ınd Redemption of Sir Thomas
His coming to Virginia and the
nent of the Lord La Warr, July
) (4th edn). Charlottesville, VA:

receive': explicating an undocu-
stown through the archaeological

port APVA Jamestown Rediscovery.
servation of Virginia Antiquities.
ed 10 December 2014).
ismatic Chronicle 17, 97–125.
Herwonden Stad 2008, 141–56.
se of Early America. Cambridge:

CHAPTER 10

CASHLESSNESS, ANCIENT AND MODERN

Bill Maurer

For centuries, how many we do not know, the principal instrument of commerce was neither the coin nor the private token, but the tally.
(Innes 1913)

Abstract

New technologies for transferring value, from mobile-phone enabled services to cryptocurrencies, lead to a reconsideration of money's origins. They also pose challenges to what money has become during the modern era. Political questions once thought settled about the state's role in centralizing and monopolizing the means of exchange are now open for debate. There are deep historical precedents for this debate. Setting contemporary mobile money against ancient Near Eastern coinage, this chapter explores the physical instantiations of the stuff of value, and the operations warranting it. It is inspired by an early statement made by an observer of mobile money, a US regulator, when it was new to the scene: it 'is just an accounting system'. Who writes and controls those accounts? How are they ordering and re-ordering the world? Reflecting on money's origins helps situate new relationships of rank, power and centralisation in the making of monetary orders.

Introduction

In 2007, Kenya's near-monopoly telecommunications provider, Safaricom, launched M-Pesa, a mobile phone-based money transfer service. Using M-Pesa, people can send money to one another using a basic handset. Retail agents, mainly the sellers of Safaricom airtime, serve as encashment points: I give cash to an agent, who credits my account with funds. I can then send the funds via text message to another Safaricom user. The recipient shows the message to a Safaricom agent, who then remits the cash. M-Pesa captured the imagination

of development and philanthropic actors, who envisioned it as a way to bring financial services to the poor and to those living far from bank branches and infrastructures (see Jack *et al.* 2010; Kendall *et al.* 2012; Maurer 2012).

So-called mobile money also captured the imagination of ordinary Kenyans: by 2011, half the country was subscribed, and the M-Pesa network processed more individual transactions within Kenya than Western Union had processed globally. Many other mobile network operators have since aspired to Safaricom's success. As of April 2014, there were over 150 such services worldwide. Activity is accelerating in the global North, as well.

This chapter is a speculative archaeological reverie. Many of the first mobile money services took their names from words for currency that have to do with weights and measures, derivations from the Latin *pensare*: 'pesa,' 'paisa,' 'peso,' in Swahili, Hindi, Dari, Pashto, Spanish. *Pensare* is a metonym, signifying 'hanging down' like pans suspended from the beam of a balance. Similarly, lira and the symbol for pound, £, is taken from *librum*, Latin for scale. The names of many currencies and especially these mobile money services evoke an ancient practice for determining value: the use of scales and weights to measure precious materials like gold and silver, or to measure grains of wheat, barley or rice. They remind us of a world where value had to be tangibly ascertained and verified, where you could see what something was worth regardless of what language you spoke or your social rank, where you could feel the heft of it in your hands. Most modern commentators and even many everyday participants in money economies today view the naming of money after weight or scales as symbolic of a referent that is no longer there: gold, silver or other precious metal. With state-issued fiat currencies, the legacy of names indicating substance, or the attempt to index the heft of metal as a sign of value, may feel like a cheat – and, to many modern-day bullionists, it is. But words referencing weight, as I will argue, do not only resonate with so-called sound money antecedents: they also recall different, non-bullionist versions of the tale of the origins of money.

Mobile money is bringing to the surface a reconsideration of these origins, at the same time that it points toward uncertain futures for money itself. It arrived on the world scene when many others were opening up questions about the origin and nature of money and economy more broadly, not just academics, but people involved in all manner of solidary economy projects, alternative currency experiments – Occupy, Time Banking and Bitcoin. In order to explain what I mean, I will take you back to the ancient Near East and the rise of coinage, only to question the received wisdom on coin, on physical instantiations of the stuff of value, and the operations warranting it. I am inspired by an early statement made to me by an observer of mobile money, a US regulator, when it was new to the scene: 'M-Pesa is just an accounting system.'

sioned it as a way to bring
r from bank branches and
012; Maurer 2012).
imagination of ordinary
l, and the M-Pesa network
a than Western Union had
erators have since aspired
re over 150 such services
rth, as well.
ie. Many of the first mobile
rency that have to do with
nsare: 'pesa,' 'paisa,' 'peso,'
is a metonym, signifying
m of a balance. Similarly,
ibrum, Latin for scale. The
bile money services evoke
e of scales and weights to
o measure grains of wheat,
value had to be tangibly
hat something was worth
ial rank, where you could
mentators and even many
iew the naming of money
it is no longer there: gold,
t currencies, the legacy of
the heft of metal as a sign
m-day bullionists, it is. But
nly resonate with so-called
, non-bullionist versions of

sideration of these origins.
futures for money itself. It
ere opening up questions
ny more broadly, not just
olidary economy projects.
Banking and Bitcoin. In
s to the ancient Near East
ived wisdom on coin, on
operations warranting it.
by an observer of mobile
scene: 'M-Pesa is just an

In the beginning...

In the standard Anglo-American account, represented by William Stanley Jevons or Paul Samuelson (Jevons 1885; Samuelson and Nordhaus 2004), bullion money solves the problem of the double coincidence of wants. Jevons opened his book, *Money and the Mechanism of Exchange*, by relating the travails of a Parisienne prima donna who, upon delivering an operatic revue in the Solomon Islands, received in payment 'three pigs, twenty-three turkeys, forty-four chickens, five thousand cocoa-nuts, besides considerable quantities of bananas, lemons, and oranges' (Jevons 1885, 1). Though at first pleased with the remuneration – equivalent to 4,000 francs, she estimated – she soon realised she could never herself consume the reward, and had to feed the fruit to the pigs and poultry. When one has items to barter, one needs to find someone who wants what one has, and who has what one wants. This, Jevons stated dryly, 'will rarely happen' (*ibid.*, 3–4). He goes on to explain the solution: the agreement among sellers and purchasers to use one commodity as the means of exchange for all the others.

Anthropologists have challenged this just-so story at least since Marcel Mauss (1923–4). So have alternative monetary theorists. Says Randall Wray, 'The problem [of the inconvenience caused by the double coincidence of wants] is that the Never-Never Land imagined by the Paul Samuelsons and other textbook writers simply never, ever, existed' (Wray 2002, 42). Alternative monetary theorists include State Theorists (after Knapp 1924), who place the emphasis on the role of state institutions in creating money of account rather than money of exchange; chartalists, who place the emphasis on the state's role in demanding payment of tax in its money; and credit theorists, who place the emphasis on the state's extension of credit based on its own stores of wealth, money of account serving to keep track of and centrally organise production (especially in ancient agricultural states). 'Money,' Wray continues, 'originated not as a cost minimizing medium of exchange, but as the unit of account in which debts to the palace (tax liabilities) were measured' (Wray 2002, 43). In the beginning were tax and credit, not barter and exchange – in other words, in the beginning was 'just an accounting system.'

Karl Polanyi (1969) argued that the concepts and tools of nineteenth- and twentieth-century economics were inadequate to explain historical and cultural contexts where markets in land and labour did not exist. Even terms seemingly as basic as 'trade' and 'price,' to say nothing of 'money,' fail the descriptive task to which they are put. In Babylonia, he writes, 'marketplaces in the cities were altogether absent' (*ibid.*, xviii). 'Trade… was thought by scholars to be market trade', 'yet gift trade was the chief form of trade between the empires of antiquity.' 'Prices were taken to be obviously market prices. Actually, in antiquity prices were fixed largely by custom, statute, or proclamation' (*ibid.*,

xix). For Polanyi, 'the fountainhead of all these errors was to rank exchange as *the* economic relation… On such flimsy grounds was the human world interpreted by economists as a potential market system' (*ibid.*, xix–xx).

In a series of workshops in the 1990s and early 2000s, the International Scholars Conference on Ancient Near Eastern Economies met at the British Museum to confer on the state of knowledge of the ancient systems that captivated Polanyi, and, before him, John Maynard Keynes. These Assyriologists displaced the conventional 'individualistic model used by free-enterprise ideologues to deduce the origins of economic practices', and find the roots of our contemporary economies and markets in ancient Near Eastern systems of planning and administration, specifically 'public institutions' (Hudson 2000, 20). Money was money of account, materialised in transaction records, such as a tablet documenting the disbursal of beer. Taxes denominated in a silver weight standard could be paid in a barley equivalent. If silver circulated, it was as a prestige item for gifts to the temples, a kind of sumptuary offering (Henaff 2010, 114). The state served as creditor, not debtor, lending land and grain in order to extract and accumulate surpluses, rather than selling its own debt to raise revenue. In Polanyi's terms, the state was redistributive. Workers on the land could exchange their surplus for prestige items or tools (Hudson 2000, 314). If the people became too indebted, then the rulers would wipe the slate clean, 'adjust[ing] the volume of debt to the economy's ability to pay' (*ibid.*, 323).

The Assyriologists' story is repeated by economic anthropologists Keith Hart and Chris Hann (Hann and Hart 2011) as well as by David Graeber's (2011) rewriting of the anthropological story of debt. Clearly, however, the world of ancient Mesopotamia did not endure. What happened? Hudson writes, 'the families of warlords and chieftains gained power by acting as merchants and creditors in their own personal interest, depriving cultivators of their liberty and land rights that formed the basis of their citizenship status' (Hudson 2000, 323). The archaeological and anthropological literature thus arrives at a new world of weight, where bullion now circulated and, because no longer measured at the temple, had to be verified for its metal content. The hoards accumulated by early agricultural empires were dispersed into the hands of a new elite that issued its own metal money. In the received wisdom on the fate of the ancient hoards, restated by Graeber, a 'military-coinage-slavery' complex (Graeber 2011, 229; Ingham 2004; Hann and Hart 2011) was responsible for breaking up the hold of the temples, liberating bullion and instituting coinage for the purpose of payment – of armies, of protection money – rather than the extension of credit for the common surplus in the form of land or agricultural commodities. The historical defeat of the temple by the army effected the transition from money of account, 'book money' (Ingham 2002), to money as a means of exchange, 'government-free

bullion-money whose issue and exchange was independent of public control' (Hudson 2000, 324).

This defeat also ushered in the democratisation of metrology: whereas previously only the temple guardians or state functionaries had to worry about standards of measure for grain or precious metal, afterwards, anyone exchanging coin needed to wonder about its purity and weight. *Pensare* became a more generalised operation of value.

I am quite partial to this story, but it does not sit right. First, there is a sociological question about those chieftains. How is it that they were possessed of a kind of individualistic self-interest that no one else seems to have had at the time? Second, if in our economic systems today we still have the institutional legacies of ancient Mesopotamia, why is the ruling ideology so successful? That is, why is money seen as primarily a medium of exchange, and why do we need institutional sociologists to help us remember that markets are never truly 'free', without states providing the necessary infrastructures – from money to contract – to make them so? Third, and related to the second question: was the defeat of the temple by the warlord in fact a total triumph of brute materiality, inhuman calculation and metallist money? If we can see the legacies of state/credit money in our contemporary institutions, as economic sociologists and anthropologists continually point out, if there are still traces of the gift in the interstices of capitalism, as Mauss argued, then might it not be reasonable to assume that there could have been traces of another economy, tracks left by other practices, in the rise of metallism?

I feel the gravitational pull of heft, of weight, of the *pesa* in an M-Pesa transaction, and in mobile money's indexing of the ancient practices of weighing barley and silver, the standardizing of taxes and rents, along with a world of circulating receipts and tabs 'to be settled on payday' (Hudson 2000, 314). The attraction of that must have seized John Maynard Keynes, when, sitting in the British Museum studying ancient weights and measures, he was gripped by what he called a 'Babylonian madness'.

Just information?

At a forum on mobile money held by the US Federal Reserve in 2010 – the first of its kind – a consultant intoned, dramatically, 'The point-of-sale is the point of everything.' None of the attendees really grasped what he meant. Everyone was captivated by M-Pesa and the mobile phone as a new channel for banking services (Figure 10.1). Few were thinking about merchants and real-world purchases. By 2012, however, after the European Consumer Commissioner had declared, 'Personal data is the new oil of the internet and the new currency of the digital world' (quoted in World Economic Forum

Figure 10.1: M-Pesa in action. (Courtesy of Institute for Money, Technology and Financial Inclusion. Photo: Ivan Small.)

2011, 5), the idea that mobile money is about a value chain from data rather than fees started to become generalised in the mobile money community.

People started to describe mobile money and payments technology in general, as a new frontier, explicitly referencing the nineteenth-century American West. My informants in the payments industry started saying things like 'The bonanza is going on behind the scenes with all this data;' 'data analytics on your customer is becoming more important' than other revenue generated by mobile money. And, 'the merchants are the ones with the data – without you [controlling] the POS [point-of-sale device], you've got nothing.' Before 2012, except for that one consultant at the Federal Reserve, I had never heard such language. But that year, just as major new corporate partnerships were announced in the US for mobile payments, several people told me that payments was a 'wild west,' and that mobile money at the point of sale was 'unlocking a goldmine.'

In models for digital currency from mobile money to American Express loyalty points, the dream is for a system where value enters a network and circulates endlessly, never leaving as material cash. People can purchase things using electronic value warranted by a (usually private) provider but backed by

loney, Technology and
ll.

chain from data rather
money community.
s technology in general,
nth-century American
saying things like 'The
ata;' 'data analytics on
her revenue generated
vith the data without
ve got nothing.' Before
Reserve, I had never
corporate partnerships
ral people told me that
t the point of sale was

y to American Express
enters a network and
ple can purchase things
provider but backed by

the (usually public) legal tender in a manner that generates new value in the form of fee income and, increasingly, it is hoped, 'data' that can be mined for additional value. Some even imagine a system that would replace legal tender as the store backing such electronic transfers. Modern cashlessness, as reflected in these efforts to create electronic platforms for value transfer, may indeed represent a return to 'book money.' But it may be book money without a store of value behind it – 'just' accounts, only data, the value operation based on a (prospective) prospecting in the archive of information captured at the point of sale, the 'point of everything.'

When we examine the material and informational practices of *ancient* merchants passing newly liberated silver from hand to hand, the tale of the conquest and dispersal of the hoard by the chieftains takes a few unexpected twists and turns. The 'tyrants,' as the new minters of coin were called (see Shell 1982; Kurke 1999; Henaff 2010) – for they were tyrannical against the old order – may have marked the medium of exchange with the symbols of their sovereign authority. But at least sometimes, and in some places – my example is Lydia on the western edges of the Persian empire, around the time of Darius I – merchants warranted coins with their own marks along the way. They created a chain of credibility, materially inscribed on the faces and edges of the coin, alongside the state's money or the chieftains' power and to one side of metrology. In some instances, wrote Sir George Francis Hill, numismatist at the British Museum, in 1919, Persian sigloi from Lydia were covered with so many of these so-called countermarks that they no longer maintained their integrity and were crumbling into pieces (Hill 1919).

That merchants using early coins would have marked them somehow, for some reason, should not come as a surprise to anthropologists and sociologists of money, given the rich archive we have produced about the social inflection and use of state-issued currencies (Zelizer 1994; Guyer 2004; Maurer 2006). Yet I think our political commitment to remaking 'human economies' (in Keith Hart's phrase) distracts us from imagining the complexity of the early world of coin and the composition of value more generally. Our intellectual labouring to disprove the standard metallist hypothesis about the origin of money in barter, and our subsequent elevation of the story of ancient book money or 'dematerialised' money of account, with the central role accorded the state or state-like institutions, leads us to overlook – or, really, not even look for – evidence of alternative practices in the world of coin.[1]

The state still had a role, of course, in that coin was minted for states to pay soldiers and for subjects to pay states in the form of tax. But alternative institutions can be seen alongside, in merchants who created new signs of their own credibility, a chain of commitments linking merchant to merchant and creating an alternative value (and this is not, incidentally, Graeber's everyday communism – far from it!). The chain of credibility they instituted

was, I believe, much like what some digital money proponents today imagine they will create. Our analytical antinomies insist on generalisations and distinctions between logical operations of various sorts (structure/agency, metallism/chartalism, substance/idea). They also encourage us to conceptual in-gatherings, bringing diverse knowledges together as if in an ancient hoard, to centralise (analytical) power and control. But the composition of the hoard should give us pause, as should the nature of 'big data.' All kinds of incompatible things lie within. As Jane Guyer has written about knowledge practices in Equatorial Africa, another frontier zone, 'composition is a different process [from accumulation]. Freestanding elements have necessary connective interfaces that are accessible to one another only situationally' (Guyer and Eno Belinga 1995, 103).

About a hundred years after G. F. Hill, the numismatist Koray Konuk summarised the scholarly consensus on Persian sigloi thus:

> *These marks were probably applied by money changers and bankers to coins they considered of correct weight and alloy (counterfeits were not uncommon). If these coins came into their hands again, they would recognize their marks and not have to test them again. This practice became commonplace under the Persians on their sigloi.* (Konuk 2012, 47)

I myself became obsessed with these coins (Figure 10.2). They are common in the collectors' trade and relatively inexpensive. I bought one for display in an exhibition on the history of money that ran in the main library of my home institution. But at a coin show that I randomly wandered into, a dealer showed me another. 'This one is interesting because it has an Indian punchmark on it,' he told me. My interest was piqued further.

My own example of this siglos being behind glass at the library, I decided I needed another as a prop for a talk I was to give to an industry forum. The theme was 'big data.' My talk was to be about 'big data' as a value proposition for mobile money companies. I wanted to say that the 'data' part of the digitisation of transactions at the point of sale via mobile devices, the creation of a centralised archive of transactional information, was nothing new. Ancient Mesopotamia had seen something very similar, albeit not for everyday transactions (which were generally not recorded; Schmandt-Besserat 1992, 167). I also wanted to make the point that just as ancient Mesopotamian record-keeping indicated a hierarchical society (*ibid.*, 170), industry players should think about whether the creation of an archive and its enclosure by them for private gain would represent a new kind of hierarchy. I wanted to contrast the public institutions of ancient Mesopotamia with the 'big data' transactional archive owned by private entities or else only transited through private infrastructures, and to spark reflection on the corporate role and responsibility in curating that archive.

roponents today imagine
on generalisations and
sorts (structure/agency,
encourage us to concep-
gether as if in an ancient
. But the composition of
re of 'big data.' All kinds
nas written about knowl-
r zone, 'composition is a
; elements have necessary
nother only situationally'

nismatist Koray Konuk
i thus:

*nd bankers to coins they
not uncommon). If these
their marks and not have
der the Persians on their*

10.2). They are common
I bought one for display
n the main library of my
y wandered into, a dealer
· it has an Indian punch-
ther.
; at the library, I decided
o an industry forum. 'The
ata' as a value proposition
e 'data' part of the digiti-
devices, the creation of
as nothing new. Ancient
it not for everyday trans-
ndt-Besserat 1992, 167).
n Mesopotamian record-
, industry players should
its enclosure by them for
. I wanted to contrast the
· 'big data' transactional
ed through private infra-
role and responsibility in

Figure 10.2: Siglos. Persia, Achaemenid empire, time of Artaxerxes I–Xerxes II (*c.* 455–420 BCE, Carradice Type IVA). Courtesy of Classical Numismatic Group, Inc., www.cngcoins.com CNG Electronic Auction 155, lot 91.

I also wanted to make the point that we have a difficult time thinking about the not-newness of the digital archive of transactional data because we're stuck in a metallist mindset: it still surprises people to learn that money, after all, is 'just information' because so much of our history and philosophy is bound up metaphorically with the age of the coin and cash, taken as it is with questions of the objects of thought being adequate to the objects of the world and so on. So I needed to get my hands on another ancient coin, to say: first, was the data archive; then, came the brute materiality of the coin; and now, maybe we are moving back to an informational economy. It was, after all, for an industry audience.

I got my second siglos on eBay. It arrived in the mail. It had two countermarks, one on the edge, one on the face, both quite beautiful and surprisingly intricate given their tiny size. I was struck with the thought that my basic premise — that the coin and cash era was an interregnum between two eras of 'big data' — was incorrect. For here, on my coin, was informational content not related to the sign of the sovereign on its face or the heft of the metal in my hand. Here were the marks of merchants.

What's in a mark?

The literature on countermarked Persian siglοi from Lydia advances several theories to explain the practice. One of the earliest discussions, in E. C. F. Babelon's *Les Perses Achemenides* (1893), suggested that the marks indicated the

mints in which the coins were struck. Despite the sign of the sovereign on the coin, the state required an additional mark of the province or city. In Babelon's initial assessment, then, the marks were simply additional indices of the state authorities issuing the coin.

My coin dealer's 'Indian marks' explanation, as well as Konuk's reference to money changers, comes from an article by E. J. Rapson (1895), a distinguished Sanskritologist at Cambridge. Rapson found Babelon's city of origin thesis plausible. He wondered whether coins bore countermarks from the Persian provinces of India, and turned to Sir Alexander Cunningham's *Coins of Ancient India* (1891) for guidance on how to interpret the marks. Cunningham was the founding director of the Archaeological Survey of India.[2] He relied on ethnographic analogy and his first-hand experience with Indian moneychangers to speculate on the countermarks:

> *at the present day these men are still in the habit of placing their own particular stamps on the rupees that pass through their hands, so that when any of the coins come back to them again, they know their value without making a second testing.* (Cunningham 1891, 58)

Led perhaps by Cunningham's reflections, Rapson, in examining the collection in the British Museum, put forward the thesis that the countermarks were Indian characters, indicating their use in trade far from Anatolia on the eastern edges of the Persian empire. Since Indian coins, Rapson stated, were 'mercantile money-tokens issued by traders' (1895, 872), it was reasonable to assume that Indian traders were taking Persian sigloi and turning them into their own token.

The turn to the ethnological archive and the theoretical divergence from Babelon that Rapson offered – from state money to merchants' money – influenced Babelon himself, who moved away from the idea that the marks signified specific mints and came around to Rapson's view that they were placed by merchants or bankers. Like Rapson, he made the case with reference to contemporary ethnology: merchants had been 'denied by the public authority of the right to coin money but continued anyway, like Chinese bankers of our day, to countermark official money that passes through their hands [*caisses*, lit., cash boxes, tills]' (Babelon 1901, 37–8, my translation, emphasis added).

Variants of Rapson and Babelon's arguments contributed to a basic story that began to take hold: states minted coins and marked them with the seal of their authority. But they circulated as bullion. The problem was, there were counterfeits and coins of lesser quality, especially coins minted later in time. Coins needed 'revalidation,' so to speak, if there was any doubt about them. G. F. Hill arrived at the conclusion that the marks served to validate the coinage until the coins could be replaced by the state's money. Still, he

noted ambivalently, 'One would have thought that a single cut would have been sufficient for this purpose, but some coins have been reduced almost to fragments' (Hill 1919, 125–6). There is an incipient argument in the literature from the 1910s that while coins may have functioned as bullionist money, they needed a little help from the merchants who exchanged them.

There is a contradiction here, of course, evident to us with the hindsight of the debate between bullionist versus state and credit theories over the historical origin and nature of money. The coins were being treated at once as merchants' tokens (credit theory) and as bullion (having value in themselves, hence, the need to 'test' them). For the nineteenth-century Indian traders invoked by the numismatists to explain ancient countermarking, they could have been both: one could mint one's own coin – Cunningham had documented the practice of Indian goldsmiths doing so – and one would want to test others' coins when they passed through one's hands, marking them after one had done so. My coin I issue on my own credit, so to speak; yours, I have to test. Once I place my mark on it, my credibility is added to it – mainly, a mark for myself, the next time I see it.

But in a world of hierarchy and rank, my mark would also serve as a signal of my position vis à vis others, my claim on status: it declares my existence, for one thing; it tells everyone else I am a trader; and it indicates that I have a scale. Here, we can discern a system of reward where one gets more or keeps what one has by advertising one's name, and by passing that advertisement along. This is less about honesty – my scales are true, you can trust me – than it is about fame.[3] The instrument of measure weighs not just the quantity of bullion but the quality of men.[4]

By the 1970s bullionist theories dominated the numismatic literature on countermarked Persian sigloi. They had also done so in the academic literature on money more broadly. The ferment of the early twentieth century, when Keynes (1914) was reading A. Mitchell Innes's unabashedly chartalist *What Is Money?* (1913) and entering into his Babylonian madness, had concretised into 'sound money' theories, despite – or because of – the dominance in that century of wholly fiat currencies. When issuing governments 'ceased to exist,' wrote Colin Kraay, 'coins became bullion and might require revalidation in order to become once again officially acceptable' (Kraay 1976, 15). For such revalidation, 'a fee was no doubt charged' (*ibid.*, 16, citing Milne 1931). He sounds like both an early twenty-first-century survivalist wanting to live without money (Boyle 2010) or an 'end of money' evangelist, imagining a return to gold after the end of governments. And he also sounds like a payments industry professional, taking for granted the toll levied on any passage for value. At a digital money event in London, a speaker from Citi wore a necktie with an image of the Panama Canal on it to remind attendees, he told us, that their business is toll collection on other people's exchanges.

A memory bank

Why wander through this fusty coin collection[3] when considering early twenty-first-century mobile money and new technologies for value transfer? First, these efforts to create and control the conduits for electronic value depend on an imaginary in which the 'real' stuff is secreted away somewhere. The idea is to create a set of systems that allow a customer to 'cash in and never cash out,' as one industry professional put it at a conference in 2011, to 'keep the money in the system *forever*.'

They also similarly depend on merchants' extension of credibility to one another, and their willingness to participate in what they say is an 'ecology' of ventures and practices. By merchant here I mean not the everyday shopkeeper with a cash box who starts to receive electronic payments. Rather, I mean a figure analogous to the countermarkers of Persian Lydia: the provider of one of the services that are a part of a new set of interlocking operations for value transfer, from mobile network operators, to database managers, to intermediaries and networking businesses of all kinds, operating alongside and in the tracks of state money. Their own extension of credibility to one another depends on a great deal of institutional trust in the face of always-uneasy rivalries — trust within different parts of a business enterprise, between different businesses, and between businesses and governments. The trust is shaky, not always there, and often dissipates entirely. But most industry professional seem to understand that if electronic payments are going to displace cash, their bosses are going to have to learn that no single entity is going to control the 'rails.'

They do, however, have designs on states' claim on value storage and exchange. I should reiterate that I am not treating the means of exchange and store of value functions as definitional or analytical terms, but rather 'native' concepts that are newly surfacing, even as industry participants start to recognise the value in money of account, in the database of information captured by electronic devices at the point of sale.

If these new 'merchants' of money and payment can dislodge the state's monopoly over the means of exchange, they also question the state as guarantor of the store of value function of money. Regulators worry about this: said a Kenyan official, '[our] major concern is … basically, [to] make sure that when you bring money into an e-money system there is [sic] *hard* receipts, *hard* evidence to prove that the money has come in.' With modern cashlessless, however, the 'real' stuff itself matters less and less to the operations of value. There are two reasons for this. First, providers may want to create their own tokens, private credits to be accepted only within a particular network of merchants but one which they imagine to become ever-encompassing. The store of value matters less than the store of data which, it is presumed, will

generate new value in turn. Second, and less frequently noted in the industry, it is often the case that the funds 'behind' electronic credits are denominated in state currencies that are 'soft,' not 'hard.' That is, they are currencies that do not retain value – the great majority of the world's moneys, as Guyer reminds us – that are themselves always-already media of exchange not stores of wealth (Guyer 2012): the Kenyan shilling, the Tanzanian shilling, the Ghanaian cedi, and so on.

When the Persian armies invaded western Anatolia, they did not unleash a world of deracinated money and brute calculation, the coin circulating separate from any moral authority or divine precept. Instead, they created the conditions of possibility for others to warrant already-minted coin. Merchants placed their own insignia on the money. They added countermarks as coins passed through their hands, identifying their prior ownership of the coin, and making in the process a chain of connection, physically stamped on the coin, ultimately underwriting their nascent if distributed and dispersed community, and advertising their own fame within it.

It was still, or, rather, it was also, a world dependent on there being a temple and a coaligned state or religico-political authority. Money was a means of recording transactions (Tymoigne and Wray 2006), but not because of people's 'natural' distrust of one another, or attempts to cheat or gain. Rather, money was an externalisation of memory: it helped solve a memory problem, not a trust problem. There is no trust or mistrust in a world of rank: my demonstration of my rank must be genuine and true otherwise it would not be worth the making – I can't pull a fast one with fake coppers or beaver skins, because to do so would be to enter a world not of rank but individual acquisitiveness more resonant with liberal capitalist societies. The challenge is not whether to trust or distrust another, but keeping track of the gifts warranting and evincing rank.

Money is indeed, as Keith Hart (1999) famously stated, a memory bank. The state-cum-temple became the holder of that externalised, depersonalised, consultable and durable memory on behalf of everyone else, alongside other memories marked on coins and set in motion by merchants. But keeping track of the gifts warranting rank today is now a generalised problem: it occurs at the level of a customer's interaction with a merchant, where loyalty points may accrue; it occurs at the level of the merchant's relationship with the payment provider, now not merely moving money but composing offers and rewards; and it occurs at the level of the relationship between the payment provider and the state, the always tentative dance between operator and regulator. The operator needs the state's authorisation, or, better, wants not to do anything that might signal that it ought to be under regulatory scrutiny.

Agents of some states facing mobile money and digital currency experiments do not necessarily worry about corporate control over that memory

considering early twenty-
for value transfer? First,
ectronic value depend on
ay somewhere. The idea
o 'cash in and never cash
nce in 2011, to 'keep the

sion of credibility to one
they say is an 'ecology' of
t the everyday shopkeeper
ayments. Rather, I mean
in Lydia: the provider of
of interlocking operations
to database managers, to
s, operating alongside and
'credibility to one another
ace of always-uneasy rival-
terprise, between different
ts. The trust is shaky, not
industry professional seem
ng to displace cash, their
tity is going to control the

im on value storage and
he means of exchange and
l terms, but rather 'native'
participants start to recog-
se of information captured

nt can dislodge the state's
estion the state as guarantor
rs worry about this: said a
cally, [to] make sure that
re is [sic] *hard* receipts, *hard*
With modern cashlessness,
to the operations of value,
ty want to create their own
in a particular network of
ne ever-encompassing. The
which, it is presumed, will

bank. Some laud it. Said one national regulator about another, international, regulatory body, 'Now they [understand] that any time you get people out of the cash economy, you put them under regulatory… eh… you know.' You put them under state scrutiny, at least potentially. Cashlessness is rich in records, potentially useful and usable for the state. Another stated, 'The goal of M-Pesa is a cashless society. It tracks things because it's digitised!' Some regulators see no tension in having a money of account with merchants in charge, as long as there are digitised traces for the tax collector and law enforcement.

But others express concern that, in the near future, there may be systems that are outside the existing payment rails – the networks that ultimately touch on the banks and other regulated entities: loyalty points, for example, that start to take on a life of their own. Even if there are digital footprints, one regulator explained to me, it is going to be difficult for governments to follow them. In a payments world driven by fees, this mattered less, because at some point the fees passed over existing payments rails or through banks, and thus open to regulatory view. But new electronic payments may usher in a world where the name of game is the creation of a new storehouse of data, a new archive, and the mining of that archive for new value. Said one regulator, this 'raises the question of what the core of banking is. Our bosses don't like to hear this.' For it also raises the question of where in the hierarchy of money the state is now positioned (see Bell 2001).

Marcel Henaff (2010, 114) argued that the coins in ancient hoards cannot be understood as proceeds of trade but rather as public reciprocal recognition. The hoard was the result of 'ceremonial gift exchange.' And that gift is neither moral nor immoral; it simply is, in a world where as Polanyi (1957) recognised, debts are not derived from 'economic' relationships – indeed, there are no economic relationships *per se* – but are occasioned by marriage, coming of age, death and other socially recognised makings and sunderings of relationships (Polanyi 1957, 198) – much as mobile money is used today, in places like Ghana and Kenya, for male circumcision rituals, bridewealth or funeral payments. People brought coins to the temples as a means of maintaining status distinctions. These were societies where people, always-already ranked with respect to each other, nevertheless continuously negotiated their position through unequally balanced gifts. Bringing coins to the temple provided an opportunity for the display of one's rank. High payments did not level distinction, but demonstrated it (Collier 1988). The temple was not properly speaking a mechanism of redistribution, as Polanyi thought, even if to our eyes it seems to have served that function. In a world organised never entirely by individual will or divine rules, every act was also an act of rank.

Some people in the contemporary world of mobile money imagine a similar hoarding, an in-gathering of the money of the world into capacious electronic accounts so that the material instantiation of money is no longer necessary, as

mother, international,
you get people out of
.. you know.' You put
ness is rich in records.
l. 'The goal of M-Pesa
ll' Some regulators see
ts in charge, as long as
nforcement.
there may be systems
s that ultimately touch
nts, for example, that
digital footprints, one
governments to follow
Less, because at some
rough banks, and thus
may usher in a world
chouse of data, a new
said one regulator, this
ur bosses don't like to
ne hierarchy of money

ancient hoards cannot
blic reciprocal recogni-
ange.' And that gift is
here as Polanyi (1957
elationships — indeed,
casioned by marriage,
akings and sunderings
money is used today,
on rituals, bridewealth
mples as a means of
where people, always-
ss continuously negoti-
Bringing coins to the
s rank. High payments
1988). 'The temple was
s Polanyi thought, even
world organised never
s also an act of rank.
oney imagine a similar
to capacious electronic
no longer necessary, as

value transits along electronic conduits from entity to entity. New operations of value interfere at every turn with the manoeuvres the various parties to this game are attempting to execute. Payment is already a field with no dominant player. There are non-interoperable systems, patched together at various points in a way that creates the effect — most of the time — of integration. But not always. While payment providers jockey for position to achieve fame, so to speak, and secure a position in the hierarchy of money, they are each capturing a different piece of the archive being written at the point of sale. There is not one storehouse. They are multiple, channelled by people's payment choices on different rails: Starbucks may know my coffee order, but has nothing on my book purchases; MasterCard knows I am in the US, and the shop at which I make a purchase, but not what I actually buy. The state may have access to some information; but ironically, when I choose its tender, it has nothing — except, perhaps, an already-given grant of freedom as the price of my acceptance of its place in the hierarchy of money.

I am arguing that it is a new configuration or composition of relationships of rank that place new merchants — the builders of channels and infrastructures for weighing and tallying — in uneasy co-alignment, co-opetition, with states. The Assyriologists help shift the frame on the origins of money, resurfacing ancient money of account. Electronic payments systems with the promise of replacing cash and coin themselves revivify the account, the archive, in an effort to control and profit from it. I offer this chapter also to shift the frame. Mobile money and cashlessness may be less about the balance of power, measures on an imaginary modern-day *pomœrium*, between the public and the private where payments and money are concerned. They are instead about a new contestation over rank in a plural and multiple world.

Notes

1. Keynes quipped that the chartalist approach to money, 'with its whole emphasis on the State and the legal-tender aspect of money' was 'as Hegelian and German' as the bullionist theory is 'Johnsonian and English' (Keynes 1920, 365). He wanted to find a 'just-right' perspective, one, it turned out, founded on perspectivalism and practice.
2. Keynes was in the India Office in London from 1906–8, where he worked on his first monetary treatise, after which he pursued his probability work under A. N. Whitehead.
3. I am suggesting a related but different relationship between merchants, money and credibility to that Julia Elyachar (2012) excavates from Daniel Defoe. Writing in a different historical context, Defoe emphasised the virtue of honesty in warranting letters of credit, specifically, the honesty of merchants' account-books: honesty, not reputation, ensured that everyone would 'give one another good grounds for believing that promises would be performed and expectations fulfilled' (Pocock 1985, 113; see Elyachar 2012; Sherman 2007).
4. And, yes, I am presuming that they were men. My subrosa thesis is that the city states of Anatolia under the Persians can be understood in Euro-American terms with reference to Collier's unequal bridewealth model, where sibling sets jockey for position with each other in a world of rank that has the character of being both ascribed and achieved at the same

time. There is not the balanced gift-giving that characterised equal bridewealth societies where elders manage credit on behalf of juniors, but a competitive gift giving where one is constantly trying to announce one's position in a hierarchy, and thereby change it (Collier 1988). This is in accord with Kurke's (1999) discussion of money, marriage and prostitution in ancient Greece.

5. The phrase is Catherine Eagleton's (pers. comm.). Eagleton was responsible for a revamping of the British Museum's Money Gallery in 2011–12.

Bibliography

Babelon, E. 1893. *Les Perses Achemenides*. Paris: Chez C. Rollin and Feuardent.

Babelon, E. and de Morgan, J. 1901. *Traité des monnaies grecques et romaines*. Paris: E. Leroux.

Boyle, M. 2010. *The Moneyless Man*. London: Oneworld Publications.

Bell, S. 2001. The role of the state and the hierarchy of money. *Cambridge Journal of Economics* 25(2), 149–63.

Collier, J. 1988. *Marriage and Inequality in Classless Societies*. Stanford: Stanford University Press.

Cunningham, A. 1891. *Coins of Ancient India from the Earliest Times Down to the Seventh Century A.D.* London: B. Quaritch.

Elyachar, J. 2012. Before (and after) Neoliberalism: tacit knowledge, secrets of the trade, and the public sector in Egypt. *Cultural Anthropology* 27(1), 76–96.

Graeber, D. 2011. *Debt: the first 5000 years*. Brooklyn: Melville House.

Guyer, J. I. 2004. *Marginal Gains: monetary transactions in Atlantic Africa*. Chicago: University of Chicago Press.

Guyer, J. I. 2012. Soft currencies, cash economies, new monies: past and present. *Proceedings of the National Academy of Sciences of the United States of America* 109(7), 2214–21.

Guyer, J. I. and Eno Belinga, S. M. 1995. Wealth in people as wealth in knowledge: accumulation and composition in Equatorial Africa. *Journal of African History* 36, 91–120.

Hann, C. M. and Hart, K. 2011. *Economic Anthropology: history, ethnography, critique*. Cambridge: Polity Press.

Hart, K. 1999. *The Memory Bank: money in an unequal world*. London: Profile Books.

Henaff, M. 2010. *The Price of Truth: gift, money, and philosophy*. Stanford: Stanford University Press.

Hill, G. F. 1919. Notes on the Imperial Persian coinage. *Journal of Hellenic Studies* 39, 116–29.

Hudson, A. 2000. Offshoreness, globalization and sovereignty: a postmodern geo-political economy? *Transactions of the Institute of British Geographers* 25(3), 269–83.

Ingham, G. K. 2002. 'Babylonian Madness': On the historical and sociological origins of money, in J. Smithin (ed.) *What Is Money?* London: Routledge, 16–41.

Ingham, G. K. 2004. *The Nature of Money*. Cambridge: Polity.

Innes, A. Mitchell. 1913. *What is Money?* New York: Banking Law Journal.

Jack, W., Suri, T. and Townsend, R. 2010. Monetary theory and electronic money: reflections on the Kenyan experience. *Economic Quarterly* 96(1), 83–122.

Jevons, W. S. 1885. *Money and the Mechanism of Exchange*. London: Kegan Paul Trench & Co.

Kendall, J., Maurer, B. and Machoka, P. 2012. An emerging platform: from money transfer system to mobile money ecosystem. *Innovations: Technology, Governance, Globalization* 6(4), 49–64.

Keynes, J. M. 1914. What is money? *Economic Journal* 24(95), 419–21.

Keynes, J. M. 1920. Review of Currency and credit, by R. G. Hawtrey. *Economic Journal* 30(119), 362–5.

Knapp, G. F. 1924. *The State Theory of Money*. London: Macmillan & Co.

Konuk, K. 2012. Asia Minor to the Ionian Revolt, in W. E. Metcalf (ed.) *The Oxford Handbook of Greek and Roman Coinage*. Oxford: Oxford University Press, 43–60.

Kraay, C. M. 1976. *Archaic and Classical Greek coins*. Los Angeles: University of California Press.

Kurke, L. 1999. *Coins, Bodies, Games, and Gold: the politics of meaning in Archaic Greece*. Princeton: Princeton University Press.

Maurer, B. 2006. The anthropology of money. *Annual Review of Anthropology* 35: 1–15–36.
Maurer, B. 2012. Mobile money: communication, consumption and change in the payments space. *Journal of Development Studies* 48.5–589–604.
Mauss, M. 1923–4. Essai sur le don. Forme et raison de l'échange dans les sociétés archaïques. *L'Année sociologique* seconde série–1–30–186.
Milne, J. G. 1931. *Greek Coinage*. London: Clarendon Press.
Pocock, J. G. A. 1985. *Virtue, Commerce, and History: essays on political thought and history, chiefly in the eighteenth century (Ideas in Context)*. Cambridge: Cambridge University Press.
Polanyi, K. 1957. *The Great Transformation*. Boston: Beacon Press.
Polanyi, K. 1969. *Dahomey and the Slave Trade: an analysis of an archaic economy*. Seattle: University of Washington Press.
Rapson, E. J. 1895. Art. XXVII—Counter-marks on early Persian and Indian coins. *Journal of the Royal Asiatic Society of Great Britain & Ireland* 27.4–865–77.
Samuelson, P. and Nordhaus, W. 2001. *Economics*–18th edn.–New York: McGraw-Hill/Irwin.
Schmandt-Besserat, D. 1992. *Before Writing: from counting to cuneiform*. Vol. 1. Austin: University of Texas Press.
Shell, M. 1982. *Money, Language, and Thought*. Baltimore: Johns Hopkins University Press.
Sherman, S. 2005. *Finance and Fictionality in the Early Eighteenth Century: accounting for Defoe*. Cambridge: Cambridge University Press.
Tymoigne, E. and Wray, L. W. 2006. Money: an alternative story. in P. Arestis and M. C. Sawyer–eds–*A Handbook of Alternative Monetary Economics*. Cheltenham: Edward Elgar Publishing. 1–16.
World Economic Forum 2011. *Personal Data: the emergence of a new asset class*. Geneva: World Economic Forum.
Wray, L. R. 2002. Modern money. in J. Smithin–ed.–*What Is Money?* London: Routledge. 42–66.
Zelizer, V. 1994. *The Social Meaning of Money: pin money, paychecks, poor relief, and other currencies*. Princeton: Princeton University Press.