Interfaces for 3D Scholarly Editions: A New Paradigm for Three-dimensional Scholarship

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Abstract of the answer to the call for proposals

There are several challenges unique to 3D scholarship: Various disciplines and communities of practice, including medical experts, archaeologists, game developers, and heritage professionals, are involved with 3D objects of some kind, each bringing their own research objectives and publishing expectations. This variety is further confounded by the array of methods, tools, and software available for developing, disseminating, and interacting with 3D content. 3D models available on the Web are often hosted in general online warehouses (e.g., SketchFab, 3D Warehouse, Thingiverse, or Turbosquid) and/or in academically-focused digital libraries and repositories (e.g., Europeana, CyArk, and 3D Icons). More often however, 3D models, especially those developed for research purposes, are used primarily for the production of static images and animations in conventional publication formats. On the one hand this is due to the lack of adequate publishing options that could support 3D beyond mere illustrations, while on the other, because 3D - similar to other forms of digital scholarship - is not recognised as equal to more 'conventional' types of academic work, eg. journal articles or monographs. Due to these two factors, and despite the long tradition of 3D scholarship especially in cultural heritage contexts, there have not been any concrete attempts to create a sustainable solution (Champion and Rahaman 2019; Champion 2018) that will enable researchers to publish their 3D work as originally intended; e.g., an infrastructure which provides the means to develop new hypotheses and interpretations through testing, alternatives, and simulation (Statham 2019).
The options available for communicating 3D scholarship are rather limited and do not include the critical apparatus required for communicating academic arguments; an apparatus that will allow researchers to incorporate the material that informed their decisions, while also allowing readers to trace the process of knowledge creation. As a result, the interfaces of existing platforms for 3D visualization (or platforms that support 3D content among other modalities) follow the paradigm of more conventional browse and search interfaces, thus either treating 3D models (either digitised objects or computer graphic reconstructions) as supplementary to other sources of information (e.g. text) or focusing more on the technical characteristics and rendering modes of the models. In both cases, such interfaces do not provide the means to use 3D models as central components of the narrative, therefore diminishing their role in knowledge production.

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Humanities (PDI-SSH), aspires to break new ground by building a digital infrastructure for 3D Scholarly Editions (Schreibman & Papadopoulos 2019; Papadopoulos & Schreibman 2019) in which, 3D models will be treated as 'texts', thus assuming a central role in the narratives being created, and operating as fora for scholarly argument and debate. Drawing from the proposed framework for 3D scholarly Editions, this paper will first evaluate existing 3D interfaces, and then, based on preliminary results of a user survey and a series of focus groups with makers and users of 3D scholarship, it will present initial ideas for 3D interfaces that would serve as tools for 'prying problems apart and opening up a new space for the extension of learning' (Apollon et al., 2014, 5-6).

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