

## Virtual 3D Reconstruction of the East Pediment of the Temple of Zeus at Olympia

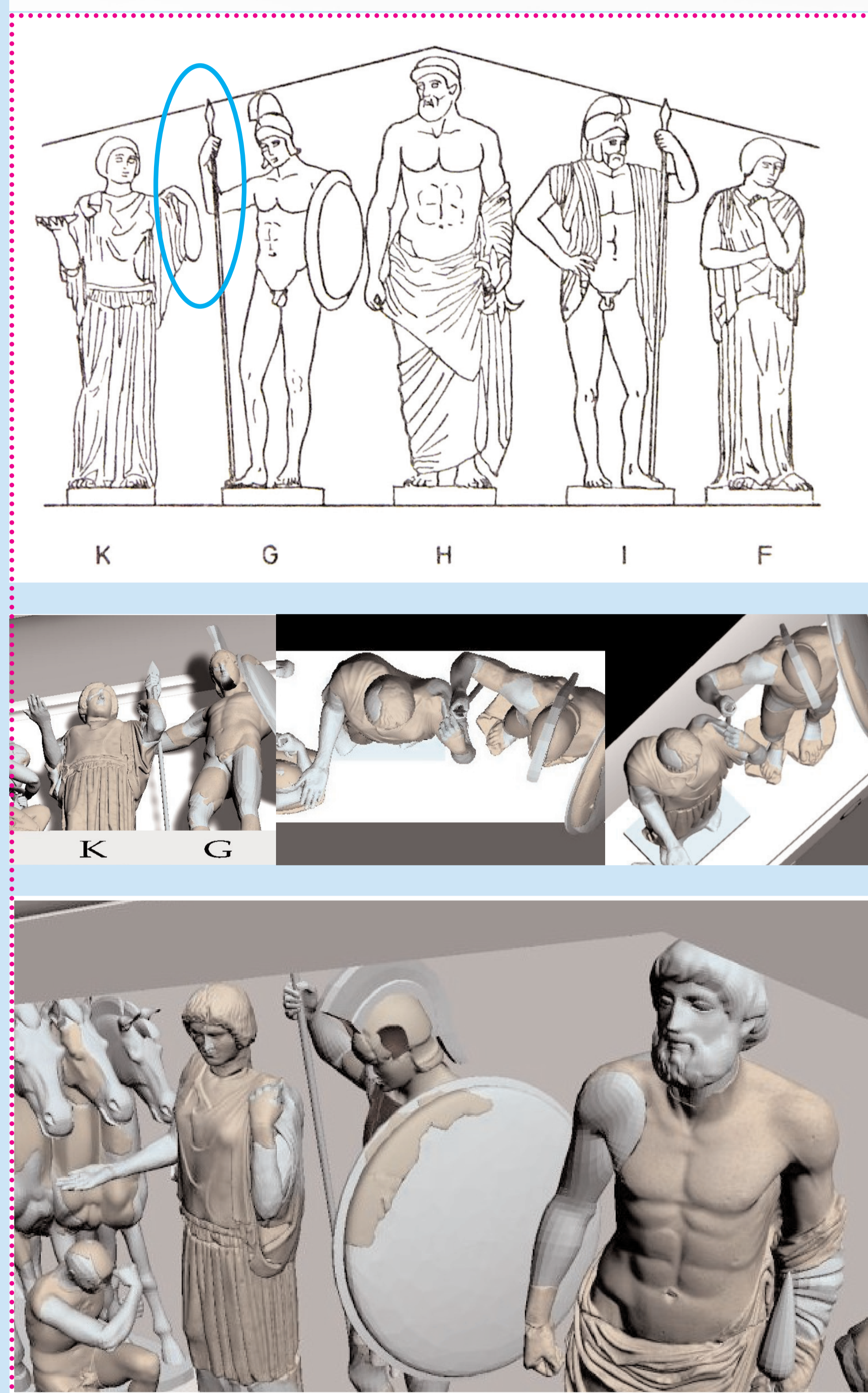


Fig. 2. Different views of the open arrangement Type A. This reconstruction was declared to be physically impossible by G. TREU in 1897, but features as the most probable one in most recent publications. The area, where the arm of K and the spear of G would come in collision according to Treu is highlighted in the drawing (after H.-V. Herrmann, Olympia. Heiligtum und Wettkampfstätte, München, 1972; fig. 96). The 3D model shows that the arm and the spear do not necessarily cross each other, but since their distance is very small, it is very unlikely, that this would have been the arrangement intended or realized by the ancient artists.

### The new approach

Instead of the expensive and troublesome experimentation with plaster casts and models, highly accurate virtual 3D models of the statues were produced by scanning the original fragments and then modelling the missing parts virtually. Inserted in the virtual model of the pediment, these 3D models can be easily used to test the technical feasibility and aesthetic effects of the different reconstructions.

### Results

In the case of both “open” arrangements, one can observe, that the spears fit the available space only if both heroes grip the shaft directly under the spearhead. (Fig. 3)

In the other two “closed” cases, we have no such problem with the spears. (Fig. 4)

The 3D models created during the project and the full documentation can be consulted on the multimedia documentary CD-ROM ISBN 978-963-284-196-0.

**Project coordinator:** András PATAY-HORVÁTH, PhD  
classical archaeologist  
pathorv@gmail.com  
**Assistants:** Dániel BAJNOK, Gábor GEDEI, Magdolna HITTER

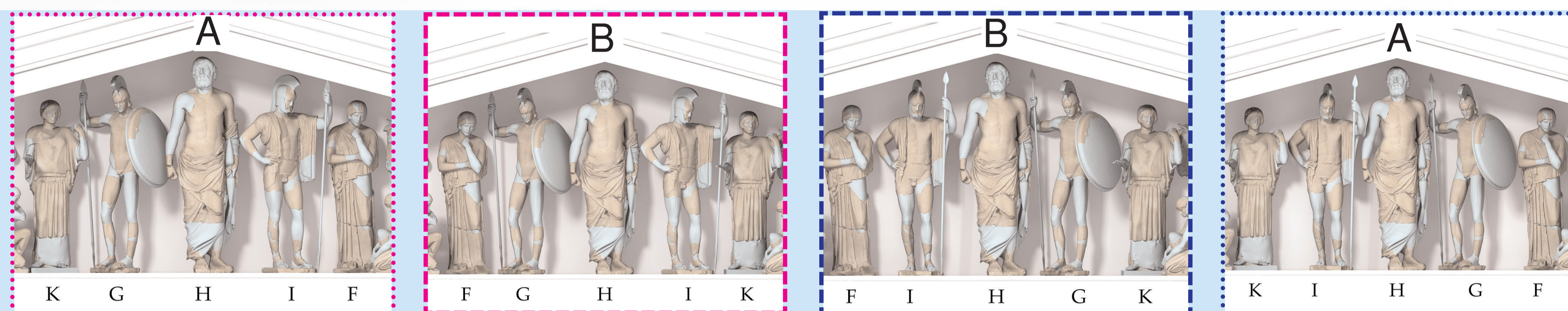


Fig. 1. The virtual 3D model showing the four main possibilities for the reconstruction of the central part of the pediment. Figure H in the middle is Zeus, the identification of the other figures is doubtful. Original fragments are grey, reconstructed parts are rendered in pale blue. The two “open arrangements” (male figures turning away from each other) are marked with a pink, the “closed arrangements” (figures G and I arranged in the opposite way) with a blue frame. These borders also indicate differences in the position of the female figures: Type A (dotted) means F standing to the north and K to the south of Zeus, in Type B (dashed) they are arranged inversely (K - north, F - south). The virtual reconstruction of the entire pediment (on the top) conforms to the closed arrangement Type A, because this variant is considered by the present author as the most probable one.

### A brief history of research

The main problem of the reconstruction concerns the relative position of the five figures in the centre of the pediment (Fig. 1) and results from the following facts:

- 1) The *fragments themselves* can be arranged in four substantially different ways.
- 2) Each reconstruction can be easily presented in *drawings* or *miniature plaster models*.
- 3) There are *no other obvious clues* for choosing the most probable reconstruction.

At the end of the 19<sup>th</sup> century in Dresden, plaster models of the fragments were produced on their original scale and lost body parts, arms, etc. were reconstructed in plaster as well. After several years of experimenting with these plaster models, Georg TREU the archaeologist, who published the sculptures of Olympia, claimed in 1897 that one of the four conceivable arrangements is physically impossible, because the left hand of figure K and the spear in the right hand of G would run across each other in the limited space (Fig. 2). To support this argument, TREU added that with the help of the plaster models, anyone could verify his statement. During the following decades, several archaeologists exploited this possibility and experimented with the life-size models: they concluded that the reconstruction proposed by TREU had to be modified at some major points, but no one advocated the option excluded by him.

After World War II, the results of these experiments have been largely ignored and an absurd situation emerged: nowadays the most widely accepted reconstruction is precisely the one (open Type A), which was deemed technically impossible by TREU (Fig. 2).

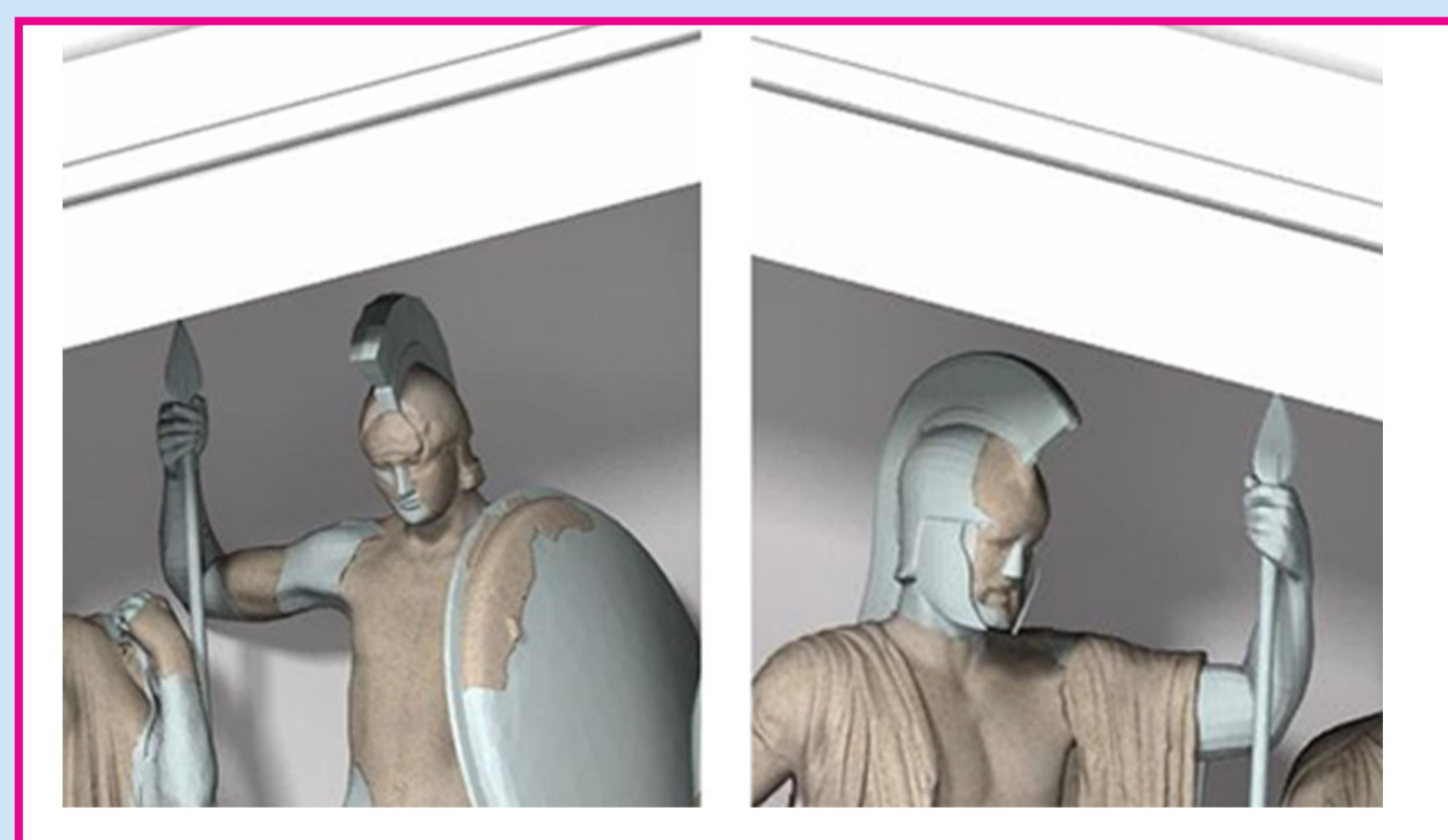


Fig. 3. The main problem of the two open arrangements. The spears of the two male figures can be accommodated within the pedimental frame, only if they hold the weapon in a most unusual way, which is otherwise hardly attested in ancient Greek art.

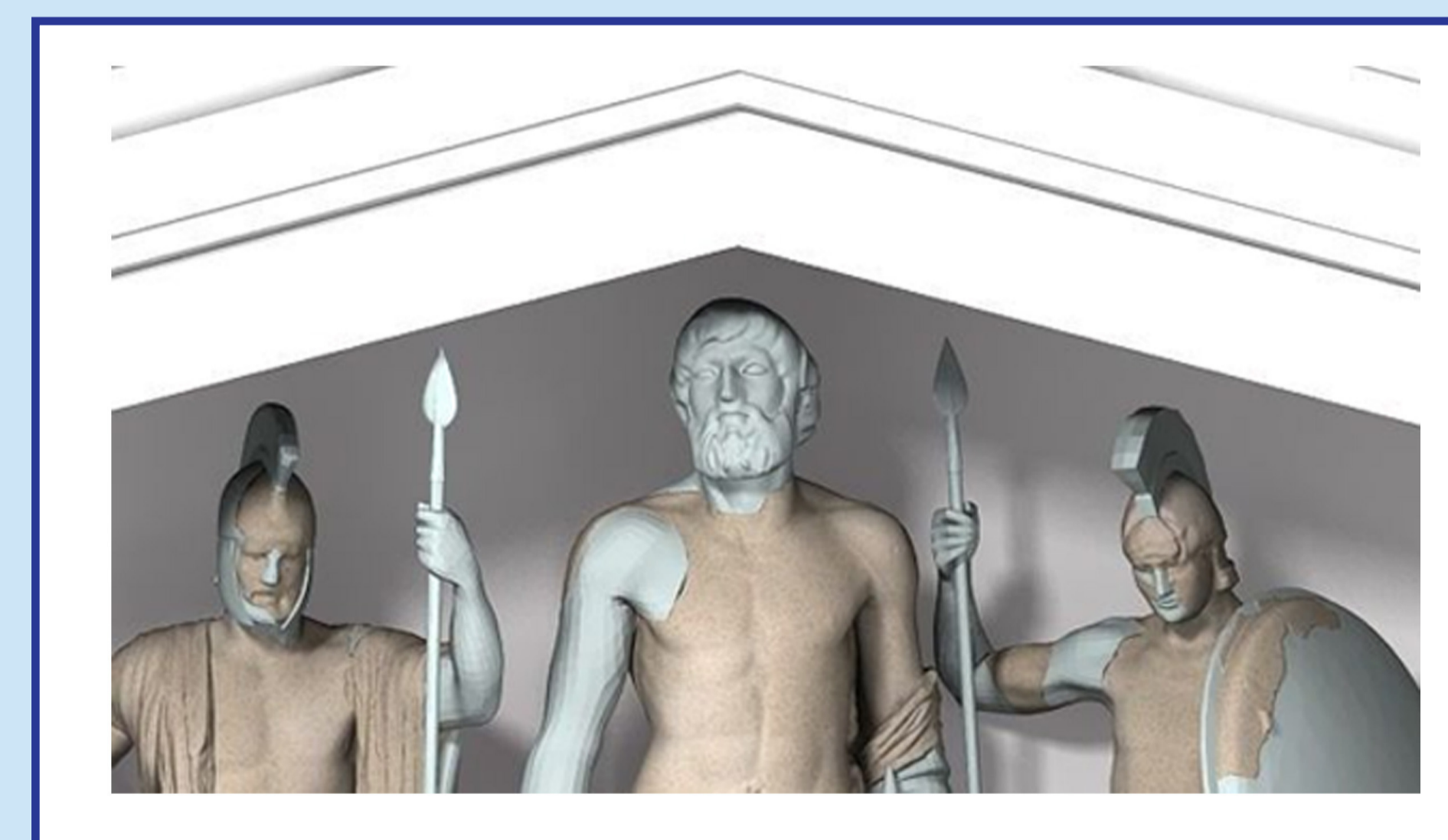


Fig. 4. The central part of the composition according to the closed arrangement. There are no iconographic problems, the spears can be held correctly. The closed arrangements should be therefore preferred instead of the open ones.

### Conclusions

- 1) The reconstruction, which is most widely accepted today (open Type A), is technically the most difficult to realize and therefore highly improbable (Fig. 2).
- 2) Both open arrangements would be feasible only, if we ignored a general pictorial convention of ancient Greek art (i.e. the way spears are shown in similar cases). The closed arrangements should be therefore preferred (Fig. 3 and 4).

It must be stressed, however, that the virtual reconstruction does not enable us to establish the right arrangement, i.e. the one actually realized in antiquity, but only to exclude two options. Considering every piece of available evidence, the **closed arrangement Type A** can be regarded as the most probable reconstruction (large picture above Fig. 1).

Sponsors:



Collaborating  
institutes:

