

ASSESSING THE VIABILITY OF BLOCKCHAIN TO IMPACT THE ANTIQUITIES TRADE[♦]

DR. DEREK FINCHAM^{*}

ABSTRACT

Blockchain, the technology underpinning Bitcoin and other digital currencies, offers promise to shift the gathering and sharing of information in profound ways. It could help form a new kind of financial system that limits current inefficiencies, or even radically change how parties enter into contract, or monitor supply chains. The technology's distributed ledger allows users in a network to monitor and access peer-to-peer digital transactions in real time. This digital ledger allows users to maintain this information securely by encrypting and allowing access only to those who have permission, given by cryptographic keys.

For the art market, blockchain offers a tantalizing possibility: a verifiable provenance research platform that would eliminate or minimize the problems with title history, authenticity, and looting, which have long-plagued the art and antiquities market. This essay examines whether blockchain might offer a chance for the antiquities market to remedy its persistent problems. The antiquities market has been beleaguered by the sale of forgeries, allowed stolen material to find a market, been hampered by market inefficiencies, and even been a haven for looted archaeological material. Distributed ledgers and blockchain could alleviate or eliminate these problems, but only if the market and those who shape it want to utilize them. No technology, no matter how ingenious or elegant, can end problems caused by the unprincipled actors in the antiquities trade. Such change has to come about with a culture shift and continued pressure by regulators and cultural heritage advocates.

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^{*} Professor, South Texas College of Law Houston, Ph.D. University of Aberdeen King's College in Scotland; J.D. Wake Forest; B.A. University of Kansas.

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INTRODUCTION

The international antiquities trade, beset by the lack of transparency and inadequate vetting of objects by buyers, dealers, and auction houses, facilitates the trafficking of too many fake and illicit objects. The failure of the trade to satisfactorily police itself in the important New York art market has even sparked the creation of a special Antiques Trafficking Unit within the Manhattan District Attorney's office.¹ For too long, museums and collectors have relied on incomplete or even misleading information to justify the acquisition of antiquities. The antiquities market needs a radical shift in the way it guarantees objects, and new technological advances offer one potential solution.²

Take one recent example. In February 2019, the Metropolitan Museum of Art (the "Met") announced it was returning a golden coffin from the first century B.C.E.³ The object was purchased from an art

¹ See, e.g., Henri Neuendorf, *Art Traffickers Beware: The Manhattan DA Is Deploying a New Unit to Combat NYC's Antiquities Crime Wave*, ARTNET NEWS (Dec. 18, 2017), <https://news.artnet.com/art-world/manhattan-antiquities-trafficking-unit-1182896>

[<https://perma.cc/RWL5-3FY9>]; Jason Daley, *Manhattan DA Launches First Antiquities Trafficking Unit*, SMITHSONIAN MAG. (Dec. 22, 2017), <https://www.smithsonianmag.com/smart-news/manhattan-da-launches-first-antiquities-trafficking-unit-180967607/>; James C. McKinley, Jr., *Looted Antiques Seized From Billionaire's Home, Prosecutors Say*, N.Y. TIMES (Jan. 5, 2018), <https://www.nytimes.com/2018/01/05/nyregion/antiques-seized-from-billionaire-michael-steinhardt-cyrus-vance.html>; Press Release, Manhattan Dist. Att'y's Office, Manhattan DA's Office Returns Ancient Etruscan Vessel to Italy (Apr. 16, 2017) (available at <http://manhattanda.org/node/6395/print> [<https://perma.cc/VV5J-74D6>]).

² Antiquities are a subset of objects which comprise our material cultural heritage. The term antiquity often lacks precision and shifts based upon the age and material remains of the civilization in question. In most cases, antiquities are objects from ancient cultures—in particular, the ancient cultures of classical antiquity such as Greece, Rome, Egypt, or the Near East. Oftentimes, antiquities have an underground find-spot and are the product of excavation. But, above all, they are chiefly a source of important information about ancient cultures based in part on their archaeological and historical context. The U.S. federal government defines an "archaeological resource" as "any material remains of past human life or activities which are of archaeological interest" and are at least one hundred years old. 16 U.S.C. § 470bb(1) (2018).

³ Colin Moynihan, *Met Museum to Return Prize Artifact Because It Was Stolen*, N.Y. TIMES

dealer in Paris in 2017 for 3.5 million euros.⁴ Unfortunately, the coffin was likely looted from Egypt during the unrest there in 2011. The Met purchased the coffin because it was accompanied by a forged 1971 Egyptian export license.⁵ Though the Met described itself as the victim of deceit on the part of the dealer,⁶ the coffin was not some minor object. The Met had carefully crafted an exhibition to describe the role of Nedjemankh in ancient Egypt, and the coffin was an essential part of that story, along with seventy other works from the Met's collection.⁷ Though the Met is certainly not unique, the Museum has unfortunately been repeatedly weighed down by illicit material in its collection.⁸

(Feb. 16, 2019), <https://www.nytimes.com/2019/02/15/arts/design/met-museum-stolen-coffin.html> [https://perma.cc/968Y-PSHV].

⁴ Victoria Stapley-Brown & Nancy Kenney, *Met Hands Over an Egyptian Coffin That It Says Was Looted*, ART NEWSPAPER (Feb. 15, 2019, 4:24 PM), <https://www.theartnewspaper.com/news/met-hands-over-an-egyptian-coffin-that-it-says-was-looted> [https://perma.cc/96MT-ULE3].

⁵ *Id.*

⁶ The Met's President and CEO, Daniel Weiss, commented:

After we learned that the museum was a victim of fraud and unwittingly participated in the illegal trade of antiquities, we worked with the DA's office for its return to Egypt. The nation of Egypt has been a strong partner of the museum for over a century. We extend our apologies to Dr. Khaled El-Enany, minister of antiquities, and the people of Egypt, and our appreciation to District Attorney Cy Vance Jr.'s office for its investigation, and now commit ourselves to identifying how justice can be served, and how we can help to deter future offenses against cultural property.

Press Release, Metro. Museum of Art, Metropolitan Museum of Art Returns Coffin to Egypt (Feb. 15, 2019) (available at <https://perma.cc/CB5G-CT5Z>).

⁷ Stapley-Brown & Kenney, *supra* note 4.

⁸ See, e.g., Ashton Hawkins, *The Euphronios Krater at the Metropolitan Museum: A Question of Provenance Commentary*, 27 HASTINGS L.J. 1163 (1975); Tom Mashberg, *Ancient Vase Seized From Met Museum on Suspicion It Was Looted*, N.Y. TIMES (Dec. 22, 2017), <https://www.nytimes.com/2017/07/31/arts/design/ancient-vase-seized-from-met-museum-on-suspicion-it-was-looted.html>; Tom Mashberg, *Met Museum Turns Over Another Relic With Disputed Past to Prosecutors*, N.Y. TIMES (Aug. 1, 2017), <https://www.nytimes.com/2017/08/01/arts/design/met-museum-relic-lebanon.html>; Carol Vogel, *Ciao to a Met Prize Returning to Italy*, N.Y. TIMES (Jan. 11, 2008), <http://www.nytimes.com/2008/01/11/arts/design/11voqe.html>; Jason Felch & Ralph Frammolino, *Italy Says It's Proven Vase at Met Was Looted*, L.A. TIMES (Oct. 28, 2005), <http://articles.latimes.com/2005/oct/28/local/me-met28> [https://perma.cc/D6B9-H8C4]; Sanka Knox, *Art Museum Finds It Owns 3 Fakes: Famed "Etruscan" Warrior Statues Proved Forgeries by Scientific Tests*, N.Y. TIMES, Feb. 14, 1961, at 39 [hereinafter Knox, *Article 4 – No Title*]; Sanka Knox, 3 "Old Etruscan" Soldiers Fade Into a "Morgue" at Metropolitan: Frauds Now Accessible Only to Students or Scholars – Case Histories Published First Shown in 1933 Findings Confirmed Old Method Revived, N.Y. TIMES, Jan. 22, 1962, at 23 (available at <https://www.nytimes.com/1962/01/22/archives/3-old-etruscan-soldiers-fade-into-a-morgue-at-metropolitan-frauds.html?searchResultPosition=1>); Elisabetta Povoledo, *After Legal Odyssey, Homecoming Show for Looted Antiquities*, N.Y. TIMES (Dec. 18, 2007), <http://www.nytimes.com/2007/12/18/arts/design/18trea.html>; Tom Mashberg & Ralph Blumenthal, *The Met to Return Statues to Cambodia*, N.Y. TIMES (May 3, 2013), <http://www.nytimes.com/2013/05/04/arts/design/the-met-to-return-statues-to-cambodia.html>; Randy Kennedy & Hugh Eakin, *Met Chief, Unbowed, Defends Museum's Role*, N.Y. TIMES (Feb. 28, 2006), <http://www.nytimes.com/2006/02/28/arts/28mont.html>; Kate Taylor, *Met to Repatriate Objects From King Tut's Tombs to Egypt*, N.Y. TIMES (Nov. 10, 2010), http://www.nytimes.com/2010/11/10/arts/design/10met.html?_r=2; Helen Stoilas, *The Met Might*

Subjecting these objects to a more rigorous vetting process before they change hands could improve things considerably. Blockchain could be an answer.⁹ This article considers the effects of crafting an art market infrastructure on top of blockchain—such as a provenance clearing house, an anonymous authenticity clearinghouse, a chain of title record, or perhaps a listing of non-saleable objects.

To provide context, I begin by giving a brief overview of Bitcoin and blockchain, as I understand it. I point out the potential benefits of the technology, but caution against its widespread application too soon. Next, I discuss the antiquities trade and make the case that the trade in antiquities suffers from under regulation, which leads to looting, theft, destruction, and forgery. Finally, I conclude by considering the risks that blockchain would pose if it were adopted as a platform for antiquities sales without the necessary foundation. There is a great deal of work needed in the antiquities trade and museum community. I fear that these weaknesses, if left unaddressed, would allow blockchain to be yet another tool used by unprincipled actors in the antiquities trade to insert looted antiquities into museums and private collections. I am certainly not aiming to defend the current state of the antiquities trade, which has much to criticize, but an antiquities trade built on top of a distributed ledger, or blockchain, also poses significant risks.

For the purposes of this essay, the important question to ask is if Bitcoin and the underlying blockchain technology might be useful to disrupt the unhelpful aspects of the antiquities trade.¹⁰ Neither a detailed understanding of blockchain, nor even faith that the author can effectively communicate it is necessary to follow the arguments made here.¹¹ Instead, only a core understanding of the most basic attributes of blockchain are essential: its ability to serve as a platform and as an open-source, decentralized public ledger, which may impact the way

Return Another Ancient Vase to Italy, ART NEWSPAPER (Aug. 1, 2017), <https://www.theartnewspaper.com/news/the-met-might-return-another-ancient-vase-to-italy>.

⁹ Blockchain has been considered as an innovation in a number of contexts, most notably in financial systems. See, e.g., Jeanne L. Schroeder, *Bitcoin and the Uniform Commercial Code*, 24 U. MIAMI BUS. L. REV. 1 (2015).

¹⁰ See, e.g., Laura Shin, *Bitcoin's Shared Ledger Technology: Money's New Operating System*, FORBES (Sept. 28, 2015), <https://www.forbes.com/sites/laurashin/2015/09/09/bitcoins-shared-ledger-technology-moneys-new-operating-system/> [<https://perma.cc/SZ5M-U8XL>] (“Beyond banking, the shared ledger approach could streamline record keeping and property transfers of all sorts—from land titles to patent and trademark holdings—displacing armies of white-collar workers and incumbent software providers.”).

¹¹ See, e.g., SAIFEDEAN AMMOUS, *THE BITCOIN STANDARD: THE DECENTRALIZED ALTERNATIVE TO CENTRAL BANKING* (2018); DANIEL DRESCHER, *BLOCKCHAIN BASICS: A NON-TECHNICAL INTRODUCTION IN 25 STEPS* (2017); NATHANIEL POPPER, *DIGITAL GOLD: BITCOIN AND THE INSIDE STORY OF THE MISFITS AND MILLIONAIRES TRYING TO REINVENT MONEY* (2016); PAUL VIGNA & MICHAEL J. CASEY, *THE AGE OF CRYPTOCURRENCY: HOW BITCOIN AND THE BLOCKCHAIN ARE CHALLENGING THE GLOBAL ECONOMIC ORDER* (2016); PHIL CHAMPAGNE, *THE BOOK OF SATOSHI: THE COLLECTED WRITINGS OF BITCOIN CREATOR SATOSHI NAKAMOTO* (2014).

information is recorded and shared.

I. THE PROMISE (AND PERIL) OF BITCOIN

Bitcoin has attracted the attention of many since it was launched. Its creator, though, remains a bit of a mystery. It was reportedly created by Satoshi Nakamoto, and yet Nakamoto may even be a pseudonym.¹² Bitcoin itself is peer-to-peer¹³ technology which maintains an open-source distributed public ledger.¹⁴ This public ledger has become known as the blockchain, and acts like a digital register which shows all changes made since the creation of the ledger.¹⁵ There is currently a debate over how public this technology should be, with some arguing for private permissioned blockchains, while others argue for or public permission-less ones.¹⁶ The software has evolved since its initial development, with changes to the code coming via volunteer and paid programmers. They determine what changes are made by “informal processes that depend on rough notions of consensus and that are subject to no fixed legal or organization structure.”¹⁷ Some businesses are creating their own permission blockchains, while others are using the Bitcoin blockchain as a foundation for their business.¹⁸

Bitcoin’s blockchain is maintained by a network of computers, called miners, which resolve mathematical equations to verify changes made to the ledger.¹⁹ Though not impermeable to hacking,²⁰ blockchains offer the advantage of robust security because information cannot be amended without approval across the network. The

¹² Joshua Davis wrote about his attempts to discover the programmer, or team of programmers, who posted under the name Nakamoto in 2011. Joshua Davis, *The Crypto-Currency*, NEW YORKER (Oct. 3, 2011), <https://www.newyorker.com/magazine/2011/10/10/the-crypto-currency>.

¹³ See Raymond H. Brescia, *Regulating the Sharing Economy: New and Old Insights into an Oversight Regime for the Peer-to-Peer Economy*, 95 NEB. L. REV. 87, 101 (2016) (Brescia argues, “[b]y eliminating the ‘middle person,’ sharing economy platforms are able to offer highly competitive pricing, but those peer-to-peer systems rely more heavily on traditional forms of trust, rather than the trust that one might bring to a relationship . . .”).

¹⁴ ANDREAS M. ANTONOPOULOS, *MASTERING BITCOIN: PROGRAMMING THE OPEN BLOCKCHAIN* 18 (2014).

¹⁵ *Id.* at 176–77.

¹⁶ Angela Walch, *The Bitcoin Blockchain as Financial Market Infrastructure: A Consideration of Operational Risk*, 18 N.Y.U. J. LEGIS. & PUB. POL’Y 837, 840 (2015).

¹⁷ Shawn Bayern, *Of Bitcoins, Independently Wealthy Software, and the Zero-Member LLC Online Essay*, 108 NW. U. L. REV. 1485, 1488 (2014).

¹⁸ Edward Robinson & Matthew Leising, *Selling the Blockchain to Wall Street*, BLOOMBERG (Sept. 1, 2015), <https://www.bloomberg.com/news/features/2015-09-01/blythe-masters-tells-banks-the-blockchain-changes-everything> [<https://perma.cc/7CYG-PJVB>]. Nasdaq has collaborated with a San Francisco firm called Chain to use blockchain to issue and transfer shares of closely held companies in a private marketplace. Its CEO, Bob Greifield, said that blockchain “is going to bring levels of efficiency to the financial markets that we’ve never seen before.” *Id.*

¹⁹ ANTONOPOULOS, *supra* note 14, at 173–74.

²⁰ Mike Orcutt, *Once Hailed as Unhackable, Blockchains Are Now Getting Hacked*, MIT TECH. REV. (Feb. 19, 2019), <https://www.technologyreview.com/s/612974/once-hailed-as-unhackable-blockchains-are-now-getting-hacked/> [<https://perma.cc/K54F-LRHZ>].

technology offers the twin advantages of traceability and security, conducting the same functions as a Torrens property title registration might.²¹ The security of blockchain relies on how it is distributed with timestamping and a peer-to-peer network which manages itself autonomously. The distributed ledger is decentralized, which makes blockchain a very useful tool for recording medical records,²² user identifications, or even providing provenance information for works of art or antiquities.

Bitcoin has been the subject of a number of scandals. In 2014, the currency exchange Mt. Gox closed after a reported 850,000 Bitcoins disappeared, worth an estimated \$473 million.²³ In 2015, Ross Ulbricht was sentenced to life in prison for operating the online marketplace Silk Road, which accepted Bitcoins as payment and allowed for the sale of drugs and contract killings.²⁴ Perhaps more troubling, the code supporting Bitcoin has occasional errors and glitches in its underlying operation.²⁵

A potential problem with blockchain is the limited number of people who understand its complexity and have the expertise needed to understand it. To craft an effective blockchain which would affect positive change on the antiquities trade requires specialized knowledge of software coding, cybersecurity, economics, payment systems, financial transactions, international law, archaeology, art history, and perhaps more. Individuals or groups of these individuals exist, but this kind of effort requires a very select group of skills in these fields. Moreover, as more and more blockchain initiatives are created, there will be more pressure put on those who have the expertise to implement policy, to make sound decisions.²⁶

Blockchain technology also has a decentralized structure. This means that the blockchain does not exist in one single server or location. Instead, the ledger is repeated across the systems of every user who runs the blockchain.²⁷ Because of this decentralized organization,²⁸ there is a

²¹ See Jennifer Anglim Kreder & Benjamin Bauer, *Protecting Property Rights and Unleashing Capital in Art*, 2011 UTAH L. REV. 881, 901 (2011) (arguing a property recordation system like the Torrens system could serve “as a model upon which a cultural property registration system could be based”).

²² See Christina Comben, *Five Ways Blockchain Could Transform the Healthcare System*, COIN RIVET (Feb. 27, 2019), <https://coinrivet.com/five-ways-blockchain-transform-the-healthcare-system/> [<https://perma.cc/36JU-NDFJ>].

²³ Jen Wiczner, *\$1 Billion Worth of Bitcoins Lost in Mt. Gox Hack to Be Returned*, FORTUNE (June 22, 2018), <http://fortune.com/2018/06/22/bitcoin-price-mt-gox-trustee/> [<https://perma.cc/AT3K-SNPL>].

²⁴ Benjamin Weiser, *Ross Ulbricht, Creator of Silk Road Website, Is Sentenced to Life in Prison*, N.Y. TIMES (May 29, 2015), <https://www.nytimes.com/2015/05/30/nyregion/ross-ulbricht-creator-of-silk-road-website-is-sentenced-to-life-in-prison.html> [<https://perma.cc/KCL3-XHGM>].

²⁵ Walch, *supra* note 16, at 858.

²⁶ See Shin, *supra* note 10.

²⁷ Bayern, *supra* note 17, at 1488.

very real possibility that these decentralized blockchains are not really run by any one person or entity. This decentralization poses a risk, but also makes the system more robust. If a blockchain stays decentralized and open-source, and is maintained through volunteer contributions and labor, there is a possibility that the code might be under-maintained. But on the other hand, if there is a more centralized structure, and the code is maintained by private parties or core developers, there might be conflicts of interest.²⁹

Another worrisome aspect of blockchain is the unbridled enthusiasm it has garnered among some of its most ardent supporters. Tyler Winklevoss, a Bitcoin supporter has claimed that those who invest in Bitcoin “put our money and faith in a mathematical framework that is free of politics and human error.”³⁰ These claims suggest no person is responsible for Bitcoin or its underlying code. Perhaps these statements are mere investor puffery—but they remain fundamentally inaccurate. As we must acknowledge, humans have created the code for blockchain on which Bitcoin sits, and this code is subject to errors, miscalculations, and other mistakes.

Technology has certainly played a larger and larger role in our daily lives, and its role in the cultural heritage sector is no exception.³¹ Unfortunately, the operational risks of blockchain have received less attention than they should by academics and regulators. The reason may be tied to historian Siva Vaidhyanathan’s conception of “Techno-fundamentalism,” which he argues is a “blind faith” in technology.³² He argues that too often we overlook the human component of technology.³³ Although Bitcoin and its blockchain may offer tremendous potential, companies and policymakers should not forget to exercise appropriate caution before moving forward. While blockchain offers tremendous promise to reform some of the unfortunate aspects of

²⁸ See Shlomit Azgad-Tromer, *Crypto Securities: On the Risks of Investments in Blockchain-Based Assets and the Dilemmas of Securities Regulation*, 68 AM. U. L. REV. 69, 94 (2018) (describing the costs of maintaining a blockchain through a distributed ledger: “The ledger can be technically decentralized, with controlling costs subtly embedded in the original allocation of tokens of the blockchain, or through its code.”).

²⁹ See Walch, *supra* note 16, at 880–81.

³⁰ Nathaniel Popper & Peter Lattman, *Never Mind Facebook; Winklevoss Twins Rule in Digital Money*, N.Y. TIMES (Apr. 11, 2013), <https://dealbook.nytimes.com/2013/04/11/as-big-investors-emerge-bitcoin-gets-ready-for-its-close-up/> [<https://perma.cc/A6LV-QWWF>].

³¹ See, e.g., Sonia K. Katyal, *Technoheritage*, 105 CAL. L. REV. 1111 (2017).

³² SIVA VAIDHYANATHAN, *THE GOOGLIZATION OF EVERYTHING: (AND WHY WE SHOULD WORRY)* 75–76 (2011).

³³ Vaidhyanathan argues:

Although consumers and citizens are invited to be dazzled by the interface, the results, and the convenience of a technology, they are rarely invited in to see how it works. Because we cannot see inside the box, it’s difficult to appreciate the craft, skills, risk, and brilliance of devices as common as an iPod or a continuously variable transmission in an automobile.

Id. at 52.

the antiquities trade, the trade itself has proven time and again that its bad actors will go to great lengths to move illicit material to auction houses and museum galleries.

II. THE UNDER-REGULATED ANTIQUITIES TRADE

Antiquities can be divided into three categories: (1) objects which have been unearthed or discovered and are not reported;³⁴ (2) objects which remain in situ in their archaeological context;³⁵ and (3) objects which have been displayed or owned for years and which are in established collections.³⁶ The primary difficulty is how to distinguish the first two classes, which are illicit, from the latter. The antiquities trade has failed to consistently police itself.³⁷ To put it another way, the market does not value compliance with the complex series of export restrictions and ownership declarations that govern cultural objects, or what Alessandro Chechi calls *lex culturalis*.³⁸ Absent any direct legislation at the State or Federal level influencing the art and antiquities market, regulation relies too much on individual buyers and sellers operating under the default rules of contract and sale of goods.³⁹ Blockchain technology offers an opportunity to consider how and why technology might disrupt this art and antiquities market. The ultimate goal of any sensible regulation of the antiquities trade should be to end looting of sites and to prevent profits from the sale of illicit material.⁴⁰

The scale of the trade in stolen and looted art is a dark number, as so much of the art trade is conducted anonymously.⁴¹ Auction houses

³⁴ The Euphronios Krater, which was acquired by the Metropolitan Museum of Art for a then-record \$1 million in 1972, is an example of this. See Hawkins, *supra* note 8.

³⁵ See, e.g., Katharyn Hanson, *Why Does Archaeological Context Matter?*, in CATASTROPHE!: THE LOOTING AND DESTRUCTION OF IRAQ'S PAST (Geoff Emberling & Katharyn Hanson eds., 2008).

³⁶ The Parthenon sculptures held by the British Museum since their removal at the direction of Lord Elgin are one example of this. See Derek Fincham, *The Parthenon Sculptures and Cultural Justice*, 23 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 943 (2013).

³⁷ See, e.g., Predita C. Rostomian, Note, *Looted Art in the U.S. Market Note*, 55 RUTGERS L. REV. 271, 286–89 (2002).

³⁸ See generally ALESSANDRO CHECHI, THE SETTLEMENT OF INTERNATIONAL CULTURAL HERITAGE DISPUTES (2014).

³⁹ See, e.g., Erin Thompson, *Successes and Failures of Self-Regulatory Regimes Governing Museum Holdings of Nazi-Looted Art and Looted Antiques*, 37 COLUM. J.L. & ARTS 379, 389 (2014) (arguing that “[t]he supply of looted antiquities would slow if museums, collectors and dealers were sufficiently reluctant to buy antiquities without documentation of provenance showing that the works were legally excavated and exported”).

⁴⁰ See Taylor Moskowitz, Note, *The Illicit Antiquities Trade as a Funding Source for Terrorism: Is Blockchain the Solution?*, 37 CARDOZO ARTS & ENT. L.J. 193, 196 (2019) (arguing that blockchain technology in the antiquities trade could lead to a decrease in sales of illicit material and increase law enforcement efforts to police the trade).

⁴¹ See, e.g., Graham Bowley & William K. Rashbaum, *Has the Art Market Become an Unwitting Partner in Crime?*, N.Y. TIMES (Feb. 19, 2017), <https://www.nytimes.com/2017/02/19/arts/design/has-the-art-market-become-an-unwitting-partner-in-crime.html>.

closely guard the identity of buyers and sellers.⁴² Efforts have been made to compare the black market in art and antiquities to other illicit markets.⁴³ But those efforts are only rough estimates. We do know that illicit art travels the world in shipping containers, slips anonymously through freeports, is stowed in airplane luggage, and is looted from ancient sites.⁴⁴ It is often fueled by unrest and armed conflict.⁴⁵ The illicit trade in art and antiquities risks closing off entire disciplines of human learning.⁴⁶ This crime has touched every ancient culture and site of note from the ancient Inca civilization in Peru⁴⁷ to rock art in the American Southwest,⁴⁸ netted extremists in Syria and Iraq and estimated thirty six million dollars in profits,⁴⁹ impacted ancient Greek civilizations in the Mediterranean,⁵⁰ and even destroyed some of the temples of Southeast Asia.⁵¹ No nation is immune to the damage done by looters, no matter how large or small its economy.⁵² And no major

⁴² As Stuart Bennett, a lawyer and former auctioneer with Sotheby's auction house, noted, the reasons for this anonymity are economic: "[a]nonymous, untraceable offerings have an aura of mystery, of ancient families fallen upon hard times. Dealer consignments, on the other hand, smack of unsalability and shop-soil." Stuart Bennett, *Fine Art Auctions and the Law: A Reassessment in the Aftermath of Cristallina*, 16 COLUM.-VLA J.L. & ARTS 257, 260 (1992).

⁴³ See, e.g., *Works of art / Works of art / Crime areas / Internet / Home - INTERPOL*, INTERPOL, <https://www.interpol.int/Crime-areas/Works-of-art/Works-of-art> [https://perma.cc/QTC8-NADT].

⁴⁴ There are many examples of looting and art theft, but for a few recent examples, see, e.g., Donna Yates & Simon Mackenzie, *Heritage, Crisis, and Community Crime Prevention in Nepal*, 25 INT'L J. CULTURAL PROP. 203 (2018); Christos Tsirogiannis, *False Closure? Known Unknowns in Repatriated Antiquities Cases*, 23 INT'L J. CULTURAL PROP. 407 (2016); Vernon Silver, *If You Steal It, the Art Vigilante Will Find You*, BLOOMBERG (June 26, 2018, 4:00 AM), <https://www.bloomberg.com/news/features/2018-06-26/if-you-steal-it-the-art-vigilante-will-find-you> [https://perma.cc/WG9E-RURU]; Tom Mashberg, *Stolen Etruscan Vessel to Be Returned to Italy*, N.Y. TIMES (Mar. 16, 2017), <https://www.nytimes.com/2017/03/16/arts/design/stolen-etruscan-vessel-to-be-returned-to-italy.html> [https://perma.cc/E5NC-JNHH]; Tom Mashberg, *Met Museum Turns Over Another Relic With Disputed Past to Prosecutors*, N.Y. TIMES (Aug. 1, 2017), <https://www.nytimes.com/2017/08/01/arts/design/met-museum-relic-lebanon.html>; Alan Feuer, *Hobby Lobby Agrees to Forfeit 5,500 Artifacts Smuggled Out of Iraq*, N.Y. TIMES (July 5, 2017), <https://www.nytimes.com/2017/07/05/nyregion/hobby-lobby-artifacts-smuggle-iraq.html>.

⁴⁵ See Hannah D. Willett, Note, *Ill-Gotten Gains: A Response to the Islamic State's Profits from the Illicit Antiquities Market*, 58 ARIZ. L. REV. 831, 832 (2016).

⁴⁶ See Derek Fincham, *The Fundamental Importance of Archaeological Context*, in ART AND CRIME 3 (Noah Charney ed., 2009).

⁴⁷ William Neuman, *Guardians of Peru's Treasures Stake Out Post Office to Block Smuggling*, N.Y. TIMES (June 13, 2013), <http://www.nytimes.com/2013/06/14/world/americas/guardians-of-peru-treasures-stake-out-post-office-to-block-smuggling.html>.

⁴⁸ Felicity Barringer, *As Vandals Take to National Parks, Some Point to Social Media*, N.Y. TIMES (June 4, 2013), <https://www.nytimes.com/2013/06/05/us/as-vandals-take-to-national-parks-some-point-to-social-media.html>.

⁴⁹ Steven Lee Myers & Nicholas Kulish, *'Broken System' Allows ISIS to Profit From Looted Antiquities*, N.Y. TIMES (Jan. 19, 2018), <https://www.nytimes.com/2016/01/10/world/europe/iraq-syria-antiquities-islamic-state.html>.

⁵⁰ Ralph Frammolino & Jason Felch, *The Getty's Troubled Goddess*, L.A. TIMES (Jan. 3, 2007), <http://articles.latimes.com/2007/jan/03/local/me-aphrodite3> [https://perma.cc/W5DB-PNR3].

⁵¹ See Simon Mackenzie & Tess Davis, *Temple Looting in Cambodia: Anatomy of a Statue Trafficking Network*, 54 BRIT. J. CRIMINOLOGY 722 (2014).

⁵² As Donna Yates argues:

collecting museum has been able to successfully acquire material without risking buying stolen,⁵³ fake,⁵⁴ or looted material.⁵⁵

The art market builds value for works of art and objects of antiquity.⁵⁶ However, this value comes at some steep costs.⁵⁷ The market relies on information asymmetries, which make it impossible for buyers and sellers to consistently operate on equal footing. In other words, the antiquities trade often creates unnecessary winners and losers. Works of art are often sold by anonymous sellers to anonymous buyers.⁵⁸ The auction house systems' anonymity too often allows for the sale of fake, forged, stolen, and looted works of art.⁵⁹

The massive art and antiquities frauds perpetrated by a small family in England illustrates how forgers can take advantage of flaws in the art and antiquities market. The investigation by Scotland Yard's Art and Antiques Squad revealed how one art forger and his family fooled some of the world's leading art institutions. The Greenhalgh's amassed an astounding number of forged works—including paintings, vases, sculptures, base reliefs, and reliquaries—some of which were displayed by leading arts institutions. For a decade, a work supposedly by Paul Gauguin, "The Faun," had been displayed at the Art Institute of Chicago, before it was revealed in late 2007 to have been the work of Shaun Greenhalgh.⁶⁰ It was authenticated by the Wildenstein Institute, sold at Sotheby's in 1994 for £20,700 and purchased by the Art Institute

[P]olicy focus must be at the market end of the trafficking chain. Demand causes supply and a reduction in demand for Latin American cultural property will result in a reduction of cultural property theft. Our focus should be discouraging criminality and punishing criminals rather than simple artefact recovery at all costs.

Donna Yates, *Illicit Cultural Property from Latin America: Looting, Trafficking, and Sale*, in COUNTERING ILLICIT TRAFFIC IN CULTURAL GOODS: THE GLOBAL CHALLENGE OF PROTECTING THE WORLD'S HERITAGE 33, 42 (France Desmarais ed., 2017).

⁵³ The St. Louis Art Museum has been the subject of an unsuccessful civil forfeiture suit by federal prosecutors, alleging it acquired the Ka-Nefer-Nefer that had been stolen from an Egyptian storehouse. Victoria A. Russell, *Don't Get SLAMmed into Nefer Nefer Land: Complaints in the Civil Forfeiture of Cultural Property*, 4 PACE INTELL. PROP. SPORTS & ENT. L.F. 209 (2014).

⁵⁴ Knox, *Article 4 – No Title*, *supra* note 8, at 39.

⁵⁵ See generally CATASTROPHE!: THE LOOTING AND DESTRUCTION OF IRAQ'S PAST (Geoff Emberling & Katharyn Hanson eds., 2008).

⁵⁶ See, e.g., Gregory Day, *Explaining the Art Market's Thefts, Frauds, and Forgeries (and Why the Art Market Does Not Seem to Care)*, 16 VAND. J. ENT. & TECH. L. 457 (2014).

⁵⁷ See Bowley & Rashbaum, *supra* note 41.

⁵⁸ See *William J. Jenack Estate Appraisers & Auctioneers, Inc. v. Rabizadeh*, 22 N.Y.3d 470, 478 (N.Y. 2013) (noting the argument that anonymity in the consignment and bidding process "is a time honored and necessary custom and practice of auction houses to maintain the confidentiality of the seller" by an auction house and other amici curiae in the suit seeking damages for a bidder who refused to pay after winning an auction).

⁵⁹ See generally Note, *Uniform Commercial Code Warranty Solutions to Art Fraud and Forgery*, 14 WM. & MARY L. REV. 409 (1972).

⁶⁰ Alan G. Artner, *Art Institute is Forger's Latest Victim*, CHI. TRIB. (Dec. 12, 2007), <https://www.chicagotribune.com/news/ct-xpm-2007-12-12-0712110766-story.html>.

in Chicago for \$125,000.⁶¹ The Greenhalgh family produced and sold an astounding number of forged works, some of which were displayed by the British Museum and the Art Institute of Chicago.⁶² The “Amarna Princess” was a forged statue in the Egyptian Amarna style purchased by the Bolton Museum for £440,000 in 2003 and displayed for three years, despite the fact it had been created in a garden shed.⁶³ George Greenhalgh, the forger’s father, approached the Bolton Museum in 2002 claiming the object was from a “forgotten collection.” Soon after, it was purchased and displayed after Christies auction house, and the British Museum authenticated the piece as genuine.⁶⁴ It may never be known how many more forgeries remain undetected in other collections throughout the world. Though the Greenhalghs had been suspected forgers as early as 1990, the state of the market is such that legitimate works cannot be distinguished from forgeries, let alone objects which have been stolen or illegally excavated.

Achieving transparency in the antiquities trade has been difficult, as the trade often fails to conduct reasonably diligent investigations into the histories of objects. The single biggest factor perpetuating the illicit trade is the shadow and mystery which routinely surrounds cultural property transactions. As New York Supreme Court Justice Shorter wrote in an opinion in 1978, “in an industry whose transactions cry out for verification of both title to and authenticity of subject matter, it is deemed poor practice to probe into either.”⁶⁵ This appears to remain the case. As one antiquities dealer noted in Simon Mackenzie’s outstanding study of the antiquities trade, “[t]he [antiquities trade] is just a pastiche of lies, cheating and lack of integrity on all levels by most of the people involved. That’s the art market, basically.”⁶⁶ Artefacts are frequently hidden in larger pieces of furniture or other false compartments to avoid detection by customs officials.⁶⁷

Newcomers to the cultural heritage field are often surprised to learn that the majority of cultural property transactions do not involve an exchange of information on title history, or what is called

⁶¹ *Id.*

⁶² Simon Parkin, “*I Wasn’t Cock-a-Hoop that I’d Fooled the Experts*”: Britain’s Master Forger Tells All, *GUARDIAN* (May 27, 2017, 4:00 AM), <http://www.theguardian.com/artanddesign/2017/may/27/wasnt-cock-a-hoop-fooled-experts-britains-master-art-forgers>.

⁶³ *Id.*

⁶⁴ *Id.*

⁶⁵ *Porter v. Wertz*, 23 U.C.C. Rep. Serv. 614, 614 (N.Y. Sup. Ct. Mar. 13, 1978), *rev’d and vacated*, 68 A.D.2d 141, 416 N.Y.S.2d 254 (1979), *aff’d*, 53 N.Y.2d 696, 421 N.E.2d 500 (1981).

⁶⁶ SIMON MACKENZIE, *GOING, GOING GONE: REGULATING THE MARKET IN ILLICIT ANTIQUITIES*, iii (Inst. of Art & Law 2005).

⁶⁷ Peter B. Campbell, *The Illicit Antiquities Trade as a Transnational Criminal Network: Characterizing and Anticipating Trafficking of Cultural Heritage*, 20 *INT’L J. CULTURAL PROP.* 113, 121 (2013).

provenance.⁶⁸ The word provenance comes from the French word *provenir*, which means “to originate.” It is a variation on the similar term provenience, which is used in the context of archaeology to identify an object’s findspot or context. In most cultural property transactions, neither information regarding the authenticity of title is given, nor are there guarantees that any of the provenance information that is given is accurate, which is troubling because securing this information would be the foundation of a well-ordered antiquities market.⁶⁹ Courts have stressed the importance of this information, particularly for purchasers: “[i]t is a basic duty of any purchaser of an object d’art to examine the provenance for that piece. . . .”⁷⁰

The antiquities trade defies attempts to calculate both how much material and also the value of that material that enters the international trade.⁷¹ Without records and the skilled expertise of an archaeologist to record scientific and contextual information, a tremendous amount of raw information and knowledge is lost, not to mention the amount of material that is damaged and cast aside as it may not be salable.⁷² We can, however, estimate the kinds of objects that may have been taken from a looted archaeological site via qualitative studies. The work of reporters and other investigators has given a glimpse at how the antiquities trade operates. Peter Watson described the ways in which illicit material was smuggled out of Italy, through Switzerland, and was

⁶⁸ See generally Ronald D. Spencer & Gary D. Sesser, *The Importance of Provenance in Art*, ARTNET NEWS (June 26, 2013), <https://news.artnet.com/market/the-importance-of-provenance-in-determining-authenticity-29953>.

⁶⁹ Jane A. Levine, *The Importance of Provenance Documentations in the Market for Ancient Art and Artifacts: The Future of the Market May Depend on Documenting the Past*, 19 DEPAUL J. ART TECH. & INTELL. PROP. L. 219, 221 (2009) (“A credible and documented provenance, or ownership history, stands as a kind of buffer zone at the intersection between an antiquities market that could function legally and legitimately, and the dirty and largely illegal business of site looting.”).

⁷⁰ *Davis v. Carroll*, 937 F. Supp. 2d 390, 429 (S.D.N.Y. 2013). It would perhaps be too easy to claim that all objects sold without a provenance must be stolen or looted. Neil Brodie, an archaeologist and expert on the workings of the antiquities trade, has noted that there are at least four reasons why an object would be sold with no provenance. First, the provenance may be known but not listed or kept private. Second, it might be known, but the consignor may not want it made public for personal or financial reasons. Third, the provenance may, in fact, be unknown. And finally, the provenance may be known but be “tainted in some way, either by illegal trade, or by fraudulent fabrication of the piece itself.” Neil Brodie, *Uncovering the Antiquities*, in THE OXFORD HANDBOOK OF PUBLIC ARCHAEOLOGY (Robin Skeates et al. eds., 2012) (ebook).

⁷¹ See Neil Brodie, *Congenial Bedfellows? The Academy and the Antiquities Trade*, 27 J. CONTEMP. CRIM. JUST. 408, 411 (2011) (“There are no reliable statistics describing either the material volume or monetary value of the trade, though a large number of studies have documented the global occurrence of often badly looted or vandalized sites and monuments, and police investigations have uncovered evidence of criminal organization and institutional collusion.”).

⁷² Cf. Katharyn Hanson, *Why Does Archaeological Context Matter?*, in CATASTROPHE!: THE LOOTING AND DESTRUCTION OF IRAQ’S PAST 45 (Geoff Emberling & Katharyn Hanson eds., 2008).

then sold at Sotheby's in London.⁷³ Roger Atwood tracked the work of looters of pre-Columbian civilizations in the Americas.⁷⁴ Jason Felch and Ralph Frammolino conducted investigative reporting into the acquisition of antiquities at the Getty, which helped show how much illegally exported and looted material made its way into that museum.⁷⁵ Archaeologists have also used auction house catalogues to show how little information is provided to the public when antiquities are sold.⁷⁶

These quantitative studies have helped shape our empirical view of the art and antiquities market. The mounting evidence indicates a substantial portion of antiquities which appear on the market are illicit. Professor Ricardo Elia conducted a recent study on South Italian vases from the Apulian region. Elia analyzed Sotheby's auction catalogues between 1960 and 1998 and found that of the 1,550 vases auctioned, only fifteen percent had provenance information.⁷⁷ Another study by Christopher Chippindale and David Gill looked at Cycladic figurines.⁷⁸ That study concluded that of the 1,600 known Greek Cycladic figurines, only 143 were recovered by archaeologists.⁷⁹ Yet another study examined the antiquities collections of seven prominent collectors, including Shelby White and Leon Levy, who loaned their collection to an exhibition at the Metropolitan Museum of Art in New York in 1990 and 1991.⁸⁰ A similar study was undertaken by Elizabeth Gilgan to examine the market for antiquities from Belize in the United States.⁸¹ She looked at auction catalogues from the 1970s through the 1990s to trace pre-Columbian objects which appeared on the market. She found a substantial shift in the descriptions of objects in the catalogues, as the United States began to impose import restrictions on the nearby nations of Guatemala and El Salvador so as to elude detection as illegal imports.

⁷³ PETER WATSON, *SOTHEBY'S: THE INSIDE STORY* (1997).

⁷⁴ ROGER ATWOOD, *STEALING HISTORY: TOMB RAIDERS, SMUGGLERS, AND THE LOOTING OF THE ANCIENT WORLD* (2006).

⁷⁵ JASON FELCH & RALPH FRAMMOLINO, *CHASING APHRODITE: THE HUNT FOR LOOTED ANTIQUITIES AT THE WORLD'S RICHEST MUSEUM* (2011).

⁷⁶ See, e.g., Ricardo Elia, *Analysis of the Looting, Selling, and Collecting of Apulian Red-Figure Vases: A Quantitative Approach*, in *TRADE IN ILLICIT ANTIQUITIES: THE DESTRUCTION OF THE WORLD'S ARCHAEOLOGICAL HERITAGE* 145 (2001); David W.J. Gill & Christopher Chippindale, *Material and Intellectual Consequences of Esteem for Cycladic Figures*, 97 *AM. J. ARCHAEOLOGY* 601 (1993); Donna Yates, *Value and Doubt: The Persuasive Power of "authenticity" in the Antiquities Market*, 2 *PARSE: PLATFORM FOR ARTISTIC RES. SWED.* 71 (2015); Cara Grace Tremain, *Fifty Years of Collecting: The Sale of Ancient Maya Antiquities at Sotheby's*, 24 *INT'L J. CULTURAL PROP.* 187 (2017).

⁷⁷ Elia, *supra* note 76, at 150–51.

⁷⁸ Gill & Chippindale, *supra* note 76, at 602.

⁷⁹ *Id.* at 610.

⁸⁰ Christopher Chippindale & David Gill, *Material Consequences of Contemporary Classical Collecting*, 104 *AM. J. ARCHAEOLOGY* 463, 465 (2000).

⁸¹ Elizabeth Gilgan, *Looting and the Market for Maya Objects: A Belizean Perspective*, in *TRADE IN ILLICIT ANTIQUITIES: THE DESTRUCTION OF THE WORLD'S ARCHAEOLOGICAL HERITAGE* 73 (Neil Brodie et al. eds., 2001).

She found that catalogue descriptions changed to the use of “lowlands” rather than describing the precise region such as “Petén in Guatemala.” Such a generic description makes it more difficult to restrict the movement of these objects.

If one were to devise a perfectly flawed market, one would be hard pressed to surpass the antiquities trade for two reasons. First, there is a restricted supply⁸² for objects which carry high demand among a small group of wealthy collectors.⁸³ Second, the trade relies on anonymous buyers and sellers who are often shielded by auction house practices and tradition.

Though one potential solution might be to eliminate all purchases of antiquities, and that is the stated goal of many cultural heritage advocates, achieving an end to the trade seems unlikely.⁸⁴ We are left then with a regulatory framework which rests upon prohibition of illicit antiquities, but which has no reliable means of distinguishing the legal objects from the illegal ones. Blockchain technology could help to distinguish the legal from the illegal, but it could also be used as a tool to obfuscate and avoid sound regulation. One of the weaknesses with prohibitions lies in the stark reality that they restrict supply, without taking account of the potential demand. This makes the targeted trade more profitable, allowing better, more sophisticated, tactics to evade law enforcement. In some cases, prohibition helps create and incentivize large-scale criminal operations and organized crime networks. It also creates a powerful disincentive to impart any kind of public scrutiny of many antiquities transfers. Blockchain *could* facilitate heightened scrutiny of the trade, which can alleviate many of these difficulties by allowing for a licit trade in antiquities, which in turn might spark a profound impact on the existing body of public and criminal law aimed at stemming the illicit trade in antiquities.⁸⁵

⁸² The supply is restricted for some very good policy reasons. Nations of origin are justifiably reluctant to sell or lose to foreign institutions many objects which are unearthed illegally. Mexico enacted a heritage protection scheme in 1897 that stopped short of outright nationalization of artifacts, but declared “archaeological monuments” to be “the property of Nation” and stated that no one could “remove them . . . without express authorization of Executive of the Union.” See *United States v. McClain*, 545 F.2d 988, 997 (5th Cir. 1977) (quoting Article 1 of Mexico’s Law on Archaeological Monuments, May 11, 1897).

⁸³ See Paul M. Bator, *An Essay on the International Trade in Art*, 34 STAN. L. REV. 275 (1982).

⁸⁴ See generally Tim Harford, *How to Eliminate the Black Market in Stolen Antiquities*, SLATE MAG. (Sept. 14, 2007), <https://slate.com/culture/2007/09/how-to-eliminate-the-black-market-in-stolen-antiquities.html> (“They replace the logic of the market with the logic of the black market, which means that smugglers would try to conceal the locations of new archaeological sites, to erase or forge the historical record surrounding objects, and to excavate and ship objects without the care that could be lavished on an operation that was legal.”).

⁸⁵ The late legal scholar and art market theorist John Henry Merryman long advocated for a licit trade in cultural objects, arguing the art and antiquities trade could theoretically forge partnerships with nations of origin to help responsibly protect antiquities and archaeological sites. See John Henry Merryman, *A Licit International Trade in Cultural Objects*, 4 INT’L J. CULTURAL PROP. 13 (1995). For the author’s criticism of the weaknesses in the current criminal regulation,

The antiquities market rests uneasily between two differing views of what should be done with material cultural heritage. This tension hampers effective policy solutions, and perpetuates the current difficulties.⁸⁶ One group argues archaeological sites are a limited resource that cannot be commercially exploited.⁸⁷ They argue the regulation of antiquities cuts against the ill effects of the antiquities trade through deterrence and the high costs of avoiding these laws.

The opposing group argues this strong source regulation deters individuals from declaring chance finds of antiquities and drives any trade underground into the black market, further increasing the criminal and corrupt aspects of the trade.⁸⁸ By not allowing for a legitimate outlet for these inherently valuable objects, restrictions cause the illicit trade to flourish. Opponents of these strong source regulations argue that the law should protect only the most important objects, which would allow more people to come into contact with these objects, either as owners or visitors to museums.⁸⁹ Cultural property conventions have attempted to regulate activity during armed conflict,⁹⁰ sought to prevent illicit movement through public law,⁹¹ worked to set aside World Heritage sites of universal cultural value,⁹² attempted to harmonize private international law,⁹³ and have even sought to regulate underwater cultural heritage.⁹⁴

The fact is that both sides have a point, but we are left with a system of half-measures where neither group's vision is effectively implemented. Making matters more difficult is the classification and division of the groups, which creates a stale argument—sometimes little

see Derek Fincham, *Why U.S. Federal Penalties for Dealing in Illicit Cultural Property are Ineffective, and a Pragmatic Alternative*, 25 CARDOZO ARTS & ENT. L.J. 597 (2007).

⁸⁶ See Alexander Bauer, *New Ways of Thinking About Cultural Property: A Critical Appraisal of the Antiquities Trade Debates*, 31 FORDHAM INT'L L.J. 690, 690 (2008) (“Debates over the trade in archaeological objects or antiquities are contentious, emotional, and often contain not-so-subtle claims about the relative morality of its interlocutors.”).

⁸⁷ See LYNDEL V. PROTT & PATRICK J. O'KEEFE, *LAW AND THE CULTURAL HERITAGE: MOVEMENT* 464–70 (1989); see also Lyndel V. Prott, *The International Movement of Cultural Objects*, 12 INT'L J. CULTURAL PROP. 225 (2005).

⁸⁸ See John Henry Merryman, *Two Ways of Thinking About Cultural Property*, 80 AM. J. INT'L L. 831 (1986); John Henry Merryman, *Cultural Property Internationalism*, 12 INT'L J. CULTURAL PROP. 11 (2005).

⁸⁹ See JAMES CUNO, *WHO OWNS ANTIQUITY?* (2008).

⁹⁰ Hague Convention for the Protection of Cultural Property in the Event of Armed Conflict, May 14, 1954, 249 U.N.T.S. 215.

⁹¹ Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property, Nov. 14, 1970, 823 U.N.T.S. 231.

⁹² Convention for the Protection of the World Cultural and Natural Heritage, Nov. 1972, 1037 U.N.T.S. 151.

⁹³ UNIDROIT Convention on Stolen or Illegally Exported Cultural Objects, June 24, 1995, 2421 U.N.T.S. 457.

⁹⁴ UNESCO Convention on the Protection of the Underwater Cultural Heritage, Nov. 2, 2001, 2562 U.N.T.S. 51.

better than entrenched talking points.⁹⁵ By focusing on the means of acquisition, and imparting a meaningful due diligence procedure under which antiquities are transferred in good faith, the destruction of ancient sites and the harm to museums and cultural institutions could, in theory, be eliminated.

Auction houses and antiquities dealers routinely sell objects which have no provenance information, and even when this information is provided it can be incomplete or even inaccurate. One good remedy for this problem would be to utilize a database which would track objects. But auction houses and dealers have a lack of incentive to research individual items.⁹⁶ Even when an auction house may require an export permit, sellers often fake export permits.⁹⁷ Auction houses are not even required to research the claims that sellers make to them, or to ascertain whether this documentation is legitimate. And even if they did, there are very few ways in which this legitimacy could even be ascertained. Though there are a handful of databases, none have adequately solved the problems with the antiquities trade.

The art loss register is probably the most widely known and widely used database, but it has had real problems in the context of antiquities. Art and antiquities, unlike real property, have no established system for determining whether a seller has good title. And because auction houses never take title to the objects they sell, all of the responsibility falls on the seller, creating a strong disincentive for auction houses to research items.

The Art Loss Register is an illustrated database, meaning it only works to search known objects.⁹⁸ An object which has been looted from its context has never been documented, and thus the database has a limited utility. In addition, the storehouses of antiquities from nations of origin have not been fully documented. As an illustration of how expensive and laborious it would be to document all known licit antiquities in nations of origin, consider the incentive to document this

⁹⁵ See Alan Audi, *A Semiotics of Cultural Property Argument*, 14 INT'L J. CULTURAL PROP. 131, 132 (2007).

⁹⁶ Kelly Hill, Note, *The Problem of Auction Houses and Illicit Antiquities: A Call for a Holistic Solution*, 51 TEX. INT'L L. J. 337, 360 (2016).

⁹⁷ See, e.g., *Kingdom of Spain v. Christie, Manson & Woods Ltd.*, [1986] 1 W.L.R. 1120 (U.K.) (discussing the use of a forged Spanish export license for a work of art by Goya).

⁹⁸ *Our Company*, THE ART LOSS REGISTER, <http://www.artloss.com/about-us/our-company> (last visited Mar. 14, 2019). The Art Loss Register describes itself as:

the world's largest private database of lost and stolen art, antiques and collectables. Its range of services includes item registration, search and recovery services to collectors, the art trade, insurers and worldwide law enforcement agencies. These services are efficiently delivered by employing state of the art IT technology and a team of specially trained professional art historians. The worldwide team has been deliberately constructed so as to offer a range of language capabilities as well as specialties (modern art, old masters, antiquities).

Id.

material. If an object were to appear on the market—undocumented—it would then be by default considered to have been looted illegally.⁹⁹

Most purchases or transfers of art and antiquities do not include any information on title history or provenance.¹⁰⁰ The state of the market promotes asymmetrical agreements in which one party knows far more about the material facts of the trade than the other. One of the consequences of this is a trade which destroys archaeological context. But it also distorts the historical record by providing a market for modern forgeries. Charles Stanish, an archaeologist and critic of the antiquities trade, has argued that eBay, long thought to be rife with illegally excavated antiquities, may not be as big a problem for the looting of ancient sites, because these sellers are often selling fakes instead.¹⁰¹ He argues that because it is so much less expensive for these “producers,” as he calls them, to fake an antiquity than it is to loot, the market actually incentivizes fakery in some cases.¹⁰²

The illicit trade in antiquities presents challenges. Records do not really exist for newly discovered antiquities, and, in some cases, source nations have not even documented the stores of antiquities, which have been excavated but are not on display.¹⁰³ Illegal excavations destroy

⁹⁹ As Max Anderson notes, though, the degree to which objects in museums and galleries are documented varies:

The degree to which an object is documented also varies widely. Awarding each newly obtained artifact a reference number, or accession number, is a normal first step. That number is normally painted on the least obtrusive part of its surface, on top of a reversible (removable) sealant. From that point on the work is typically photographed, measured, and identified, with these details recorded in a museum’s database.

MAXWELL L. ANDERSON, *ANTIQUITIES: WHAT EVERYONE NEEDS TO KNOW* 129 (2017).

¹⁰⁰ When these details are included, the value of antiquities soars. In the spring of 2007, the Albright-Knox museum in Buffalo, New York auctioned many of its antiquities to shift their focus to buying contemporary art. As a result, a number of objects with clean and detailed provenances dating back decades entered the market. One object, a Roman bronze sculpture of the goddess Artemis with a stag was sold at Sotheby’s in New York for a then-record (for an antiquity) \$28.6 million. Many speculated its high price was earned because of its comparatively clean provenance, though there is no record of it before its initial publicized purchase in 1953, meaning it was very likely illegally excavated. At minimum, we do not know where it was discovered. See *A Bronze Figure of Artemis and the Stag, Late Hellenistic/Early Roman Imperial, 1st Century B.C./1st Century A.D.*, SOTHEBY’S (June 7, 2007, 2:00 PM), <http://www.sothebys.com/fr/auctions/ecatalogue/lot.41.html/2007/egyptian-classical-and-western-asiatic-antiquities-including-property-of-the-albright-knox-art-gallery-n08325>; Lawrence Van Gelder, *Arts, Briefly*, N.Y. TIMES (June 8, 2007), <https://www.nytimes.com/2007/06/08/arts/08arts.html>.

¹⁰¹ Charles Stanish, *Forging Ahead*, 62 *ARCHAEOLOGY* No. 3 (May/June 2009).

Stanish argued:

The wealthier collector who up to now has been laughing about the naive folks who buy on eBay is in for a surprise, too: those dealers that provide private sales are some of the forgers’ best customers, knowingly or otherwise. In fact, the workshops reserve their “finest” pieces for collectors using the same backdoor channels as before, but now with a much higher profit margin because they are selling fakes.

Id.

¹⁰² *Id.*

¹⁰³ The Ka-Nefer-Nefer mask on display at the Saint Louis Art Museum was most likely stolen

archaeological context and sometimes even the actual objects, which are often chopped up or disguised to hide their value.¹⁰⁴ The illicit trade has the potential to remove large parts of a nation's cultural heritage.

The absence of consensus on the laws, policy, and penalties indicates as well the need for a uniform by which stakeholders can evaluate the licitness of these objects. Antiquities can move easily across borders, and enforcement still relies on self-regulation by buyers, dealers, and museums. Though the attitude is changing because of the high-profile trials of individuals such as Marion True and Robert Hecht in Italy, a great deal of progress is still needed. There exists a core of agreement within the heritage community that art theft and antiquities looting are pressing problems. However, there are sharp differences of opinion with respect to the acquisition of these objects and the circumstances under which they can be acquired.

III. BLOCKCHAIN AS A REGULATORY TOOL FOR THE ANTIQUITIES MARKET

The antiquities market desperately needs innovations to elevate transparency and accountability, and a number of new initiatives are already using blockchain. Though there is promise here, there are too many features of blockchain which are too uncertain to immediately recommend it as the one-stop solution to the lack of transparency and accountability which plagues the art market.¹⁰⁵

A. *Current Initiatives to Integrate Blockchain and the Art and Antiquities Trade*

The art and antiquities trade has been joined by a number of new startup companies hoping to use blockchain technology. These initiatives are sometimes short-lived. But they nonetheless offer insight into how blockchain might impact the trade.

Codex is a company that aims to create a system of provenance research which uses a decentralized title registry with blockchain. Mark Lurie, the founder of Codex, estimates that "in the long term" they hope to use the ability to concretely and securely demonstrate clean

from an Egyptian warehouse in the 1980s, where it had been stored since its discovery during a professional dig in 1951 at Saqqara south of Cairo. The Saint Louis Art Museum acquired the mask in 1998, but Egypt has requested its return. Malcolm Gay, *Out of Egypt*, RIVERFRONT TIMES (Feb. 15, 2006), <http://www.riverfronttimes.com/2006-02-15/news/out-of-egypt/full>.

¹⁰⁴ A great deal of scholarship focuses on the damage done to archaeological sites as a result of the illicit trade. For two of the most persuasive articles, see Clemency Chase Coggins, *United States Cultural Property Legislation: Observation of a Combatant*, 7 INT'L J. CULTURAL PROP. 52 (1998).

¹⁰⁵ Transparency, according to cybersecurity researcher Benjamin Fung, rests on five pillars: (1) Truthfulness, (2) completeness, (3) materiality of information, (4) timeliness, and (5) accessibility. Benjamin Fung, *The Demand and Need for Transparency and Disclosure in Corporate Governance*, 2 UNIVERSAL J. MGMT. 72, 76 (2014).

provenance to “dramatically increase confidence in authentic items, and thus in the value.”¹⁰⁶ The company boasts that its registry has partnered with 5000 small auctioneers through Liveauctioneers.com and other online platforms.¹⁰⁷ Another group operating within the services firm Deloitte has crafted a proof of concept it calls “ArtTracktive,” which also aims to “trace the journey of artworks” and would remedy “one of the main concerns in the art market today, namely the fragile documentation related to the provenance and movements of a piece of art.”¹⁰⁸

Another new initiative calling itself P08 is using cryptocurrency to facilitate treasure salvage from the floor of the Bahamas.¹⁰⁹ Unfortunately, it makes the specious claim that there may be as much as \$100 billion in treasure on the seafloor.¹¹⁰ But no treasure-hunting commercial venture has ever been profitable for investors, let alone the troubling consequences for serious archaeological study.¹¹¹ That kind of salvage model would theoretically be dependent on the salvage of Spanish flag vessels returning to Spain loaded with precious metals from the new world, but those vessels would not have been capable of carrying weight which would lead to anything close to \$100 billion in present-day gold.¹¹² And those vessels are currently still considered Spanish State property.¹¹³

¹⁰⁶ Sarah P. Hanson, *New Art Registry Will Use Blockchain Technology*, ART NEWSPAPER (Jan. 30, 2018, 7:00 PM), <http://theartnewspaper.com/news/new-art-registry-will-use-blockchain-technology>.

¹⁰⁷ *Id.*

¹⁰⁸ Stan Higgins, *Deloitte Demos Blockchain Use Case for Art Industry*, COINDESK (May 17, 2016, 9:38 PM), <https://www.coindesk.com/deloitte-creates-blockchain-proof-of-concept-for-tracing-artworks>.

¹⁰⁹ P08, *Blockchain Education Takes Center Stage in the Caribbean, as Developers Get Training to Enter Billion-Dollar Industry*, CISION (Feb. 21, 2019, 12:43 PM), <https://www.prnewswire.com/news-releases/blockchain-education-takes-center-stage-in-the-caribbean-as-developers-get-training-to-enter-billion-dollar-industry-300799862.html>.

¹¹⁰ *Id.*

¹¹¹ See, e.g., Peter B. Campbell & Rodrigo Pacheco-Ruiz, *Treasure Hunting Is the World's Worst Investment*, BLOOMBERG (May 7, 2014, 9:03 AM), <https://www.bloomberg.com/opinion/articles/2014-05-07/treasure-hunting-is-the-world-s-worst-investment>; Maxwell L. Anderson, *Cultural Heritage's Nautical Future*, WALL STREET J. (July 11, 2016, 5:44 PM), <http://www.wsj.com/articles/cultural-heritages-nautical-future-1468273487>; Janet Blake, *The Protection of the Underwater Cultural Heritage*, 45 INT'L & COMP. L. Q. 819 (1996); Ole Varmer, *Closing the Gaps in the Law Protecting Underwater Cultural Heritage on the Outer Continental Shelf*, 33 STAN. ENVTL. L.J. 251 (2014); Alessandra Lanciotti, *The Dilemma of the Right to Ownership of Underwater Cultural Heritage: The Case of the "Getty Bronze"*, in CULTURAL HERITAGE, CULTURAL RIGHTS, CULTURAL DIVERSITY: NEW DEVELOPMENTS IN INTERNATIONAL LAW 301 (Silvia Borelli & Federico Lenzerini eds., 2012).

¹¹² I owe this point to a twitter thread by Peter Campbell (@peterbcampbell), TWITTER (Mar. 17, 2019), <https://twitter.com/peterbcampbell/status/1107311789879054337>.

¹¹³ In 2007, a deep-sea exploration company named Odyssey Marine, discovered the 19th century Spanish vessel, Nuestra Señora de las Mercedes. After flying the silver, gold, copper, and tin removed from the wreck to Florida, the company brought a declaratory action in Federal District Court for the Middle District of Florida. After a lengthy series of trials and appeals, it was

Yet another initiative, Artory, is based on the idea of conducting art transactions in the open. The company founder, Nanne Dekking, hopes to bring together “what is known about a work of art, academically and commercially, and about its provenance,” and making such information available to buyers of that object.¹¹⁴ Christie’s auction house partnered with Artory on a pilot program to provide a “secure digital record of transactions, with a goal of providing greater confidence in an artwork’s ongoing provenance and greater efficiency in its eventual resale.”¹¹⁵ Artory has a goal of transparency, which it hopes to end the practice of intermediaries who would “be able to choose the facts and interpret them in a certain way.”¹¹⁶ The database seeks to allow its users access to the data collected from the public domain, including auction house catalogues, exhibition catalogues, and academic publications. Artory also promises to use an independent committee of professionals to vet each individual or entity which issues title to an object.

But many of these initiatives are short-lived. Ascribe, which was based in Berlin, started an initiative allowing artists to create a certificate of ownership for their artwork. The platform would have allowed the provenance for each piece of art to be checked by using a cryptographic ID, which is assigned to the work. That company though no longer is active, because there remains “a lot of blockchain infrastructure work to do in terms of scaling, user experience, interoperability, and security.”¹¹⁷

B. Blockchain Could Produce a More Just Antiquities Trade, but Will It?

Blockchain technology offers the possibility of crafting a network where transactions and transfers are recorded securely on a distributed ledger. It could allow buyers of antiquities a secure system by which their transactions would be deemed licit, and would finally allow nations of origin a measure of control over the information disseminated in purchases. In an antiquities blockchain, parties can be given a key which would grant the power to grant or deny an object as salable. This power could be given to a nation of origin for example, giving that

ultimately decided that Spain retained title to the wrecks and their contents, and in 2013 Odyssey Marine was ordered to pay over \$1 million in legal fees to the Kingdom of Spain. *Odyssey Marine Expl., Inc. v. Unidentified Shipwrecked Vessel*, 979 F. Supp. 2d 1270, 1283 (M.D. Fla. 2013).

¹¹⁴ *About Us*, ARTORY, <https://www.artory.com/about-us/> (last visited Mar. 20, 2019).

¹¹⁵ Zachary Small, *How 3D Scanning Technology Went from the Louvre to the Auction House*, HYPERALLERGIC (Mar. 18, 2019), <https://hyperallergic.com/490322/how-3d-scanning-technology-went-from-the-louvre-to-the-auction-house>.

¹¹⁶ *About Us*, *supra* note 114.

¹¹⁷ *Ascribe Is No Longer Active*, ASCRIBE (2019), <https://www.ascribe.io/faq/> (last visited Mar. 20, 2019).

source nation input into whether a work of art, which is purported to have originated there, has been properly exported. A distributed ledger might also be used by a coalition of nations which prohibit export of art and antiquities. This could finally allow export restriction regimes, the core policy legacy of the 1970 UNESCO Convention, to be coordinated and harmonized.

For any of these initiatives though, the blockchain would have to be carefully crafted in coordination with programmers. It would also require a tremendous amount of underlying work before the blockchain could be usable. This kind of effort will surely require the cooperation of the art market,¹¹⁸ nations of origin, international organizations like UNESCO,¹¹⁹ and perhaps even other interest groups such as IFAR, the Art Loss Register, the Antiquities Coalition, or others.

We must proceed carefully, because there are important concerns that should be remedied. Any new initiative must account for the mistakes of past technological innovations. Take as one example the frequent abuse of Art Loss Register certificates in the antiquities trade. These certificates have been used by dealers to show that no search by the Art Loss Register indicates any red flags. But for antiquities, the Art Loss Register would not be equipped to offer meaningful advice, as newly looted or forged antiquities would never be able to be flagged by their database. The National Gallery of Australia was given a certificate by the Art Loss Register for a bronze Shiva,¹²⁰ but the certificate proved worthless when the Museum had to return the object after it was revealed to have been looted from a temple in India and was sold by alleged illicit antiquities dealer Subash Kapoor.¹²¹ So, there is a very real risk that some blockchain initiatives might be used to present what Arthur Houghton at the Getty called optical due diligence, an effort to only give the appearance of a good faith check into the history of an object.¹²²

Initiatives like Artory claim that a blockchain registry offers the potential to give greater confidence in the history of objects and can even make art transactions more efficient. But there are at least two

¹¹⁸ Bowley & Rashbaum, *supra* note 41.

¹¹⁹ See, e.g., Kevin F. Jowers, Comment, *International and National Legal Efforts to Protect Cultural Property: The 1970 UNESCO Convention, the United States, and Mexico*, 38 TEX. INT'L L.J. 145 (2003).

¹²⁰ *Optical Due Diligence: Art Loss Register Claims to Vet Ancient Art. Does it?*, CHASING APHRODITE (Aug. 1, 2013), <https://chasingaphrodite.com/2013/08/01/optical-due-diligence-art-loss-register-claims-to-vet-ancient-art-does-it>.

¹²¹ Anne Barker, *Dancing Shiva: National Gallery of Australia Should Get \$11M Compensation for Stolen Statue, Court Rules*, ABC NEWS (Sept. 26, 2016, 1:13 AM), <https://www.abc.net.au/news/2016-09-26/nga-granted-11m-compensation-for-stolen-dancing-shiva/7878740>.

¹²² FELCH & FRAMMOLINO, *supra* note 75, at 61–62, 68.

major obstacles that have to be navigated.¹²³

First is the problem of retroactivity. These registries will not be able to readily solve errors or falsehoods in existing records. We should be clear eyed about what a tremendous impediment this poses. Creating a blockchain today will help provide information moving forward, but it will not tell us very much about the history of an object. Every new blockchain entry will require extensive research into the history of an object in order to be useful, a worthy but likely expensive undertaking. Some works of fine art have histories which extend back centuries, and objects of antiquity extend back even further than that.

A second major obstacle will be the issue of anonymity. The claim that an antiquity comes from “an anonymous Swiss collection” has been a common claim for objects for sale since the 18th century when the art and antiquities trade sprang up around the shifting fortunes of the wealthy nobility, particularly in England.¹²⁴ Anonymity first began as a market innovation allowing a wealthy collector to sell art or antiquities without advertising that he or she has fallen on comparatively hard times. Claiming an object from an anonymous Swiss collection today is an attempt to avail a seller or potential buyer of that country’s once-permissive movable property laws for good faith purchasers. This long tradition presents a real problem though, because if a blockchain, a ledger, or any recording system will be effective, it really should not be anonymous. So long as a blockchain allows purchase and sale of antiquities anonymously, problems will continue. At the very least, it will open itself up to the idea that auction houses and antiquities dealers are secretly, perhaps nefariously, selling the world’s material cultural heritage.

Another point which may be useful to consider, involves the art market’s place outside of banking and other regulation. Auction houses are not subject to banking and other regulation. As Bitcoin and cryptocurrency gains more traction within the practice of the art trade, and as more buyers enter the art market and treat art and antiquities as an asset class, these buyers may be gradually moving the art market towards increased regulation.¹²⁵

Ideally, the use of blockchain and a distributed ledger would produce a policy which promotes justice for not only nations of origin,

¹²³ See Zachary Small, *Will Blockchain Create a More Transparent Art Market or Merely Entice More Investors?*, HYPERALLERGIC (Nov. 14, 2018), <https://hyperallergic.com/466114/will-blockchain-create-a-more-transparent-art-market-or-merely-entice-more-investors>.

¹²⁴ See, e.g., Donna Yates, *Oxford Research Encyclopedia of Criminology* (Dec. 2016), <https://traffickingculture.org/app/uploads/2016/10/Global-Traffic-in-Looted-Cultural-Objects-Oxford-Research-Encyclopedia-of-Criminology.pdf>.

¹²⁵ See generally Zachary Small, *Does the Art World Have a Money Laundering Problem?*, HYPERALLERGIC (Oct. 18, 2018), <https://hyperallergic.com/465736/does-the-art-world-have-a-money-laundering-problem>.

keepers of culture, and the greater public, but also the participants in the antiquities market itself. Many cultural heritage advocates will dismiss immediately the idea of an antiquities market regulating itself with blockchain or something like it.¹²⁶ But the current regulatory framework continues to limp along, while sites are looted, buyers are duped into acquiring fakes, and this illicit cultural property often ends up in museums and educational institutions. This concept, cultural justice, implies that cultures have a right to access the works of other cultures, but also maintain the right to their own culture and its expressions. When discussing justice, we must remember of course that it is a big, sometimes aspirational, concept. And to have any meaning, we must subject it to some kind of boundaries. The technology by itself, no matter how artful, will still require the cooperation and investment of the governments and various stakeholders which impact cultural heritage policy and the market in antiquities.¹²⁷

Best practice requires that prospective buyers of an antiquity conduct extensive research into the history of prospective purchases. Too often, dealers and middlemen will obfuscate or forge export permits and other provenance information. Each permit and record should be evaluated at each new transfer of possession or sale. Unfortunately, there does not currently exist a unified database for export permits. Those records would perhaps be a good avenue for a regulatory blockchain, perhaps a permission one even, that would allow investigators and prospective buyers to determine whether export permits had been successfully acquired. In other words, rather than rely on an individual certificate, perhaps a clearinghouse or registry of licit export could be checked instead, making potential forgery of these papers much more difficult.

¹²⁶ It must be noted that the damage and looting they have seen first-hand gives them good reason. See, e.g., Balestrieri et al., *Field Archaeologists as Eyewitnesses to Site Looting*, 7 ARTS 48 (2018); Ignacio Rodríguez Temiño et al., *Archaeological Heritage and Metal Detectors: Should We Be Managing Supply or Demand?*, in COMPETING VALUES IN ARCHAEOLOGICAL HERITAGE 139 (Stuart Campbell et al. eds., 2019); Deborah Amos & Alison Meuse, *In Syria, Archaeologists Risk Their Lives To Protect Ancient Heritage*, NPR (Mar. 9, 2015, 3:57 AM), <http://www.npr.org/blogs/parallels/2015/03/09/390691518/in-syria-archaeologists-risk-their-lives-to-protect-ancient-heritage>; Randy Kennedy, *Greek Antiquities, Long Fragile, Are Endangered by Austerity*, N.Y. TIMES (June 11, 2012), <http://www.nytimes.com/2012/06/12/arts/design/archaeologists-say-greek-antiquities-threatened-by-austerity.html>; ATWOOD, *supra* note 74; Alexander A. Bauer et al., *When Theory, Practice and Policy Collide, or Why Do Archaeologists Support Cultural Property Claims?*, in 54 ARCHAEOLOGY AND CAPITALISM: FROM ETHICS TO POLITICS 45 (Yannis Hamilakis & Philip Duke eds., 2009).

¹²⁷ Chris Cooper, *Blockchain and the Battle for 'Blood Antiquities': Could Digital Currency Platforms Help to End the World's Deadliest Trade?* DCEBRIEF (Sept. 26, 2016), <https://dcebrief.com/op-ed-blockchain-and-the-battle-for-blood-antiquities-could-digital-currency-platforms-help-to-end-the-worlds-deadliest-trade>.

CONCLUSION

Imagine we could achieve full transparency of the art market via blockchain. What would that art market look like? Despite some important recent successes, a vibrant trade in stolen, illegally excavated, and illegally exported antiquities thrives. The new possibilities presented by blockchain give us a moment to think about what this licit market should look like. And without question, the use of blockchain has promise. It could be used to craft a unified export permission regime across jurisdictions. It might finally create a more robust and secure provenance history attached to objects. It might also be used to impose a small fee on each antiquities transaction that could be used to advance cultural heritage policies, like securing sites, or even funding professional archaeological excavation. But for any of the potential initiatives to succeed, the different constituencies need to come together and agree on a core set of guiding principles. Unfortunately, the antiquities trade, museums, archaeologists, and heritage advocates are too often at odds. A necessary first step will be to consider the promise of blockchain and use the technology wisely to create a more just and sustainable way to protect and transfer ownership of these objects and what they tell us about our collective cultural heritage.