

Probing Question: How can you spot a forgery?

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History is checkered with stories of fakes -- and people duped into believing they were the real thing.

Even an artist as great as Michelangelo was not above being accused of forgery. As the story goes, in 1496 the sculptor created a sleeping cupid figure, treated it to appear ancient, then sold it as such to a cardinal who -- upon learning of the fraud -- demanded a refund. The mystery over the still-lost cupid is credited with drawing attention for the first time to Michelangelo's sculpting work.

So how do you spot a forgery?

Think like a forger, says Baruch Halpern, a Penn State professor of ancient history, classics and religious studies whose class "The Art and Science of Forgery" teaches students to do just that.

"If you don't think like a forger, you're going to get scammed yourself," said Halpern.

Forgers are typically motivated by several things: the prospect of great financial gain, the desire to make a statement, or the opportunity to make a fool of a despised contemporary or play a joke on a respected one. A forger also may create the fake just because he can, said Halpern.

Works of art or historical artifacts found at a reputable archaeological excavation are likely to be authentic, while those found for sale in the

marketplace are likely to be fakes, said Halpern. The best rule of thumb is "buyer beware," he suggested. When a bargain seems too good to be true, it probably is a fake.

Even though forgers are committing fraud, Halpern suggested that their deceit should be kept in perspective. "Really, compared to corporate fraud, art forgery is mild. The victims are people trying to pick stuff up on the market for cheap. It's a con game, not a massive public fraud." The best forgers are artists in their own right, he added. He respects their ability to challenge scholars to be better at their work.

Famous art forgers include Han van Meegeren, who swindled buyers out of more than \$25 million by copying Dutch masters like Johannes Vermeer. More recently, Thomas Keating claimed to have forged more than 2,000 paintings by more than 100 different artists before his death in 1984, as a protest against art traders who accumulated wealth at the artist's expense. Keating, a master of art restoration, understood the chemistry of pigments and, when creating a forgery, would plant clues beneath paint layers that he knew restorers would ultimately find. His forgeries have become valuable collectibles in their own right.

"Forgery is always detectable," said Halpern, "Not at the moment of the forgery, but down the line because no forger can anticipate the scientific advances in the next 30 years. They always -- I mean always -- come to light."

A modern analytical method called neutron activation analysis can be used to specifically identify the materials in an object like a painting or piece of pottery, said Kenan Unlu, professor of nuclear engineering. A small sample of the painting is bombarded with neutrons, causing the paint or clay to leak gamma rays. Scientists can then use those rays to identify the object's composition at an atomic level. That information is then cross-referenced with what is known about the available materials

during the era in which the work purportedly was created.

Forged paintings are the easiest to spot by such methods, said Halpern, because the chemical makeup of paints has changed so much over time. A forged pencil sketch is harder to detect, since pencils haven't changed much over the centuries.

Halpern's favorite case is that of the Vinland Map, a parchment some believe to be the very first map of North America. A rare-book dealer in New Haven, Conn., purchased the map in 1957 from an Italian bookseller. A Yale benefactor purchased it for a reported \$1 million and donated it to Yale in the early 1960s.

Scientists and historians have debated its authenticity ever since. Two conferences and four analyses haven't definitively settled the matter. In 2002, one published study concluded that the ink appears to be modern since it contains titanium dioxide, a chemical that didn't appear in commercial paints until 1920. Another study published the same year used carbon dating to conclude that the parchment is authentic. The map is now insured for an estimated \$25 million.

Halpern, who believes the Vinland Map is a fake, said it should be displayed and the forger respected as a genius. "If you can forge something that passes muster, then you're a good scholar," he argued. He has little sympathy for experts whose egos won't let them admit when they are wrong.

"Everybody gets fooled once in a while," he said. "Being wrong is part of the scientific process."

Source: By Lisa Duchene, Research Penn State

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