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Introduction
Curating Transactional Things

BILL MAURER AND LANA SWARTZ

Consider this book a catalog for an exhibition that never happened. Each contribution takes up an ephemeral object connected to the act of payment, a transactional thing that unlike metal coins or paper banknotes would rarely make it into a display case—or, in some cases, even be impossible to curate. Money is the most obvious transactional thing. It is used for billions of transactions every minute, the sum total of which we call an "economy." Museums have money galleries, displaying coins, notes, and some of the other objects that people have used historically to conduct transactions—pretty things like beads, shells, stones, and metal ingots. Such items have been displaced by coins and cash, and commentators today predict the imminent demise of those transactional things, too, heralding a cashless future in the face of digital technologies of payment. Supposedly, the pretty things will get replaced by pure data.

Increasingly, however, monetary transactions have begun to require even more things. There are payment cards, mobile phones, electronic point-of-sale terminals, networks of wire, and webs of radio signals. Money-like things, too, have started to multiply. More and more, people are using frequent-flier miles, coupons, cryptographic currencies, and sharing economy

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platforms to conduct transactions. As sociologist Viviana Zelizer puts it, "money multiplies," and how.

These payment objects and some of their ancient antecedents are the subject of this book—the transactional things that are often forgotten, ignored, or operate in the background, and the social, artistic, and political practices that sometimes bring them to light. This book is one such practice. It brings together writers from archaeology, history, technology studies, industry, law, and computer science, each of whom considers an object, turns it around on the page, and reflects on its place in the archive of human exchange.

The era of cash and coin, of tangible, physical objects serving to settle transactions, is relatively speaking a historical anomaly, especially seen from the point of view of ten thousand years of recorded human civilization. Archaeologists and historians of the ancient Near East have shown that money of account, recorded in transactional records, long predated the minting of coin or other tangible objects used as a universal equivalent for exchange. In the beginning was not the coin but rather the receipt.

So coins and banknotes are not the only transactional things. And receipts do not make themselves: there are whole technological and institutional apparatuses around the recording of transactions. Anthropologists have long talked about "gift economies," which use other kinds of objects to record the transactions that tie people and groups together.

A great deal of attention has been paid to the thingness of traditional money. The US Mint calls coin collecting "the king of hobbies and the hobby of kings." Most major museums feature a collection of gold coins, curious banknotes, counterfeits, and ethnographic curios of shell, stone, beads, and bones all taken as tokens of value. There is the sense that transactional

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things, in the form of money, connect us to the past and should be preserved.

But with rare exception, there are few people or institutions interested in preserving the stuff of new transactional things. Where are the charge-a-plates, the zip-zap machines, and mobile phone dongles? Today's payment artifacts—along with their associated merchant guidebooks, authorization checklists, wires, and cables—are mostly regarded as trash. This is true even though pundits are perpetually proclaiming the "death of cash," and even though the "cashless society" has been part of an idealized future for over a century.

One reason for this is because new transactional things don't really seem like things. How, exactly, would a museum curator collect and display Bitcoin, the cryptographic currency (the British Museum has tried)? While some professors, entrepreneurs, and artists have made physical Bitcoins, these are mostly novelty items. Bitcoin "lives" in the blockchain, a dynamic transaction record produced in concert by a network of decentralized computers. Or what about the Automated Clearing House, the infrastructure responsible for much of today's direct deposit and direct bill payment (though at least one money museum, at the Atlanta Federal Reserve, sought to curate it, owing to its significance for that regional branch of the United States' central bank)?

Another reason why contemporary transactional things are rarely paid attention to is because it is part of their job to be invisible. The Square dongles that Scott Mainwaring describes in chapter 1 are given away for free, adding to their "frictionless" aesthetics. Like many critical infrastructures, most users only notice them when they are broken. When a point-of-sale terminal breaks, a merchant either throws it away or returns it to the third-party payment company that provided it, who will

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probably throw it away as well. The online market place eBay is littered with such wreckage. So are electronic waste collection facilities.

In addition, the payments industry is little understood by those not directly involved in it, and there are many, many pieces of the payments puzzle. Even the basic card networks like Visa and MasterCard depend on issuing and acquiring banks, payment processors, point-of-sale devices, independent sales organizations, manufacturers of plastic cards, "J-hook" displays from which gift cards are suspended in grocery stores, wireless networking services, and chip and device manufacturers. At the level of infrastructure, many services depend on the "rails" and "pipes" (to use industry parlance) of other services: Western Union "rides the rails" of First Data; PayPal uses the federally mandated Automated Clearing House.

We want to encourage readers to start pulling these things apart, to look at their inner workings. Looking under the hood, into the machinery, of everyday transactions, seeing all the different players in a system described by participants as an "ecology," provides new insight into what we shorthand as "the economy." This comes at an important political moment. The global financial crisis, increasing income inequality, and the spread of mobile computing and world of connected digital devices all together have opened up new questions about what money is, how the act of payment takes place, and whether it is time for a reconsideration of value itself. There is an explosion of interest in alternative currencies, new value formations based on reputation or trust in online networks instead of traditional forms of labor or investment, and the rise of the so-called sharing or peer economy. A lot of people are spending a lot of time (and good-old traditional forms of money) on these things.

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We offer this collection of transactional things at a time when more and more people are interested in taking money apart and putting its components back together in new configurations. The systems of payment that undergird our world are speaking and doing new things—finding affordances in old infrastructures as well as authorizing value transfer as they forge and sunder connections with one another. There is high tech alongside the clunky and even ancient, "disruptive" innovators riding the rails of the legacy systems, a complicated tangle of wires and wishes. It is a good time to explore infrastructures of payment.

Our inquiry into payment comes about also because so many human and technological actors are currently preoccupied not just with exchanges themselves but also with the transactional record of those exchanges. Money itself, as alternative monetary theorists have long recognized, is an archive: a great ledger recording debts and credits. Transactional record keeping is central to money, and so the things of record keeping find a place in our collection, too. As Jane I. Guyer writes in chapter 15, the receipt is "proof of an event in the past"—a proof necessary for the forging of future relations—much like the espresso maker accessed by way of an Airbnb rental (described by Maria Bezaitis in chapter 12) promises a coming together over a steaming cup.

The anthropologist Keith Hart calls money a "memory bank," and the analogy to computing is intentional. For archaeologists of ancient Mesopotamia like Michael Hudson, it goes without saying that before there was coin or paper, there was "book money" (even if the books were made of fired clay). Everyone knows that the paper dollar bill has no value in itself. When they focus on the fiction of fiat currency, they forget that the dollar bill has a serial number; it is a coupon pointing back to an entry in a great, national ledger.

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Money is an archive we allow to become a medium of exchange, a marker and store of value referenced back to that archive. Even the most gilded goldbug (or silverites, as explained by Finn Brunton in chapter 20) unwittingly participates in an act of bookkeeping when hoarding gold or Bitcoin against state or fiat money: they are betting that someone, someday in the future, will accept their token in payment for any debt. This is a belief in credit in all senses of the term. Money—any money—needs instruments for noting (or knotting, in the case of khipu, as described by Gary Urton in chapter 7) new entries into the transactional archive. Payment systems provide those instruments.

But transactional archives are growing, becoming a source of value unto themselves. They are a species of "big data," but potentially the biggest data of them all: the complete record of all human and nonhuman transactions involving value. We think it is a good time to look at the other techniques that humans have created to record and figure transactions, from France's Minitel, discussed by Julien Mailland in chapter 14 to the soon-to-be-forgotten magnetic stripe, whose story David L. Stearns tells in chapter 4.

Opening up payment opens up questions of the unit of account, of how accounts are reconciled, of the authority authorizing account reconciliation. Is it the state? A private entity? The people or a community? An algorithm?

Our project seeks to authorize another kind of accounts keeping by curating and convening, putting side by side the object ontologies of this and that system of accounts keeping and settling, from tattooed arms to the sharing economy. We believe it is especially relevant at a time when many seek to create alternative authorities to the unit of account, from Occupy to Bitcoin, American Express to Airbnb.

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The authors we have assembled are diverse, and their work has had unexpected influence. David Graeber is an anthropologist whose historical study of debt helped galvanize the global Occupy movement. Bezaitis is a comparative literature scholar whose career has been spent in the information technology industry. Among other things, she has translated Jane Bennett's vibrant materialism into Intel Labs. Urton, a scholar of pre-Colombian archaeology, has influenced computer scientists fascinated with ancient and alternative coding systems. Our scope is audacious: all of human history. We juxtapose archaeological, historical, and ethnographic material. It is a new wonder cabinet of transactional things.

The Chapters in This Book

The book grew out of an experiment: we invited a carefully selected group of individuals for two days of discussion on transactional things. In addition to archaeologists, anthropologists, economists, computer scientists, and science and technology studies scholars, the group included Federal Reserve payment experts, industry representatives from payment start-ups, those who had built the 1970s' interbank networks that became Visa and MasterCard, information technology professionals, and others. After the workshop, we invited participants to write a short piece about their "favorite" transactional thing. We then invited others to contribute to the project as well, resulting in a compendium of payment objects and transactional things.

Transactional objects are visible (cash railways with transparent chambers for shuttling money and receipts across a business establishment; tattoos on the arm of a California chief for measuring standard lengths of strung shells). Their visibility supplies confidence. But transactional objects are also secret

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or hidden. Proprietary networks carry valuable and sensitive information: what we see on the surface (a Visa card) hides an acquiring and issuing bank, payment processor, or point-of-sale manufacturer. Ben Turner, the barista and money performance artist discussed by Alexandra Lippman in chapter 9, named his "occasional coffee shop" Squamuglia after the secret mail service in *The Crying of Lot 49*. Cash and coin bear material traces of human handling, which carry secret stories of their past trajectories. It is for this reason that Turner says washed money is "less vibrant."

Is "vibrancy" the primary innovation of private currency Dogecoin? As Sarah Jeong describes in chapter 6, it is a cryptographic currency that emerged from a popular Internet meme that depicts the inner monologue of a "cheerfully wary" Shiba Inu dog. Because it mocks and affirms Bitcoin along with the mix of radical libertarian and anarchist politics associated with it, Jeong writes that Dogecoin became, for a moment anyway, the "Internet's official currency."

Are the material traces of interaction lost with electronic forms of payment? We think not; it just takes a little excavation to discover them. We are inspired by archaeology and ontography as well as how ancient practices impinge on contemporary payment ecologies (from tribute to corvée labor). There is also a biographical quality to the essays that follow, such as Mailland's teenage memories of text-based porn accessed via the French state-run Minitel, or Guyer's still-remembered grocery cooperative member number.

Personal histories intertwine with payment technologies, and sometimes the latter are literally inscribed on the former, as in chapter 3 in Lynn H. Gamble's essay on the measurement of wealth among Native Americans in what became the state of California. Payment objects are intimate objects, carried close to

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the person—or even inscribed onto the person—and in an age of big data, carrying a wealth of data about the person, constituting the person as data. As Keith Hart's contribution shows in chapter 17, payment creates intimacies, individual or group, short or long term, kin and criminal. In chapter 5, Taylor C. Nelms's discussion of group and individual receipts in Ecuador reveals that the receipt serves as an interchange between the informal and formal, all kept safe and secure in a cash box. Payment entails vulnerability after all: during the tense waiting for authorization, for clearance and settlement to take place, as well as in the moments of relationality forged through the gift and the expectation of its return.

A number of our contributors demonstrate the legacies of infrastructural history, how the tracks laid down and paths not taken led to the endurance, even in today's world of virtual touch screen keyboards, of things like the telephone keypad (Michael Palm, chapter 18) and PIN number (Bernardo Bátiz-Lazo, chapter 16) as the signature of payment. Other elements of contemporary payment, such as the thirty–seventy revenue split between application developers and Apple, derive from Minitel's French (pre)modern, its exacting of tribute back to the center, just like Jean-Baptiste Colbert's network of roads—since if all roads lead to the center, hierarchy endures (Mailland).

Questions of liability, risk, and distributional justice are essential not just to money but also the rails that money rides on. In chapter 8, Swartz probes at the racial reality of midcentury dreams of a cashless society. If government benefit payments no longer come by way of a check but rather a prepaid MasterCard (Lisa Servon, chapter 2), then the labor and expenses associated with those payments are off-loaded onto the citizen. One might be quick to reference here the so-called sharing economy, discussed by Bezaitis, where the risk of, say, faulty wiring in an

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apartment or an aging gas line to a stovetop fall on the user—sharer, beware!

And then there are the roads not taken. Stearns's history of the magnetic stripe on the back of plastic payment cards reveals the old struggle between merchants and banks, with the latter winning the payment wars—for a time—by instituting their preferred technology over the merchants' optical scanning devices. Massive credit and debit card breaches in the mid-2010s would seem to portend the extension of chip-embedded payment cards to the last giant holdout against that technology, the United States. At present, the United States has adopted chip and signature rather than chip and PIN, which is the standard elsewhere. Will US cardholders continue to sign their names (or as Maurer describes in chapter 10, artful scribbles) to authorize transactions? Or will they, like the rest of the world, someday enter PINs? Chip and PIN, of course, brings us back to Palm's essay and the telephone keypad: we are now at an historical moment where a growing number of humans in the developed world will never have experienced pushing buttons on a landline phone and may marvel at the peculiar layout of the keys.

Throughout the history of payment, fraud and fakes have always been a concern. In chapter 13, Whitney Anne Trettien looks at money in the early American republic. Benjamin Franklin employed leaf prints on notes as an anticounterfeiting device. As she notes, the leaves of money captured the tension between organic life and the inorganic reproduction represented by money's own increase—through trade and interest payments. Similarly, as Rachel O'Dwyer demonstrates through her exploration of ether in chapter 19, there is an ever-present dialectic between reality and abstraction in monetary affairs, substances, and networks, visible and invisible. Nature printing recalls the other stuffs of nature in transactional worlds, such as the ether-like

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shells and tattooed wrists in Gamble's essay, or Urton's discussion of khipu, an encoding mechanism and nonscriptural accounting system for managing the relations of tribute and empire.

Trettien writes that plants' "incessant *becoming-something-else*" made it impossible for a forger to recapture the lost moment in time when a leaf was first pressed on a metal printing block. This, it seems to us, also describes the things of payment, their technologies and ephemera. As records of the transactions of ongoing social life, they only momentarily freeze interaction as it wends its way to whatever comes next.

This collection, then, is also an effort momentarily to freeze the worlds of transactional things so that we might marvel at them, reflect on their transition and effacement, their innovation and old habits, while new rails are being imagined and actualized alongside the old. Payments and their things are transient—the transaction is, after all, "settled"; it ends. Until the next one begins.

This book is not a comprehensive crash course on payments. Instead, it is an invitation to pay more attention to the ecology of transactional things that ultimately make economies possible. It is also an invitation to think about those artifacts and economies differently.

An exhibit catalog serves as a guidebook and memento. Take this collection as an invitation to explore transactional things. Take it as a memory bank, too—a series of pages from the great archive of payment.

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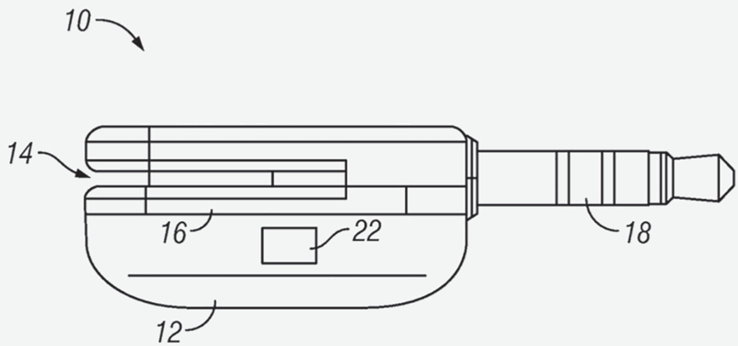

FIG. 2

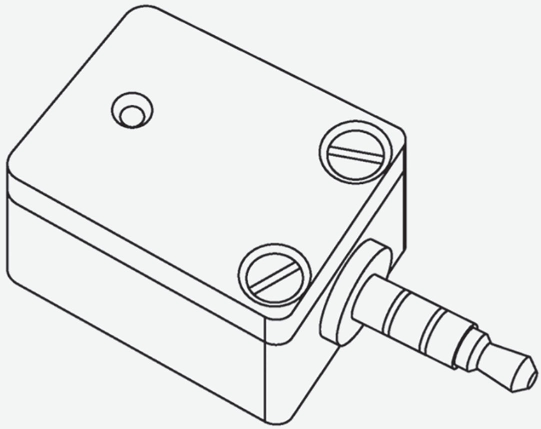

FIG. 3A

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Paid

Tales of Dongles, Checks, and Other Money Stuff

Edited by: Bill Maurer, Lana Swartz

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