

BRINGING ARTIFACTS TO LIFE: AUGMENTED EXPERIENCES

Brett S. Harte

Augmented reality (AR) allows us to use computer-generated imagery in creating enhanced interactive experiences within the real world. With AR applications and tools, AECOM can provide a user-friendly, accessible way for individuals to view or interact with digital representations of artifacts within a tangible environment. Our first publicly accessible AR application debuted in the third volume of *River Chronicles* (2018). Using an Android mobile device, the reader may scan an image of an artifact labeled with an AR symbol to view a virtual 3D model of the artifact on their screen. Moving or spinning the printed image corresponds with how the artifact is displayed on the device screen.



Staffordshire Bird Whistle

To perform these actions, the user must complete specific steps. While wearing the HoloLens, using our application, the user's first step is the gaze command or focus point—simply meaning that the user focuses on the digital artifact. For this demonstration, we are using a Dolly Madison-style doll head and a Staffordshire bird whistle as digital artifacts. The user can focus on one of these artifacts at a time. A small blue ring will appear on the piece when the gaze command is in effect. The appearance of the ring indicates that the piece is currently selected. Once selected, the user can apply hand gestures to interact with the artifact. While still focusing on the piece, the user will bring their hand in front of the display screen.

For the HoloLens to recognize the user's hand, the user should have a closed fist with the back of the hand facing the user while the index finger points upward, not toward the selected artifact. The ring will change to a hand icon once the user's hand is recognized. From this point, to move or rotate the artifact, the user will implement the gesture command. The gesture command is a midair tapping or pinching action of the thumb and index finger, then held in position. If done correctly, the hand icon will disappear, confirming that the user now has complete control of the digital artifact's movement.

(Left) While wearing the Microsoft HoloLens, Brett Harte demonstrates the gaze function on the digital representation of the Dolly Madison-style doll head. Photograph by Demi Borzano, 2020.

(Above) The render of the Staffordshire bird whistle. Rendering by Brett S. Harte, 2019.

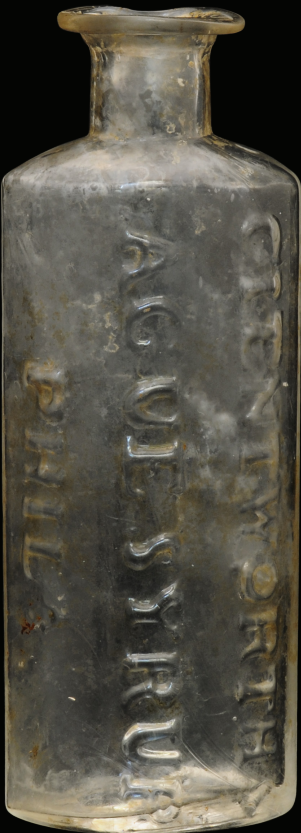


Starting with these basic commands, we hope to build more specific functions for specialized digital models in future projects. Like the "move" and "rotate" command, voice-recognition commands would be able to cycle through set functions to complete particular tasks. In future exploration of this technology, we aim to develop fully interactive environments, such as historical locations and excavation sites. While in these environments, the user would be able to interact with items that are time specific to that era and location. Such an immersive experience can give the user a better understanding of a given environment or tasks performed within that environment.

Through public-outreach events and controlled tests, we have received positive reviews for how engaging this technology is for the public. We also demonstrated the application on a one-on-one basis at the Society for Historical Archaeology (SHA) 2020 conference and received excellent reviews from professionals within the field. We saw that people with zero experience or knowledge of archaeology were just as excited and engaged with exploring the digital artifacts as professionals and specialists. After demonstrations, we were commonly asked about the artifacts, showing how this tool could help encourage interest in archaeology. The HoloLens and AR devices are an excellent way to have archaeology reach a new audience, while giving the existing audience a unique control over digital artifacts in an immersive environment.

GLENTWORTH'S CELEBRATED SYRUP

THOMAS J. KUTYS



Archaeological investigation of a privy behind former 701–707 Richmond Street in the Fishtown section of Philadelphia produced an important, and rare, American druggist bottle dating to as early as 1812. Made of heavy lead glass, the ovoid bottle was produced in a two-piece hinge mold and features a glass-tipped pontil scar on its base and a crude flared finish. Embossed vertically, "GLENTWORTH'S / AGUE SYRUP / PHILA," it would have contained a product intended to treat ague, a historic term for the fever and chills typically associated with malaria. Embossed American druggist bottles from the early nineteenth century are exceedingly rare, though known examples have been thoroughly researched and documented. Our unfamiliarity with this bottle—and lack of success from a quick Google search—spurred an increased level of attention.



Embossed vertically, "GLENTWORTH'S / AGUE SYRUP / PHILA," this significant early American medicine bottle was recovered behind former 701–707 Richmond Street in the Fishtown section of Philadelphia. Photograph by Thomas J. Kuty, 2020.

The second volume of *River Chronicles* focused on the Dyottville Glass Works and its namesake, Thomas W. Dyott. Though Dyott identified himself as a doctor and claimed descent from a Dr. Robertson of Edinburgh, in reality he rose from a pauper family in England and began his business in America producing boot black.¹ Image was everything to Dyott, and his fictitious backstory was surely used to legitimize his products and self-appointed title. With Dyott's story in mind, the background to the Glentworth bottle then becomes its antithesis.

George Glentworth (1789–1866) was born into a prestigious Philadelphia family in 1789, the son of Dr. Peter Sonmans Glentworth (1765–1793) and Sarah Coates (1772–1810), of the prominent family that Coates Street—now Fairmount Avenue—was named after. A graduate of the Medical Department of the University of Pennsylvania, Dr. Peter Sonmans Glentworth died while George was a child in 1793, serving victims of the Yellow Fever epidemic of that year.²

George's namesake and grandfather, George Glentworth (1735–1792), received his M.D. degree from the University of Edinburgh in 1758, afterward serving as an assistant surgeon in the British Army during the French and Indian War and going on to establish a small pox hospital in Philadelphia in 1773.³ He was later appointed first regimental surgeon in 1777, then senior surgeon of the military hospitals, and subsequently director-general of the Middle Division of the Continental Army.⁴ It is said that he extracted the musket ball from a wounded Marquis de Lafayette at the Battle of Brandywine, later making General Lafayette his guest in Philadelphia in 1784.⁵ Following the war, in 1786, Dr. Glentworth helped in founding the College of Physicians in Philadelphia, becoming one of its senior fellows.⁶

Though it is likely that George Glentworth barely knew either his father or grandfather, this lineage surely predetermined his direction in life. Likewise, George's uncle, Plunket Fleeson Glentworth (1767/1768–1833), may have continued to influence him in his youth. Plunket Fleeson Glentworth, like his older brother, George's father, graduated from the University of Pennsylvania, becoming its secretary in 1791.⁷ Plunket was also a fellow of the College of Physicians and a founder of the Academy of Fine Arts, and, on at least one occasion, attended George Washington during the president's residence in Philadelphia.⁸

FEVER AND AGUE.—To be cured of the Ague, after all other remedies have failed, is, to use GLENTWORTH'S CELEBRATED SYRUP, warranted to cure when used as directed. Prepared only at No. 287 RACE Street, at his Drug Store, corner of CHESTER Street. Price 50 cts. n4-6t*

Though likely dated slightly later than the bottle recovered from Fishtown, this 1845 advertisement from the *Public Ledger* describes the benefits of using Glentworth's "celebrated" syrup.⁹ The advertisement shown is a recreation of the original and has been edited for clarity. Recreation by Brett Harte.



In 1812, George Glentworth (the younger) opened his drugstore at the northeast corner of Sassafras and Chester Streets (later 817 Race Street).¹⁰ By circa 1816, medical and pharmaceutical lectures were being given on the second floor of the store, and many of the men who attended these lectures, including George, became founding members of the Philadelphia College of Apothecaries (shortly thereafter, the Philadelphia College of Pharmacy).¹¹ The Glentworth family operated the drugstore at 817 Race for over 92 years, with George's son, William Watts Glentworth, M.D. (d. 1893), joining his father in the business by circa 1849.¹² Glentworth's drugstore came to be a Philadelphia landmark, characterized by Gothic-type fixtures, a large night bell, and even a clerk's sleeping bunk under the counter. The show bottles in the shop were filled with applejack (supposedly dating to 1812) and two other shop features warrant their original description:

Two of its devices attracted particular attention, one being a sign consisting of an old head that would turn and look first one way and then the other. The second was the old painted owl that greeted the customer from the top of the central fixture as he entered. By means of a mechanic device, this owl could be made to flap its wings, move its eyes and bill and make a noise like a real bird. It is said that the proprietor had a great deal of fun with this contraption, especially in frightening children.¹³

Based on its manufacturing attributes, archaeological context, and overall crudeness, the Glentworth bottle from Fishtown likely dates to the first couple decades of the drugstore's existence—from 1812 to perhaps as late as the early to mid-1830s. As a contemporary to Dr. Dyott, George Glentworth personified the image that Dyott was so desperate to create and convey. Small details regarding both men are ironically similar, even down to details about Dr. Dyott's fictitious creation, Dr. Robertson. Dr. Robertson was supposedly from Edinburgh. George Glentworth's grandfather actually received his M.D. from the University of Edinburgh. Dyott endeavored to create such lineage, while the younger George Glentworth likely found it impossible to escape. Dyott seemed to enjoy drawing parallels between himself and Benjamin Franklin. The Glentworths literally rubbed shoulders with America's founding fathers. Dyott and Glentworth may have crossed paths more than a few times through their affiliation with Old St. Paul's Church in Philadelphia. Dyott was married there in 1808. Glentworth was buried there in the family vault in 1866, and indeed, the Glentworth family is mentioned prominently in the history of the church. Perhaps the similarities are mostly coincidental, or perhaps Dyott modeled his story from individuals he became familiar with. That will forever remain speculative.

(Left) The original fixtures of George Glentworth's drugstore, shown here as part of an early twentieth-century display, were donated to the College of Pharmacy's Museum by the Glentworth family following the store's closure.¹⁴

Likely cut from a piece of Glentworth drugstore stationery, this simple engraving depicts the pharmacy at its location at Race and Chester Streets.¹⁵

ESTABLISHED 1812



BY GEORGE GLENTWORTH.

Sir J. Clarke's GREAT ENGLISH REMEDY MOZELLE SHAMASH-ROSENTHAL

ARCOM archaeologists unearthed this Sir J. Clarke's pill bottle at 2852 Richmond Street in Port Richmond. The rectangular bottle is embossed "SIR J. CLARKE'S" and "FEMALE PILLS." Job Moses was the proprietor of Sir James Clarke's pills, a type of chemical contraception used during the mid to late nineteenth century. This bottle has a tooled prescription finish and no mold air venting marks, which indicates that it dates from about 1870 to the mid-1880s, even though the retailer's advertisements began earlier.⁴ Newspaper advertisements warn that the name "JOB MOSES" should be on all packaging and others are "worthless imitations."⁵ The size and shape of this bottle are correct, but the name "JOB MOSES," which is usually embossed on one side, is missing. This raises questions about the authenticity and reliability of the contents.

Based on widespread newspaper advertising, this method of contraception appears to have once been used across the United States and in some parts of Canada. The pills were touted as "The Great English Remedy . . . Prepared from a Prescription of Sir James Clarke, M.D., Physician Extraordinary [sic] to the Queen."⁶ Although Sir J. Clarke's pills may have been used as an

abortifacient intentionally, they were not always advertised so bluntly. One advertisement in an 1850 Belvidere, Illinois, newspaper promotes the pills as a way to remove "all obstructions" and to "bring on the monthly period with regularity." It also includes a warning that pregnant women should not use the pills, since this will lead to a miscarriage.⁷ Addressing married women in particular, promotions for the pills also boast of curing a host of other ailments, including, but not limited to, spinal problems, pain in the back and limbs, fatigue, heart palpitations, and hysterics.

The euphemisms for an intentional miscarriage indicate that while this method of contraception was widely used, it was not accepted publicly. At the time, abortions were not considered illegal before what was known as "quickening," when movement of the fetus could be felt.⁸ While this does not rule out the option for women to use the pills after quickening, a woman taking these pills before fetal movement could be detected probably did not consider this form of contraception an abortion. There is no mention of unmarried and younger women using these pills, but it is hard to imagine this did not occur.

A later 1868 advertisement from Rock Island, Illinois, makes similar claims, and at the bottom assures the reader that any mail order will be "securely sealed from all observation."⁹ The emphasis on privacy perhaps indicates that while the drug appears to have been a convenient way for women to prevent pregnancy, there was still some stigma against this method. This form of contraception could be bought through the mail and taken by women in their own homes, at least until the Comstock Law passed in 1873, making it illegal to send contraceptives through the mail.¹⁰ It is clear that women did not want this to be public knowledge, but a dramatic drop in birth rate among white married couples within the United States between 1840 and 1880 could indicate that this and other forms of contraception were widely used within families.¹¹ There was an increased interest in limiting the size of one's family during this period. Alternately, the accessibility of this form of contraception may have caused the decrease in birth rate, but it is unclear which factor may have led to the other.



So, who could have owned this bottle? The house at 2852 Richmond Street was home to the McCafferty family between 1870 and 1885, the most likely period this bottle was used. Several women of child-bearing age lived at the property during this period, including Daniel McCafferty's second wife, Mary; a female domestic servant; the oldest daughter from his first marriage, who turned 16 in 1870; and, by 1884, a third wife.¹² This bottle could have belonged to any of the women in this household, possibly a married woman preventing another child in an already large family or a younger girl preventing an unwanted pregnancy. The pills appear to have been available to anyone with the means to read the advertisement and pay for the remedy to be sent to them.



Photograph by Thomas J. Kutys, 2019.