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Making a Point!

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Abstract/Objective

The archaeological field has been trying to become more collaborative and socially engaged with the public and researchers for many years. The latest attempt is the creation of “intangible digital models from tangible artifacts” (Means, McCuistion, and Bowles 2013: 1). The Virtual Curation Laboratory of Virginia Commonwealth University has made great efforts over the past few years on digitally curating and conserving “objects from historical sites using a NextEngine Desktop 3D Scanner” (Means, McCuistion, and Bowles 2013: 1). Besides making digital models of artifacts, the VCL can also make plastic replicas by using a MakerBot Replicator (Means et al. 2013). The VCL wishes to “extend conservation and access to collections” while enhancing the preservation and accessibility of said collections (Means, McCuistion, and Bowles 2013: 1). One of the collections that the VCL has consists of chipped stone artifacts, with projectile points being one of them. My objective is to make a point of emphasizing the importance of digitally archiving the archaeological record while using projectile points scanned by the VCL as an example of how the VCL accomplishes this.

Methods and Projectile Points

Scanning to Printing

The NextEngine Desktop 3D Scanner scans the points with lasers “specifically designed to record topological (surface) attributes” (Means, McCuistion, and Bowles 2013: 6). For points, you may face problems due to the thin edges or refractive properties since some are “manufactured from quartz or quartzite,” which can be reflective (Means et al. 2013). This can generally be fixed by using baby powder (Means et al. 2013: 31). A software called ScanStudio is used to do things like editing and aligning. You can then make STL (stereolithography) files of the artifacts for digital use (Means, McCuistion, and Bowles 2013). Then, the STL file can be formatted into other files (Means et al. 2013). One file format is with Adobe Acrobat Reader which allows a person to “rotate, manipulate, and measure the digital model” (Heine et al. 2013: 52). When printing points, the VCL uses a MakerBot Replicator. This uses another file format made from the STL file format and allows for the printing of plastic replicas of any size (Means et al. 2013).

Timelines

The timeline of projectile points fluctuates depending on the region but the one the VCL uses is very similar to the one used in the Northeast of the U.S.: Paleo-Indian Period (12,000-8,000 B.C.), Archaic Period (7,000-1,600), Terminal Archaic Period (1,800-1,000 B.C.) and Woodland Period (1,000 B.C. to 1,500 A.D.) (Fogelman 1992: 9). For the VCL, each period besides the Terminal Archaic and Paleo-Indian is then divided into Early, Middle, and Late.

Background

Beginning of the Virtual Curation Laboratory.

The Virtual Curation Laboratory, headed by Dr. Bernard K. Means, is a lab located in the School of World Studies at Virginia Commonwealth University. They started using 3D scanning technology “as a part of a project funded by the Department of Defense (DoD) Legacy Resources Management Program” and were “sponsored by the U.S. Marine Corps” (Means, McCuistion, and Bowles 2013: 1). They were to test the technology’s effectiveness and demonstrate its usefulness “for potential employment in ensuring DoD compliance and historic preservation laws” (Means, McCuistion, and Bowles 2013: 1).

What are Chipped Stone Artifacts and Projectile Points?

Chipped stone artifacts are stone artifacts found at archaeological sites that have gone through a lithic reduction process (Hofman 1987). The most well known chipped stone artifacts are projectile points. “Projectile point” is a generic term used by many since differentiating “between arrow points and dart points” can be hard (Arkush and Sutton 2009: 52). Points can be made out of flint, chert, obsidian, quartz, or other kinds of rock (Justice 1987). They can allow one to organize what is left of extinct cultures, “follow the path of developments, and see significant changes over time” (Justice 1987: 1).

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References


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