Audrey Wells

Modeling the Pepper Wreck

Chair: Frederick Parke, VizLAB
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This study was a collaborative project between the fields of nautical archaeology and computer visualization. An interactive virtual reconstruction of the 1606 Portuguese vessel Nossa Senhora dos Mártires, also known as the Pepper Wreck, was developed as a detailed 3D computer model based upon reconstruction information gathered from the shipwreck site and a number of contemporary texts and images. The model of the ship was displayed within an appropriate virtual environment. Models of cargo and people were added to show how the ship might have appeared loaded with trade goods and hundreds of crew and passengers on the return voyage from India. The scene was shaded and lighted. Both the inter-

Introduction

In Audrey’s own words: “Modeling is a very powerful tool, which can allow viewers to progress from what is observable, archaeological data and theory, to concepts of what is unobservable, the past.”

Quoting Gary Lock’s Using Computers in Archaeology: Towards Virtual Pasts (London: Routledge, 2003), Audrey continues: “‘Moving from data to explanation through theory and interpretation has always been the endeavor of archaeology.’

Lock also presents the use of computer modeling in archaeology as a hermeneutic spiral, or process of interpretation, in which the data model and theoretical model are derived from the archaeological record through interpretation. Digital computer models, informed by the data and theory, add an additional layer of interpretation.

Based on the models, interpretive statements about the past are made. These interpretations constantly inform and reform our understanding of the past. (...) This is useful because the subject of study is generally from partial remains. Models, and the process to create them, can have a significant influence on archaeological interpretations. Gary Lock asserts: ‘Because the past is complex, often unknowable and unverifiable, working through models is the only way of approaching explanation and experimenting with the meaning of observed data.’

Audrey’s model is the basis for further work, namely Kotaro Yamafune’s dissertation, which was inspired by it.

Citation

Testing the model at Frederick Park’s C.A.V.E.

Crew and passengers were modeled after Italian 16th Century painter Luca Cambiaso, whose stylized figures revealed themselves extremely economic in term of computer memory allocated per person.

Reconstruction of the mainmast top, stay, shrouds, and lifts.

The Pepper Wreck reconstructed and loaded, at departure from Cochin, India, to Lisbon, Portugal.

Asian pots, common in shipwrecks from this period.

Barrels turned up to be very difficult to model, at least in what pertains to their standardized sizes. We have their capacities, but not their main dimensions.

The cargo was object of careful study and all clues to standardization retrieved from coeval documents were used.