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Money as Token and Money as Record in Distributed Accounts

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CHAPTER 12

Money as Token and Money as Record in Distributed Accounts

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Money has always had agency, or, rather, has been an expression of agency, or even is agency itself, or . . . well, this is precisely the problem of money.

People have certainly imagined money objects to possess agency. Who among us has not thrown a coin into a fountain or picked one up imagining it would bring us luck, would change our destiny? Eighteenth-century English tracts on money, somewhere between didactic pamphlets and the early serialized novel, imbued both notes and coins with the ability to witness the affairs of humans around them, and to remark on questions of morality and social order as they were passed from hand to hand—unless, unfortunates, they ended up in someone's safe, or misplaced somewhere. Saved or lost money lost its powers of action and narration. Money in circulation, even counterfeit, chronicled the world of men and women, boys and girls, from every station of life and every corner of the world. And seemed to enjoy doing so, too.

In telling their tales, these coins and notes reflected upon the economies of which they were a part and which they were creating in their travels. They served as a distributed, collective memory bank, to use Keith Hart's (2000) phrase, each note or coin testifying to its transit during human exchange and, in the process, forming a collectivity having the potential to record all of human intercourse—or at least those aspects of it in which money was quite literally brought to bear. Money was not inert but nor was

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it completely fluid. It occupied a Goldilocks spot: just malleable enough to be impressed with others' stories, but not so malleable as to melt away. In that respect, the memory bank made by these money tokens imagined in these stories was not unlike the digital transaction records of contemporary means of payment, from credit cards to PayPal or Bitcoin, electronic means of recording transactions and human interrelation. They also bear a family resemblance to the databases inscribed on clay tablets in the ancient Sumerian temples and storehouses.

Like today, money in these narratives was brought to bear pretty much everywhere. There was no escaping it. Almost every interaction involved it. Money objects' distributed agency recorded the stories of humanity, mapping relations in time, space, and value, and memorializing—again, often for pedagogical purposes—the distributed action of humans, hapless or otherwise.

What do these stories teach us today? What do they teach us as our monetary relationships increasingly become an object of business concern—when Apple or Google wants to create and manage the record of all of our interchange, to create a new hoard of our interpersonal transactional data?

Insofar as they remain didactic for contemporary readers, it may be that these money narratives point up the fallacy that money is ever a mere token, just a thing that represents something else or else is valuable somehow in itself. It is about time we dispensed with this idea. The stuff of money is a lot of fun, and does indeed matter, as will become clear. But the stuff of money has also distracted monetary theorists and "money nutters" (Maurer 2011) alike: both those who would seek to understand money and those who would seek to solve any number of social, environmental, or political problems by making money anew err in their attention to its things absent its relations in time and space, the relations of debt and credit that the token helps mark. Commodity money theorists, sound money proponents, or survivalists preparing for the end of the world see a money object essentially the same way as in the tales of its origination in primitive barter (Graeber 2011). Money's qualities—rarity, portability, malleability, divisibility—and its qualities in themselves, not any agencies they might possess, are for such people what makes it an object of universal value.

Money's matter matters in a different way, however.

When people write IOUs, relations of credibility extend outward from person and paper, and can move across time and space often toward unplanned or unexpected ends, outside whatever original intention may have first animated them. When states issue currencies, they leverage their own credibility in a financial and moral sense, but then let money go to

do what it will, whatever people will do with it, from underground to dark economies, to adornment and decoration and magic tricks. Private or public credit, money is regardless a record of all manner of relationships of credit and debt across time and space, and not just economic relationships of credit and debt.

In arguing that money is a "means of collective memory," a distributed record of all human intercourse, Hart (2005) implicitly poses the question of the relationship between those records and the infrastructures that produce and maintain them. It is not just cash circulating hand to hand that constitutes this great database; it is also all the systems for transferring money, recording those transfers, and creating great globally expansive ledgers into which human collectivity finds a kind of rhetorical and mathematical expression. *This* is the matter of money that matters, and the sense in which that matter matters: it affords a carriage across space-time and between other agents. Hart wondered whether the infrastructures—the internet, the electronic payment card networks like Visa and MasterCard—could be seized for "human," rather than simply corporate, purposes. Could they be decentralized rather than held in walled gardens, shared with the many whose everyday economic activity made them repositories of collective memory in the first place rather than enclosed for the profit of the few?

Early 21st-century experiments with digital currencies like Bitcoin respond to this challenge, despite the at times incoherent perspective on money they evince (Maurer, Nelms, and Swartz 2013). The center of the confusion is whether people understand, and then seek to create, money as "cash-based" or "ledger-based." For central banks, this is a primary preoccupation, since money in circulation and money on the books must be measured if the bank is to intervene in monetary affairs: cash money has to be ledgered. Eduard de Jong (2014), a pioneer in the development of digital currency systems—and the toll road payment network for the Netherlands!—uses these terms to distinguish between moneys that are emitted by a central source and then embedded in objects that leave no record of their passage from one agent to another, and moneys that by design record their passage in a database, the authority of which all accept. For a toll road, you might want what de Jong calls a cash-based system, if you are worried about the prying eyes of the state into your travels, or you just didn't care about the massive amounts of data generated at the toll booth about people's comings and goings every day, day after day, on their regular commutes. In such a system of value embedded in token, however, people can pour too much power into the money object. Some Bitcoin proponents thus evince a kind of digital metallism, imagining that the value of the bits in Bitcoin derive wholly from their scarcity, a scarcity built into the

design. With the latter, the ledger-based system, people ponder whether the database must be centralized for it to have its authority. Must it be maintained and verified by a trusted, or simply overwhelmingly powerful, third party—a temple, a corporation, a notary, a government? Or can there be a democratically decentralized database, owned by none or owned by all, without the intercession of any scribes, bookkeepers, banks, or governments? Just how far can the distribution of agency go?

Bitcoin and other so-called cryptocurrency experiments rely on the existing network infrastructures of the internet and the electrical grid. On top of those systems—which are more or less centralized, depending on how you look at it— Bitcoin creates a database. This database has a specific structure. Imagine a great ledger book. Imagine further that everyone—everyone!—has a copy of that ledger. Anyone can make an entry of a debit or credit into that ledger. I credit you, while debiting myself. But then everyone has the opportunity to verify that entry (though not everyone does). Those who do the work of authenticating transactions are rewarded with a new credit line in the ledger. They can also levy a fee, in the form of an additional incremental credit, for their work of verification. A verified set of transactions—a complete ledger page—is called a block. The entire database is called the blockchain, a chain of groups of verified transactions. A great database, distributed among all participants, public yet pseudonymous, written by the collective, collaborative and competitive effort of the participant in the system. A Visa network without Visa, banks, or the government. Just computers and people (and electricity . . . and the internet). At least, this is the theory, anyway.

In one of the 18th-century money narratives, money objects possess distinct agencies, and multiple agencies within themselves, too, which the money objects can send out of their bodies and into the world, and into other bodies. In one story, a coin, an Indian gold rupee, describes itself as having multiple spirits, though it names only three. They are Ductility, Malleability, and Fusibility. "Men have foolishly called them qualities," he says (Scott 1782, in Bellamy 2012:36). But they are not qualities, in the conventional sense of the term. They are different aspects or externalizations of its core self: agents. They are also among the properties of precious metal that Enlightenment philosophers and, earlier, the Greeks had imagined to be perfectly suited to serve as money. But the story suggests that what matters is not their matter in itself but the agency the qualia afford, to carry value across time and space and between persons. They are also infrastructure, then—something that transports or transmits other things. Again, this is the sense in which the matter of money matters—it

bestows the ability to act over distances, but it does not possess by virtue of those qualities any intrinsic value in itself.

The rupee is able to dispatch its spirits and send them into people's minds, or, more precisely, into their brains. There, the spirits can peer into a person's history by reading the literal inscriptions on a specific region of the brain where memories are recorded. Or, not memories exactly: the word our rupee uses is *transactions*:

> One of my subordinate spirits immediately mounted his cella turcica [the structure in the skull holding the pituitary gland] by my command, from which spot the brain above may be seen marked with impressions, like figures on a celestial globe. These impressions are nothing but the scratches made by objects which have been presented to the senses, and of which memory makes use in her operations. By reading these, we can discover all the transactions of any consequence in which a man has been engaged. (Scott 1782, in Bellamy 2012:51)

We have qualities—ductility, malleability, fusibility—that are agents that can read individual humans' memories. Those memories are literally written on the brain, like tally marks, at the seat of the human person's own agency, which is revealed by the money object to be itself a great database of transactional records. This is a wondrous hall of mirrors: money objects, distributed throughout all humanity, replicate at a higher level of scale the transactional database in each person's brain. Money's agencies, embodied in money's qualities, intermediate between the great transactional database of all human interaction and the personal archive of every individual's memories. This places money—all of money, that is, all the money in the world—in the position of serving as the record of all of human history. A memory bank, indeed!

It is difficult to think of a coin as a record-keeping instrument. But this is precisely what the rupee's tale reveals.

The earliest coins were themselves a kind of receipt, the insignia on their faces a constant reminder of the sovereign from which they were issued and to which, through tribute or tax, they would return. Users of the first coins sometimes stamped their own marks on them, announcing their presence to the wider community of people among whom the coins circulated. It is as if people still lived with a cuneiform mentality, the urge to record one's own symbol on coins so great that one numismatist, examining a collection in the British Museum, noted that some examples were so covered with these countermarks as to be losing their material integrity (Hill 1919).

In Sumer, ancient bureaucrats kept cuneiform tablets in central temples and palaces (Hudson 2000). Later, in Anatolia, coins were issued from

mints and allowed to circulate. Agency centralized; agency dispersed. Yet the latter was no less a giant record book than the former. Similarly, coin and cash are no less a system of credits and debts and no less an infrastructure or an archive for being materialized in what comes to our hands as individual objects, individual tokens. Just a distributed archive. All the money in circulation is a distributed database of all our credits and debts, if we take the point of view of our Indian rupee.

If money's qualities could extend outward from money objects to look into personal trajectories, today electronic payment systems disaggregate and distribute the agency of the person across spatial and temporal scales, while opening up the person's prior—and, predictively, future!—transactions. If transactions in the 18th century were recorded as traces on the brain, many of today's transactions are recorded in other memory banks: the computer servers that store the transactional data of these electronic systems.

With Bitcoin or with new electronic payment systems—ApplePay, PayPal—what falls outside of this archive are precisely the relations our rupee was able to witness: the hand-to-hand transfers of cash and coin. From a digital computational point of view, these transactions are virtually invisible, especially if there is no electronic receipt-producing device like a cash register or point-of-sale terminal linked to computers processing and storing other data that may enter into the system. Corporate entities at the time of this writing are actively seeking to enclose this "commons"—a term used by more than one payments industry professional in conversations with me.

Experts have predicted the obsolescence of physical instantiations of money almost as soon as 19th- and early 20th-century governments standardized their issue. They have a point but miss their mark. Before there was coin, there were centralized ledgers, records of transactions warranting other transactions and literally inscribing (in clay, stone, papyrus) the distributed agencies of human interaction. Financial crisis and "disruption" in the payments industry—the business of transferring value—in the early 21st century again raise the question of money-as-ledger, making the era of cash and coin seem like a brief interregnum in the deep history of value transfer. Asking after the infrastructures facilitating that transfer leads to the role of accounting not as a record of monetary interaction, but as that interaction itself. It is precisely a question of the distribution of agency: who shall make entries into the great ledger of human transaction and exchange? As the ledger pluralizes, who controls the cross-referencing, the gateways between newly dispersed accounts? Will it be the new

corporate masters of multiple, independent or interdependent temples, each holding its own record of our interactions (a twist on Peebles's (2008) story: instead of the hoards migrating to the banks, they migrate to the great server farms of our era)?

Or, as a joint commitment par excellence—something we do together, with it, over it, through it, because of those Goldilocks qualities—can money be made to redistribute agency, away from the Apples and Googles and Facebooks, and toward another economy? Ledgers, after all, are vulnerable: to fraud, to damage, to fire. Their intentional destruction can have world-changing consequences, from the burning of the Inkan khipu by Spanish colonials to the burning of the tally sticks—and the fire's spread through the House of Commons—in early 19th-century England. If money's agencies are increasingly being locked up now in corporate ledgers, hoarded like a rupee in a safe, removed from the human interaction that once delighted it, can we help set them free so they can tell their—our—stories?

Or shall they burn?

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REFERENCES

de Jong, Eduard. 2014. "Towards an Open E-currency System." Lecture given at MoneyLab, Amsterdam, March, 23, 2014. Available at http://networkcultures.org/moneylab/2014/03/23/edward-de-jong-towards-an-open-e-currency-system/, last accessed November 15, 2014.

Graeber, David. 2011. *Debt: The First 5,000 Years*. Brooklyn, NY: Melville House.

Hart, Keith. 2000. *The Memory Bank: Money in an Unequal World*. London: Profile.

Hart, Keith. 2005. "Notes toward an Anthropology of Money." *Kritikos: An International and Interdisciplinary Journal of Postmodern Cultural Sound, Text and*

Image 2, available at http://intertheory.org/hart.htm, last accessed November 15, 2014.

Hill, G. F. 1919. "Notes on the Imperial Persian Coinage." *The Journal of Hellenic Studies* 39 116–129.

Hudson, Michael. 2000. "Introduction: The Role of Accounting in Civilization's Economic Takeoff." In *Creating Economic Order: Record-keeping, Standardization, and the Development of Accounting in the Ancient Near East, Volume IV*, edited by Michael Hudson and Cornelia Wunsch, 1–22. Bethesda, MD: CDL.

Maurer, Bill. July 2011. "Money Nutters: *Economic Sociology_The European Electronic Newsletter* 12(3): 5–21.

Maurer, Bill, Taylor C. Nelms, and Lana Swartz. 2013. "When Perhaps the Real Problem Is Money Itself!": The Practical Materiality of Bitcoin." *Social Semiotics* 23(2): 261–277.

Peebles, Gustav. 2008. "Inverting the Panopticon: Money and the Nationalization of the Future." *Public Culture* 20(2): 233–265.

Scott, Helenus. 2012. *The Adventures of a Rupee*. London: J. Murray, 1792. In *The British It-Narratives, 1750–1830, Volume 1: Money*, edited by Liz Bellamy, 31–71. London: Pickering and Chatto.