



Representation of the Human Musculature in the Bronze Age Aegean

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ABSTRACT

Bronze Age Aegean sculptures range from abstract to naturalistic, but how accurate are those naturalistic sculptures? To answer this question, it is useful to compare three Minoan works of art: the large relief of the Prince of the Lilies from Knossos, the Kouros statuette from Palaikastro, and the small relief images on the Boxer Rhyton from Ayia Triadha with the modern replica of male musculature. This comparison will tell us how much the ancient Minoan people were studying the human body, along with the reasons as to why these sculptures were portrayed with such realistic characteristics. To accomplish this goal the artifacts' background is taken into consideration, while measuring the length of several muscle groups and comparing them to a modern anatomical representation. The results show varied accuracy in comparison to the anatomical models. One of the Minoan artifacts is shown to be almost identical to the anatomical replica. Other conclusions involve the backgrounds of the sculptures, which range from religious contexts to possible images of royalty. Each provides insight into the life of the Bronze Age Minoans. In addition, further study into the Prince of the Lilies from Knossos shows that this relief sculpture was heavily reconstructed, and that there are controversies surrounding the reconstruction.

BACKGROUND

Three Artifacts Used:

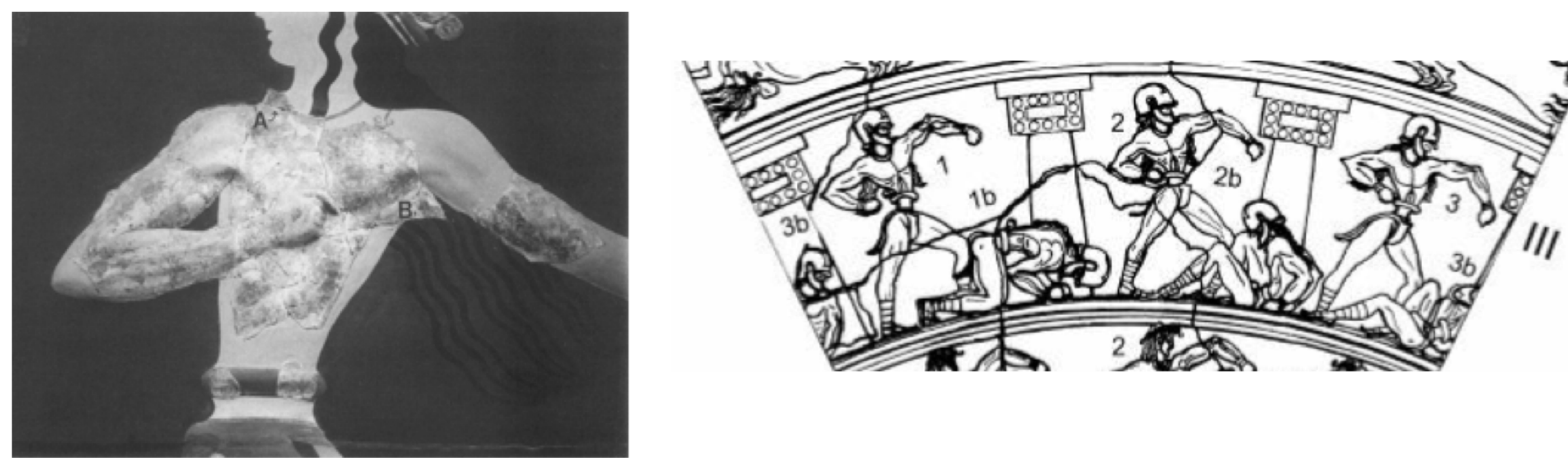
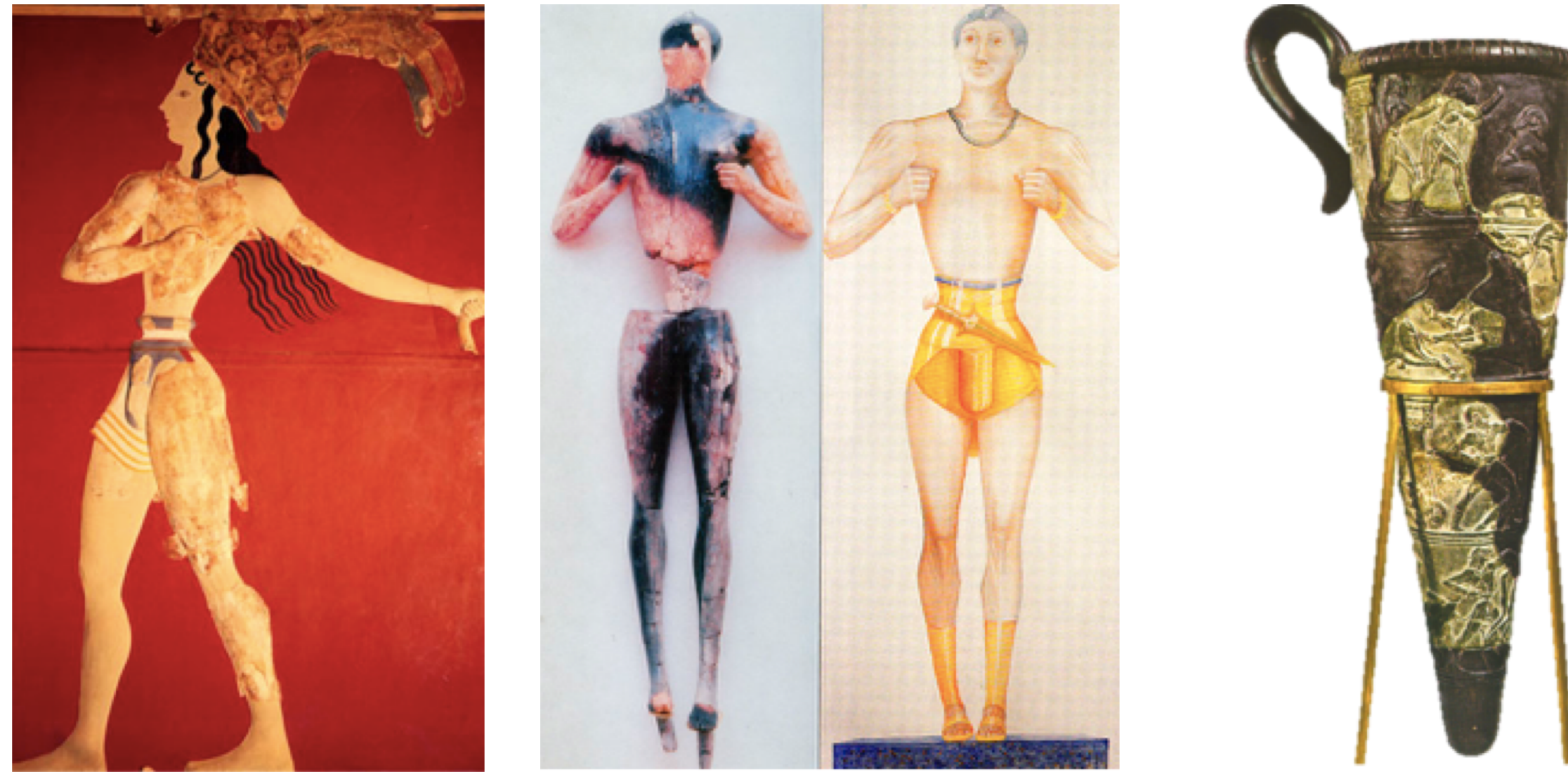
- Prince of Lilies fresco from Knossos: Made in about 1550 BC, thought to be the image of the Prince of the Palace of Knossos and he is thought to be herding an animal or leading a procession
- Kouros statuette from Palaikastro: Made in about 1480-1425 BC, has strong Egyptian influence, and was shattered to pieces during a raid
- Boxer Rhyton from Ayia Triadha: Made in about 1550-1500 BC, shows the events that took place to worship the gods, thought to have ritual usage

Muscle Groups:

- Deltoid
- Bicep
- Quadriceps: Vastus Inermedius, Vastus lateralus, Rectus Femoris, Vastus Medius
- Calf : Gastrocnemius and Soleus (combined)

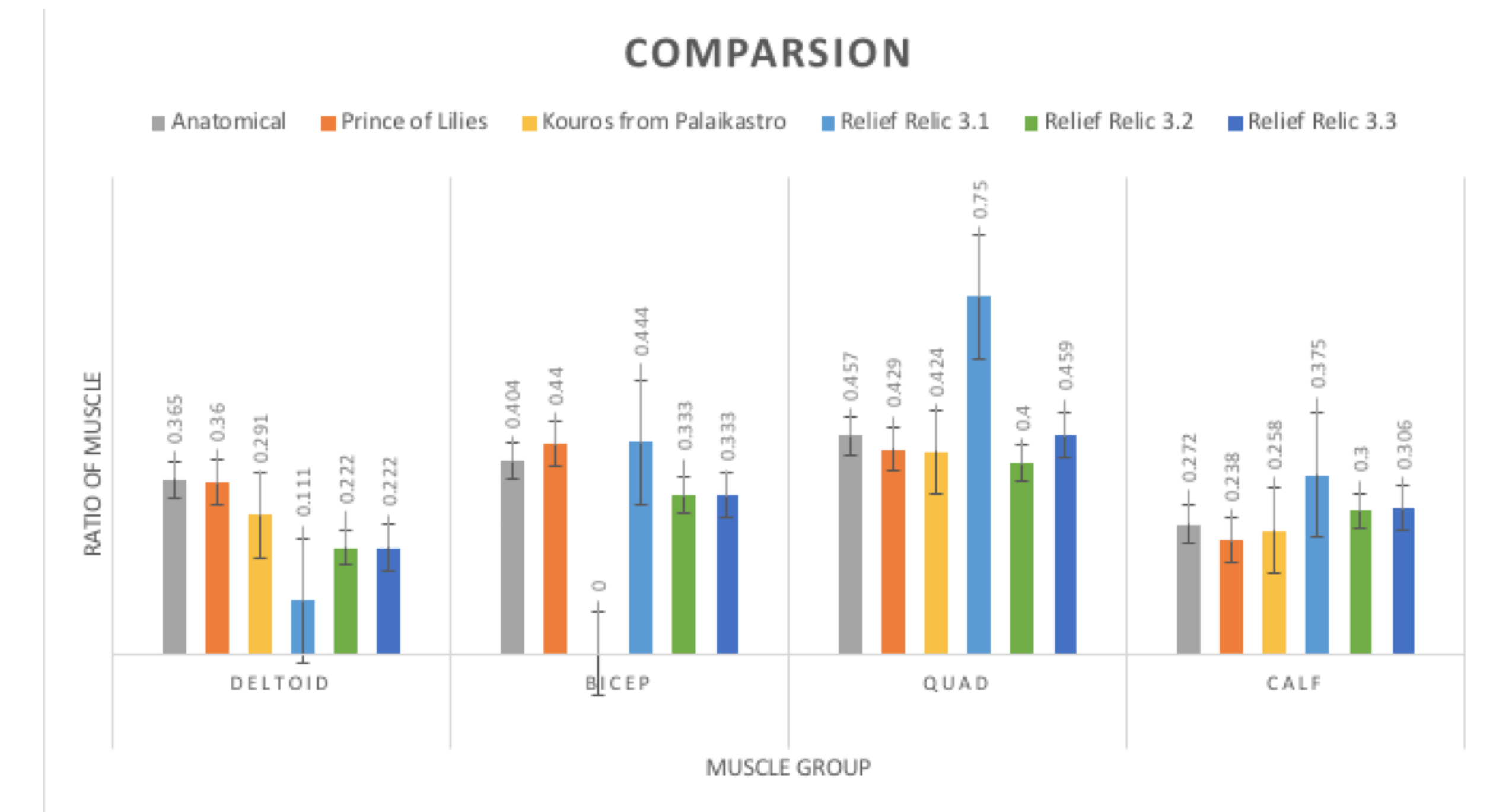
METHODS

- Determine an anatomical control group
- Measure the length of the muscle from origin to insertion point on all three artifacts and the anatomical control group
- Compare the anatomical control group to the artifacts
- Look into the background of the most accurate artifact and see if there are any discrepancies



- Upper Images from L to R: Prince of Lilies Fresco, Kouros Statuette from Palaikastro, Boxer Rhyton from Ayia Triadha
- Lower Images from L to R: Reconstruction errors on Prince of Lilies fresco, section from the Boxer Rhyton of which figures were studied

RESULTS



CONCLUSIONS

- The Prince of Lilies Fresco was the most accurate. This accuracy is probably due to the reconstructions done in the 1920's. The image in the lower left hand corner shows some inconsistencies done when reconstructing the fresco.
- A reason the artifacts could differ is because the Egyptians and the Greeks had a different idea of the Golden Ratio. This is the head to body ratio. The Greeks thought it should be a 1:8 ratio while the Egyptians thought it should be a 3:16 or a 1:8 ratio.
- The human body has evolved over time so a better anatomical replica is a major reason as to why the data might be wrong.
- Another reason the results could differ is because the actual artifacts were not used, but printouts of the artifacts. These printouts might have distorted the images because they are varying in size.

OBJECTIVES

- Compare the musculature of 4 muscle/ muscle groups to an anatomical replica
- See how accurate the artifacts are to a modern human replica
- Look into the reconstruction of the most accurate artifact

RESULTS

- The Prince of Lilies fresco was the most accurate compared to the anatomical model
- The Kouros statuette was the second most accurate but could not get a measurement for the bicep because the insertion point could not be determined accurately
- The Boxer Rhyton was the least accurate with a significant amount of variation between the figures on the third level

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