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Chapter 3
Materiality, Symbol, and Complexity in the Anthropology of Money

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Abstract The invitation to review anthropological studies of money offers an opportunity not only to revisit the history of anthropologists' investigations into money's objects, meanings, and uses but also to reflect on the intersections of such work with recent psychological research. In this review essay, we survey the primary findings of the anthropology of money and the central challenges anthropological work has posed to assumptions about money's power to abstract, commensurate, dissolve social ties, and erase difference. We summarize anthropologists' historical concern with cultural difference and recent work on money's materialities, meanings, and complex uses. We emphasize the pragmatics of money—from earmarking practices and the use of multiple moneys to the politics of liquidity and fungibility. In the final section of the paper, we find inspiration in recent psychological studies of money to indicate new trajectories for inquiry. Specifically, we point to three potentially fruitful areas for research: money use as a tool and infrastructure; the politics of revealing and concealing money; and money's origins and futures as a memory device. We end with a brief reflection on ongoing monetary experiments and innovations.

Money has long been a topic of anthropological interest. From the giant Yap rai stones to the global diffusion of cowrie shells for use in trade to the creation of elaborate transactional archives in clay, string, and paper in places where physical money-stuff did not circulate, the ethnographic and archival record is rich with a diversity of money-objects: all manner of shells, beads, feathers, beans and grains, textiles, clay tablets, metal artifacts (wire, blades, axes, bars, rods, rings, and open bracelets called manillas), livestock, and much more—including, of

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course, coins, paper, and plastic, as well as unwritten, mental accounts-keeping. Anthropologists and archaeologists have documented a similarly diverse set of meanings and uses of money, exceeding and complicating the typical functions conventionally attributed to money, from Aristotle to modern-day economics textbooks: medium of exchange, store of value, unit of account or standard of value, and method of payment.

Some of the earliest ethnological compendia record the use of a variety of media for exchange and payment. Such surveys invite a certain wonder at the expanse of the historical and ethnographic records. In the Preface to her 1949 *Survey of Primitive Money*, Quiggin (1949) mentions broad scholarly interest in the "obsolete currencies of different countries, especially about those of the ancient civilizations of the Orient, where money has been in use for hundreds if not thousands of years" (p. ix). The book offers a survey of "primitive money" by continent and region or country, with a separate chapter for "cowries and beads," which, she says, "cannot be confined within these [geographical] limits" (p. 25).[1]

Cowries offer, in fact, an important case for the anthropology of money. Harvested primarily from the waters of the Indian Ocean, these shells came to be a predominant form of payment from China to Africa, circulating transnationally beginning as early as the eleventh century through Indian Ocean and Mediterranean commercial networks and the trans-Atlantic slave trade. Billions of shells were imported to Asia, Africa, and Europe and used in conjunction with a variety of local money-objects, including colonial currencies, in complex patterns of exchange (Hogendorn & Johnson, 1986). In the nineteenth century, cowries were accepted in some colonial jurisdictions for the payment of taxes, even as colonial officials attempted to demonetize the shells, continuing imports produced hyperinflation and devaluation, and local peoples in some circumstances refused to use the government-imposed money (Gregory, 1996). The cowrie's historical importance exerts an influence even today: The Ghanaian currency, for instance, is named the *cedi*, the Akan word for cowrie (Dzokoto, Young, & Mensah, 2010; Dzokoto, Mensah, & Opare-Henaku, 2011), and in some parts of West Africa, people still use cowries in rituals, offerings, and alms (Şaul, 2004).

This history of the cowrie's varied use as money speaks to recent approaches to the study of money in anthropology. The earliest surveys of what was called "primitive money" assumed a unilineal evolutionary trajectory in the development of money-objects and their functions (from, as we will explain below, "special-" to "general-purpose"). Particular money-objects were linked to particular peoples and culturally specific circumstances for payment—say, the exchange of shell valuables for pigs, or cattle for wives. The global circulation of cowrie shells, however, demonstrates that the use of certain objects in transactions extended well beyond the assumed boundaries of cultural difference or function. It points to the internal diversity of the category of things we call money, as well as its temporal dynamism. Such diversity and dynamism directs analytical attention to, as Guyer (2011, p. 1) puts it

[1] See also Einzig (1948), Ridgeway (1892), and Stearn (1889).

in a recent review, "[b]orders, thresholds, and historical shifts," especially those emerging from colonial encounters.[2] As Guyer (1995, 2004) has consistently maintained, the complexity of such interfaces makes it difficult to sustain, notions of boundedness, simple functionalism, and ahistorical or ethnocentric approaches to understanding the currency of money-objects.

Anthropological research on money—its forms, functions, meanings, and uses—now assumes such diversity and complexity, while continuing to investigate both the materiality of money and the symbolism money-forms elicit. In this chapter, we review key findings in the anthropology of money and trace potential intersections among these findings and recent psychological studies of money. We suggest that bringing together psychology and anthropology on the question of money is quite felicitous, as anthropologists have often seen in transformations of money manifestations of transformations in human consciousness itself, from changes in memory afforded by external recording devices to various kinds of abstraction, evaluation, and calculation. We also argue that recent psychological literature examining the effects of use or exposure to money on people's mental, emotional, and neurological states dovetails with recent anthropological approaches to money that foregrounds its pragmatics. This pragmatic approach shifts questions about what money *is* towards questions of what money *does* and the broader sociocultural processes it indexes and opens up for empirical and analytical consideration.

In this chapter, we first review, over the course of two sections, the history of conventional anthropological investigations of money.[3] We then introduce the challenge posed by recent anthropological work to this conventional story, before turning to examine, in turn, three central themes: (1) the material stuff of money and the effects of its materiality; (2) the symbolic meanings attached to money and the use of money to translate between different realms of meaning, matter, and value; and (3) the complexity of people's monetary practices (e.g., earmarking and sequestering, or the manipulation of diverse scales of value) and the social effects of such practices. In our final section, we turn to psychological research on money as a kind of tool; on money and conceptions of power or capacity; and on the place of transactional records in the evolution of money as a memory device. Our goal is to suss out potential points of intersection between certain trajectories in the psychology of money and emerging research in anthropology.

[2] Guyer adds, usefully: The borders that we focus on are social and between communities of currency users. The thresholds are conceptual and institutional between distinctive capacities of different moneys, often implicating different moral economies of fairness (in the short run) and transcendence (in the long run). The historical shifts are moments when combinations of attributes are brought into open question and submitted to deliberate reconfiguration. (2011, p. 1).

[3] We will be unable to provide a comprehensive survey. Maurer (2006) provides a similar review, although we include citations to work published since then. See also Hart's (2012) review. We do not address literature in anthropology on gifting, nor do we range into growing bodies of work on finance and debt (on finance, see Footnote 16; on debt, see Peebles, 2010; Han, 2012; Schuster, 2010, and the articles in the November 2012 special issue of *Social Anthropology*).

Theories of Money, Cultural Difference, and the Mind in Anthropology

Conventional approaches to money in anthropology were concerned with definitional questions, especially how to classify the so-called primitive currencies of non-Western peoples. Debates about how to understand these material objects frequently stood in for arguments about how to make sense of cultural difference generally, and these latter discussions often involved assumptions about the minds of the people being studied.

At the heart of these debates was the question of how to define money, one shared broadly across the emerging human sciences in the 18th and 19th centuries. The period itself, not coincidentally, saw profound changes in economic and market relations, especially the expansion of transoceanic colonial and mercantile networks and predominantly Euro-American (but also Chinese, Arab, and Indian) global social formations, which brought more and more peoples—and their moneys and modes of figuring value—into relation with one another, often hierarchically (Wolf, 1982). Two main strands of Western thinking on money derived from these global encounters. One, harking back to Aristotle, saw money in functional terms (as a means of exchange, unit of account, and store of value, as well as standard of value and method of payment). This strand tended to posit that money solved the "double coincidence of wants" (Jevons, 1875) problem of a supposed era of primitive barter by serving as a common means of exchange that could equilibrate the value of different commodities (e.g., Menger, 1892). It also posited that money fashioned from precious metals solved a value-storage problem since gold and silver, unlike iron or perishable commodities like grain, can last generations (and is therefore heritable). The general version of this monetary tradition is categorized as the *commodity theory* of money and the more specific version (embracing gold and silver) as *metallism* (Schumpeter, 2006/1954; see also Bell, 2001; Desan, 2005; Wray, 2010).

The other main strand of thinking on money tended to emphasize the role of social relations and conventions in the creation of money, focusing on interpersonal trust and credibility among market participants, as well as the credibility and authority of the state in warranting—and backing up by force—contracts settled in terms of its coin, as argued by the so-called *chartalists* (Innes, 1913, 1914; Knapp, 1924/1905; Wray, 2004; see also Graeber, 2011). By the early twentieth century, commodity money proponents were challenged by state money proponents, most notably John Maynard Keynes (e.g., 1930). With the rise of a post-World War II economic order, however, the resurgence of classical liberal and neoliberal economic theory (and, by century's end, apparent global market dominance) tended to favor versions of commodity money theory. These located money's origins in barter and emphasizing its functions as medium of exchange (in theory) and store of value (in policy). Such orthodoxies have incorporated the end of the gold standard and the emergence of fiat money and central banking.

Yet the early twenty-first century is also witnessing renewed interest in the nature of money. Contemporary conversations often recapitulate previous debates, with commodity proponents sounding like latter-day Goldbugs from the postbellum United States (Carruthers & Babb, 1996; O'Malley, 2012). Other times, new configurations emerge, such as when alternative currency practitioners echo credit theorists, historically aligned with chartalism, while imagining moneys without a state, based on interpersonal trust and shared values (North, 2010) or even cryptographic code and decentralized digital networks (Maurer, Nelms, & Swartz, 2013). We will return briefly to this recent intensification of interest in money at the end of this chapter, when we point to the proliferation of such experiments with money, exchange, and payment.

The anthropological record is routinely called on to adjudicate contending claims on the origin and nature of money. At issue are whether and how one can specify presumed human cultural universals—a core problem of anthropology, given its insistence on both the "psychic unity of mankind" (as Adolph Bastian famously put it) and sometimes incommensurable, untranslatable cultural difference. Classic anthropological investigations of money reflect this tension. In the final chapter to *Argonauts of the Western Pacific*, Malinowski (1984/1922, p. 510) declared that the "tokens of wealth" circulating in the Trobriand Islands through the system of ritual inter-island exchange called the kula "are neither used nor regarded as money or currency." Although both shell money and money "represent condensed wealth," the circulation of shell valuables is "subject to all sorts of strict rules and regulations," and must therefore "conform to a definite code" (p. 511). That code is not, Malinowski insists, that of the market; "the transaction is not a bargain," and since the exchange of shell valuables is not motivated or governed by the logic of market exchange, they are not, according to Malinowski, money.

Kula valuables should instead provoke us, Malinowski argued, to reconsider the application of such categories and the "crude, rationalistic conceptions of primitive mankind" they imply to non-Western peoples. If anything, "the kula shows us that the whole conception of primitive value; the very incorrect habit of calling all objects of value 'money' or 'currency'; the current ideas of primitive trade and primitive ownership—all these have to be revised in the light of our institution" (p. 516). If we want to understand "the native's point of view" (p. 25), we cannot rely on analytical categories that reduce that point of view to simplistic models of "enlightened self-interest" borrowed from "current economic textbooks" (p. 60).

Firth, who turned to anthropology from economics after meeting Malinowski, arrived at a similar conclusion, arguing that "[i]n any economic system, however primitive, an article can only be regarded as true money when it acts as a definite and common medium of exchange, as a convenient stepping stone in obtaining one type of goods for another" (Firth, 1929, p. 880; in Dominguez, 1990, p. 20). Money, Firth suggests, is meant primarily to facilitate exchange, although he notes that the other functions necessarily follow; while there might be some overlap in the functions of money from one society to the next, for non-Western societies, tokens of value entail much more than rational economic decision-making under conditions of scarcity. Money, according to Malinowski and Firth, is a notion taken from the Euro-American conceptual repertoire and so limits our understanding of other people's economic lives.

The views expressed by Malinowski and Firth—and in particular, the importance they give to understanding the limits of the generalizing categories of social science—represent one important line of thinking in anthropology about money, one that recites orthodox Western economic models of money even as it challenges the suitability of such models for other peoples and practices. For these anthropologists, the use of money in its strictest sense implied a mental disposition, indeed a particular psychology—that of the calculating *homo economicus*, which should be juxtaposed with, in Malinowski's words, "a fundamental fact of native usage and psychology: the love of give and take for its own sake; the active enjoyment in possession of wealth, through handing it over" (1984/1922, p. 173). This us–them juxtaposition—between the economizing or profit-maximizing tendencies of users of "modern money" and the "social" character and uses of non-Western money—echoes throughout the history of the anthropology of money (as it does in anthropology generally). That distinction, for instance, has often been figured as one between the logics of "commodity" and "gift" exchange (Gregory, 1982; see also Godelier, 1999), even as anthropologists attempt to complicate that gift-commodity binary (Appadurai, 1986; Strathern, 1988; Thomas, 1991).

Indeed, some of the earliest anthropologists to consider money undermined such distinctions even as they relied upon them. As Hart (1986) has pointed out, Mauss (1990/1950, p. 100, n. 29) criticizes Malinowski in a lengthy footnote in *The Gift* for using the term "money" in "a restricted sense" and arbitrarily bounding its meaning: "[T]he question posed in this way concerns only the arbitrary limit that must be placed on the use of the word. In my view, one only defines in this way a second type of money—our own." Mauss proposes that since so-called primitive currencies "have purchasing power, and [that] this power has a figure set on it"—that is, since non-Western peoples calculate what they can obtain in exchange for certain generally circulating objects—"these precious objects have the same function as money in our societies and consequently deserve at least to be placed in the same category" (p. 101).

The us–them, commodity-gift, "modern"-"primitive" dualisms, then, could be subsumed to another level of analytical juxtaposition, between using such layered divisions and collapsing them. Malinowski's own distinctions, in fact, fell apart, despite his arguments about the misapplication of economic models to non-Western social forms. He famously compared, for instance, the kula valuables—those he insisted should not be categorized as "money"—to England's Crown Jewels (1984/1922, pp. 88–89).

In the mid-twentieth century, anthropologists building on the work of Polanyi (and echoing Mauss) critiqued the "formalist" positions of some of their colleagues for drawing the lines too narrowly around what kinds of objects and practices should count as "money." Those working in this so-called substantivist tradition, such as George Dalton (1965, p. 45; see also Polanyi, 1968), argued that anthropologists cannot "judge whether or not money-like stuff in primitive economies is really money by how closely the uses of the primitive stuff resembles our own," but instead that "money" must be defined within the context of its use. Yet the basic division between "their" money and "ours" remained and would continue to prove central to social scientific understandings of money until the present day: While the money of non-Western peoples was plural, confined to particular circuits of exchange, and deeply embedded in complex social relationships that made it impossible to separate from kinship, politics, religion, and so on, the money of Western colonial powers was more abstract, less tangible, less social, more impersonal, and marked by functional unification, such that one money-object could serve all the functions required of it by economists (Guyer, 1995). Polanyi (1957) called the former "special purpose" money and the latter "general purpose." When the two came into contact, general-purpose money was thought to overwhelm, replace, and transform special-purpose money.[4]

Joining Polanyi, Dalton, and other substantivists, Bohannan provided the prototype for the interaction between special- and general-purpose money: In a series of essays about his fieldwork among the Tiv in colonial West Africa, Bohannan (1955, 1959; see also Bohannan & Bohannan, 1968) juxtaposed the Western "unicentric" market economy with the Tiv "multicentric" economic system. For the Tiv, not all goods were equally exchangeable, but circulated, according to Bohannan, within distinct "spheres of exchange." Even if a certain commodity took on the status of universal equivalent within a particular domain, there was no "common denominator among all the spheres" (1959, p. 500). The imposition of a colonial currency by the British administration, however—introducing coinage, demanding that taxes be paid in that medium, expanding trade with the Tiv—provided just such a general purpose money. Colonial efforts to promote European currency also resulted in the inflation of local money-objects, debasing them and making them less attractive alternatives. Bohannan emphasized that for the Tiv, the introduction of general-purpose money allowed traditionally illicit conversions between spheres, permitting those with access to it to circumvent status distinctions. Since "[i]t is in the nature of a general purpose money that it standardizes the exchangeability value of every item to a common scale," the "impact of money" is specifically to expunge difference by replacing "special-purpose" money with general-purpose money. Modern money, Bohannan (1959, p. 135) wrote, "creates its own revolution."

Money, Modernity, and Anthropology's "Savage Slot"

Anthropologists of money today reject such straightforward stories of encounter and change for reasons we will elucidate below. But it is important to understand the basic structure of such arguments, centrally because it reiterates in many ways a familiar narrative in the social sciences and beyond about money and its effects on, in Simmel's (2004/1907, p. 52) words, the "inner world[s]" of individuals and the

[4] Indeed, for Dalton, the key variable in characterizing non-Western economies was the degree to which they were integrated with Western market society.

"culture" of modern life. Recounted in detail elsewhere (by, for instance, Zelizer, 1989, 1997/1994, 1998), this conventional story portrays money as concomitant to and catalyst of a general transition to a modern world marked by the alienation of human beings from the fruits of their labor and the breakdown of established, often hierarchical social structures and traditional attachments to community. As a universal and internally uniform measure that "commensurates incommensurabilities" (Carruthers & Espeland, 1998, p. 1400) and permits the "fraternization of impossibilities" [in Marx's famous words (1964/1844, p. 169)], money is said to allow the erasure of qualitative difference in favor of a single numerical scale; the imposition of impersonal, rational, instrumental, calculative modes of thought and comparison; the detachment of human beings from the world of things; and the "hollowing out" and weakening of social relations and promotion of individualism (Gilbert, 2005, p. 379). Hence Simmel's (1950, p. 412) famous characterization of money as "transform[ing] the world into an arithmetic problem"—a typical depiction of the psychological changes said to accompany the use of money. In this almost mythical story, money is linked not only to the dissolution of ties among persons and communities but also the imposition of novel mental dispositions oriented towards the formal, quantitative means-ends calculation of self-interest.[5]

This transformative narrative reinforces assumptions about quantification and number as well. Crump, documenting language change among the Maya of southern Mexico, argued that it was the introduction of market relationships, and in particular the use of modern money, that shifted indigenous ways of counting. Tzotzil, like many other languages, employed a system of noun classification. Modes of enumeration were tied to specific noun classes: "Tzotzil numbers," Crump (1978, p. 505) writes "are incomplete without one of five possible suffixes which depend upon an implicit semantic classification of all nouns." The word for the number "four" changes depending on whether it refers to "years," "dogs," "houses," "men," or "ears of corn." With greater incorporation into the wider national and global market, Tzotzil-speaking Maya gradually came to adopt one standard (Spanish) system of counting and did so through specific interactions with Ladinos—in open-air markets characterized by haggling over prices and quantities. Money thus comes in first, followed by abstract enumeration not linked to other forms of classification, such that the "three" in "three cows" is no different from the "three" in "three pesos," chickens, persons, or any other enumerable entity.

It is important to note that, as with this example, anthropology occupies a consistent role in the oft-told story of the impact of modern money, filling what Trouillot (2003) calls "the savage slot." Anthropological accounts provide the other side to the "revolution" that Bohannan argued money created—that is, descriptions of the specific, socially embedded money-objects (or ways of counting, calculating, or reasoning) of non-Western people. This too-simplistic equation—the story of the social and the particular displaced by the universalizing, formalizing, and individualizing—remains with us, especially the assumption that in its capacity to flatten

[5] One of us has described this conventional account as the "money-as-acid hypothesis" (Maurer, 2006, p. 14).

social differences, money institutes a temporal rupture between the modern world of alienation, individualism, and commodity exchange and the non-modern world of solidarity, reciprocity, and social embeddedness.

Here, money serves to discursively reproduce the modern, which is marked by the development of a particular kind of general-purpose money: an abstracted, homogenizing, multifunctional medium of exchange capable of initiating profound social transformations by virtue of its abstract power to make all the world equivalent to it. Modern money is supposedly detached from its social meanings and origins and becomes capable of liberating both persons and things from the specific sociocultural webs of meaning and use in which they were embedded. Accounts of money's evolution and progressive dematerialization—purporting to trace the history of money from barter to socially embedded, special-purpose money to general-purpose money, which itself is said to evolve from coin to paper notes to, finally, the digital form of money today—reinforce such false distinctions and yet continue to circulate (e.g., Ferguson, 2008; Surowiecki, 2012; Weatherford, 1998). In what follows, we show how anthropological approaches to the study of money challenge this narrative and show up its erroneous assumptions.

First, however, we want to briefly explore the theoretical frameworks offered by Marx, Weber, and Simmel since our received story of money and modernization has roots in these classic sociological accounts. We emphasize, however, that the work of these three authors is rich and nuanced enough to provide provocations for anthropologists working on money today. (We can offer here only a superficial take). For Marx, commodity money—primarily gold and silver—occupies a central role in mediating capitalist relations of production and exchange. For Marx, all commodities become reducible in the abstract to money, which "extinguishes all distinctions" among them (1976, p. 229). But this does not erase the commodity character of money; Marx called money the "privileged commodity," at once a commodity like all others and yet set apart from them to serve as general measure of their exchange value (1976, p. 187). Money is thus paradigmatic of Marx's central analytical object: industrial capitalism generally. In money, Marx suggested, one can find "the riddle of the commodity fetish, now become visible and dazzling to our eyes" (1976, p. 187). Or again: "All commodities are perishable money," Marx (1973/1939, p. 149) writes in the *Grundrisse*, but "money is the imperishable commodity."

Like Marx, Weber and Simmel understood money to be at the heart of social and economic transformations ongoing throughout the nineteenth and early twentieth centuries. Unlike Marx, Weber stressed the importance of the state in the creation of money and of bureaucratic agents in regulating its circulation. But like Marx, Weber emphasized how money can act as an abstract measure through which the values of other things can be compared and commensurated; with money, Weber (1978, p. 81, emphasis in original) wrote, came the possibility of "monetary *calculation*; that is, the possibility of assigning money values to all goods and services which in any way might enter into transactions of purchase and sale." Weber thus saw money as part of the increasing rationalization of modern life, since, according to Weber, "expression in money term yields the highest degree of formal calculability" (1978, p. 85).

Simmel's approach also foregrounds the role of money in social transformation. But Simmel describes the ambiguity of this process and shows how the emergence of the kind of universal-equivalent money discussed by Marx and Weber has both liberating and homogenizing effects. Money—by virtue of its fungibility, "its unconditional interchangeability, the internal uniformity that makes each piece exchangeable for another, according to quantitative measures"—partakes of a progressive process through which our relationship to the material world becomes more and more abstract, until finally, "through money, man is no longer enslaved in things" (2004, p. 407). This progressive distancing of the human subject from the world of objects is accompanied, within a money economy, by a loosening of people's social ties to others and to traditional hierarchical categories. Thus, for all three of these emblematic social thinkers, money is linked to the emergence of a modernity marked by the dissolution of a prior world of rigid social attachments and communities. For Simmel, money's capacity to emancipate people from the restrictions imposed by heritable corporate status paradoxically produces an egalitarianism that erases ascribed rank, such that money becomes the central tool mediating social relations. As we will see, the effects of such mediation cannot necessarily be predicted.

Challenging the Received Narrative

And yet, despite the typical "modernizing" story of money, the world's diverse monetary ecologies have not been simply overwhelmed by a progressive homogenization, quantification, dematerialization, dissolution of social ties, and so on. The classic narrative of socioeconomic transformation in Africa and around the world, for instance, has been challenged by accounts that point to resistance to the imposition of colonial currencies (Şaul, 2004), alternative causes of local currency inflation (Gregory, 1996), and the long historical experience of many societies with multiple currency systems and regional trading networks, which preexisted colonial economies and then coexisted alongside them (Guyer, 1995, 2004).[6] As Robbins and Akin (1999, p. 1) explain for Melanesia (but which could easily apply elsewhere),

> Widespread social scientific expectations that global capitalist expansion would quickly overwhelm traditional Melanesian economies have been confounded by the latter's dynamism and resilience. Indeed, many local systems of exchange appear to have flourished rather than withered from linkage with the world economy, and state currencies and imported goods mingle within formal exchange systems fundamental to social reproduction.

[6] On the coexistence of multiple currencies, see also the classic chapter by Mintz (1964) on Gresham's Law in Jamaica in the eighteenth century and the groundbreaking work of historian Kuroda (2008).

> Far from the advent of money having consigned indigenous currencies to irrelevance, the two instruments of exchange are clearly in dialogue throughout Melanesia.

Anthropologists today therefore continue to explore the intersections of money and social change, but in ways that do not presuppose the direction or completeness of such change. Roitman (2005) offers a reconsideration of the imposition of colonial currency through taxation as a political technology of state and subject formation, locating money and tax at the heart of political obligation. Ewart (2013), on the other hand, describes the complex relationship between the Panará (an indigenous people living in Brazil), Brazilian currency, and the manufactured goods to which such currency provides access, arguing that the Panará's interest in money and goods does not reflect growing "dependence," but long-standing, pre-existing orientations toward outsider-others, including the state. And Guyer (1995, 2011) suggests that the "currency interface" between ostensibly modern and primitive money has been re-invented in the late-twentieth century in the distinction between "hard" national currencies like the US dollar, which are used internationally as reserve currencies, and "soft" national currencies and other money-like coupons used primarily in their cash form. Other anthropologists have explored the link between money and modernity in local or indigenous idioms and highlight, as we review below, the multiplicity of money—local, national, and transnational (Cole, 2004; Hutchinson, 1992; Shipton, 1989; Taussig, 1980). Rutherford (2001) shows, for instance, how in parts of Indonesia, money signifies foreignness, but is used in the service of both social intimacy and alienation.

Bloch and Parry's (1989) signature contribution is in some ways representative of much of this work. They point up the diversity of meanings and forms money can assume in different places and in different times but also suggest commonalities in the way monetary exchanges are conceptualized depending on whether transactions guided by a short-term profit motives interfere with or threaten the long-term capacity of a social group to reproduce itself and its value system. Bloch and Parry thus attempt to redirect attention away from popular Western ideologies about money—such as those outlined above—and toward the timescales that frame particular transactional categories, whether monetary or nonmonetary. Guyer (2011) similarly proposes that greater attention should be paid to the temporalities of using different monetary forms and converting among them.

Such research displays a marked departure from the questions that have conventionally occupied anthropologists when studying money. Instead of definitional inquiries into what money "is" or what makes "their" money different from "ours," anthropologists today are concerned to document empirically the pragmatics of money—that is, its material forms, meanings, and uses in practice.[7]

[7] While much of this research is contemporary, some of it draws on histories of money that have often been overlooked, and so we include select works from the ethnographic and archaeological record.

Money and Materiality

Often, all that is available in the archaeological and ethnographic record on pre-modern or nonwestern forms of exchange are the material objects used in such exchanges. This, in part, accounts for the focus on the stuff of money in anthropology. Even when that stuff consists of familiar objects like metal coins, however, it can be tricky to interpret. Were silver coins used in market exchanges in the ancient eastern Mediterranean, for example? Or were they sumptuary or ritual offerings, distributed almost like souvenirs at fairs, given as medals to honor soldiers, or meant to announce the name of the local sovereign? When it comes to the objects that numismatists classify under the heading "Odd and Curious Money," the metal rings, iron rods, carved shells, bone, and other materials, the interpretation gets even trickier.[8]

Part of the problem is that the people using such "odd" moneys rarely imagined these objects could be used as a general standard of value for all other goods and services, or that objects given in exchange for a good or service somehow reflected its "value" (understood to be a ranking on an abstract, external, transcendental and potentially universally applicable scale). The very logic of the transaction led in other directions. In parts of Papua New Guinea, for instance, a shell or packet of sago flour was not exchanged for a pig so much as it *substituted* for the pig in the pig's position in a series of social relationships forged through marriage. Not any shell could stand in for such a pig; it had to be a specific shell, with its own social history, substituting for a specific pig. Rather than a calculation involving ratios (how many shells or how much sago makes up one pig?), this is an operation of substitution (how many make up the "right one"? Strathern, 1992, p. 187). Similarly, the metal artifacts used in some African societies rarely took on all of the Aristotelian functions of money at the same time (Guyer, 2004), and even where they appeared to be used as such—in exchange for, say, a cow or a wife—what mattered was how the object stood in for a set of social relations newly created, sundered, or reconfigured (Graeber, 2001).

Strathern's insights offer a starting point for thinking about money's materialities. In work on the role of money in Cuban Ifá cults, Holbraad (2005, p. 232) writes, for instance, that money's "trademark quality" is its multiplicity or "pliable partibility." Counterintuitively, however, Holbraad argues that money's quantity does not necessarily imply abstraction and commensuration; the moment of expenditure or consumption, for instance, "eclipses the purview of possible worlds with a concrete exchange" (p. 244). (Indeed, according to Hart [2009, p. 140], money's "persuasiveness" follows from "the fluency of its mediation between infinite potential and finite determination.") Quantity as a quality of money also shapes the pragmatics of its handling, counting, storage, and movement, as well as the possibilities

[8] On the archaeology of money and the origins of coinage, see Eagleton and Williams (2007), Grierson (1977), Haselgrove and Krmnicek (2012), Smith (2004), von Reden (1997), and several of the contributions to Wray (2004).

for its social concealment and revelation (Guyer personal communication; see also Pickles, 2013b, Strathern, 1999). "[A]ll currencies objectify quantitative measures in concrete forms," writes Weiss (1997, p. 352).

Money's materiality is also important because of its role in the debates between commodity and credit or state money proponents. Cases where people use nonprecious metals or objects as money confound commodity theories and lend weight to alternative accounts emphasizing the role of money in signifying trust, credibility and social connection. On the other hand, proponents of commodity money often emphasize the material qualities of precious metals (and other money objects)–their durability or malleability, for instance–and this remains true today, notwithstanding the widespread use of fiat currency: Witness the rise of contemporary commodity-money supporters, who call for an end to the US Federal Reserve and fractional reserve banking generally and for a return to the gold standard. Some have argued that such stances have historically reflected deep-seated commitments to reinforcing hierarchies of race and class since gold-standard theories imply a world in which value corresponds perfectly to substance and wealth to merit—with regards to people as well as things (O'Malley, 2012). Money's substance is thought to stand in for, and shore up, a social formation.

Money's material qualities turn up in anthropological accounts where other properties or social phenomena are analogized to a people's or country's particular money-stuff. "Not all cash is alike," notes Lemon (1998, p. 22) in a study of the aesthetic and affective relationship Russians after the Soviet period held toward US dollars. There, "hard" currency was imagined to link people to more solid and secure futures. In the same way, anthropologists have explored money's role in symbolizing the nation and post-nation in a unifying Europe (Peebles, 2011) and other emerging post-Socialist contexts (Truitt, 2013). In El Salvador, in contrast, the imagination of a wealthy but turbulent future fostered by flows of remittances in US dollars gets concretized in the designation of Washington, DC—the source of migrants' remittances—as "*la mina de oro* (the gold mine)", but Intipuca, one remittance destination village, as "*el pueblo de los ladrones* (the town of thieves)" (Pedersen, 2002, p. 433). Other analogical extensions are possible, too, including to the spiritual world: Kwon (2007) describes the various meanings elicited by replica money burned as a ritual offering to gods, ancestors and ghosts in Vietnam and how, as it becomes more common to use replica US dollars, such "Do La" money can become either a token of authority challenging traditional spiritual hierarchies or a token of emancipation and a sign of the democratization of the spiritual world. Finally, Chu (2010, p. 5) describes a variety of mundane and ritual tools, such as replica US $100, issued and underwritten by the Bank of Heaven and Hell and littering the streets after a funeral procession, which mediate the "pragmatics of desire" of rural Chinese preparing to migrate to the USA.

These studies show how the specific material qualities of money can become fodder for varied meaning-making practices. In work in Indonesia, Strassler (2009, p. 70) points to how a large-denomination Indonesian bill displaying the face of the dictator Suharto became "visual shorthand" for corruption and the abuse of state power after his resignation. The abstract exchange value or purchasing power of any given money-object, she insists, does not "account for the ways that money is necessarily concretized," nor how its material form furnishes possibilities for resignification and refunctioning (p. 71). Indeed, Keane (2001, p. 69; cf. Keane, 2008) has argued persuasively that money's "irreducible materiality" leads to its "semiotic underdetermination," making money vulnerable to slippage and thus forever open to reinterpretation. "The matter of money—the way that no money exists entirely in the abstract, but must always find material expression in cash, coin, the "odd and curious," or the electronic infrastructure of digital accounting—provides a foundation for symbolic innovation.

Money and Symbol

This consideration of money's materialities has thus also involved a reconsideration of money's meanings. Focusing on money-stuff instead of monetary abstraction and commensuration reopens anthropological and linguistic debates over the nature of language itself, even as it draws on a long-standing trope comparing money and language (Derrida, 1992; Shell, 1978, 1982, 1995). Anthropologists have long been influenced by Saussurean structuralist understandings of the arbitrary connection between the signifier and the signified. Saussure's own model of the relationship between signifier and signified and among signifiers as a system of values was expressed via a money metaphor:

To determine what a five-franc piece is worth one must therefore know: (1) that it can be exchanged for a fixed quantity of a different thing, e.g., bread; and (2) that it can be compared with a similar value of the same system, e.g., a one-franc piece, or with coins of another system (a dollar, etc.). In the same way a word can be exchanged for something dissimilar, an idea; besides, it can be compared with something of the same nature, another word (Saussure, 1966, p. 115; see Maurer, 2006).

Some anthropological work on money upholds the Saussurean understanding of the sign (in this case, the money sign) as a product of convention and as arbitrary in its relation to that for which it stands (bread, commodities, abstract value) and in relation to other kinds of its type (dollars, francs, pesos, etc.). Some anthropologists, for instance, have begun to ask what happens to money in moments of crisis, when hyperinflation or devaluation threatens money's representational capacity to stand for value. Argentine social scientists, for instance, have documented the effects of the collapse of the country's currency regime in the early 2000s, including the proliferation of local currencies (Luzzi, 2010; Ould-Ahmed, 2010). Neiburg (2010, pp. 98–99) suggests that Brazilians and Argentines have learned to live with "sick currencies" and monetary instability in part by learning how to use numerical devices like "index numbers" (for example, indicators of price changes) to protect themselves from inflation and depreciation. Nonetheless, even if people become accustomed to monetary instability and adept at negotiating multiple currencies, questions about the "real value" of money or the tangible ground of the relationship between money and value often persist (Dominguez, 1990). Here money becomes a vehicle for concerns about representation per se. Examples of situations like these—of money in crisis or of the manipulation of multiple currencies and money-objects at once—abound, but anthropological research in this area continues to develop. (See Guyer, 2011 for a call to action.)

As we have already seen, the introduction of Western-style money frequently provides occasion not just for anthropologists but also for their interlocutors to reflect on money and symbolic process. Again, the record from Papua New Guinea is instructive, probably because of the long assessment of material things not as stable objects, but as (the product of) variegated, multiple flows of energy, blood, kinship, and/or spirit. Money for Melanesians embodies "the paradox of social reproduction," how the social and cosmic order endures despite the "transient individual lives that animate it" (Foster, 1999, p. 229). Where some nineteenth century Americans railed against paper currency because they felt it to be representationally inadequate to abstract value money is supposed to signify, Melanesians take paper money as "the skin of the state—the site where [they] might look for news about relationships to the powerful forces brought by contact with white people and their institutions" (p. 230). For Foster, the representational dilemmas posed by money (especially to Westerners) are perhaps irresolvable. "Doubts," he says, "persist" (p. 226).

On the other hand, anthropological research on other cultures' money-stuff and other people's understandings of value and modes of evaluation has often discovered that money signs are non-arbitrary and motivated (or linked to their referent), directing anthropologists to other accounts of semiotic processes. In addition, the process of abstracting and equilibrating presumed in the Saussurean account borders on the mystical for many non-Western peoples; it is not surprising, therefore, to find in the introduction of Western-style currency around the world indigenous discourses that associate it with magic, religious conversion, and a transmutation of the material into the spiritual and back again (Taussig, 1980).

In recent work, the question has shifted from one about *what* money signifies—which invites these questions about the representational adequacy of any monetary form to its value—to *how* money signifies. This leads back to the empirical investigation of the entailments and implications of money's many forms and uses, although with revised understandings of how signification can work. Drawing on Peirce, a significant group of anthropologists working on money and value have drawn attention to how material qualities of things (such as heft or texture), when experienced as being possessed by different objects, serve as a sign linking those objects to one another. This creates a chain of relationships across objects (heavy objects, rough objects) not divorced from their materiality (Munn, 1992). Moneys and other objects of value are exemplary when their material qualities link them to other entities. Keane (2001, p. 77) writes of the Indonesian island of Sumba that "money […] does not always fully possess the properties of fluidity, impersonality, or abstraction." Drawing on the Peircean concept of the indexical sign—a non-arbitrary sign that points toward its genesis (e.g., a bullet hole signifying a bullet, or smoke fire)—money "often retains some indexical links to its sources and owners" (p. 77). This is a world in which a representation is never understood as entirely separate from that which it represents.

Similarly, many have explored how, in contrast with a prevailing narrative about the progressive dematerialization of fiat and digital currency, most money continues to wear a "national uniform," as Marx (1976, p. 222) put it, inscribed and circulated as legal tender by the state and always pointing back to a political authority. Money-stuff, Rotman (1993/1987, p. 90) writes, retains a "domestic, national indexicality." Studies of money in nation-building have looked at the ways money, as both "physical object" and "iconographic surface," can unite national communities by providing a shared experience or communicating shared narratives of national belonging (Strassler, 2009, p. 71; see also Gilbert & Helleiner, 1999; Helleiner, 1998). Peebles (2008), for instance, shows how the emergence of national paper money is tied especially to efforts to convince people to give up their private hoards and instead invest in the future of a particular territorial nation-state with its own centralized currency reserve.

In some times and places, even in the West, abstraction may not matter and materiality may matter more—such that money's material capacities to "represent" value are not the point—in contrast to the focus on abstraction and commensuration inherited from the Western tradition of monetary exchange. People may try to avoid the representational conundrums posed by money as an ultimate symbol of abstract value when this conflicts with, say, theological understandings of the nature of the divinity. Proponents of contemporary Islamic finance often sidestep the question of whether money can ever really be representationally adequate to all goods, services, things, and beings in this world (or the next!) (Maurer, 2005). Just as there are different weights given to the qualities of things, so too are there "plural immaterialities" (Miller, 2005, p. 25), many reasons why tangibility or material form can be shed, obviated, or made irrelevant. The language of representation is but one.

Money and Complexity[9]

The work reviewed so far suggests that in the ethnographic record, money is revealed as complex along a number of dimensions. First, the record indicates the need to soften the gift society/market society dichotomy (and the us/them distinction generally), to appreciate the quantitative and calculative aspects involved in the gift and the solidarities and contests over honor or prestige involved in the market (Appadurai, 1986). Second, appreciation of the ways in which the materiality of money matters in its conceptualization and functioning suggests the inadequacy of either commodity or token/credit theories of money (Hart, 1986; Maurer, 2005). As a signal example of one Western understanding of representation itself—money-object signifying abstract value, enumerable objects indicating denomination—money is also the undoing of this model of representation.

[9] By "complexity" we want to call attention to the wider sociocultural contexts of money's use and emphasize the ways that the effects of monetary practice involve multiple vectors and variables, which rarely line up evenly.

As any magician knows, tear up the dollar bill, and your audience will gasp—partly because you have destroyed a token of value, but partly, too, because in so doing you have revealed that there was nothing there but paper to begin with. In working your spell, to reconstitute the torn dollar, you have simultaneously, if only momentarily, broken the spell of money.

Recent work by anthropologists on money's diverse histories, uses, and meanings also attempts to break this spell, showing up the deficiencies of the assumptions running behind the conventional narratives about modern money depersonalizing or de-socializing relationships. Serious challenges have been posed to such accounts by recent research on barter (Ferraro, 2011; Humphrey, 2002; Humphrey & Hugh-Jones, 1992); on the "social" qualities and not strictly "economic" uses of money today, even in the contemporary West (Wilkis, 2013; Zelizer, 2007); and the archaeological origins of money itself (Haselgrove & Krmnicek, 2012), as we have discussed above. At the same time, Bohannan's "spheres of exchange" model has proven important to contemporary work in the anthropology of money, for this "theory of value in nonexchange," as Sahlins (1972, p. 277) puts it, can constitute a significant challenge to assumptions about money's fungibility, liquidity, and universality when applied to the modern side of the conventional narrative of money.

One of the most productive strands of recent anthropological research on money builds on these insights about differentiation to highlight how people actively manage monetary multiplicity and emphasize the politics and pragmatics of producing and translating value in complex monetary ecologies. Here the sociology of money has proven to be an important inspiration. Carruthers (2010) suggests that we make meaning with money by producing difference in two ways: by separating money out, segregating it away from other kinds of transactions and interactions, and by creating distinctions within money, distinguishing between monetary categories, for instance, on the basis of source or destination. A vast literature has emerged on how we construct such spheres of exchange or monetary "circuits" (Zelizer, 2004), which allow certain transactions and disallow others. Zelizer (1989, 1996, 1997/1994, 2006, 2007) has been at the forefront of this development, writing about how people "earmark" certain pots of money for specific uses, differentiate between pots in terms of how they are earned, name distinct uses of singular currencies and distinct users of money for different kinds of exchange, and continually move back and forth across the boundary between what are supposed to be private worlds of emotion and intimacy and the public spheres of economy activity, instrumental reason, and anonymous exchange.[10]

This kind of mental and material budgeting has been documented in detail by a plethora of studies, which show not simply fiscal earmarking at work but also sacralization, localization, and other kinds of sociocultural, practical, and linguistic enclaving, channeling, or domaining (e.g., Eiss, 2002; Piot, 1991; Rutherford, 2001;

[10] Zelizer's work has provoked a debate within sociology, which focuses on the personalization of money by its users vs. money's capacity to commensurate, especially as a sign of larger structural systems, such as finance capitalism or the state. See Dodd (2005), Fine and Lapavitsas (2000), Ingham (2001), Polillo (2011), Zelizer (2000).

Shipton, 1989, 2007; Znoj, 1998). Indeed, it is therefore also important to pay attention not only to moments of circulation and exchange but also to what *cannot* be exchanged—that is, domains of pricelessness or *inalienability* (the classic text in anthropology on this topic is Weiner, 1992). Such processes of connection and disconnection do not unfold in one direction, but are ongoing and multivariate. Peebles (2012) shows how common metaphors about "dirty money" or "filthy lucre" can be imaginatively revised to highlight the ways that money crosses borders and domains; "when we spot the pronounced claim that money is 'dirty,'" he writes, "we should see it as a moment in an ongoing process of social boundary construction by interested parties" (Peebles, 2012, p. 1249). Hutchinson (1992) has extended Bohannan's "spheres of exchange" model to show how among the Nuer of the Sudan, the introduction of money has not led to the dissolution of traditional rules about the exchangeability of certain kinds of goods, but has provoked the creative incorporation of money through the invention of hybrid categories of cattle and wealth.

Many anthropological studies of money-in-practice have focused on what Rogers (2005) calls the "politics of liquidity" or what Jessica Cattelino (2009) has addressed in terms of money's fungibility. Both authors treat money's ability in particular circumstances to make things equivalent as something achieved and not given in advance. Rogers investigates how Russians have used official currency (rubles) and moonshine as media of exchange and stores of value after the break-up of the Soviet Union, showing that there are degrees of alienability and asserting that liquidity will be unevenly distributed among various transactables along lines of social distinction and inequality. Cattelino (2009) similarly describes how members of the Seminole tribe in Florida selectively use dividends from the US government to promote tribal goals by both reinforcing Seminole distinctiveness and community identity *and* facilitating commercial transactions and interpersonal intimacy (foregrounding money's capacity to "connect and equate things that might seem different" [194] and build networks of exchange). Cattelino argues that the fungibility of money can be exploited, "whether to make or to break ties, in ways that reinforce indigenous political authority and autonomy" (p. 194). The goal, she says, is to trace under what conditions and for whom fungibility becomes important. In research on pyramid schemes in post-socialist Albania, Musaraj (2011) similarly emphasizes the work of translating among multiple regimes of value and wealth, including stacks of cash and flows of migrant remittances in many different currencies.

Monetary practice and meaning-making is, in short, political—a struggle, in particular, over who can channel money's fungibility and make connection and difference work for them. Money can be thus used to create or reinforce relations of inequality and rank as well. In northern Brazil, for instance, Ansell (2010) reports that money spent in fundraising auctions is used both to promote political participation and to reinforce local political hierarchies. In work on the long-distance remittance economies of Vietnam, Small (2012) argues that money transacted as a gift can reveal and exacerbate difference (in this case, between the located experience Vietnamese and an imagined world of wealth and mobility indexed by US dollars).

This research tends to emphasize the plurality of money's forms, practices, and meanings—returning, in a way, to anthropology's focus on "special-purpose" moneys. Thus, scholarly accounts of currencies "here" and "there," "then" and "now" are converging in that recent research finds in money greater variegation and complexity, not one universal form or function. Guyer observes that as we fill out the ethnographic record on the special-purpose qualities of "our" money, and the "formal" or "calculative" aspects of non-Western and historically non-modern monetary practices, we find that so-called special-purpose money has "*more* modern 'purposes' and characteristics than was thought in the past, and that twentieth century monies clearly have *fewer*" (Guyer, 1995, p. 1; emphasis in original). This recognition opens up new questions for research on money—and new possibilities for interdisciplinary collaboration.

Emerging Trajectories for Future Research: The Anthropology of (the Psychology of) Money

In an influential article, Lea and Webley (2006) propose that neurobiological processes structure people's relationships with money in two distinct ways: as a "tool" or as a "drug." The "tool-theory" of money, they argue, would treat money as a means to (potentially multiple) ends; the "drug-theory" of money, on the other hand, provides an explanation for moments when money becomes a "functionless motivator," mimicking "biological rewards" such that it continues to shape behavior, "but in an illusory, nonfunctional way" (p. 165). Money, they say, is "neither literally a tool nor literally a drug," but that these serve as useful metaphors to summarize the dual structure of human motivation toward money. Both of these strands of research suggest, as Burgoyne and Lea (2006, p. 1091) insist and as anthropologists have long understood, that "money is material."

Lea and Webley find evidence for their hypothesis across disciplines, from economics and psychology to history, sociology, and some of the early anthropologists we cited at the beginning of this chapter. Chartalism, they suggest, is basically a tool-theory of money; metallism, however, is a drug theory. Reports from sociologists and anthropologists about the "restrictions" on the use of money—giving money as a gift, "sacred" uses of money, taboos on expenditure (such as those documented by Zelizer), and how "primitive moneys of non-Western societies" were at times "confined to a particular class of commodities or a particular group of people" (p. 170)—are offered in support of a drug theory. The role of money in social status, the tendency of people to privilege the nominal value of money over its real purchasing power (the so-called "money illusion"), and the resistance new money forms receive, among other phenomena—these are also best accounted for via a drug-theory of money. Lea and Webley suggest, then, that while a more-or-less functionalist tool-theory of money accounts for much of "normal" money practice, outlying cases call for other explanations: In these cases, "money seems to act on the human brain in ways that mimic more natural incentives, not just by being an instrument for access to them" (p. 173). For Lea and Webley, these natural incentives appear to be first-order motivations while the normative money-as-tool is a second-order means to an end. They thus recapitulate the longstanding Eurocentric assumption that non-Western peoples are closer to nature and the old (and no longer widely accepted) anthropological account of culture as helping the human organism fulfill its biological needs.

At the same time, however, work that builds on these hypotheses indicates areas of potential (and potentially surprising) overlap with trends in the anthropology of money. We do not pretend, nor are we in a position, to evaluate this research. We are suspicious, however, of theories and experimental findings that lend themselves too easily to universal generalizations about human biology, behavior, motivation, decision-making, even morality. Lea and Webley recognize that "[i]t remains possible that an alternative, completely nonbiological, model could give a more economical account of the phenomena" (p. 165), but they prefer the language and explanatory apparatus of sociobiology:

> If we are to fit money motivation into the framework of biological explanation that applies to other strong human motives, then we must explain how money gets its incentive power through its action on other instincts. If we cannot do so, we would be faced with a situation that would be scandalous within the terms of a biological psychology—a powerful human motivation, perhaps even the most powerful, with no real biological roots. (p. 175)

The argument, of course, is tautological: We assume that human behavior must have evolutionary, biological foundations; therefore, we find that human behavior has evolutionary, biological foundations. We contend that even if there are powerful motivations that have biological roots, their content and form is not given in that biology. (All humans have the capacity for language, but no human speaks "language"; rather, they speak English, Dari, Tok Pisin, etc. And as we have seen, no one uses "money" as an abstract category, but rather Guatemalan *quetzales*, manillas, debit cards, etc. The differences matter.)

Thus, as Benedict (1934, p. 9) warned 80 years ago, social science, because of the inherent limitations of its data, always risks identifying "local attitudes" of its own time and place with "Human Nature." We are therefore wary of experiments designed to test ideas and behavioral orientations that are embedded in particular cultural worldviews and historical traditions in order to locate them in a universal human psychology. We do not presuppose or take for granted the singularity of "the human mind" or human agency, motivation, or practice, and we would caution those who would—especially with regards to money. For if the ethnographic and archaeological records of money's forms and functions convey any single lesson, it's about the heterogeneity of those forms and functions: Money objects come in all shapes and sizes, have been put to an extraordinary diversity of uses, and have elicited an equally extraordinary variety of meanings.

We note our differences here, however, *not* to dismiss Lea and Webley's work, but to situate it as a work of theorization and to delineate areas of agreement and points of intersection. We are with Lea and Webley up until they locate their posited sociobiological explanatory apparatus in biological evolution—and we suspect most anthropologists would agree with us. This is one place where disciplinary differences and histories (given anthropology's uncomfortable early alignment with scientific racism and its encounters with cultural difference) will be consequential in any conversation between anthropology and psychology. For anthropologists have long worked to complicate accounts of complex sociocultural phenomena as simple expressions of biological, genetic, or evolutionary "nature"—and to complicate the very poles of "nature" and "culture" taken for granted in such accounts (e.g., Strathern, 1980). Of course, as our editors pointed out to us, linking monetary practice to the psychology or biology of the human brain does not necessarily discount the complexity of such behavior; indeed, modern biological psychologists must confront the diversity of brains both within and across cultural contexts. The trouble is that by locating behavior or culture in biology or evolution or even "human nature" and describing that relationship in deterministic terms, we provide fodder for unscientific rationalizations of the world as-it-is (of, for instance, inequality) and ignore both the diversity and potentiality of human life.

Despite our own disciplinary biases, we are nonetheless struck by the implications of some psychological research for an anthropology of money that foregrounds not questions about how to define money, but its pragmatics. If we find inspiration in the psychology of money, it is as a spur to thinking not about the universal foundations of human minds, but about the expansiveness of human capacity. That expansiveness is evident not only in the use and manipulation of money objects but also, and especially, in ongoing creative repurposings and experimental innovations with money and payment in the contemporary world.

Money as Tool: From Semiotics to Pragmatics

Citing Lea and Webley's tool-theory hypothesis, Becchio and her colleagues set out to test the psychological foundations of the tool metaphor. "The tool theory," they write, "accepts the metaphorical extension of the idea of tool to money seeing money as means to an end: As a screwdriver is *for* screwing, money is *for* representing the value of goods and services, and it does this on a precise scale for tracking and evaluating their exchange" (Becchio et al., 2011, p. 1). Their neurological imaging experiments attempt to demonstrate the validity of this metaphorical extension, and they report that, when watching video of currency being ripped and torn, images of research participants' brain activity show activation of the parts of the brain associated with tool use. "Violation of social norms associated with money activates a network associated with tool use, and this network is parametrically modulated by the value of the money presented" (p. 9). That is, as the face value of the bills destroyed increased, so too did brain activity.

What does it mean to treat money as a tool? The turn to tool use in psychological investigations of money parallels in some ways the turn in anthropological considerations of money from semiotics to pragmatics. The latter, however, makes no assumptions about the primary or proper implementations of money-as-tool, nor does such work assume a one-to-one relationship between form and function. If money is a tool, its material forms matter not only in terms of its intended uses, but also as platforms or infrastructures that allow for unintended employments and innovative or creative refunctioning.

Here we can only point briefly at emerging research on money's denominations. Consider again Becchio et al.'s finding about the greater brain activity associated with the destruction of higher denomination banknotes. In a fascinating dissertation, Anthony Pickles (2013a) reports a kind of gravity well produced by large denomination banknotes during gambling games in the highlands of Papua New Guinea. Men playing cards engage in complicated mental calculations when placing money into the pot, as they often lack the proper denomination notes for their small-value bets. Placing a large value note into the pot, but mentally tallying only a portion of its value as committed to the game, an unlucky player can watch his note slowly get consumed over the course of the game, as first one fraction of the note is lost to another player and then he must commit another fraction as his next wager. This sets off a competition in which each player tries to win the totality of the note, the large denomination banknote pulling everyone in as they attempt its reconstitution.[11]

In Ecuador, where the national currency was abolished after a banking crisis and the US dollar adopted as the sole legal tender in 2000, the particularities of the dollar's denominations played a similarly important role in Ecuadorians' adaptations to the new currency. Ethnographic fieldwork conducted by Nelms reveals that when faced with a lack of fractional currency during and immediately after dollarization, many Ecuadorian merchants preferred to "round up" to the nearest whole dollar denomination. Here the dollar denomination served as a tool for making equivalence in market settings. In discussions about the practice, however, rounding up came to signify cultural and national difference as Ecuadorians accused one another of being unable to recognize, unlike US users of the dollar, the value of a cent. More generally, many Ecuadorians' struggled to recognize the dollar's individual denominations—due to the homogenous color of dollar bills and the sizes and lack of numbers on many of the coins—and these struggles to recognize denominational differences became linked to the political process of learning to "trust" the dollar after a serious financial crisis. When the Sacagewea dollar coin began to circulate in Ecuador, it was quickly and widely adopted, and many associated it with the series of fractional currency inscribed with Ecuadorian national imagery minted specially for the Ecuadorain government to address the lack of small change. Ecuadorians saw the woman on the dollar coin—the North American Indian woman Sacagewea, pictured with a baby on her back—as a particularly "Andean" one. In Ecuador, in

[11] Pickles' findings reinforce the comments made by Strathern (1999) on the capacities of money in highland Papua New Guinea. Strathern's interlocutors in Hagen juxtapose the capacity of money to be divided (and thus to serve multiple potential uses, which necessitates choosing among them) and the singularity and non-divisibility of shell valuables. For Hageners, Strathern writes, money "did *not* have an individuating effect. Money was always too suggestible of alternatives. So in handing only some of it over, one was not resolving conflicting intentions in the single act, but rather activating the mind's divisions" (p. 97).

short, the denominational differences of the US dollar became the tool through which national and cultural difference was delineated and negotiated.

These cases indicate that money is not simply a functional tool the way a screwdriver is: its tool-like qualities can be used for other purposes than those for which they were designed.[12] As Pickles and Nelms show, money's denominational capacities are deployed in social and political struggles, whether small-scale, in the bluffs and tells of a poker game, or large, in national political economies and the afterlives of financial crises. Some might align these political processes with "natural incentives" for dominance or hierarchy. But the more one looks at power and money, the more difficult it is to see first-order incentives in the complexity and overlay of money's pragmatics and politics.

Money as Power: Ritual and Capacity

Much recent psychological research has also followed in the vein of Lea and Webley's "drug-theory" of money, investigating the behavioral and psychophysiological effects of exposure to money. We would avoid the language of drugs and toxins, first to neutralize the unnecessary moral overtones that such language evokes (i.e., setting up a moral binary between "normal" and "abnormal" monetary practices) and second to avoid replaying the old story about money's deleterious effects on social behavior. While we find that story unconvincing, we find points of resonance between anthropology and recent psychological work, especially by Vohs and her colleagues, that have begun to draw out other kinds of symbolic processes that foreground money's material power. These remind us of anthropological work on the ritual dynamics of display and visibility.

Here we focus on the apparent power of money as a material object (rather than as a sign of relative wealth or socioeconomic distinction) to orient behavior and even influence physiological response. Vohs and her colleagues have investigated the capacity of money to shape people's reactions—even to physical pain. In a series of experiments, they demonstrate that research subjects "primed" with money systematically worked longer on an impossible task before asking for help; expressed less willingness to help others; put more physical distance between themselves and a new acquaintance; preferred leisure activities they could enjoy alone rather than with family and friends; and even reported less distress to being socially excluded and less physical pain when placing their hands in hot water (Vohs, 2010; Vohs, Mead, & Goode, 2006, 2008; Zhou, Vohs, & Baumeister, 2009). They argue that money appears to activate feelings of strength and desires for "self-sufficiency," "an

[12] These studies build on anthropological work that highlights how money's material forms provide platforms for making and remaking meaning and for innovative repurposing of money's uses. They are also complemented by research in psychology (and economics) on the complex dynamics of denomination. Di Muro and Noseworthy (2013), for instance, show that both currency denomination and the physical appearance of money can influence spending behavior.

insulated state wherein people put forth effort to attain personal goals and prefer to be separate from others" (Vohs et al., 2006, p. 1154).[13]

More than the conclusions of this research, its methods are fascinating to us as anthropologists. In Vohs' studies, a variety of methods is used to prime participants—that is, to suggest subtly and nonconsciously the physical and mental presence of money—but they are often heavily visual: scrambled phrases with money-related terms, play money kept in participants' peripheral vision, screen savers of floating currency that pop up on computer screens, posters with bills of various denominations hung innocuously on laboratory walls, counting bills in one's hands, and so on. The materiality and visuality of the methodology, and the link between such visuality and the sense of "power" it seems to elicit in research subjects, reminds us of ritual practice: the use of money in weddings, funerals, graduations, and other life events, for instance, or in religious ceremonies. In such ritual contexts, money is deployed as an object of display and sign of abundance and power, especially as bodily adornment or when hidden away from sight (Haynes, 2012; Strathern, 1999; Tassi, 2010).

Money is worn on the body around the world; it adorns clothing, newlyweds, the nuptial bed, and the dead. It is showered and rubbed on babies, brides and grooms to be, images of saints, gods, and evil spirits alike. It is displayed in restaurants (the first money received by the new business) and on temple walls (the bills and their values signifying fidelity in this life and merit in the next). It is piled up to impress. It is also "hidden"—under the bed or in pockets (Pickles, 2013b)—or in ostentatious ways, such as underneath a cloth hiding the hands of traders as they exchange precious goods for money, or its presence not shown but still announced in the Mercedes or the kente cloth, the cement house or the mansion. It is, as we have noted, the quintessential prop in the magician's act. What is the power of such monetary displays?

Graeber (2001) argues that money is associated with the potential for future action, as opposed to its material manifestation—in, say, coin—as a sign of wealth already realized. This distinction is expressed in a visual idiom: Money signifies "invisible potency" (p. 114), a hidden capacity for action; wealth, on the other hand, requires visual display to reinforce social difference and hierarchies. For the Greeks, Graeber points out, money that remained hidden, kept out of circulation in a private

[13] Such self-sufficiency can be both desirable and undesirable:

Compared to neutral conditions, when the construct of money was activated, participants behaved in ways that were both more desirable (persistence on challenging tasks; taking on more work for oneself) and more undesirable (reduced helpfulness; placing more distance between the self and others)—in short, a mixed bag that echoes people's ambivalence toward money and the divergent findings observed in extant research. (Vohs et al., 2008, pp. 210–211).

That is, while it is easy to associate the results of such research with narratives about how money engenders selfishness and greed, it is unclear that this is always the case. We emphasize as well that the behaviors and reactions displayed by research participants primed with money might not always lead to individualism or self-interested calculation. Anthropologists, as we have shown, have long documented the ways that money can be used to promote family, community, and social interaction—even national identity.

hoard, represented unknown power, “something dangerous, subterranean, a threat to the cohesiveness of the political community” (pp. 102–103). Stamping images of political authority onto coins was an attempt to render such power visible and public and thereby to translate money’s “generic,” anonymous capacities into political power through an act of revelation (p. 94).[14]

Graeber’s argument, and the wealth of ethnographic and theoretical resources on which he draws, offers important cultural and historical context to the psychological findings of Vohs and her colleagues. The material and visual presence of money, Vohs’ research suggests, influences not only human behavior, but sense of self, eliciting feelings of power and self-reliance. Graeber’s work suggests that the link between money and self has a long social history, informed by the politics of visibility and invisibility. It also suggests that ritualistic uses of money in display—those identified by Lea and Webley as outliers to money as a tool—are not secondary, but central to the pragmatics of money—especially money as a sign of wealth, power, or capacity. The “symbolism” of money and its function as a tool are not distinct from one another, but continuous aspects of money form and practice.

Money as Memory

In their work on the neurological images elicited through watching money’s destruction, Becchio and her colleagues wonder about the connection between money’s material form and its functionality as a tool. Becchio and her colleagues argue that since there is no intrinsic connection between the physical form of money and its use or function, monetary forms and functions are linked by “our social practices” alone (Becchio et al., 2011, p. 2). The foundation of money’s tool-ness, they suggest, is memory—that is, “memory-based representations of functionally appropriate tool use” (p. 8).

This suggestion is evocative for anthropologists familiar with Hart’s arguments about money as a “memory bank.” Hart (2001) argued that the origins and future of money were to be found in social memory: Money originated as a device for manipulating personal credit and managing social relationships; similarly, as money becomes more embedded in digital systems of information storage and transfer, its ability “to help us keep track of those exchanges with others that we choose to calculate” will become more important. Even as its forms continue to diversify in the wake of a period of nation-state-based fiat currency, money will remain a “cultural infrastructure” and “a means of remembering.”

Hart’s work builds on and contributes to a long history of state and credit theories of money that highlight money’s unit of account function as its originary use and characterize money in terms of social relationships of credit and credibility (Bell, 2001; Bell and Nell, 2003; Ingham, 2004; Keynes, 1923, 1930; Knapp, 1924/1905;

[14] On the links between money and political authority, see also Graeber (2011) and below.

Wray, 1998, 2004).[15] This history has recently emerged again in the wake of the global financial crisis and the recent surge in debates about money, debt, and value.[16] Graeber's recent work (2011) recounts the story told by these state and credit theorists and echoed in the work of archaeologists, numismatists, and post-Keynesian economists. That story locates money's origins not in barter—as conventional neoclassical economics would have it—but in centralized registries of debts held and maintained by ancient Sumerian states. As such, these scholarly accounts foreground money's originary role in keeping such accounts, and foreshadow, we think, contemporary visions of a coming "cashless" society, where value storage and exchange will supposedly depend on immaterial record-keeping of social and economic obligations (Bátiz-Lazo, Haigh, & Stearns, 2011).

Recent research using cross-cultural data posits a link between the historical and archaeological emergence of transactions records and the growth of social networks beyond that easily managed by a single human brain. Waymire, Basu, and their colleagues (Basu & Waymire, 2006; Basu, Kirk, & Waymire, 2009) argue that accounting and recordkeeping practices emerge in response to the growth and complexification of social networks, since external records can augment and complement individual memory of social relationships and past encounters. That is, as tracking the history of exchanges and other kinds of relations becomes difficult for a single person, sociomaterial forms emerge to provide permanence to such histories by locating them in material artifacts outside the human brain: in clay tokens and balls in Mesopotamia and cuneiform tablets in ancient Sumer; in Inka khipu, knotted textile record-keeping devices (Urton, 2003); in tally sticks used all over the world, including by the British Exchequer in the fifteenth century; and in double-entry bookkeeping and promissory notes (Poovey, 1998). This work dovetails with the story preferred by state and credit theorists, Hart, Graeber, and others, since money itself, they argue, emerges from such histories of accounting. These varying accounts support in general terms, then, money's use as a memory and record-keeping device. Indeed, the economist Kocherlakota (1996, pp. 1–2, emphasis in original) proposes that money is a "*technological* innovation" and specifically, "a primitive form of memory." As we have seen, however, money's functions as a tool does not limit its uses or forms, but in fact serve as foundations for further innovation, creative manipulation, and refunctioning. The history of money, its own "memory bank," demonstrates that diversity.

[15] It is worthwhile to note here the emergence in studies of law and society of a legal approach to money and monetary history, much of it also inspired by this heterodox state/credit tradition. Kreitner (2012, p. 424) writes in review of this emergent literature that instead of recording the legal aspects or implications of money, this approach emphasizes the law as constitutive of money and especially of "money as a project collectively engineered and orchestrated to create liquidity." For these scholars, money is thus a *constitutional* project. See especially the important work of Desan (2005, 2006, 2008, 2010).

[16] For a review of work by anthropologists and others on finance after the crisis, see Ho (2010) and Maurer (2012).

We have noted elsewhere (Maurer, 2011; Maurer et al., 2013; see also Swartz, 2012) that we write in a time of incredible ferment around money. The financial crisis that began in 2008, together with technological innovation in social media and mobile computing, have reawakened experiments in money dormant since perhaps the time of the consolidation of national currencies—whose existence, it bears noting, is a relatively recent phenomenon in human evolutionary terms (going back 300 years if we are liberal in our definitions or half that if we are more conservative). In the USA, private "wildcat" currencies circulated from 1861 to 1863 and the centralization and control of federally issued legal tender was not complete until 1913 (Helleiner, 2003; Mihm, 2007). Contemporary experiments echo this history of plural moneys, ranging from attempts to create new currencies (through, for instance, local time-banking schemes, reputational record-keeping, or decentralized digital networks and cryptography, such as with Bitcoin, an online peer-to-peer currency), to businesses providing financial services via the mobile phone, to projects that imagine the construction of new infrastructures of payment based on the issuance of digital tokens by private entities, many of them harnessing mobile computing. These experiments contribute to the diversity of money and require renewed attention to money's forms, uses, and meanings.

Recent work in anthropology and related fields on the relationship between economic "theory" and economic "realities" has drawn attention to the self-fulfilling prophesies of economic (and other scientific) theory. Economics, Callon (1998) famously writes, does not describe a preexisting economy "out there." In a nontrivial manner, it formats it, participates in its making. This line of thinking builds on decades of research into how scientific practice works to generate knowledge about the world and in so doing remakes the world in its image. It also highlights the recognition that the ways we think about the economy matter greatly for how the economy operates and how we, as economic actors, behave. Anthropology and psychology participate in this economy-making, too: anthropological theories of gift societies and other forms of non-capitalist economy have inspired all manner of small-scale "alternative economy" experiments, from barter networks to local currencies to, now, as Nelms has found in recent research in Ecuador, national and transnational projects to build "social and solidarity economies". Psychological research, especially as it comes to inform behavioral economics, is helping reshape the incentive structures for things like pension plans or health insurance, thereby remaking the market.

Today, however, self-reflexive experiments in money and money-like coupons and credits are restaging debates over the origin and nature of money itself. Anthropologists and psychologists of money, together, will have a lot to learn from these new experiments as they potentially remake money forms and the complex of ideas and practices and discourses that surround and shape money and our relationships to it. Such debates are increasingly embedded in practical, innovative, material experiments, projects, and enterprises by a range of state and non-state actors. In this, they again remind us of the expansiveness of human capacity, the material forms that enable and express it, and the way that we continuously compose and recompose worlds of value, with and through our moneys.

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