
Uncanny exchanges: the possibilities and failures of ‘making change’ with alternative monetary forms

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Received 26 June 2001; in revised form 29 June 2002

Abstract. In most standard accounts, modern money depends on its function as the general equivalent. Equivalence, in turn, rotates around a specific numerological metaphysics, including the concept of zero and the algebraic function. Yet, rarely are the mathematics of equivalence subject to critical scrutiny. In this paper I explore contemporary alternative numerologies of money and finance. The alternatives that I consider are a US local scrip currency and transnational Islamic finance experiments. My data come from fieldwork in Ithaca, New York, and from research among Islamic finance specialists devising new financial products. I am interested in how these alternatives make explicit the moral form of the mathematics of the general equivalent.

“When all is said and done, the quality of uncanniness can only come from the fact of the ‘double’ being a creation dating back to a very early mental stage, long since surmounted—a stage, incidentally, at which it wore a more friendly aspect. The ‘double’ has become a thing of terror, just as, after the collapse of their religion, the gods turned into demons.”

Freud (1955 [1919])

Uncanny exchanges

In most standard descriptions, modern money depends on its function as the general equivalent—the yardstick according to which all value can be measured, the solution into which all goods and services can be dissolved.⁽¹⁾ Scholars of money take various positions on the ramifications of that function. Does the ability of money to render the qualitative into the quantitative flatten social relations, working like an ‘acid’ on all humane values (Simmel, 1990; see Bloch and Parry, 1989, page 6)? Does money “homogenize” and produce a “featureless” world of “universal exchangeability” (Fine and Lapavistas, 2000, page 367)? Does it ‘disembed’ social relations from their place and time, leading the advance toward modernity (Giddens, 1990)? Does the universal reach of money necessitate that there be limits to the placing of all goods and services on one scale of value (Radin, 1993)? These questions assume that quantification necessarily involves standardization, homogenization, and universal commodification.

Those who are critical of the ‘money as acid’ hypothesis draw attention to the myriad kinds and multiple effects of money. Money, they argue, does not simply or merely or universally flatten relations and meanings; it can enrich them, multiply them, complexify them (Akin and Robbins, 1999; Bloch and Parry, 1989; Carruthers and Espeland, 1998; Zelizer, 1997). Money may be earmarked for specific purposes,

⁽¹⁾ Although they take different approaches to the problem of money as the general equivalent, all share the underlying assumption that the equivalence function is central: see, for example, Akin and Robbins (1999), Bloch and Parry (1989), Bohannan (1959), Goux (1990), Hart (2000), Leyshon and Thrift (1997), Marx (1977b [1865–66]), Polanyi (1957), Simmel (1990), Taussig (1980), Zelizer (1997).

it may be separated out into distinct bundles, between which convertibility becomes problematic if not impossible (Zelizer, 1997). Nonetheless, these critics assume, monetization goes hand in hand with calculation (1997, page 12). Although money “commensurates incommensurabilities” (Carruthers and Espeland, 1998, page 1400), the quantitative function of money “downplays, or even ignores those aspects of value that cannot be reduced to a single number” (page 1401).

In this line of inquiry, the role of money in *commodification* comes under scrutiny. So-called ‘gift’ economies lie just beneath the surface as an implicit point of contrast even as one of the objectives of this line of inquiry is, rightly, to soften the distinction between the gift and the commodity and to see it as a product of the West’s ideologies about itself (Bloch and Parry, 1989). Appadurai has suggested, along these lines, that transcending the ‘us and them’ oppositions implicit in arguments over money and commodification, on the one hand, and the gift, on the other, entails critical work to “restore the cultural dimension to societies that are too often represented simply as economies writ large, and to restore the calculative dimension to societies that are too often simply portrayed as solidarity writ small” (1986, page 12). The critical effort has been to bring into relation culture and practical reason, to see the pragmatic aspects of ‘gift’ societies and the cultural aspects of ‘calculative’ societies.

In these accounts, however, that calculative dimension is presented as common sense and as obviously pragmatic. The mathematical operation is accepted as doing what common sense says it should: that, in calculating, the mathematical operation equates, desacralizes, and rationalizes.⁽²⁾ But is the conversion to number simply a reduction, a transformation to a lower-order level that permits a generalized abstraction of value across otherwise incommensurable domains? Highlighting the “social differentiation” (Zelizer, 2000, page 385) of money sidesteps the problem: it does not address the question of whether the mathematical operation of equivalence actually rationalizes, but is an ‘additive’ critique (that is, money may rationalize and desacralize, but it also does different kinds of social and meaningful work). As all analysts of money seem to agree that monetization goes hand in hand with calculation, we need to examine more than the “social networks” and “discursive regimes” in which money moves (Leyshon and Thrift, 1997, page 38). We also need to attend to its mathematics: not only whether and how the mathematics are used, not only the meanings that are attached to it, not only its metaphorical functions, but also the mathematical form of the equivalence function itself. And we need to do so without falling into the false dichotomy between culture and practical reason that has lurked in many discussions of culture and economy. Instead of treating the equivalence function as merely a practical tool, then, in this paper I explore it as a form of argument that calls into question the separation of metaphysics from method.⁽³⁾ As a form of argument, the mathematical equivalence function is a moral tool not just a practical one.

⁽²⁾ While Appadurai’s call to reconsider the distinction between the gift and commodity is well taken, if we accept that the common sense of calculation risks solidifying an analytical opposition implicit in accounts of money—that between the sacred and the profane—it also allows Appadurai, as well as Zelizer and others, to maintain their awkward relationship to Simmel, for whom the profanity of money and calculation was a foregone conclusion. On the pitfalls of the Simmelian approach, see Ferguson (1988). On another, related note, Belk and Wallendorf (1990) have written a fascinating compendium of the sacred meanings of money, but they do not make the analytical move of seeing the ‘sacred’ in the supposedly ‘profane’ meanings of money, that is, of using their analysis to call into question the sacred/profane distinction.

⁽³⁾ One of the anonymous reviewers commented specifically on this point and I would like to acknowledge here the reviewer’s assistance in clarifying my argument.

This inquiry thus takes me a little afield from the monetary realm, and leads me to reconsider the bifurcation in theory and method that is flagged by the distinction between the real and the theoretical, the empirical and the discursive. Through my ethnographic work with participants in various alternative monetary systems I became interested in the way contemporary alternatives to modern money echo and sometimes explicitly invoke the founding moment of the separation of two realms of human inquiry: knowledges of fact or scientific inquiry, on the one hand, and knowledges of evidence or humanistic inquiry, on the other. Participants in alternative monetary systems sometimes see themselves as engaged in practical negotiations with dominant money forms and markets. But they also sometimes see themselves as engaged in the pursuit of particular truths, especially of the moral and religious kind. In doing so, as I hope to demonstrate later in this paper, they explicitly call into question the fact/evidence distinction and the role of numbers in maintaining that distinction.

In popular cultural understandings, if not in actual scientific, legal, and interpretive practice, a fact is a fact, but it only becomes evidence when it is enlisted to prove a particular theory, which is understood to be a product of human discourse and a form of systematic knowledge (Daston, 1994).⁽⁴⁾ Numbers have generally been understood in the West to be referential, referring to countable items in the world. These countable items become ‘facts’ or deracinated and disinterested particulars in the sense of their existence being ontologically prior to any specific act of enlistment (Dear, 1995; Poovey, 1998).⁽⁵⁾ Barnes and others have written extensively on the role of quantification in the human sciences (Barnes, 1989; 1994; 1998; Daston, 1988; Dear, 1995; Mirowski, 1987; Porter, 1995; Rotman, 1987). Following Wittgenstein, Barnes and others take mathematics to be a language and emphasize the social production, contexts, and effects of that language: number takes on rhetorical functions and different mathematical metaphors do different kinds of persuasive work; the task becomes determining the best metaphor for the job. But whence that separation of number from rhetoric in the first place, a separation that constitutes critical analysis as the act of bringing the two into relation (see Strathern, 1999)? I will suggest that the equivalence function itself played a role in the separation of number from metaphor, and of fact from evidence. Coupled with the founding place of that separation in the formation of the analytical apparatuses of the human sciences, this requires a new kind of critical attitude for understanding the mathematical operations of equivalence and their putative effects.

Equivalence is not a straightforward or self-evident affair; it rotates around a specific numerological metaphysics that hinges on the figure zero and on the algebraic function. The mathematical technique of algebra involves zeros both horizontally and vertically. Horizontally, the equality sign signifies zero itself, for, by definition, nothing separates the two sides of the equation: subtracting one side from the other would leave zero. This fact makes possible the vertical operation of solving the unknowns by subtracting the same element from both sides and reducing them to zero in order to turn the problem into simple division.

Equivalence is also haunted by the possibility of its own failure, the lack of certainty at its core—embodied by the figure zero in the algebraic equation—necessary

⁽⁴⁾ And the legal undertone here should give us pause. See Shapiro (1991) on the tight relation between legal and scientific standards of evidence in the 17th-century and 18th-century solidification of law and the scientific method.

⁽⁵⁾ I would like to thank Tom Boellstorff for helping me to think through this paragraph.

for any monetary conversion.⁽⁶⁾ As well as being haunted by the uncanny doubling its potential failure facilitates, equivalence is haunted by its rendering of difference into similitude, but not quite (Bhabha, 1994; Schwartz, 1996). It is this ‘not quite’, this troubling remainder, that animated Renaissance European double-entry bookkeeping, and wizarded from accountants’ books the mysteries of ‘income’ and ‘profit’, the sublime objects of capitalist ideology (Poovey, 1998). To make this case, in this paper I present contemporary alternative numerologies of money and finance. The alternatives I consider are US local currencies and transnational Islamic finance experiments. My data come from fieldwork in Ithaca, New York (home to one of the longest-running local-currency experiments), and research among Islamic finance specialists devising new financial products. I am interested in how, in their moments of apparent failure, these alternatives call into question the general equivalent and its attendant mathematics, and make explicit the messy but necessary remainders of those capital equations.⁽⁷⁾

In the sections that follow, I explore specific mathematical practices among adherents to alternative monetary forms—the elimination of interest and interest-bearing debt in a mutual-fund market framework, and the making of change in a farmers’ market transaction. I consider whether and how these contemporary alternatives, in their moments of apparent breakdown, concoct new monetary, mathematical, and meaningful forms and reveal something hidden in the old. I am interested in the morally fraught equivalencies that occur when Islamic conceptions of *riba*, or interest, are translated into *zakat*, or charity, and when alternative currencies are translated into US dollars. According to the explicit ideologies articulated around these monetary forms, such translations should not be possible. Yet, in fact, they continually recur. How people deal with these translations says a lot about people’s ability to negotiate and compromise between dominant and alternative monies, dominant and alternative values, dominant and alternative moral economies. At the same time, however, there is often a powerful and emotionally unsettling uncanniness to these compromises.

⁽⁶⁾ Crosby discusses the mystical reputation of zero and the resistance of Europeans to the very idea that zero is a number (1997, page 114). While in the middle of one of the many revisions to this paper, and in residence at the Australian National University, I came across a photocopied 20-page pamphlet by one ‘Mariot’, titled, “The understanding of zero”, which, like the medieval and Renaissance texts discussed by Crosby, also enters metaphysical objections to the figure zero (and, specifically, to the alphanumeric symbol, ‘0’). The author worries that, although it may be a fine tool for mathematicians, “we have to keep that same tool out of the hands (and the minds) of our inexperienced children—for all it adds to the understanding of the simple everyday world is absolute confusion” by making nothing seem to be a number that refers to something—a paradox that makes Mariot exceedingly uncomfortable.

⁽⁷⁾ I arrive at these alternative monetary forms by way of work on the Caribbean offshore financial-services sector (Maurer, 1997). The British Virgin Islands, like now nearly all former and current British possessions in the West Indies, makes more money each year from business-incorporation fees than from either tourism or export agriculture. In the wake of a multilateral, international crackdown against tax havens which began in 1999, these island states have even put forward the idea of a ‘right to offshore finance’, arguing that contemporary globalization, especially of agriculture, leaves them with no other option for survival in the new global market. Coming at offshore finance from the point of view of state sovereignty and global capital, however, I missed the moral discourses circulating around these spaces offshore, which seriously trouble regulatory and analytical accounts of finance. Whereas the moral opprobrium associated with tax havens comes easily to mind, we are less familiar with the way in which offshore centers in the Caribbean have served as crucial nodes for ‘ethical’ business and banking—specifically, in the form of Islamic-banking experiments which are aimed at avoiding interest. Although the Bank of Credit and Commerce International scandal gave Islamic banking in the Caribbean a bad name, still, at the same time, good-faith efforts to provide Islamic financial products continue in the Caribbean and lend new languages of morality and meaning to the money flows that characterize globalization.

They do not sit well with those who make them. In order to arrive at an assessment of the uncanny in the fraught equivalencies of alternative monetary forms, I first inquire into the stitching together of numbers, markets, and meaning that continues to bind money.

While markets are always characterized by the reconciliation of alternative value formations, I want to spotlight that uncanniness in order to bring into view the equivalence function as a deontic mode of reasoning, not a reflection of already-existing ontologies.⁽⁸⁾ I also want to suggest that uncanniness works in concert with critical analyses of capitalism. How we ask questions of alternative monetary forms demonstrates the moral form of monetary exchange as much as the practical and metaphysical unfolding of monetary exchange in people's everyday transactions. Those transactions and our analytical translations of them are both uncanny exchanges.⁽⁹⁾

Monsters, markets, and modern facts

As Rotman (1987) has argued, Shakespeare's *King Lear*, written around 1606, is an allegory about new economic formations and new ways of perceiving the world. It is profoundly haunted by the figure zero, the possibility of absolute absence—the 'nothing' around which new knowledge practices like double-entry bookkeeping found form. The tragedy begins with Cordelia's refusal to denominate her love for Lear in monetary terms, as her two sisters had already done in return for a third each of the kingdom:

Lear: ... what can you say to draw

A third more opulent than your sisters? Speak.

Cordelia: Nothing, my lord.

Lear: Nothing?

Cordelia: Nothing.

Lear: Nothing will come of nothing. ... (act 1, scene 1)

The drama continues with Lear's ensuing madness and culminates in his death, his own rendering into nothing. Because of his infatuation with the numerologies of monetary equivalence, he forsakes his kingdom and eventually his life—his crown a great 0 as well, as indicated by the Fool, who sees 'nothing' in that symbol of Lear's royal station: "Now thou art an 0 without a figure. I am better than thou art now: I am a fool, thou art nothing" (act 1, scene 4). The play is full of accounting metaphors, some not picked up by Rotman, beginning with the opening exchange in the play, between Kent and Gloucester ("equalities are so weighed that curiosity in neither can make choice of either's moiety").⁽¹⁰⁾ I am particularly fond of the metaphorical reconciling of accounts that occurs in the resolution of the conflicts between the two evil sisters and the two Eds (Edmund and Edgar)—especially the two Eds, who are alike, but not quite.

⁽⁸⁾One reviewer directed me to Olsson's discussion of the equality sign (1980, pages 64b–69b). My effort here, like Olsson's, is to excavate the equality sign "in the fleeting characteristics of functional relations and qualitative change", and to account for the way in which "the worlds I am talking about reflect the words I am talking in" (page 65b). To Olsson's dialectics I would underscore deontics: Olsson opens up ontology by not limiting it to "what is truth-functional and extensional" (page 67b, in a passage that also makes note of 'nothing') and thus points toward the moral arguments embedded in any truth claim.

⁽⁹⁾Again, I thank the anonymous reviews for critical comments that helped me to clarify the argument.

⁽¹⁰⁾Lear has so carefully demarcated the shares of his kingdom that will devolve to Albany and Cornwall, his daughters' husbands, that neither will feel he has been slighted upon examination of the other's inheritance.

Given the importance of the new knowledge practices of accounting in the play, we can also read *King Lear* as part of the history of academic disciplinarity. The literary historian Mary Poovey (1998) analyses the separation of the sciences of fact from the force of rhetoric through the development of modern financial accounting. Poovey shows how Renaissance double-entry bookkeeping allowed those who used it to argue that their language of numbers transparently reflected real, deracinated particulars in the world and that it therefore was beyond question—Renaissance accountants were recording facts, understood as enumerable, countable items. Nevertheless, Poovey shows, Renaissance bookkeeping constituted a modality of argument that could not quite escape its status as rhetoric. In part, this is because people could fudge the numbers and did so all the time for different rhetorical effects.

Poovey argues, further, that double entry did not simply have rhetorical effects, but was itself a specific mode of argument. The balance book pivoted around zero, a number that troubled Renaissance accountants and their interlocutors (Rotman, 1987). The technique of double entry relied on entering a number referring to the monetary value of a transaction two times, once as a ‘credit’ to one account and once as a ‘debit’ to another. This allowed the accountant to add up the credits and the debits and to ensure that they cancelled each other out—that the difference between them would be zero, and the books would thereby be ‘balanced’, exactly as in an algebraic equation rotating around the equality sign (see Poovey, 1998, page 43).⁽¹¹⁾ Double entry was an algebraic operation, and algebra had entered into Europe via the deeply religious texts of Mohammed ben Musa (also known as al-Khuwarizmi, from whom we derive the word algorithm), a figure overlooked by Poovey and Rotman. For al-Khuwarizmi, algebra was a prayerful activity, and this was not lost on the Renaissance European importers of the technique. Enumeration was not a natural act but a metaphysical one. Solving for x did not mean finding the ‘real’ value of a slave, cost of a bride, or exchange rate between wheat and barley (the examples that make up the bulk of al-Khuwarizmi’s text). It meant, instead, partaking in, following along with, pointing toward the quintessence, the absolute.⁽¹²⁾ “The balance”, Poovey remarks, “conjured up both the scales of justice and the symmetry of God’s world” (1998, page 54).

There were two sides to this divinity, however. Zero, like money, was possessed of unsettling, potentially demonic powers.⁽¹³⁾ Indeed, this relationship between zero and money was made explicit in 18th-century ballads about the South Sea Company’s rise to prominence and spectacular downfall, as in the following little ditty by

⁽¹¹⁾ The vast literature on accounting is relevant here; for a summary and partial critique, see Maurer (forthcoming).

⁽¹²⁾ The 1831 translator, Frederic Rosen, complains that, in the last third of al-Khwarisimi’s text, “[t]he solutions which the author has given of the remaining problems of this treatise, are, mathematically considered, for the most part incorrect. It is not that the problems, when once reduced and into equations, are incorrectly worked out: but that in reducing them to equations, arbitrary assumptions are made, which are foreign or contradictory to the data first enounced” (Rosen, in al-Khuwarizmi, 1831, page 133). What Rosen misses is that these ‘arbitrary’ numbers are only arbitrary if one assumes number to be referential, which al-Khuwarizmi did not.

⁽¹³⁾ Thus, contra Rotman, I am not convinced of the “secular effect” of zero (Rotman, 1987, page 5). Failures of equivalence suggest that the numerical pivot of algebra—zero—did not always deliver on what it promised—equivalence. Rather, the mystical associations of zero transformed to hinge on the doubt that failure produced. Zero thus became associated with the remainders left over after attempted equivalence functions.

Thomas D'Urfey, titled "The Hubble Bubbles" (in Dugaw, 1998, page 52):

A bubble is blown up with air,
 In which fine Prospects do Appear,
 The Bubble breaks the Prospects lost,
 Yet must some bubble pay the cost,
 Hubble bubble bubble hubble all is smoke
 Bubble bubble hubble bubble all is broke
 Farewell your Woods your Houses Lands your Pastures
 And your Flocks.
 For now you have nought but your Selves in ye Stocks.

Like the hapless stockjobber in the song, the facts of double entry depended on their being beholden to 'nothing' but themselves—they, too, had "nought but" their own ontological status as entities supposedly existing in the world and existing before any human act of enumeration. Such facts depended on their being deracinated particulars, stand-alone data not wedded to any theory. They could be enlisted as evidence, but supposedly were not, in themselves, evidentiary. At the same time, however, their pivot point, zero, could not escape its broader and more sinister metaphysical connotations. So, too, with the stockjobbers and their own 'nothingness', "[N]ow you have nought but your Selves in ye Stocks" implied not just foolishness but a violation of the divinely ordained hierarchical social and legal order and the forms of property—woods, houses, lands, pastures, and flocks—that mirrored and justified it. The nothing here, then, is both nothing in an empirical sense and at the same time nothing in a moral and metaphysical sense, and the two can not be meaningfully separated.

Historians of mathematics trace the origins of the fact/evidence distinction not to algebra but to an apparent bifurcation in concepts of probability (Daston, 1988; 1994; Hacking, 1977). These scholars seek to historicize the separation between probability taken as a description of random processes in the world, and probability taken as an assessment of the weight of arguments (for example, 'it is probable that ...'). The former probability, based on recording and measurement, is central to the discursive fabrication of the kinds of facts we take for granted when we talk about empirical reality. The latter probability transmutes into rhetoric, discourse, language games, law. The bifurcation of probability into stochastic probability and argumentative probability lies at the root of the historical separation of scientific inquiry from humanistic inquiry.⁽¹⁴⁾ Take Pascal, a figure central to most historical accounts of probability. His correspondence with de Fermat over games of chance is taken as the aleatory, descriptive side of probability theory, whereas his wager over the existence of God is generally taken as the rhetorical, weight-of-argument side of probability theory. The descriptive side relied on number, rendered a purely descriptive function of counting; the weight-of-argument side relied on words and arguments, the persuasive force of rhetoric. (This has shades of the sciences/humanities division in the contemporary academy.)

⁽¹⁴⁾ I realize this is a rather large claim. I make it through a reading of historians and philosophers of mathematics like Hacking (1977) and, in particular, the work of literary historian Poovey, who is centrally concerned with the epistemological domain-forming processes entailed in academic disciplinarity. Conversations with Robyn Wiegman have also guided my thinking here. The division between stochastic and epistemological probability is not so clearly drawn with, say, Bayesian statistics, which, a reviewer reminds me, do incorporate subjective views. It is worth remembering that Bayes was a man of religion. On the stochastic/epistemological problem in probability, see Franklin (2001) and Maurer (2002).

16	2	3	13
5	11	10	8
9	7	6	12
4	14	15	1

Figure 1. A simple magic square.

What, then, are we to make of Pascal's experiments with magic squares (see figure 1, and Darriulat, 1994)? A magic square consists of rows and columns of numbers arranged so that carrying out the same arithmetic operation across the rows and down the columns results in the same number. Christian, Jewish, and Muslim mystics used magic squares to demonstrate miracles to the heathen in order to convert them, to deduce and manipulate the flows of divine knowledge in the world, and to marvel at the unity of creation (see Falkener, 1961 [1892]; Karpenko, 1993). Number here did not describe countable objects or phenomena in the world; rather, number was a marvel, and was understood not to reference preexisting objects in the world, but to have been, from the cosmic beginning, evidentiary for God's design.⁽¹⁵⁾

I am arguing that number never became transparent, in the sense of merely reflective of countable deracinated particulars in the world. Indeed, turning to the number zero, the pivot of double entry, we find that its rhetoricality and mystical properties were never really occluded, they were just refracted through new knowledge practices and discursive struggles. The balance did signify the divine, but it was the particular divinity associated with miracles and portents that it signified, not the distant divinity who set the clockwork of the universe in motion and then receded from the world's view. Where Poovey sees the balance as sidestepping the association between number and necromancy (1998, page 54), then, I suggest that a different slice through the sort of divinity people had in mind during their calculations reveals these number games to be far from rationalizing or desacralizing.

Miracles and portents were not just figures of numerology. They were also found in monsters. With the consolidation of Baconian science, monsters became objects of the natural world. In Robert Boyle's formulation, monsters, as aberrations, give insight into the normal order of things, and thus confirm the natural world as one eminently

⁽¹⁵⁾ Pascal's work with magic squares highlights his complicated relationship to the work of Ramon Lull, the 13th-century Christian mystic, and Nicolas da Cusa, the 15th-century German scholastic. Each, in turn, had complicated relationships with medieval Islam. I cannot explore this here, but see Adamson (1995, page 46), Armour (1993, page 17), Burman (1991), Menocal (1990), and Urvoy (1990) on Lull; and Hopkins (1980), Jaspers (1957), Smirnov (1993), and Watts (1982) on da Cusa. The mutual participation of each in one field of discourse about number and divinity relieves my own anxieties about relating contemporary Islamic banking to Renaissance and Enlightenment debates within Christendom—these worlds are not so separate as one might wish to believe (see Asad, 1993).

explicable by the laws of science (Daston and Park, 1998). Although Enlightenment Europeans naturalized monsters, they invented at the same time new figures of fancy that had the potential to topple this natural order. Both popular class and elite western Europeans wizarded up, and then tried to cope with, the new cultural domains of finance and of fiction, and became avid consumers of stocks and storybooks (see Hentzi, 1993; Ingrassia, 1995; Sherman, 1996). If we return to the South Sea Company and the emergence of modern stock markets, then, there is more to the ‘nothing’ of D’Urfey’s “The Hubble Bubbles” than might at first glance be apparent: “now you have nought but your Selves in ye Stocks”.⁽¹⁶⁾ In a world of propertied title and corporate statuses, having nothing but one’s own self in effect renders one non-human. If what distinguishes animals from people is position in a social hierarchy and the attendant forms of social personhood (personhood understood to be a place in a corporate hierarchy), then having only one’s self—and not one’s title, position, or corporate identity—renders one outside of humanity.⁽¹⁷⁾ Not only is the present rendered a nothing, not only is property dissipated into lack: the self is, as well. Having “nought but your Selves” is tantamount to Lear reducing his crown to an empty 0. In a world where property and title had gone, apparently organically, hand in hand the troubling lack conveyed in zero, paper stocks, and fiction writing—the creation of nothing out of nothing for no (holy) purpose—called forth a new and terrible beast: the person as an empty cipher, the subject as its own negation and absence. This was indeed a frightening monster. It recalls Shakespeare’s depiction of Goneril and Regan, the evil sisters, as no mere humans but strange and vicious creatures—serpents, kites, and carrion fowl. Zero and algebra thus did not simply close off “the infinite proliferation of number signs” (or metaphysical signs) that they seemed to bring into being (compare Rotman, 1987, page 32), but opened up the inhuman, the soulless, and the monstrous, through the interlinked practices of spinning fictional tales and making financial speculations.⁽¹⁸⁾

The fantastic creations of paper credit also redounded into natural science. As scientists brought monsters into the natural order, they did not always do so with a readymade explanatory framework. What was important was not the existence of a rational explanation for a miracle or a monster, but, rather, the *possibility* of there

⁽¹⁶⁾ There is a further pun here, too: having your self in the stocks refers both to having all one’s investments tied up in worthless South Sea Company stock, and also to being put physically in the stocks—the stockade, that is—upon being declared a debtor unable to fulfil one’s financial obligations to others (see Dugaw, 1998 for further discussion).

⁽¹⁷⁾ Hence the debate over the nature of indigenous Americans after Conquest: were they persons who had ‘forgotten’ their position in the divinely ordained hierarchy and needed only Christian revelation to bring them back into the fold of civilization, or were they animals, lower forms of life whose enslavement would be justified by their being below humans on the great chain of being?

⁽¹⁸⁾ The ballad tradition in 17th-century and 18th-century England had always found ample material in sea serpents, ghosts and apparitions, and monstrous births (Dugaw, 1998, page 45). During the South Sea bubble, however, after the naturalization of the monstrous effected by the new science, monsters were considered to be creatures only fools would believe in. To the songsmiths, the same was thought of paper credit, based on equivalence, the balance, and zero—an object only for the belief of the overly credulous and women (see Ingrassia, 1995). In one popular ballad from 1720, hapless and feminized stockjobbers react swiftly—and, for their finances, disastrously—to news from landlocked Moscow that a gigantic whale is devouring ships. Rumor and fancy—in a word, fiction—turn the material into the immaterial and back again (Dugaw, 1998, page 55). In their commentary on stock trading, the songsmiths did not distinguish between rumor and information. Both led people to make bad decisions. Both contributed to the demise of the old order. For a newly constituted and investing public, the distinction between fact and fiction collapsed in a frenzy of paper trading.

being a rational explanation. Daston terms this, appropriately, “promissory naturalism”: “It is the possibility in principle, not the actual availability of a natural explanation, that counted here. ... This kind of promissory naturalism, based more on metaphysical faith than scientific competence, remained typical of attempts to naturalize marvels and miracles well into the eighteenth century” (1994, page 251). The promissory naturalism was akin to the promissory notes of the stockjobbers—a species of faith and credibility in the possibility of realizing abstract truths or absolute value, and not in the actualization of truth or value.

I wish to draw attention to this traffic among divine monsters, natural science, mathematics, and finance in the emergence of new forms of equivalence. In doing so I do not reveal something previously hidden, some nugget of essential reality or truth. Instead, I simply flesh out some of the ghosts in the machine of capitalist numerologies. The equivalence function was never a simple desacralizing operation; its mathematical form was never purely ontological. Instead it was always a moral form. This recognition permits me to describe some of the work involved in producing both commonsense and critical ‘truths’ of money.⁽¹⁹⁾ In this light, then, I turn to contemporary Islamic investing.

Purifying Islamic mutual funds

In 1999, Dow Jones inaugurated the Dow Jones Islamic Market Index (DJIM). The DJIM was one of its family of stock-market indices, the purpose of which is to aid investors and especially mutual-fund portfolio managers in the selection of stocks, and it was intended to provide “a definitive standard for measuring stock market performance for Islamic investors on a global basis” (Dow Jones, 1999, page 3). Like other Dow Jones indices, it is updated and disseminated every fifteen seconds.

As is the case for most Islamic financial institutions, the DJIM submits to the periodic review of a Shari’a Supervisory Board (SSB). Generally speaking, SSBs are made up of scholars, jurists, and clerics from a variety of countries representing the world community of Muslims.⁽²⁰⁾ Although members of SSBs adhere to one of the four main branches of Islamic jurisprudence, in practice they are bricoleurs, drawing from any jurisprudential source which they deem to be appropriate for a particular problem. The several international clearinghouses for Islamic financial services information—from the Institute for Islamic Banking and Insurance in London, to the Harvard Islamic Finance Information Program, to the Islamic Finance Net Internet email list—routinely field questions from Islamic-banking professionals seeking the opinion of a particular legal school on a particular issue.⁽²¹⁾

⁽¹⁹⁾ As Žižek admonishes, “It is not sufficient to reduce the form to the essence, to the hidden kernel; we must also examine the processes—homologous to the ‘dream-work’—by means of which the concealed content assumes such a form” (1994, page 300).

⁽²⁰⁾ Research on Islamic banking and finance was conducted from 1999 to 2001 and included participating in an international training program, conducting ongoing conversations with professionals around the world, visiting the Institute of Islamic Banking and Insurance in London, the American Finance House Lariba in Pasadena, California, and various Islamic finance operations in Indonesia.

⁽²¹⁾ In another paper (Maurer, forthcoming) I explore the relationship between individual SSBs in different financial institutions and the creation of transnational Islamic accountancy norms. I argue that the apparent shift from religious to bureaucratic authority in Islamic accountancy is not a struggle between religion and bureaucracy but a sort of complicity. SSBs provide a transnational standards-setting body (the Accounting and Auditing Organisation for Islamic Financial Institutions) with the ‘data’ it needs to devise ‘best practices’ which then, when disseminated, gain SSB seals of approval, in a neat and self-fulfilling prophecy whose main effect is the aura of technical precision for outside observers and regulators.

The index proceeds from two assumptions about the relationship between Islam and the global market. The first is the assumption that something called a ‘global Islamic market’ always already exists. The index is simply a method of ‘measuring’ it at any given moment. Measuring that market entails first determining which business activities make it up. To do so, Dow Jones devised ‘filters’ or ‘screens’ which would catch the elements of the already-existing global market that are ‘Islamic’, and sift out those that are not. The second assumption follows closely on the first: any business activity that is *permissible* according to Islamic norms—themselves the subject of considerable controversy—is itself *Islamic*. In other words, if I were to open up a widget company and sell shares of it on the stock market, my widget company would be deemed Islamic even if none of its activities had anything to do with any actually existing Muslims or any Islamic religious or financial principles. So long as I did not intentionally or unintentionally violate those principles, my company would be deemed to be (actively) following those principles.⁽²²⁾ The idea that the passive nonviolation of Islamic principles implies active acceptance of them is in line with the Islamic modernists who, at the beginning of the 20th century, argued that any activity which proceeds according to ‘universal rules’ (from the motions of the planets to the decisions of an entrepreneur) adheres, on the basis of that universality, to the principles of the divinity (compare Chapra, 1992; Kuran, 1997; Maududi, 1975; Qureshi, 1946; Siddiqi, 1983). This is a key point. Economists and others contest the idea that markets actually do behave as if they are following such universal rules, and economic modernism has come in for critique from a variety of perspectives both within and outside economics (for example, McCloskey, 1998). Still, such thinking allows contemporary Islamic-banking specialists to claim, à la early-20th-century Islamic modernists, that the Islamic market already exists (indeed, that any market that proceeded according to universal principles, even before the advent of Islam, would demonstrate the universality of God’s design and thus demonstrate the wisdom of Islam). It also allows them to claim that Islam permits the purest expression of the market form and that if Islam signifies justice then the purest market signifies justice as well.

At the same time, the operations of the DJIM proceed as if this global Islamic market is in a constant state of fraught conjurings. Dow Jones guidelines provide two main screens to filter stocks which are deemed to be Islamically pure from the total universe of stocks. The first screen eliminates businesses whose activities violate Islamic law: those that deal with alcohol, tobacco, pork products, financial services, defense and weapons, and entertainment. The final element of this list is significant because it represents a path of least resistance: rather than assessing which hotels serve alcohol or pork, for example, or which motion-picture production studios are involved in anything approaching the pornographic (which is considered prohibited in Islam), Dow Jones decided to eliminate all of them from the investable field. For the same reason, some Islamic mutual-fund portfolio managers exclude all companies involved in any kind of meat production because, as one put it, “you never really know what goes on in those places”. The global Islamic market, then, although assumed by the DJIM to be always already there in the world, ready to be measured, is not quite as absolute as it may appear. It is always at risk from unholy dangers, as well as from mundane inaccuracies (for example, some meat or entertainment businesses may be operating in perfect accordance with Islamic norms but end up screened out of the global Islamic market by the operations of the DJIM).

⁽²²⁾ In other words, the DJIM does *not* proceed by seeking out ‘Muslim corporations’. It works on the assumption that everything that does not violate Islamic norms is Islamic, even if it is not necessarily Muslim. I would like to thank Saba Mahmood for comments on earlier drafts that helped me clarify this section (and I accept all responsibility for the muddles that remain).

The second screen deals not with what kind of business a company does but with the manner in which it operates. It consists of three separate 'financial-ratio filters' that sift out "companies with unacceptable levels of debts or impure interest income" (Dow Jones, 1999, page 9). The first excludes companies whose debt-to-assets ratio is greater than or equal to 33%. The second excludes companies whose accounts receivables-to-total-assets ratio is greater than or equal to 45%. The third excludes companies whose interest-income-to-revenue ratio is greater than or equal to 5%.⁽²³⁾

These financial-ratio filters are used to guard the Islamic market against *riba*, often glossed as interest. The prohibition against *riba* is hotly debated in Islam. Islamic economics, both as an academic discipline and as a field of professional expertise, hinges on the prohibition. Although many Islamic scholars and clerics from the 19th century onwards have dismissed the relevance of the Qur'anic injunction to contemporary capitalism, the fields of Islamic banking and economics arose via the modernists' claims that it was of signal importance for creating a new Islam and independent Islamic republics (Maududi, 1975; see also Kuran, 1997). For many of the modernists and contemporary Islamic financial specialists, the prohibition of *riba* is an absolute one.⁽²⁴⁾ Some Islamic-banking experts even advocate replacing the word 'Islamic' in Islamic banking with the Arabic term *lariba*, connoting the absolute negation of *riba*, not just an avoidance of it or a working around it. Yet, in the calling forth of a global Islamic market, the DJIM—one of the greatest and most visible successes of the movement—appears to turn that absolute into a calculus, a limit function that does not screen out *riba* entirely, but rather keeps it within specified parameters.

The transformation of *riba* into a limit function permits another such transformation. Financial derivatives, like futures and options, are generally held in Islamic finance to be a form of gambling, and are forbidden.⁽²⁵⁾ Here, however, they become a technical means of 'purification'. Islamic financial engineers use derivative-pricing procedures to 'purify' a portfolio. An Islamic mutual-fund manager calculates how much of the return of a stock derives from that fraction of a company's income that is derived from interest. The manager can then determine how much of the return of the total portfolio derives from interest. That amount can be 'purified' by being given to charity in the form of *zakat*, obligatory alms that constitute one of the five pillars

⁽²³⁾ In May 2001 the DJIM has issued a revision of these financial ratio filters, such that corporate debt can constitute up to 33% of its *market capitalization* instead of 33% of assets, and interest is limited to less than one third of market capitalization, instead of 5% of income. The revision has sparked discussion and controversy among members of several Islamic banking internet discussion groups, who worry that the DJIM, in the interests of expanding the investable universe of stocks, has become more 'liberal'. The DJIM may revise these filters further in light of these concerns, and many Islamic financial advisors currently, when in doubt, use the old guidelines.

⁽²⁴⁾ There are enormous debates today about what constitutes *riba*, whether *riba* is the same as interest or not, whether all forms of increase (such as the appreciation of the value of a piece of land) are *riba*, as well as about the historical and theological roots of the prohibition. I will not survey the debate here, but see Chapra (1992), Choudhury (1997), Khan (1999), Qureshi (1946), Siddiqi (1983), Vogel and Hayes (1998). In Indonesia, the world's most populous Muslim-majority nation (with more Muslims than the Middle East), the debate is made even more interesting by the fact that Mohammad Hatta, the nation's first vice president, was a prominent economic thinker who made sharp distinctions between prohibited *riba* and different kinds of interest (see Rahardjo, 1988).

⁽²⁵⁾ There is, however, great debate on this topic (see Kamali, 1996; 1997; 1998; Maurer, 2001).

of faith. The fund manager thus draws together *riba* and *zakat* as two sides of an algebraic equation that cancel each other out.⁽²⁶⁾

In using derivative-pricing formulas for purification, Islamic financial engineers frame mathematical probability theory in *moral* terms. Derivatives are priced by using the famous Black–Scholes formula, for which its inventors won the Nobel prize in 1973. The Black–Scholes formula is a probability function designed to deal with a stochastic or random process. As such, it is a product of what economic historian Mirowski (1989) has termed the “probabilistic counter-revolution” in neoclassical economic theory. Mirowski has traced the rise of probability theory in economics to a repudiation of strictly determinist models and an elaboration of statistical procedures designed to deal with real-world numbers and to “eventually achieve numerical results”. But, for the Islamic portfolio managers, those numerical results are moral results (shades of our Renaissance accountants).

Islamic financial engineers also mathematically scale the *riba* and *zakat* calculus by attempting to approach the limit of the limit. In the words of one portfolio manager, “even though the Shari’a Board allows up to 33% debt and 5% interest, we try to keep it well below that, like, to 18% and 2 or 3%, because otherwise it’s just wasted—we have to give it up in charity”. In the ‘pure market’ of the Islamic index, in other words, investors still demand returns and do not want to see their investments ‘wasted’ on charity, regardless of any religious mandate. It is a mistake to view this as a contradiction between theory and practice. What is at stake is a matter of *both* the remaking of Islam through the bringing together of *riba* and *zakat* (something not at issue in classical Islam), *and* the remaking of the market as moral even in the pursuit of individual profit without regard for others. For, in the Islamic-banking formulation, and, again, in line with the early-20th-century Islamic modernists and their latter-day spokespersons in the field of Islamic banking, Islam and the market are, or ought to be, ‘equivalent’.

Here, then, *riba* and *zakat* become translations of one another. That mathematical operation of equivalence also reveals people’s efforts to resist it in the name of economic profit (‘we do not want to waste it in charity’). Even that resistance, however, by serving the laws of ‘the market’—which are presumed to operate according to the dictates of individual profit-seeking—serves the modernist conception of Islam at the center of Islamic economics. The mathematics of Islamic financial engineering points toward the divine *and* the market, both of which are taken to index the greater good of social justice. Social justice is symbolized and made material, then, both in the giving of *zakat*, and in the effort to avoid doing so. The numbers that allow these moral mathematical calculations, like the zero of 18th-century stockjobbers, point toward ‘facts’ that, far from being deracinated particulars, are always already evidentiary. The equivalence function is never complete; there is always a moral remainder, as it were. That remainder is the uncanny presence of an abstraction of transcendental value—the value of God and the values of the market.

Making change in local currencies

A young woman who had decided to leave the suburbs, college, and the predictable path of so many of her peers in exchange for the life of an organic cooperative farmer stood in the summer sun, one Tuesday morning, explaining to me her use of a local,

⁽²⁶⁾ Some portfolio managers are opposed to this interpretation and state that the money that is purified does not constitute *zakat* but rather a ‘gift’. At the time of my various revisions to this paper (2001–02), this issue was very much in play, and was evidence, to my mind, of the very uncanniness of the operation of equivalence involved here.

alternative scrip currency in lieu of the US dollar.⁽²⁷⁾ The currency is called the HOUR, and one unit of currency is supposed to index one hour of labor time. In practice, and because of the way in which the US federal income-tax code assesses income from 'barter',⁽²⁸⁾ the current exchange rate is one HOUR to ten US dollars. HOUR paper notes come in five denominations (an eighth, a quarter, a half, one, and two HOURS). "A lot of people [here] don't support the government completely ... I definitely like to see the fact that we can keep a local currency, and I think it builds community more, and people get involved with the community as well." Yet, like many others I interviewed in this small town in upstate New York, this woman articulated a particular anxiety that repeatedly surfaced in people's everyday use of the local currency.

While speaking of the produce she sells in the farmers' market, she lingered over the very practical problem of 'making change', both in the sense of returning to a customer the remainder of a market transaction, and in the sense of contributing to the building of a new society: after showing me that she sells bunches of carrots for a dollar each, she continued:

"... most of our stuff is done in even prices, so, like an eighth of an HOUR is a dollar twenty-five, so [if you purchase a bunch of carrots with an eighth-HOUR note] you get the twenty-five cents back. And that's one thing, that [is] kind of strange about it, ... you know Um, just, because we're trying to avoid the currency as much as possible, and to exchange back and forth like that with it ... kind of breaks the whole system in a way."

Her use of HOURS, she believed, was a small part of a shift away from US materialism and corporate domination and toward 'community values' and 'community solidarity'. And yet, at the same time, she remarked, of US society more generally, "I really don't see it changing all that much".

Time and again I encountered people who, in the course of dealing in HOURS, had to make equivalence conversions that never seemed to sit well with them.⁽²⁹⁾ Some tried to settle their anxiety about making change in the farmers' market by simply trying to keep their dollars separate from their HOURS and maintaining this monetary boundary as strongly as possible. Sometimes this could mean losing a sale. Mostly,

⁽²⁷⁾ Information on this local-currency experiment comes from two summers of fieldwork in Ithaca, New York. While there has been some excellent scholarly writing on local exchange and trading systems (LETS), relatively little has been written about local scrip currencies (on LETS, see Lee, 1996; North, 1999; O'Doherty et al, 1999; Thorne, 1996; Williams, 1996. On local scrip currencies, see Cohen, 1999; Hart, 2000; Helleiner, 1999; Zelizer, 2000; in each of these works local scrip currencies get a brief mention only). LETS, unlike the Ithaca HOURS system explored here, relies on notional currency, that is, an accounts system that records credits and debits rather than recording an actual object such as paper or coin exchanged for goods and services.

⁽²⁸⁾ US income-tax code requires that income from 'barter' be rendered into a cash equivalent and recorded on taxpayers' statements of income (see Solomon, 1996).

⁽²⁹⁾ Another vexing convertability issue has to do with the equation between labor time and HOURS. In principle one HOUR signifies one hour of labor, of any sort. This concept is absolutely central to the egalitarian ideology and labor theory of value ideology behind the HOURS system. Many people I talked to expressed concern that some people might 'calculate backwards' in order to determine how many HOURS to charge for their labor. In other words, a contractor who 'normally' charges 30 to 40 dollars per hour might translate that amount into HOURS and ask for three or four HOURS for one hour of labor time. Given space constraints, I will only address the problem of convertability in making change in this paper. Research on LETS has found that similar labor-time convertability issues are at stake in those systems (see especially North, 1999, page 79 and O'Doherty et al, 1999, page 1645 for examples). However, as LETS systems do not use a physical object as currency, the problem of 'making change' explored here never arises.

however, this would mean simply turning down a customer's HOURS and accepting only dollars—even, and especially, when a market vendor is what people call a 'diehard' HOURS supporter. The diehards' efforts to maintain a clear separation and to deny convertibility between HOURS and dollars more often than not results in their accepting more US dollars than they would do otherwise, if, for example, they would simply break change for an eighth-HOUR note and return to a customer the twenty-five cents owed on a purchase of a one-dollar bunch of carrots. People who made an effort to keep their HOURS and dollars separate often kept their US currency in a lockbox, and their HOURS in an envelope. One diehard who used this method told me she started doing it because some customers would come to "buy the smallest thing they could and try to get cash back". This same farmer, the next day, was unable to break my quarter-HOUR note when I attempted to purchase some beans, and so insisted that I pay in US currency. "Wouldn't you know it ... I think the HOURS are in the other truck. Well", she joked, "there you have it. You try to use HOURS ..."—you try to use HOURS, and then you cannot.

At the same time, however, among vendors and farmers, HOURS seem usefully and tangibly to supplement US dollars. HOURS and dollars mix freely in the repayment of debts and the settling of accounts between vendors and farmers, especially between farmers, on the one hand, and crafts vendors, on the other. They are used together and interchangeably—often as part of the same payment—for transactions that take place within the farmers' market on a regular basis. One pottery maker, having given a farmer a basket in which to display her produce two weeks before, received from her a mixture of dollars and HOURS. He then took the HOURS and went about purchasing vegetables for the week. People usually settle debts like this on a weekly or bi-weekly basis, and such debts are central to the continuing circulation of HOURS in this community.

Other important sites for the circulation of HOURS are the several large businesses that accept them and that offer to pay their employees partially in them. "For tax reasons", as one manager explained, HOURS and dollars at her establishment are not kept separate. "They're a lot like food stamps, the way we handle them", another manager explained. In people's everyday speech, the conversion of HOURS into dollars is so complete that they are denominated almost automatically in dollar amounts. When I asked a store accountant, "How many HOURS does each cashier keep in the drawer?", she responded instantly, "twenty five". Twenty-five HOURS would be equivalent to 250 dollars, so I asked for clarification: "250 dollars, then?" She responded, "No, no, 25 dollars", or, in other words, two and a half HOURS. Similarly, when I asked in another context how many HOURS a store took in during any given day, a clerk responded, "thirty seven". Again, upon asking for clarification, I learned that this referred to 37 dollars, not 370 dollars.

But when people convert HOURS into dollars like this, what do they mean by 'dollars'? The vault manager at one of the local credit unions that accepts HOURS showed me a page from her ledger book one afternoon. At the end of the working day, she records the *number* of pennies, nickels, dimes, quarters, 1-dollar bills, 5-dollar bills, 10-dollar bills, 20-dollar bills, 50-dollar bills, 100-dollar bills, and HOURS that the credit-union vault will hold that night. Whereas there is a separate ledger column for each denomination of US currency, there is only one column for HOURS. In other words, there are not separate boxes in which to enter the number of eighth-HOUR notes, quarter-HOUR notes, half-HOUR notes, one-HOUR notes, and two-HOUR notes. I asked her to explain this as, it seemed to me, the credit union would want an accurate tally of its holdings in HOURS each night. She told me that she is not required to enumerate HOUR notes in the same way she does dollars and cents. Instead, she

converts HOURS into a dollar equivalent, by using the 10-dollar-per-HOUR rate, and records their 'value'. As she explained this to me her voice trailed off: "You know, it's so unreal. When you see all the money in there, and have to record it on a piece of paper like this, it's just so unreal."

Here is a clue, I believe, to the referent of 'dollar' in people's near-automatic rendering of HOURS into dollars. This referent is not the dollar as a piece of paper, or the dollar signified by tally marks in a ledger book, or the enumerative presence of tangible objects held in a vault. Rather, the dollar as indexed in statements like 'We keep twenty-five HOURS in the drawer, I mean, 25 dollars of HOURS' is the dollar as abstract numeraire of value. In the ledger book, HOURS have presence as value, not as enumerated objects. That value is measured in terms of 'abstract' dollars, not in terms of physical paper dollars. This disbelief of the vault manager—"it's just so unreal!"—is quite instructive: we know that the dollars in the vault are just pieces of paper. Indeed, in the books, they signify *only* as pieces of paper, as objects in the world, as 'facts' in Poovey's sense that are not beholden to any theory for their presence but are just there. In contrast, HOURS are animated by the dollar as numeraire, as the abstraction of value.⁽³⁰⁾ Even in the negation of the paper dollar as value in the ledger book of the bank accountant who is simply interested in counting objects qua objects, or in the cash boxes and envelopes of the diehard organic farmers seeking to stand outside of the dollar economy, the 'abstract' dollar asserts itself, again and again. The remainder left over after the (attempted) transaction in HOURS, 'making change' in both the monetary and social senses, is the uncanny presence of an abstraction of transcendental value—the value of the dollar and the values of the market.

Equivalence and the mousetrap

What is at stake in the apparent revelation of transcendental value in these two monetary alternatives to contemporary financial globalization? In both instances, analysis reveals hidden terms just beneath the surface. Diagnosis: fetishism! Actually, it is double fetishism. What analysis reveals is not the 'real' truth of the matter, but another fetishistic spirit: Islamic banking and Ithaca HOURS are both haunted by transcendental value, which is simultaneously their greatest failing as true 'alternatives', and their greatest mystery, the spirit that keeps them functioning. And what is this transcendental value but a fundamental misrecognition, a covering over of the really real relations of production structuring market transactions and, in the case of the local currency, literally 'backing' value—labor power. This, however, is too simple an analysis. As Ferguson cogently remarks, "[t]he danger in thinking is not so much fetishism as it is the illusion that one has escaped it" (1988, page 490).

Equivalence, a reduction into sameness, is obviously part of the fantasy work of fetishism. For Marx and Freud, money, in rendering dissimilars into species of the same, participated in the uncanny. Marx referred back to Shakespeare:

"Shakespeare brings out two particular properties of money. 1. It is the visible god-head, the transformation of all human and natural qualities into their opposites, the general confusion and inversion of things; it makes impossibilities fraternize. 2. It is the universal whore, the universal pander between men and peoples. The inversion and confusion of all human and natural qualities, the fraternization of impossibilities, this divine power of money lies in its being the externalized

⁽³⁰⁾Incidentally, the international financial architecture after World War 2 defined the international numeraire as the national currency of the United States (see Eckes, 1975; Leyshon and Thrift, 1997).

and self-externalizing species-being of man. It is the externalized capacities of humanity. What I cannot do as a man, thus what my individual faculties cannot do, this I can do through money. Thus money turns each of these faculties into something that it is not, i.e. into its opposite" (Marx, 1977a [1844], page 110).

For Marx, the transformation of things into their opposites spoke of the monstrous reduction of human relationships into relations among things by way of the dismembering of the person into bourgeois self and alienated labor.

"By turning his money into commodities that serve as the material elements of a new product, and as factors in the labour process, by incorporating living labour with their dead substance, the capitalist at the same time converts value, i.e. past, materialized, and dead labour, into capital, into value big with value, a live monster that is fruitful and multiplies" (Marx 1977b [1865–66], page 468).⁽³¹⁾

It seems we cannot escape monsters. At the same time, however, merely 'revealing' what was previously hidden perpetrates three errors. First, it involves the assumption that the hidden actually is, or was, obscured. In fact, in the Islamic-banking and local-currency examples, that which I could have identified as the latent content of the monetary equivalence was, upon occasion at least, clearly articulated in the practices if not in the consciousness of the participants themselves. I did not reveal a hidden term—God/dollars—so much as refract it through their own discursive practices. Second, it involves the assumption that the analyst has some special access which is denied to participants—a classic anthropological and critical hubris. Participants in these alternative monetary forms know quite well that God and the dollar lurk just behind the surface, and they even, sometimes at least, know quite well that something else lies behind even these terms—the social for Islamic banking, inflected through the term 'justice', and labor power for the local currency, indexed most directly in the very name of the money ('HOURS'). Third, and most important, just revealing what was hidden does little to answer the question of why *equivalence-functions*, and not some other operation, conjure the spirit of transcendental value in order to hide the real spirit of value—labor—and replace it with the sublime. Why, as Žižek puts it, should the content assume such a form (1994, page 300), the form of the algebraic equation?

Nelson provocatively indicates that, "Playing detective and getting down to how the fetish 'really' works completely misses the magic act" (1999, page 77). The magic act here involves the three errors just articulated. Attending to the magic act means breaking with the tradition of algebraic reason—'solve for x '—that has characterized social analysis and that rests on the stability of the distinction between fact and evidence (as well as the distinction between ontology and morality, profane and sacred, etc). There is a 'more' that fascinates in revealing the secrets of the commodity-form and the equivalence-function. This 'more' drives the critical impulse, both my critical impulse and that of the people whose monetary alternatives I have discussed. We are both, after all, members of 'reflexive' communities that "consciously pose [ourselves] the problem of [our] own creation" (O'Doherty et al, 1999, page 1646, quoting Lash, 1994). This 'more', I am suggesting following Žižek (1994), is the fantasy work of the form itself. The question better posed, then, is not what is at stake in revealing the latent

⁽³¹⁾ The more standard translation preserves the sense of the original concluding reference to Goethe's *Faust*, but is not quite as melodious: "By turning his money into commodities which serve as the building materials for a new product, and as factors in the labour process, by incorporating living labour into their lifeless objectivity, the capitalist simultaneously transforms value, i.e., past labour in its objectified and lifeless form, into capital, value which can perform its own valorization process, an animated monster which begins to 'work', as if its body were by love possessed" (Marx, 1976, page 302).

content of the fetish, but what is *on stage*, both when analysts, through critique, and analysands, through monetary alternatives, attempt to do so?

Consider Islamic portfolio management and local-currency transactions as a drama within the drama of global capitalism, or as a play-within-a-play. In Zupancic's excursion into Hitchcock films, the play-within-a-play represents a "moment where fiction is faced with its own exterior at its own interior" (1992, page 82). In the play-within-a-play, that which is excluded from the fiction in order for it to function as narrative—all the background assumptions, technologies, and prediscursive elements that are the conditions of possibility of narrativity—are condensed into the moment of the fictionality *within* the fiction. For example, to stick with the filmic analogy, if the microphone boom or gaffer were visible to viewers of the film then the magic of the movie would evaporate. However, the filmmaker *can* represent those technologies and background elements through a process of doubling or duplication inside a fictional scene set within the film, in a drama that the filmic characters view, for example. In Hitchcock's films (for example, *Murder*, or *The Thirty-nine Steps*) this moment of fiction-within-fiction is right at the center of the larger narrative, and it constitutes the space of revelation toward which the narrative flows. The doubling effected by the play-within-the-film reveals the 'sign of guilt' of the murderer, as well as the signs of guilt of the originary fictional act. The effects is that of a setup (for the murderer as well as the viewing audience), a 'mousetrap'.⁽³²⁾

The mousetrap device stands in contrast to the 'whodunit'. In a whodunit we "coldly and without emotion await the end to learn who committed the murder. The whole interest is concentrated in the ending" (Zupancic, 1992, page 83). The detective in the whodunit plays the role of the scientist-analyst: he or she gathers clues and reconstructs the crime, and thereby deduces the identity of the murderer. But "if the climax of the whodunit is the moment when the murderer's identity is revealed", the mousetrap setup is quite different (page 83). "The fascinating point is not the revelation of the murderer's identity, the reconstruction of the crime and the deduction of the truth, but *the manner in which the truth is displayed*—or is gazing at us, if we can put it that way, in the glint of the murderer's eye" (page 84, my emphases).

Islamic banking and local currencies, as plays-within-a-play, are like Hitchcockian mousetraps. What matters is not the revelation of truth—'I have gathered all the clues and now can point the finger: the capitalist is the murderer! He has turned dead human labor into living nonhuman objects!' Rather, what matters is the particular staging of truth: in making change, or failing to do so, and in giving zakat, or seeking to avoid it, the actors in the play-within-the-play reveal the transcendental in the failures of equivalence, materialized in their social activity. That transcendental is uncanny precisely because it is so deeply familiar to social practice. As Žižek puts it, "the fundamental level of ideology ... is not of an illusion masking the real state of things, but that of an (unconscious) fantasy structuring our social reality itself" (1994,

⁽³²⁾ When I have presented versions of this paper before different audiences the mousetrap *concept* did not confuse so much as the *term* itself. But consider what a mousetrap does, how it functions: what is the archetypal act of the mouse that makes us want to get rid of it? The mouse steals the cheese out of the cupboard. Like the murderer in many a Hitchcock film, we already know the identity of our cheese-stealing criminal as soon as we are aware of the fact that the crime has occurred. There is absolutely no mystery here. The task, then, is not to deduce the identity of the cheese thief, but simply to catch it. How do you catch the mouse? You restage the scene of the crime with an artificial 'cupboard' within which you place a piece of cheese. (Have people forgotten what it is like to share a house with mice, or does everyone have a cat?)

page 316). Or, in other words, the illusion “consists in overlooking the illusion which is structuring our real, effective [and affective]⁽³³⁾ relationship to reality” (page 316).⁽³⁴⁾

The ideology work, in short, is the act of critical analysis of the real, the attempt to be ‘nonduped’ by ideology, whether in ‘my’ social science fictions⁽³⁵⁾ or in ‘their’ alternative market forms. Because of our complicity in each other’s critical projects, we perpetuate the illusion that we are beyond or above the illusion. Or, in other words, we perpetuate the facticity of the facts of both social science and monetary transactions: the enumerable, ‘empirical reality’—that which is capable of entering into the algebra of equivalence in the first place. This holds for the human sciences, not just the quantitative ones. In claiming social occurrence x as an instance of phenomenon y , I conjure a relation of equivalence through a function of enumeration: that which is enumerated as an ‘instance’, before it becomes evidentiary as an ‘instance *of*’, is an enumerable deracinated particular, a ‘fact’. This is the kind of operation that allows us to ask about the effects of equivalence (does it provide instances of homogenization or instances of social differentiation?) without querying the ‘it-ness’ of the equivalence function, the things brought into relation by it, or the grounds of our own analytical enterprise. And it leaves us stuck in the same debates we have been having since Simmel initiated them.

Postscript: Boyle’s meat

Let me return, in closing, to the monsters and promissory naturalism of the 18th century. Daston and Park open their book about monsters with a story told by Boyle that illustrates the promissory naturalization of the uncanny, and the tight relationship between wonder, marvels, and scientific investigation. In a scientific paper published in 1672 about ‘shining flesh’, Boyle inserted a narrative about the ‘night before’, and set up a mousetrap of his own, a fact-within-a-fact, so to speak:

“Yesterday, when I was about to go to bed, an amanuensis of mine, accustomed to make observations, informed me, that one of the servants of the house, going upon some occasion to the larder, was frightened by something luminous, that she saw ... where the meat had been hung up before. Whereupon, suspending for a while my going to rest, I presently sent for the meat into my chamber, and caused it to be placed in a corner of a room capable of being made considerably dark, and then I plainly saw, both with wonder and delight, that the joint of meat did, in divers places, shine like rotten wood or stinking fish; which was so uncommon a sight, that I had presently thought of inviting you to be a sharer in the pleasure of it” (quoted in Daston and Park, 1998, page 13).

The ‘pleasure’ of the sight, Daston and Park write, kept Boyle going right through until the next morning; he even called for another shank of veal to be delivered to his room while he was undressing for bed (1998). I want to suggest, in the spirit of Daston and Park, that the pleasure here is not simply that of the scientist faced with a new challenge for his emerging explanatory framework. It is also the pleasure and terror

⁽³³⁾ My thanks to Jim Ferguson for pointing out the importance of the parenthetical here.

⁽³⁴⁾ I think my analysis here resonates with that of North (1999) and O’Doherty et al (1999), who find in LETS a sort of microresistance that is more about engaging a new kind of critical reflexivity in social practice than about overthrowing a monetary order. Whereas these authors are interested in the political consciousness of the actors involved, however, I am more concerned with what we might call the ‘political unconscious’, the other dimension of the “lines of flight” which North discusses (1999, page 73), following Deleuze and Guattari (1987).

⁽³⁵⁾ I get the term ‘social science fiction’ from Nelson (1999), who in turn borrows it from Pfohl (1992).

of wonder itself—the excitement of an encounter with the uncanny, and the thrill that comes from the manner in which the ‘truth’ is revealed in a mousetrap.

In a world dominated by strikingly uniform globalization slogans which proclaim that there are no alternatives to neoliberalism, financial integration, or capital mobility it is important to insist on the experiential metaphysics of this thrill of wonder, and to recuperate the uncanny within it. This seems especially pressing in light of the scholarship on money and commodification in which the desacralizing and homogenizing claims of quantification are readily accepted, and in which the authors look elsewhere, but never at the mathematics, to find hope in other meanings, other social practices, and other institutions in an additive and indirect critique. The unearthly glow of the veal shank could, after sustained scientific investigation, be naturalized—the promissory note could be cashed in for gold. The fact that such promissory notes today cannot be cashed in for gold does not take away from their relationship to the sublime and the uncanny.⁽³⁶⁾ It is important, however, not to lose sight of the fact that the ghostly glow only shimmers on rotting meat, that the other side of the sublime is slime—the messiness of desublimation which is necessary to create the seemingly pure forms of monetary equivalence and the seemingly pure distinctions between gift and commodity, sacred and profane, that animate whole monetary, mathematical, and market worlds (Giblett, 1996; Gibson–Graham, 1996; Maurer, 2000).

But which is the sublime, and which is the slime, in the alternative financial forms examined in this paper? For Islamic portfolio managers, any income that is ‘tainted’ by *riba* must be ‘purified’. For local-currency diehards, government-issued currency is quite literally ‘dirty money’. For both, however, their efforts to make change—literally and figuratively—hinge on a transmutation of filth into faith.⁽³⁷⁾ *Riba*, forbidden interest, becomes *zakat*, obligatory charity and the essence of fealty to God and social justice. US dollars become the abstraction of transcendental value. As Freud remarked, gods and demons are doubles and duplicates of each other. The same could be said of the facts and fictions animating social analyses of social change. Revealing the hidden truths of the commodity fetishism, for example, in order to bring people to consciousness of their own ‘real’ conditions of existence, would only give us the answer to ‘whodunit?’ This kind of algebraic reason gives the illusion of our standing above the fray—the way social analysts or social engineers or business magnates often imagine they do. The alternative monetary forms here go one better. They do not reveal truths. They restage them. They give us the pleasure and terror of the truth ‘in the glint of the murderer’s eye’, a reflection of our selves—empty ciphers, like Lear’s “0 without a figure” (*King Lear* act 1, scene 4)?—while lending new meanings to the ditty ‘now we have nought but our Selves in our Stocks’.

Acknowledgements. Versions of this paper have been presented at the year 2000 meetings of the American Anthropological Association, Yale University, the Critical Theory Institute at the University of California at Irvine, the University of California at Los Angeles, the University of Kentucky, the University of North Carolina at Chapel Hill, and New York University. I would like to thank those audiences for their engagement with and critical commentary on the ideas presented here. I am very grateful for the challenging and insightful commentary of the anonymous reviewers for this journal, as well as that of Susan Coutin, Julia Elyachar, James G Ferguson, Ellen Hertz, Charles Hirschkind, Roger Lee, Diane Nelson, Don Nonnini, Richard W Perry, Pauline Peters, Elizabeth A Povinelli, Hugh Raffles, Annelise Riles, Susan M Roberts, Richard Schein, Adrian Smith, Marilyn Strathern, Robyn Wiegman, Eric Worby, and Heinzpeter Znoj. I owe a special debt to Tom Boellstorff, Saba Mahmood, and Liisa Malkki for their extensive and detailed

⁽³⁶⁾ This is a point that Marx realized in his discussion of “fictitious capital” and the relationship between “money-capital and real capital” (1967, pages 516–517).

⁽³⁷⁾ I am indebted to Jim Ferguson and Liisa Malkki for the first term of this equation.

comments on practically every page of an earlier draft. Research was supported by a grant from the National Science Foundation, Law and Social Sciences program (SES-9818258), the University of California Humanities Research Institute, and the University of California, Irvine. All errors and inconsistencies remain my responsibility alone.

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