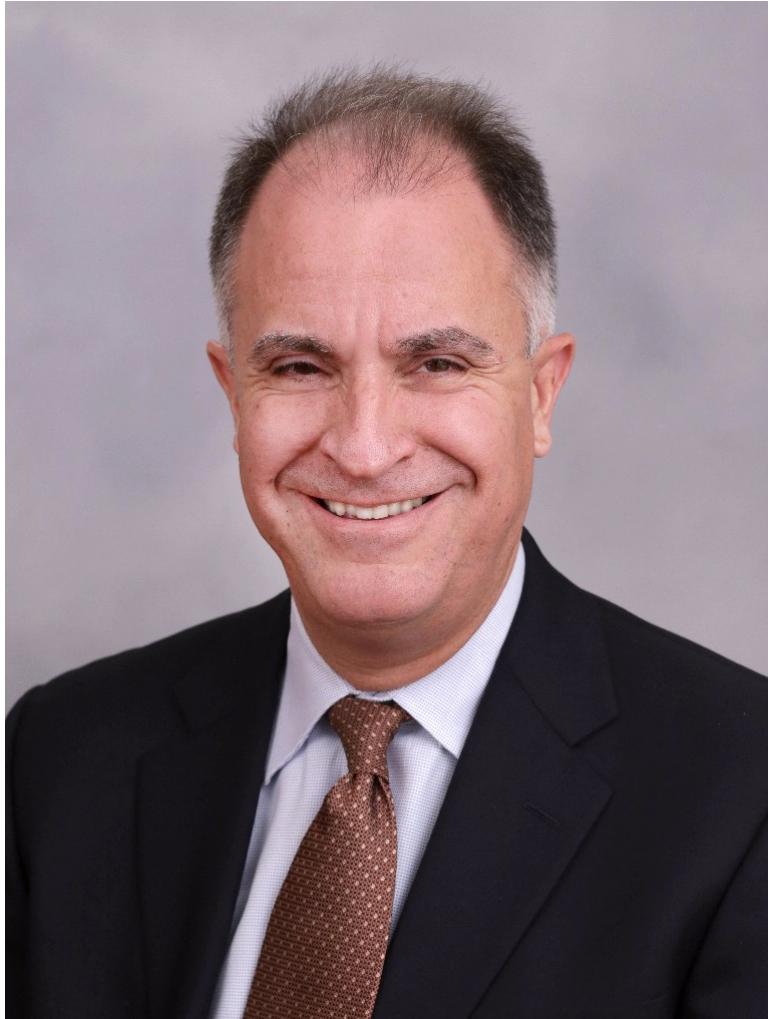


AUTHENTICATION
IN ART



Milko den Leeuw of Authentication in Art interviewing David Yermack, Professor of Finance at New York University and speaker at the AiA Congress May 2016, The Hague.

Can you give a short introduction of yourself and your work?

I am a Professor of Finance at New York University, and have been teaching at NYU since 1994. Most of my research concerns corporate finance, corporate governance, and executive compensation. However, I have been studying digital currencies and blockchains since 2013, and have begun writing papers on and teaching courses in this new area as well.

Could you, in short, explain the use of a blockchain?

A blockchain is a type of database or ledger, basically a way of storing and organizing information. What's unique about a blockchain compared to other databases, is how the records of information are linked together. Each entry in a blockchain is connected to the prior entry by way of special cryptography known as a "hash code". If you attempt to alter or change an old record in a blockchain, it changes the hash code that is part of the next entry, and through a chain reaction throws off all of the subsequent entries as well. This "chaining" of information in sequence makes it very easy to tell when somebody has tampered with a blockchain, trying to commit forgery or fraud. For this reason, it is said that blockchains are "indelible," meaning that it's impossible to change older entries without everyone realizing instantly what has happened.

Blockchains are used for recording ownership of property, much like a registry of deeds in real estate, or the ledger of ownership of a company's security. The blockchain is more secure and transparent – and probably much cheaper to maintain – than older methods of storing data.

An important aspect of blockchain technology is that copies are usually widely shared with all users of the data. This is known as a "distributed ledger" or "shared ledger", since anyone with an interest in the type of asset being tracked can access the information. Sharing the ledger essentially crowd-sources the role of the auditor, since thousands of sets of eyes will be able to observe any changes made to the data.

The original proposal for a blockchain, by two data scientists back in 1991, was connected to the authentication of intellectual property that took the form of "digital documents," so using a blockchain for authenticating works of art is actually quite close to the reason for its original design.

What would be required to successfully implement blockchain technology in the art industry?

The only real requirement is an interested base of potential users, who will agree to use the blockchain as a point of reference. Since the art market is international, this really does not require sponsorship by a government so much as adoption by a user community.

Privacy is an issue in the art world; a solution could be a private blockchain. In your opinion, is there an ideal model for such a private blockchain, maybe based on the experiences of other fields?

This is quite tricky. Transparency is a key aspect of a blockchain. There are private blockchains where a trusted third party serves as the gatekeeper and controls access to the data. It may be difficult to identify a person or group who could play that role in the art market – maybe an organization such as UNESCO. But the whole point of the technology is for people to be able to rely upon the integrity of the data structure itself, rather than the integrity of the sponsor or guardian. I think that if the blockchain is not going to be public and transparent, it's not clear what its real value would be in the art market.

What happens if the gatekeeper of a private blockchain stops monitoring and keeping records? Would everything be lost?

No, nothing would be lost. Once something is recorded onto a blockchain, it is there forever so long as somebody keeps a copy. One reason that blockchains are usually distributed widely is to assure that a large number of copies will always be available.

The learning nature of science is that it is based on renewed insights. Results might contradict earlier findings. How is this taken care off?

Blockchains can authenticate ownership and possession of an item, but they cannot prove its authenticity. That is the work of researchers. We can establish clearly that a certain museum has owned a certain painting since the date it was first acquired, but whether that painting is a Rembrandt or a forgery is a matter for debate, and the terms of that debate could easily change over time.

Systems like blockchain are professionalizing and clarifying the identification of the object and its ownership. A trade of objects and the attempt to insert an artist's oeuvre can be detected, just like with other systems using 'bio or nano-taggers' in the art market nowadays. These systems do not define any standard of the authenticity process itself, but they can contribute after the selection process as a report. Do you agree?

Yes. A blockchain can establish possession of an object at a given point in time, and it can also track an object as its possession passes from one owner to another. Ideally, the first record associated with a painting or print would be to show possession by the artist, and subsequent records could show transfers of ownership from the artist, to a gallery, to a collector, and so forth. This could establish, at least indirectly, whether a work of art is authentic and should be attributed to the artist, and it could be very useful in rebutting claims of forgery. However, many controversies about the authenticity of art pre-date the existence of accurate ownership records. A blockchain – or any other database – would only be of limited help in a situation like that. The blockchain can 'authenticate' the existence and transfer of an object, but if people disagree over the identity of the artist as the creator, that debate would not be recorded on the blockchain and would have to be settled in another way.

How do you see the legal status for blockchains as a means of documenting ownership? And more specifically: what needs to happen in order to have a blockchain admitted as evidence in court, and how do we realize this?

Information from a blockchain can be offered into evidence in court now, just as many other types of databases such as land registries or automobile title records are used in litigation. Courts almost automatically recognize the legitimacy of databases kept by governments, and if a blockchain were administered by a state or city government, there should be no issue. Private databases are also frequently used as evidence, such as financial records kept by investment companies, and blockchain would probably be treated no different by the courts than any other database.

David, thank you so much for your time and patience in answering questions for AiA.
Oliver Spapens thank you for your assistance.

Milko den Leeuw for Authentication in Art - Newsletter February 2017©