use of a chisel or a bulino in the fine detailing of the surface of the Riace bronzes.\textsuperscript{49} This means the details of the beards, finger- and toe- nails, veins, and other anatomical refinements visible on the Riace bronzes were prepared in the model rather than the cold bronze. Some linear details like the fine hairs near the beards on the cheeks and between the torso and pubic region were executed in the cold bronze with a tracer which is similar to a chisel, but the edge is round for compacting or defining metal rather than removing it by incision.\textsuperscript{50}

A large hole in the top of the head of statue A provided access to the rest of the statue much as the open soles of the feet did, less the tenons (Fig. 17). Analogously to the two

\begin{footnotes}
\item[45] Ibid., 135. Note that the iron armature bars would have originally projected out from the feet. C. Mattusch suggests that the removal of the middle toes was to make possible the attachment of the statues to their bases. Mattusch, \textit{Greek Bronze Statuary}, 207.
\item[46] Haynes, \textit{The Technique of Greek Bronze Statuary}, 105.
\item[47] Mattusch, \textit{Greek Bronze Statuary}, 111. Note that B.S. Ridgway argues that the method in which the statues were originally attached to their base is more typical of the Roman period, with the cavities (to be filled with lead) corresponding to the full outline of the feet except for the edge of the toes. See Brunilde S. Ridgway, \textit{Roman Copies of Greek Sculpture}, (Jerome Lectures; 15\textsuperscript{th} ser.), (Ann Arbor: University of Michigan Press, 1984), 36.
\item[49] Formigli, “La Tecnica,” in \textit{Due bronzi}, 133. The bulino according to Formigli, is a tool used to carve and engrave by removing the bronze in the form of shavings.
\item[50] Haynes, \textit{The Technique of Greek Bronze Statuary}, 105.
\end{footnotes}
Fig. 14. Eye and lips of statue B and the nipple and teeth of statue A.
Fig. 15. Lead tenon on the base of left foot of statue A.

Fig. 16. Artificial Patina from statue A.
small holes centered in the front of the head, this hole seems to have held a bronze rod cemented in lead to support a helmet.\textsuperscript{51} Just as the helmets requiring means of attachment have left traces indicative of their separate casting, so did the shields and spears which both Riace statues once held.\textsuperscript{52} These were attached to the statues by small amounts of lead, like the mass still fastened to the left hand of statue B. A small amount of clay from the clay investment mold was found in

\textsuperscript{51} Mattusch, \textit{Greek Bronze Statuary}, 203.
\textsuperscript{52} Finn and Houser, \textit{Greek Monumental Bronze Sculpture}, 131.
an exterior hollow space of the big toe of the right foot of statue A. When examined, it was determined that this clay was comparable to the type of clay found throughout the interior of the statue. This clay was the remains of thin layers that encased the cored wax model, with the first inner layer not so coarse as the outer layer to ensure that the applications adhered and did not separate from the wax and that all the detail was preserved. The coarse layer of clay had more grit or sand to prevent cracking from over-drying. After casting, this mold was broken away from the statue, which explains why so little of the clay remained on the Riace bronzes. Several of these discarded clay molds have been documented from excavations of foundries at both the Athenian agora and Olympia. It was determined from examining the remnants of larger pieces of this outer coat from Olympia and Athens, that most often the investment was composed of two to three layers, the first two were of fine clay which was applied by a spatula-like tool as indicated by track marks in the now hardened surface, and the outermost layer consisted of a red clay of which particles were found partially burned.

Besides some delicate enhancements executed with a tracer, the bronzes were cleared of any accumulated metals or creste di fusione at joint sites and any faults in the newly cast bronze were concealed. The removal of the outer coat also necessitated a thorough cleaning of the many grooves and cavities which were coated with the investment mold before the casting, and a chisel was likely used to take off the projections of metal formed around the many vents/jets from the pouring. Black copper oxides also called “fire-skins” would also need to be removed before

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53 Formigli, “La Tecnica,” in Due bronzi, 120.
54 Ibid. Haynes points out that the average thickness of the inner layer of a Greek investment like those in the “Keyhole Foundry” in the Agora measured ca. 10 mm and the coarse outer layer ca. 25 mm. See Haynes, The Technique of Greek Bronze Statuary, 72.
55 Mattusch, Greek Bronze Statuary, 17.
56 Formigli, “La Tecnica,” in Due bronzi, 120.
57 Ibid.
58 Haynes, The Technique of Greek Bronze Statuary, 92.
the separate pieces could be assembled. Reparation was noted in the form of a rectangular cut around a small hole in the right-hand leg of statue B made in preparation for a patch to cover the irregularity. Signs of ancient refinishing were also observed on the right arm of statue B where it adjoined the torso. Polishing the metal surface of the statues and later applying the artificial patina depended on the quality of the caster’s finishing. This is when the bronze chaplets, larger than their iron equivalent, most likely were extracted from the two statues. It has been suggested that the inner edges of holes from removed chaplets were curved inward in ancient bronzes.

Some have used these bent holes as proof of chaplets being inserted through the mold and the wax inter-model, but as others have argued the introduction of chaplets through the mold would likely have resulted in damage to the wax modeling from the caster’s inability to see where the chaplets were being guided.

It has already been noted that lead was poured into the stone base and cavities of the feet of the Riace bronzes to securely mount the figures in place (Figs. 18, 19). What is not quite known is how it was done. Three different explanations are current. The first method claimed that the legs were situated on the base prior to assemblage, and the lead was poured through them; the Riace statues however, have the torso and legs as one piece, making such pouring next to impossible. The second held that the caster made holes through which molten bronze might be poured, although any such holes have yet to be found. The last and most probable theory

59 Ibid.
60 Formigli, “La Tecnica,” in Due bronzi, 133. The rectangular carved area measures 20 × 21 mm, and the patch is equal to the full thickness of the bronze.
61 Ibid., 132.
62 Haynes, The Technique of Greek Bronze Statuary, 71.
63 Ibid. Bol’s theory on the chaplet holes can be found in P. Bol, Grossplastik aus Bronze in Olympia, (Ol. Forsch. IX), (Berlin, 1978).
64 Haynes, The Technique of Greek Bronze Statuary, 103.
65 Ibid.
Fig. 18. Drawing showing the lead tenons of statue A and statue B.
stated that the lead was transferred to the stone cavity and the feet via a clay pipe temporarily attached to the exterior of the leg, which led through the clay seal to the stone.\textsuperscript{66}

The choice of bronze as the principal medium of the Riace statues rather than marble or wood was not decided solely on the basis of their destined location, although wood and marble were not practical for open air environments. The versatility of bronze allowed the sculpture to be freestanding without the distraction of supports or other forms of props often seen with

\textsuperscript{66} Ibid.
marble.\footnote{Mattusch, \textit{Classical Bronzes}, 22.} The scale of the two statues also attests to the flexible quality of the medium with each bronze nearly seven feet tall without his original helmet. Spatiality must have played an important role in the function of the Riace bronzes, as reinforced by the fine finishing of both the front and back of the figures. We can be sure that they were meant to be seen from all sides; the fine finishing of all sides as well as their forms in space testify to that. Since, they are nude, the color and surface qualities of bronze not to mention the effect of the copper and silver have a special importance. With the awareness that the two statues were intended to be viewed in the nude, a more genuine affinity to the human form could be obtained in bronze, especially since colored inlays further enhanced the appropriateness of the metal.
CHAPTER 3

STYLISTIC COMPARISON

The nearly identical height and superficial similarity of the Riace statues (heroic type, manufacture and metallurgy) have been the source of much discussion. Both statues demonstrate contrapposto with a marked shift of weight primarily onto one leg and the other leg bent forward for bodily support. Upon closer examination of the style of the two statues, the first impressions of congruency quickly fade and are replaced by a number of subtle differences.

Consider first the head of statue A (Fig. 20). The cranial portion of the head is domed and slightly tilted back with the hair tightly conformed to the scalp by a large headband. Below the headband, long curls coil out from a central part bifurcating at the forehead. Delicate eyebrows tuck themselves under small curls on either side of the temples. Above the prominent high cheekbones, the eyes stare out under half lowered eyelids fringed by copper lashes. The thin-bridged nose is met by a thick moustache that conceals the upper lip. From beneath the moustache, the silver teeth are visible through the partially opened mouth. The silver teeth contrast well with the copper lip that is contoured by the moustache. The longer waved curls of either end of the moustache appear to dissolve into the mass of ringlets which makeup the beard. The differentiation and length of the curls of the beard increase with their distance from the face.

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2 C. Houser suggests that the open mouth of statue A is indicative of impending speech. See David Finn and Caroline Houser, *Greek Monumental Bronze Sculpture*, (New York: The Vendome Press, 1983).
The dome of the head of statue B (Fig. 21) is in contrast much more pronounced than statue A. The backward tilt of the head is more obvious in profile than in frontal view with the exaggeration pertaining primarily to the height of the head rather than the width. A roughly

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3 Brunilde Sismondo Ridgway, “The Riace Bronzes: A Minority Viewpoint,” in Due bronzi da riace:
finished cap is clearly visible from the top of the forehead to the back of the head just above the nape of the neck. The hair is cut close to the head with tiny curls escaping from under the cap around the face. The eyebrows appear wider than on statue A, but the left eye of B is not set as deeply, and the lid does not cover as much of the iris and pupil. Where the cheeks are taut and highly modeled on A, they are slack and smooth on B. This slackness in rendering flesh ages the whole figure and lends it a more seasoned character than the firmer, youthful form of statue A. Likewise, the slightly bulbous tip of the nose is that of a more mature male. The thick moustache curls inward with fine bristles over the upper lip, and the sides gradually merge into the beard. The definition of the beard is more clearly emphatic on statue B than statue A. The mouth of statue B is closed, but the visible thick lower lip contrasts the coarse hair of the moustache to the smoothness of the copper lip. The curls of the beard of statue B are looser and, consequently, less animated than those of statue A. The layers of the beard and hair are plainer on statue B than the coiled mass of statue A, so that the hair, “…consists of individually differentiated, if admittedly not strongly systematized, strands and curls, while the hair of statue B is represented more as a unified mass.”

On statue B, the ear is placed half the length of the nose higher than in nature, while the visible part on A is natural (Fig. 22). The rest of the ear of statue A is obstructed from view by the overflowing hair, the “…überquellenden Reichtum von Haar und Bart.”

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4 Mattusch, Greek Bronze Statuary, 204.
6 Ridgway, “The Riace bronzes,” in Due bronzi, 315.
7 Werner Fuchs, Die Skulptur der Griechen, (München: Max Hirmer, 1983), 78.
Fig. 21. Detail of the head of statue B.
The exaggerated shape of the head of statue B and the high placement of the ears have been a subject of criticism among some scholars but has often been justified as a means to support the now lost helmet.  

Fig. 22. Left profile views of statue A and statue B.

The head of statue A is noticeably turned to the right in an almost three-quarter view but turned much less on statue B. The trapezius muscle slopes more on statue B in contrast to the squared shoulders of statue A, and the collar bone forms hollow triangles on A. The high definition of the pectorals and the abdomen compartmentalized by the oblique muscles of statue A are indicative of someone who is in prime physical condition and aware of a fine-toned body. The firm grip of the left hand and the outward gaze of statue A convey energy and alertness to surroundings. On A the waist narrows just below the ribcage and then widens in the hips before reaching the lower abdominal region which truncates at the groin and upper thighs. These

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8 Houser, *Greek Monumental Bronze Sculpture*, 129. Houser claims that the head of statue B would have been disguised by a helmet analogous to that found on the bust of Perikles.
qualities of robustness and virility are embodied in the following observation by Caroline Houser: “With shoulders thrown back, carriage erect, and head held high, this warrior seems the very embodiment of the courageous, mighty leader.”¹⁰

As mentioned above, the arches of the shoulders of statue B are more relaxed. The angularity of the pectorals of statue A are softened and rounded in statue B, and the pectorals are fleshier (Fig. 23). The abdomen while framed by the outer edge of the ribcage and lined to indicate the obliques is less highly defined in statue B. This lack of tension is also seen in the hands of statue B with the fingers in a noticeably looser embrace than those of statue A. Also, the jut of the hips of statue B is more pronounced (compare the contour of the right thigh), and the left testicle is more pendulous than on statue A (Fig. 24). Although the face of statue A is clearly turned, the body is essentially frontal, but the body of statue B is more aligned with the turn of the head as may be seen in the positioning of the knees (Fig. 25).

The right knee of statue B turns outward from the body showing the lateral movement of the torso, while the right knee cap of statue A tilts inward to maintain the frontality of the figure. This shift in stance of statue B is subtle and not like the build of “…clearly defined elements in an almost antagonistic manner” that characterizes statue A.¹¹ The difference in the posture is most noticeable when viewing the statues in profile. The head of statue B leans downward causing the upper back to curve, and the shoulder is drawn forward making the shoulder blade protrude. The left nipple of statue B is fully visible when seen from the side in contrast to statue A, where the nipple is seen in three-quarter view (Fig. 26).

¹⁰ Houser, Greek Monumental Bronze Sculpture, 119.
Fig. 23. Frontal views of the torsos of statue A and statue B.

Fig. 24. Detail from a drawing of front view of statue A and statue B.
Fig. 25. Detail from a drawing of the legs of statue A and statue B.

Fig. 26. Detail of the left profile of statue A and statue B.
Note the voluminous basket shape for the ribcage of statue A. The lower side areas of the torso around the narrow hips accumulate as slight bulges on statue B. The buttock muscles have also lost the resiliency and firmness plainly discernible on statue A (Fig. 27). Of these retiring elements of statue B, Caroline Houser observes a, “…indivisible entity, in which forms flow together in a unified, organic whole.” Statue B is slacker and almost weary seeming in all its parts. The knee protrudes to signify an increased level of exertion with the muscles of the lower calf tensed and the toes curled downward.

Viewing the Riace bronzes from the rear, (Fig. 28) the shoulders of statue A are drawn back accentuating the deltid and trapezius muscles. The line of the spinal column leads down to an area of high definition in the lower back in the coccyx just above the buttocks. This area brings further emphasis to the buttocks of statue A by separating the cheeks, and yet framing them much as the eyebrows frame the face. The smoothness of the skin contrasts with the textured hair on the back of the head and neck. A linear quality is perceived in statue A where the upper thigh meets the right buttock, behind both knees, and separating the triceps of the arms.

The back of B is not so sharply articulated, and the line of its spinal column is definitely s-shaped. The s-shape then veers back to the left separating the buttocks and continues down the left thigh and the muscles of the calf. The purpose of emphasis on organic relaxation seems to have been to indicate the figure’s age. The skin’s lack of elasticity contributes to the soft outer appearance of statue B, where it is no longer an exterior replica of the internal framework. Note the slack buttocks of statue B, recessed with obvious indentations on the sides. The s-curve

13 David Finn and Caroline Houser, Greek Monumental Bronze Sculpture, 132.
14 Borbein, “Polykleitos,” in Personal styles, 81.
Fig. 27. Detail of the right profile of statue A and statue B.

works to draw the eye down the figure as one continuous form from the slanted positioning of the shoulders, to the close proximity of the feet.\footnote{15} A number of scholars have associated the s-curve of statue B with the style of Polykleitos or recognized his influence on the stance of the figure.\footnote{16} The less intense nature of statue B has led to statements like the following:

In particular, figure B clearly shows the influence of the Polykleitan canon: the shoulder over the \textit{Standbein} is dropped lower than over the \textit{Spielbein}; furthermore the \textit{Spielbein} is

placed less far forward than in the case of its counterpart and its knee is more strongly bent, a feature that obviously echoes the typical Polykleitan stance.\(^{17}\)

This serpentine line in statue B starts high between the scapulae, and then midway down the back it curves to the left before returning to the right upon reaching the small of the back.

Each component of statue A fits together to visually create the whole, but like pieces of a puzzle, the sections remain separately identifiable.\(^{18}\) This method appears more contrived than the stylistic approach of statue B, whose imperfections work to increase the statue’s humanity. This is not to insinuate that the figure of statue A lacks grace or sensuality, and it should be noted here that statue A is often placed a few decades earlier than statue B.\(^{19}\) The presence of statue A is one of commanding authority that while invoking respect does not exude the mellowness and approachability of statue B. The principal distinction between the two Riace bronzes is explained in the following passage by Sir John Boardman, “the main difference between them lies in what the sculptors sought to express – the arrogant self-confidence of a young leader: the mature strength and stolidity, now a little slack and tired it may be, of an older warrior.”\(^{20}\)

This ability to express personality and simultaneously demand veneration is embodied in a bronze god from the shipwreck off Cape Artemision (Fig. 29). The Zeus or Poseidon from Cape Artemision shares many features with the Riace bronzes. The bronze figure is fully nude and bearded with the long moustache blending into the hair of the beard. The god has many traits in common with the head of statue B such as the visible ear of the god of Artemision set

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\(^{17}\) Borbein, “Polykleitos,” in Personal styles, 81.
\(^{18}\) Borbein, “Polykleitos,” in Personal styles, 81.
high above the brow, the wide eyebrows, the perceptible lines under the eyes, the sagging skin cheeks on either side of the nostrils, and the bulbous nose (Fig. 30). The body of the Cape Artemision god resembles that of statue A with the firmly compact flesh and high definition of muscle. The compartmentalized treatment of the chest and lateral obliques is a distinctive trait that Riace A and the Zeus of Artemision have in common (Fig. 31). No seam is visible on the Artemision torso suggesting it was formed as a single piece. A joint in the armpit of the god reveals that the arms were made separately as with the Riace figures. As with the Riace statues, the nipples were of inlaid copper. Note the clear line that runs down the chest separating the

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21 Ridgway asserts that the eyebrows of the Artemision Zeus are inserted; whereas, the Riace statues have prominently engraved eyebrows, a trait she claims is more typical of later bronzes. See Ridgway, “The Riace bronzes,” in Due bronzi, 313.
Fig. 29. Profile view and details of the Zeus of Cape Artemision.

Fig. 30. Details of the heads of statue B and the Zeus of Cape Artemision.
the pectorals and abdomen before terminating at the entrance to the navel in both statue A and
the Artemision god. The treatment of the pubic hair is alike, trimmed into a few horizontal rows
of little curls intentionally creating a triangular appearance above the genitals comparable to the
Riace statues. The full roundness of the upper thighs in both statue A and the Artemision god set
off the more bony areas around the knees. The wider chest to hip ratio is also comparable in
both figures, and the biceps muscles are similarly accentuated. The balance of the Artemision
statue is not sacrificed to movement. Despite the numerous similarities between the two statues,
Boardman says of the Artemision Zeus: “…even the realism is only in spirit – limbs are
elongated (notably the forward arm) and the set of the legs, profile-frontal, follows the Late
Archaic formula in drawing.” 22

Another statue that resembles the Riace bronzes is a reduced version of a figure of the
late fifth century B.C. 23 This bronze statuette at the Athenaeum in Hartford has the characteristic
physical appearance of the Riace statues (Fig. 32). The physique is more comparable to statue B,
although the head is turned to the left rather than the right. The figure wears the Corinthian
helmet tilted back on his head which has been suggested for the head of statue B. 24 The
statuette is fully nude like the Riace statues, and the left arm is raised bent at the elbow, while the
right arm is relaxed along the figure’s side much like the Riace pair. The sinuous nature of the
form is further enhanced by the rightward tilt of the pelvis, which makes the ribs and shoulder on
the left side more visually prominent. This use of line is similar to the s-curve of statue B that,
“… runs through him from top to bottom, and just below the chest the curve of the ribcage,

22 Boardman, Greek Sculpture: The Classical Period, 53.
23 J. Boardman states that the original statue, which this statuette was based upon, could have been an Athenian
strategos (general) statue and suggests a comparison to Kresilas’ Pericles. Boardman, Greek Sculpture: The
Classical Period, 233.
24 Mattusch, Greek Bronze Statuary, 203, n. 89.
which is especially emphasized, embraces the area of the belly as if with a clamp.”

The left leg of the statue is bent with the knee pushed forward, while the right leg remains stiff. The perceptible drop in the shoulders is like that of statue B, as is the lack of firmness and strong demarcation of the muscles (Fig. 34). The Hartford figure appears to diminish, as the form progresses from the wider proportion of the chest and shoulders to the narrower hips and tapered thighs. The presence of a clear ridge in statue B to divide the lower abdomen from the groin is not discernable on the bronze statuette which is more like statue A. Other details like the bulging veins and raised tendons of the Riace bronzes are also noticeably absent from this small statuette, and yet the similarity in stance to Riace figures is unmistakable.

A Roman marble copy of a mid-fifth century B.C. bronze original of Apollo often attributed to Phidias equally communicates this stance invigorated with potential movement. This type commonly called the ‘Kassel Apollo’ has been linked by some scholars to the Apollo Parnopios, “Destroyer of the Locusts” (Fig. 35). The left hand originally held a bow and the right a laurel branch, both attributes traditionally associated with the Greek god Apollo. The torso is similar to the middle section of statue A with the well-toned pectorals creating shadows down along the outer edges of the ribs (Fig. 36). The head of this copy is turned left, the right leg bends from the knee while the hips are inclined to the left, and the other leg remains straight resembling the gestures of the Riace statue A (Fig. 37). The lines used to distinguish the biceps and under

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26 C. Rolley stresses that the tendons stemming from the toes on the surface of the feet of statue A have been treated as “decorative languettes.” Rolley, Greek Bronzes, 44.
28 Boardman, Greek Sculpture: The Classical Period, 86.
the ribs are stronger than on either of the Riace statues, as are the areas around the knees and calf muscles. Note the crisp lines leading from the lower abdomen to the groin and the delicate treatment of the pubic hair. This statue associated by some scholars with Phidias is considered the type of Apollo that may have stood along with the Riace statues as part of the commemorative monument at Delphi.²⁹

²⁹ Boardman, *Greek Sculpture: The Classical Period*, 84, 86. The Tiber Apollo is also considered to be a sensitive copy of this Phidian type, 87. Also see, Rolley, *Greek Bronzes*, 46. Rolley argues that the original Kassel Apollo was an early work of Phidias.
Fig. 32. Bronze reduced version of a late fifth century, Athenaeum, Hartford.

Fig. 33. Detail of the head of the bronze statuette at Hartford and the head of statue A.

Fig. 34. Front view of statue B and the Hartford bronze.
Fig. 35. Frontal view of the Kassel Apollo.
The Artemision Zeus, Riace bronzes, ‘Kassel Apollo,’ and the Hartford bronze statuette share an increased understanding of how movement affects the human body. Each figure shows
the struggle to transform stylized pattern as seen in the Cape Artemision, and to a lesser extent, statue A into the more unified and relaxed proportions of statue B or the Hartford bronze. This stylistic change comes from a more in-depth knowledge of anatomy and observation from nature of how different parts of the body function.
CHAPTER 4

CONCLUSION

Were the Riace bronzes once part of a Classical Greek sculptor’s commemorative statuary group in a Panhellenic sanctuary or careful creations made for Roman admirers? Questions of this kind have been a continual source of debate among scholars, and while generating much publication, they have yet to be definitively answered. Many of the names of Classical Greek artists have come down to us today only through literary descriptions, which makes the attribution of statues like the Riace bronzes all the more difficult. Another challenge to the assignment of the Riace bronzes is the documented Roman pillaging of Classical Greek statuaries. This plundering of ancient sites could explain why the Riace statues were found submerged in the sea near Calabria, perhaps as spoils in route from Greece to Rome.¹

Both of the Riace statues have the forward Attic stance with the “…transition from the sloping pelvis to the two feet placed firmly on the ground, by a lengthening of the thighs.”² The fine finishing of all the visible surfaces of the Riace statues and the value of the bronze and supplemental metals used in their casting suggest their original placement was in a public and outdoor setting. That no copies of the Riace bronzes have yet been identified would support the statues once belonging to a sanctuary, like those at the ancient sites of Delphi or Olympia or even in the Agora of Athens. Evelyn Harrison states, “It appears that both here [Delphi] and at Olympia the authorities that controlled the sanctuaries did not readily give permission for copying.”³

² Claude Rolley, Greek Bronzes, (Great Britain: Sotheby’s and Chesterman Publications, 1986), 46.
The complete “lack of self-consciousness” of both figures follows in the scheme of the Zeus of Cape Artemision which is typically dated to ca. 460 B.C.\textsuperscript{4} Several notable similarities are also perceptible between the Charioteer of Delphi and the Riace statue A (Fig. 38). Besides the inlaid eyes, the Delphi Charioteer had copper added on the lips of the mouth and a silver band inserted as teeth foreshadowing the more evolved elements of detail later found on statue A.\textsuperscript{5} Claude Rolley acknowledges yet another similarity between the Charioteer and statue A saying, “The large masses of statue A are brought to life by a series of small successive shifts in emphasis, starting from the legs and ending with the head. The same method was used for the Charioteer of Delphi which is well dated to around 470 B.C.”\textsuperscript{6} The restraint evident in the form of the Charioteer is diminished in statue A by the subtle expression of imminent movement exhibited in the stance. This potential motion suggests a later date possibly contemporary with the god of Cape of Artemision during the second quarter of the fifth century or a little thereafter. The sculptural decoration at the Temple of Zeus at Olympia would thus be comparable in date to Riace statue A.\textsuperscript{7} Consider the robust Herakles figure from the temple’s metopes which has the roundness of form and the recessed areas just below the ribs and in the hollow space of the raised

\textsuperscript{5} Brunilde S. Ridgway, \textit{Roman Copies of Greek Originals}, (Jerome Lectures 15\textsuperscript{th} ser.), (Ann Arbor: University of Michigan Press), 36, n. 22. See also, F. Chamoux, FdD 4.5, 52, n. 2. Chamoux claims the silver in the mouth of the Charioteer was used for soldering the copper lips and not to represent teeth.
\textsuperscript{6} Rolley, \textit{Greek Bronzes}, 44.
\textsuperscript{7} Ibid., 46.
Fig. 38. Head details of the Charioteer of Delphi and Riace statue A.

Fig. 39. Profile view of statue A and Herakles from the Temple of Zeus at Olympia metope.
underarm analogous to the treatment of the anatomy of statue A (Fig. 39). Statue A with its long distinct curls, clearly defined musculature, and tensely alert posture dates one or two decades earlier than statue B.

If statue A is datable to 460 B.C., then statue B likely cannot date before 450 on the basis of the figure’s curvaceous treatment of anatomy. Claude Rolley stresses: “…B post-dates the completion of the Parthenon and was made at about the same time that Polyclitus was working on his Diadumenus.”

This gives statue B a date of ca. 430 B.C., making it some thirty years later than statue A which would explain the more fluid appearance of the form of Riace statue B. The so-called canon of western art, Polykleitos’ Doryphoros had been established a decade earlier, giving artists the opportunity to study its ideal anatomical proportions and incorporate them into their works. Statue B clearly has a characteristic posture similar to the Doryphoros as seen in the marble copy in Naples (Fig. 40). Although the flesh around the torso and the knees of the Doryphoros is thicker, indicative of the ripeness of youth, the gestures and treatment of separate body parts as a single continuous form are obvious in statue B.

The Attic stance of the Riace statues has also been used to support the ideal theory that the agora in Athens was their original location. Note that in 86 B.C., Athens was plundered under the authority of Sulla, but unlike the neighboring city of Corinth which was destroyed in 146 B.C., Athens restored its monuments. Referred to as eponymous heroes, the group in the Athenian Agora was composed of ten heroes, with each representing one of the ten tribes of Attica (see appendix for map of Agora). The way in which the Eponymoi would have been

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8 Rolley, *Greek Bronzes*, 46.
10 Rolley, *Greek Bronzes*, 46. Could not the restored arms of B or the removed irises and curl of A be a result of this Athenian raid by Sulla in 86 B.C.? Traces of destruction have been found in the Agora excavations. For further reading on the condition of the eyes of statue A, see John Griffiths Pedley, *Greek Art and Archaeology*, (New Jersey: Prentice Hall Inc., 1998).
11 Ibid., 47.
represented in the monument is debated by scholars. Some scholars assert that these heroes all
would have been draped with some wearing beards and some holding staffs. Still others describe
the Eponymous group as including a combination of both civilians and warriors.\textsuperscript{12} It is these
warriors or soldiers that the Riace bronzes are thought to have once belonged to.

The monument at Delphi, with thirteen figures, made to commemorate the Battle of
Marathon was also a depiction of this heroic type.\textsuperscript{13} The Delphi group is often attributed to the
master Phidias, who in his younger years has been linked with the original bronze of the Kassel
Apollo.\textsuperscript{14} Evelyn Harrison states that the bronzes of Riace, “…could not be assigned to the
Pheidian group even if we could date it late enough to fit their style,” since as already mentioned
“…statues were not carried off to the west from Delphi after the time of Nero.”\textsuperscript{15} As previously
discussed, the names Miltiades or Theseus, Athena, and Apollo have often surfaced when
scholars attempted to identify the Delphi monument figures.\textsuperscript{16} These figures, mortal or divine
would have been held in esteem by Greeks of the Periklean age for their courageous defense and
support of country. Kimon, son of the general Miltiades, was said to have attacked the Isle of
Skyros at the bidding of Apollo’s oracle in Delphi, and it has been suggested that Kimon had a
“thank-offering” erected in the sanctuary (see appendix for map of Delphi).\textsuperscript{17} According to
Simon Hornblower, “Athenian interest in Delphi meant interest in central Greece, and control of

\textsuperscript{12} Carol Mattusch, \textit{Classical Bronzes: the art and craft of Greek and Roman statuary}, (Ithaca: Cornell University
Press, 1996), 65; E. Harrison, “The Iconography of the Eponymous Heroes on the Parthenon and in the Agora,” in
\textit{Greek Numismatics and Archaeology: Essays in Honor of Margaret Thompson}, (Wetteren, 1979), 83. C. Mattusch
argues that all the Eponymoi would all have been draped with some wearing beards and/or staffs. E. Harrison on-
the-other hand suggests a more diverse grouping of both soldiers and civilians.
\textsuperscript{13} Spivey, \textit{Understanding Greek Sculpture}, 134. Seven of the ten heroes were chosen by Kleisthenes based on the
\textsuperscript{14} Ibid.
\textsuperscript{15} Harrison, “Pheidias,” in \textit{Personal styles in Greek sculpture}, 25. It must be stated here that a separately cast arm
strap dating to the middle of the fifth century and nearly identical to that of statue B was discovered at Delphi, see
(Fig. 41); Rolley, \textit{Greek Bronzes}, 232.
\textsuperscript{16} See C. Rolley, \textit{La Sculpture Grecque: Des origines au milieu du V\textsuperscript{e} siècle}. Les Manuels d’Art et d’Archéologie
\textsuperscript{17} Simon Hornblower, \textit{The Greek World 479-323 B.C.}, (London and New York: Methuen, 1983), 33. For a general
history of Kimon, see chapter three, “Athens imposes her will,” of the above work pgs. 32-47.
the land as well as sea.” The figure of Miltiades was used by his son for political advantage as a “…great figure in the early colonial days of Athens,” for his victory at Marathon. While such connections may seem logical, any copies of votive or cult statues put up at Delphi have yet to be identified. Others oppose the mid-fifth century date of the Delphi monument as seen in the following excerpt:

What we know about both the histories of both Kimon and Pheidias argues against placing the Marathon group in the 50s after Kimon returned from exile. The implied heroization of Miltiades by showing him with Apollo and Athena […] and attended by a company consisting entirely of heroes, would fit the Kimonian iconography of the exploits of Theseus and the Trojan War in the paintings of the Theseion and in the Eion herms. There Kimon did not depict or even name himself but let his deeds be understood as heroic by analogy with those alluded to. In the […] feelings of panhellenic patriotism that followed his victories over the Persians at the Eurymedon, at a time when Themistokles the enemy of Miltiades was exiled from Athens and no longer an enemy of the Persians, Kimon could set his dead father and his father’s victory on the heroic level as a prototype for his own achievement. It is hard to imagine that so bold a statement would be countenanced in the time of the Radical Democracy, even if Kimon was reconciled with the Athenians and the group claimed to be a private dedication.”

This passage stresses the unlikelihood of Kimon’s using the heroic image of Miltiades as a stratagem for promoting his own personal agenda with the monument of Delphi amid the political uncertainty of the mid-fifth century. This idea that Kimon would not have commissioned the Delphi monument in the 450s for fear of political criticism is dismissed by Nigel Spivey, who argues, “…the lapse of time between the death of Miltiades and this

18 Ibid.  See Herodotus VI. 109ff., trans. de Selincourt, for Miltiades’ role in the Battle of Marathon.
19 Ibid., 32.
22 Ibid.
Fig. 40. Frontal views of statue B and marble copy of the Doryphoros.

Fig. 41. Arm strap from Delphi.
monument, the precedent of his individual heroization in the Stoa Poikile, and perhaps the distance of Delphi from Athens would have diminished the chances of denunciation by other Athenian factions."

Phidias is said to have worked under both Kimon and Perikles erecting numerous monuments during their reigns. Mattusch suggests a date in the 460s for the Delphi monument based on the painted scenes of the Stoa Poikile created by the Athenian Mikon, which depicts the Battle of Marathon. Representations of Miltiades and other heroes on the Stoa would have coincided with the placement of figures, Miltiades and Theseus, in the Delphi monument. It has also been proposed that the spoils taken from the Persians at the Battle of Marathon in 490 B.C. were used to finance this commemorative monument. If the Riace bronzes were originally included in this group at Delphi, they would have been an integral part of one of four monuments memorializing the Greek defeat of the Persians. While the figure of Miltiades is speculative, some authors have gone as far as to describe his appearance as, “…a nude warrior, mature, bearded, helmeted, and armed.” This somewhat generalized description would be favorable for the inclusion of the Riace statues. It should be noted that the argument connecting the Riace bronzes with Delphi led scholars to compare measurements of the two statues’ feet with the length of the Marathon monument base, but the dimensions of the two statues appeared to be too large for the base.

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23 Spivey, *Understanding Greek Sculpture*, 135.
25 Ibid., 42, 43. Mattusch dates the Stoa Poikile to ca. 465 B.C.
26 Ibid., 43.
27 Ibid., 44.
28 Ibid. The other three commemorative monuments include the Athenian treasury, the Athenian Stoa, and the Serpent Column.
29 Ibid., 46.
Still others place the Riace bronzes with a group of ten Greek heroes that stood near the Temple of Zeus in Olympia. This monument was dedicated by the Achaeans ca. 460 B.C. and is typically associated with the master sculptor Onatas of Aegina (see appendix for map of Olympia).\(^{31}\)

The Greek figures of the Olympian monument are thought to have been taken from the Homeric epic, the *Iliad*.\(^{32}\) The scene captured the moment before the Greek heroes confront Prince Hector in the Trojan War.\(^{33}\) With statue A dating to the same time as this Achaean monument, this figure has often been identified as Agamemnon or perhaps a weary Odysseus.\(^{34}\)

That statue B was portrayed with the tilted back helmet probably reminiscent of the bust of Perikles questions the identification of the Riace statues with the Homeric heroes.\(^{35}\) Bol’s defense of this placement of the Riace bronzes asserting the two figures once stood on the extreme north of the Achaean monument is based on bronze fragments found at Olympia.\(^{36}\)

Note two tendril curls found near the Temple of Zeus at Olympia that are comparable to curls of the hair and beard of statue A (Figs. 42, 43).\(^{37}\) Numerous remnants of curls such as those of statue A have been found on the sites at Olympia and Delphi.\(^{38}\) Copper lips similar to those of the two Riace figures, and considered to be Classical in date were also found at Olympia (Fig. 44).\(^{39}\)

\(^{31}\) Rolley, *Greek Bronzes*, 46.
\(^{33}\) Spivey, *Understanding Greek Sculpture*, 135. N. Spivey suggests the account of Pausanius V. 25.8.
\(^{34}\) Ibid., 136.
\(^{35}\) Ibid.
\(^{36}\) Ibid.
\(^{39}\) Rolley, *Greek Bronzes*, 46.

\(^{61}\)
Fig. 42. Curls from Olympia.

Fig. 43. Curls from statue A.
Note the flange visible on the right-hand corner of the mouth and the slightly parted lips. A description of the style of the Aeginetan sculptor is not established, but his name has been attributed to works in Delphi, Olympia, Pergamon, and Phigalia. Pausanius wrote this of Onatas: “This Onatas, although his statues belong to the Aeginetan school, I shall place second to none of the successors of Daidalos or of the Attic school.”

Another common theory is that the two Riace statues were created by different artists or workshops. The idea of statue A coming from a more traditional master and B from a younger and still impressionable pupil is not inconceivable. This concept of multiple artists might give explanation for the later Polykleitan essence of statue B. Caroline Houser states: “The style of the sculptor who created Warrior A adhered more closely to the Early Classical tradition, while the author of Warrior B worked in a High Classical mode.” That the Riace statues were not

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40 Carol Mattusch, *Greek Bronze Statuary: From the Beginnings through the Fifth Century B.C.*, (Ithaca: Cornell University Press, 1988), 142. Mattusch states that the closest identifiable works of Onatas are currently two bases for statuettes from the Acropolis in Athens.

41 Mattusch, *Greek Bronze Statuary*, 143.

42 David Finn and Caroline Houser, *Greek Monumental Bronze Sculpture*, 131.
made as a single group has also been suggested in explanation of the differing stylistic approaches.\textsuperscript{43}

Although a mid-fifth century date cannot be substantiated without the appearance of further and incontrovertible evidence, arguments for placing the Riace bronzes in the first or second century A.D. are even less plausible. Consider the method in which single or in some cases several curls were made separately and later soldered to the head and beard of statue A. Rolley rightly points out that, “This was the practice of the period of the Charioteer of Delphi and the Zeus of Artemision.”\textsuperscript{44} A head found on the Athenian Acropolis dating as early as 490-480 B.C. shows that a bronze statue could be cast with a separately made helmet as was statue B (Fig. 45).\textsuperscript{45} The lack of datable fifth century bronze statuary to support some of the techniques and stylistic elements found on the Riace bronzes should not be used to argue a later date. This line of reasoning is used in the following discussion on the occurrence of parted lips and teeth in Greek sculpture:

To be sure, open mouths had existed in Greek sculpture since the late Archaic period, but within specific narrative contexts. By the second century, however, the formula was used without apparent implications, primarily for cult images in temples, and at times including the lower as well as upper teeth. The frequency of such occurrences, contrasted with the rarity of previous examples, would strongly favor a later date for Warrior A.\textsuperscript{46}

The period of time in statuary when a trait is most popular does not necessitate that all occurrences of that trait must fall within that range of popularity.

\textsuperscript{43} Rolley, \textit{Greek Bronzes}, 46.
\textsuperscript{44} Ibid.
\textsuperscript{45} Ibid., 40.
\textsuperscript{46} Brunilde S. Ridgway, \textit{Hellenistic Sculpture III: The Styles of ca. 100-31 B.C.}, (Madison: University of Wisconsin, 2002), 200. See Christos Karousos, “Chronikon tis anasystaseos tou chalkimon Neou ton Antikytheron,” \textit{Archaeologike Ephemeris}, 1969, 59-79. The bronze Antikythera Youth ca. 340 B.C. is shown to have the parted lips and teeth strongly analogous to statue A. See drawings of the Antikythera lips, (Fig. 46).
It has been suggested that the Riace bronzes are “eclectic creations” dating no earlier than 100 B.C., and that they are meant to represent the heroic type of the fifth century. Ridgway claims of statue A, that the “…detailing of the veins — over arms, hands, feet — seems excessive for any period,” but bulging veins can be easily noted on sculpture contemporary with statue A on the west pediment of the Temple of Zeus at Olympia (Fig. 47). Features like the heavy eyelids and silver teeth of statue A and the prominent vein on the lower abdomen of statue B have also been used to argue a Classicizing date. This large vein on statue B has been

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47 Ridgway, *Hellenistic Sculpture III*, 200. According to Ridgway the term eclecticism as it relates to the Hellenistic period is, “… a form of emancipation from traditional constraints that allows the sculptor to choose from a variety of sources, including those of the minor arts.”


49 Ridgway, “The Riace Bronzes,” in *Due bronzi*, 314-317. The vein on the lower abdomen of statue B is called the tegumentosa and is a superficial epigastric vein. See p. 325, n. 21. Ridgway states that the course of the vein on statue B may be artistic convention.
compared to a similar one found on the Zeus in the Pergamon Gigantomachy and is considered by some as a Roman trait (Fig. 48). Rolley stresses however that, “To date the Riace statues to the first century B.C. implies that many more large bronzes were dedicated in these two sanctuaries in the first century than in the fifth, which is historically highly improbable.” Note also that, the Athena Parthenos by Phidas also may have had parted lips.

Another source of controversy is the stance of the Riace statues. Some scholars have stated that the statues are contrived in postures rather than simply standing and have used this concept to compare the Riace statues with Classicizing works. Here it should be noted that several scholars have suggested that the Riace statues are to some degree thought to be portraits which may in part explain some of the peculiar traits found on the two statues. Also, if the Riace bronzes were part of a commemorative monument, it may justify the exaggeration or idealization of certain features by the artists to depict men who are worthy of respect and honor for their extraordinary acts.

Any sense of artificiality expressed by the statues, statue A in particular, may also stem from the transition of the artist from the more rigid and stylized approach of late Archaic and the Severe style to the new sense of motion and balance of the early Classical style. Consider the following statement: “Despite the similarity of the poses, the Warrior A artist loosened the stiff frontal stance of Archaic statuary and rotated his figure along a spiral like that of the Delphi Charioteer, but the Master of Warrior B went further and adopted the S-curve introduced by Polykleitos.” As with the shift from black to red figure techniques in Greek vase painting,

50 Ridgway, Hellenistic Sculpture III, 201.
51 Rolley, Greek Bronzes, 46.
53 Ridgway, Roman Copies of Greek Originals, 37.
54 Mattusch, Greek Bronze Statuary, 210.
55 David Finn and Caroline Houser, Greek Monumental Bronze Sculpture, 132.
Fig. 47. Details of veins on statue A and pedimental sculpture on the Temple of Zeus at Olympia.

Fig. 48. Detail of the abdominal veins of statue B and the Zeus Pergamon Gigantomachy.
some artists maintained a preference for more traditional techniques, while others sought to embrace new methods and stylistic developments. Even if the Riace statues could be dated somewhere from the fourth century B.C. to the Hadrianic period, an attribution has yet to be suggested.\(^{56}\)

Remnants of a sulfide-based black patina found on statue A have been pointed to as evidence for a later date, a date of the time of the so-called Hellenistic black bronzes.\(^{57}\) Other than a few generalized statements by Pliny on ancient bronze patination, not much is known about ancient patinated and painted bronzes.\(^{58}\) Some of the bronzes found in the Mahdia shipwreck are thought to be covered with a similar black copper-sulfide.\(^{59}\) Older methods of cleaning corrosion off ancient bronzes are thought to have been responsible for the loss of many patinated surfaces.\(^{60}\) This inadvertent side-effect of preservation has greatly inhibited the patina study of previous discoveries including those of Classical bronzes.

If Phidias is to be associated with either of the Riace statues, William Biers argues, “Phidian style actually suppressed the tentative movement toward naturalism and the display of emotion that can be seen in the works of the Severe style.”\(^{61}\) If accepted, this may in part explain any difference between the more advanced structuring of the back and the less naturalistic front of the Riace statues.\(^{62}\) This identification with Phidias may support John Pedley’s claim that the clay core inside the Riace bronzes is derived from Argos and possibly

\(^{56}\) Ridgway, “The Riace Bronzes,” in *Due bronzi*, 324.
\(^{58}\) Mattusch, *Classical Bronzes*, 26; Pliny, *Natural History*, 34.8, 34.98, 34.12, 34.140.
\(^{59}\) Ibid.
\(^{60}\) Ibid.
\(^{62}\) Ridgway, *Hellenistic Sculpture III*, 200. Statue A has also been compared with the statue of Anakreon, often associated with Phidias for its “Neo-Attic type connected with the reliefs after the shield of the Athena Parthenos,” see Ridgway, *Roman Copies of Greek Originals*, 63, n. 40.
links the two statues to his teacher, Hageladas of Argos.\textsuperscript{63} It should also be noted that Hageladas is said to have worked with Onatas on the “upper Tarentine dedication” in Delphi dedicated by the city of Tarentum.\textsuperscript{64} It is thought that the two Tarentum monuments slightly precede the Marathon monument at Delphi by Phidias.\textsuperscript{65}

The fine engraving of the eyebrows, like the silver teeth of statue A and large veins on both of the Riace statues, has been used to weaken the argument for a fifth century date (Fig. 49). While statues like the Cape Artemision are seen to have the eyebrows inlaid, the method of rendering the eyebrows in engraved relief may be a mannerism peculiar to the particular artist or workshop of the Riace statues.\textsuperscript{66} The eyelashes of the Riace statues appear much like those found on the Delphi Charioteer. As with the other traits discussed, the present lack of archaeological evidence hinders exact chronology and knowledge of the stylistic approach of a number of ancient artists.

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{image}
\caption{Fig. 49. Detail of the engraved eyebrow of statue B.}
\end{figure}

\textsuperscript{63} John Griffiths Pedley, \textit{Greek Art and Archaeology}, 2\textsuperscript{nd} ed. (New Jersey: Prentice Hall, 1998), 225; Harrison, “Pheidias,” in \textit{Personal styles}, 23, n. 35. Pliny names Hageladas of Argos teacher of Phidias, and Pedley claims him to also be the teacher of the artist Polykleitos.

\textsuperscript{64} Harrison, “Pheidias,” in \textit{Personal styles}, 23. The upper Tarentine dedication was composed of foot-soldiers and horsemen. Also depicted was King Opis of the Iapygians, who was shown killed in the battle.

\textsuperscript{65} Ibid.

\textsuperscript{66} Ridgway, “The Riace Bronzes,” in \textit{Due bronzi}, 313.
The use of bronze allowed the artists of the Riace statues greater freedom than a stone alternative. With bronze, the use of contrasting supplemental metals was applied to emphasize certain features which in their intended state would have increased the liveliness of the statues. The bronze lends itself to the large if not monumental scale of the Riace statues, and yet, the plasticity of this medium facilitates subtle details like the fingernails and lines of the face around the mouth and nose. Technical evidence in the form of welded joints of the middle toes of the Riace statues argue for the use of piece-molds. The skill of the metallurgist is also shown by the torso and legs of both of the statues surprisingly being cast as one piece.

Study of how the human body reacts to potential movement culminates with the Riace statues. The traditional frontality of Archaic statues is replaced by a progressive shift of body weight and a renewed sense of balance in both of the Riace statues. On a superficial level the two Riace bronzes appear nearly identical. Upon closer examination, the stylistic difference in the mood and demeanor of the statues as expressed in the body language and stance is more significant.

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67 D.E.L. Haynes argues that the Delphi Charioteer has a joint on the middle fingers of the hand of its surviving arm suggesting a piece-mold construction like that of the Riace statues.
BIBLIOGRAPHY


APPENDIX

REFERENCE MAPS
Map of Italy and a detail of the region of Riace.
Map of the Athenian Agora.
Reconstruction of Sanctuary at Delphi.
Map of Olympia.
VITA

Jennifer Alaine Henrichs was born in Southaven, Mississippi. She was raised in Northwest Florida primarily in the city of Pensacola. She earned her Bachelor of Arts degree in art history from the University of West Florida at Pensacola. She began the graduate program in art history at Louisiana State University in the fall of 2003 with a concentration in the ancient art of Greece and Rome. She is currently a candidate for the degree of Master of Arts in art history, which will be awarded in May of 2005.