



Limiting money: redesigning the artifact that shapes modern people

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Abstract

The transdisciplinary argument in this article is that the social and ecological unsustainability of modern, globalized capitalism ultimately derives from the design of its central artifact: what Polanyi called all- or general-purpose money. The notion of a singular measure of economic value is a peculiar cultural conception that is inherently at odds with physical reality, yet it pervades modern economic thought and practice as if it were immutable. To transcend the political impasse of economic globalization, a complementary national currency (CC) exclusively for local use could distinguish a sphere of exchange and special-purpose currency for basic needs from a global sphere of more remote exchange-values. To avoid the pitfalls and failures of earlier experiments with local currencies, such a CC would require the support of national authorities, the specified objective of sustainable consumption and production, and systematic efforts to provide citizens and entrepreneurs with ample incentives to utilize it. In combining the concept of a CC with that of a universal basic income (UBI), the reform would allow their advantages to complement each other, joining the generalized scale of UBI with the potential of politically influencing consumption patterns that is inherent in CC. An essential difference in relation to earlier experiments would be that the reach of the CC would not be defined in terms of the geographical location of retailers but in terms of the derivation, relative to the consumer, of the products and services into which it could be converted. Although no such system yet exists, this should not stop us from imagining its possibilities.

Keywords Sustainability · Globalization · General-purpose money · Special-purpose money · Spheres of exchange · Complementary currency

Introduction

Like many others who have spent decades trying to understand the forces that appear inexorably to propel world society toward increasing unsustainability and inequality, I have filled my bookshelves with literature that critically challenges mainstream economics. As the years have gone by, I have realized that a single person can only see the tip of the iceberg of such literature. Every nation and language has its own body of heterodox economic publications, and even out of the innumerable English-language journals,

websites, and organizations dedicated to these matters, a person can only maintain an overview of an arbitrary handful. This excessive output of critique, not just over the past few decades but over the course of history ever since Aristotle's deliberations on money in the fourth century BCE, raises important questions. What does it ultimately signify, and why does the operation of human economies seem so impervious to it?

To be sure, the literature *defending* business as usual is no less vast. From Adam Smith to recent Nobel laureates in economics, deliberations on the advantages and possibilities of money and market exchange have been quite as voluminous, influential, and existentially compelling as the medieval theology that it displaced—and, I should add, quite as esoteric. The specialized modern discourse on why the economy must operate as it does tends to be as inaccessible to the layman as the scholastic meditations of the Middle Ages. To most people, it is probably as difficult to comprehend why the world economy must generate

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abysmal income gaps and financial crises as it is to fathom the mysteries of Genesis.

What does all the critique of mainstream economics finally mean? How could all the compelling, early objections of John Ruskin, Patrick Geddes, and Frederick Soddy be so disregarded? Not to mention the radical critiques by Karl Marx, Friedrich Engels, and their innumerable followers? In the mid-twentieth century, after thirty years of world war and an intervening depression, some of the most incisive objections against globalized market exchange were articulated by Karl Polanyi. The 1970s saw the dawn of ‘ecological economics’ through the contributions of Nicholas Georgescu-Roegen, Howard Odum, Herman Daly, Robert Ayres, Barry Commoner, and many others. In these years, influential critiques of mainstream economic rationality were also presented by Friedrich Schumacher, Ivan Illich, and Manfred Max-Neef, while André Gorz and Serge Latouche launched the currently burgeoning idea of ‘degrowth’. Since then, a long line of thinkers has continued to identify destructive features of the economy and proposed various ways in which it could be made more sustainable. A list of globally prominent voices over the past few decades would include Margrit Kennedy, Lester Brown, Wolfgang Sachs, Bill McKibben, Peter Victor, Tim Jackson, Steve Keen, Anitra Nelson, Naomi Klein, Mary Mellor, Kate Raworth, George Monbiot, and Giorgos Kallis. All of them have published influential books criticizing mainstream economics. Yet, they are only an arbitrary selection based on a quick glance at my own bookshelves—a tip of the critical iceberg. My simple question, given how massive the criticism of market economics has been, is why the operation of the world economy appears to be so unperturbed by all these objections? Is it because the hegemony of mainstream economics is so complete, or could it be because the objections and proposals do not address the problems at a pertinent level?

To answer this question, we must consider what the subject matter of economics is. To radically simplify matters, we might observe that the mandate of the economic profession, at least since the Marginalist Revolution in the 1870s, is to understand the logic of money. The concept of ‘money’ here refers to a specific form of money that emerged over the course of the past few centuries and which the economic historian and anthropologist Karl Polanyi called ‘all- or general-purpose money’ (GPM). This modern form of money combines various functions that tend not to converge in any of the various premodern forms of money known to economic anthropology: it serves as a medium of exchange, a unit of account, a store of value, and a means of payment. In contrast to premodern, special-purpose forms of money (SPM),¹ GPM is used for basically all kinds of exchanges.

¹ The concept of ‘special-purpose money’ is familiar to students of economic anthropology, who will know that such forms of money were next to ubiquitous before the expansion of the world market in

It makes most kinds of goods and services commensurable. Given this simple rule, GPM has unleashed the modern, global market economy. Economists since the 1870s have focused on studying the logic of the market: the mechanisms by which prices are determined, the ways in which market actors behave, the consequences of political interventions in markets, and many other aspects. In other words, the subject matter of economics is the way markets operate, given GPM. Economists have specialized in studying the logic of general-purpose money.

The complex relation between economics and physics

To a substantial part of the world’s population, it is evident that money does not just ‘make the world go round’ but makes it increasingly unequal and unsustainable. This insight has propelled the innumerable critiques of mainstream economics that were evoked in the Introduction. To the extent that these tendencies toward greater inequality and unsustainability are being generated by the design of regular, all-purpose money (GPM), it is important to show how this occurs.

An appropriate point of departure might be the account of economic anthropologist Stephen Gudeman, who in his book *The Anthropology of Economy* (2001) explains why he is not willing to accept mainstream models of market efficiency and rationality.² While well-versed in the internal discourse of economics, Gudeman is able to draw on the comparative approach of anthropology in pursuing his critique. He writes that his hesitation at accepting the typical market model derives from ‘its inability to account for accumulation.’³ Indeed, the phenomenon of accumulation, profit, or surplus appears to be difficult to theorize from the perspective of neoclassical economics. Gudeman proposes that profit-making is based on value creation, which shifts the question to matters of evaluation and the origins of value. Contrary to neoclassical models, he writes, premodern mercantilists, physiocrats, and contemporary rural communities in Latin America all view value or wealth as deriving from *outside* the national or local economy. For the mercantilists, international trade was a zero-sum game around the management of gold and silver, which ultimately derive from nature. Similarly, both the physiocrats in eighteenth-century France and Latin American peasants today understand wealth as

Footnote 1 (continued)

the nineteenth and twentieth centuries; (cf. Polanyi 1968; Bohannon 1955).

² Gudeman (2001, pp. 97–107).

³ *Ibid.*, (p. 97).

a product of nature.⁴ David Ricardo originally shared this view, but his labor theory of value (LTV) ‘shifted the agent of profit from nature to humans.’⁵ Karl Marx developed the LTV by explaining that surplus value and monetary profits derive from the difference between the output and the cost of labor-power, given that the exchange value of the products of labor is higher than the exchange value of the goods needed to maintain that labor (food, housing, and so on). Gudeman notes that Marx considered this capacity of humans to produce more value than they require for maintenance as a free ‘gift of nature.’ In this sense, Marx followed in the footsteps of the mercantilists, the physiocrats, and the early Ricardo. It is telling that he could write that ‘labor-power itself is energy.’⁶ Like Hermann von Helmholtz, who coined the concept of labor-power (*Arbeitskraft*), Marx understood the human capacity for value-generating work as a natural force. The disciplines of economics and physics emerged in tandem during the nineteenth century, as physicists conceptualized ‘energy’ in terms of the economists’ concept of ‘work’ while the neoclassical economists’ notion of ‘utility’ was inspired by the physicists’ concern with energy.⁷ Marxian value theory continues to occupy an ambiguous position between economics and physics.

Mainstream economists, however, have attempted to theorize the creation of value without reference to external nature. They tend to explain surplus value in terms of entrepreneurial innovation and new technology emanating from human creativity. A central exponent of this approach was Joseph Schumpeter. Gudeman appears to embrace this extolling of innovation and suggests that Marx ‘mystified value’s origin as a “gift of nature” rather than seeing it as a result of human creativity.’⁸ However, this approach to technological innovation as based *either* on nature or humans does not clarify the socioecologically hybrid phenomenon of capital accumulation. In a more recent article,⁹ Gudeman concedes that his ethnographic information on the concept of ‘strength’ (*fuerza*) among Latin American peasants indeed approximates the insights of thermodynamics. In this sense, they are more aware of the biophysical conditions of accumulation than the school of neoclassical economics

that has dominated the discipline since the apex of British colonialism.

Technological advances obviously require human ingenuity, but this is not a sufficient explanation of technological progress. As technologies are material structures, they can only be kept operating through a continuous input of physical resources, such as fuels and spare parts. Given the Second Law of Thermodynamics (the so-called Entropy Law), technological infrastructures must rely on a *physically* asymmetric exchange with their environments. In other words, the input of resources to a unit of ‘technomass’ must represent more highly ordered matter and energy than the sum of products and waste that it generates.¹⁰ The Second Law of Thermodynamics thus has two important implications for human economies that neoclassical economists are inclined to neglect. One is that the maintenance of a growing sociometabolic infrastructure of some sort (‘technomass’ or ‘technosphere’¹¹) inevitably generates increasing entropy, as abundantly illustrated by the rising global emissions of greenhouse gasses. The other is that populations controlling such infrastructure must maintain, through trade, a continuous net import of the biophysical resources required to reproduce it. In other words, the centers of ‘growth’ and ‘progress’ celebrated by mainstream economists not only accelerate the dissipation of resources but also rely on asymmetric resource transfers from their increasingly impoverished peripheries.

In approaching economy and technology from the perspective of physical resource theory, we revive the non-modern insight that accumulation must draw on nature. Neither economic nor technological growth can be accounted for exclusively in terms of human creativity. This shift of perspective helps us understand the world economy as a social *metabolism*¹² that is necessarily entwined with the planetary biosphere of which it is a part. It explains why the phenomenon conceived of as ‘economic growth’ must have implications for ecological sustainability. In explaining the reliance of advanced technologies on ecologically unequal exchange (EUE),¹³ it also illuminates the widening economic gaps between what Stephen Bunker called ‘extractive’ and ‘productive’ sectors of the world economy.¹⁴

These physical constraints on human economies cannot be circumambulated through theoretical constructs such as ‘dematerialization’ or ‘circular economy.’ The dematerialization of the economy envisaged a few decades ago is

⁴ It is significant that Gudeman discovers this affinity between eighteenth-century physiocracy and contemporary peasants living off the land; cf. Gudeman and Rivera (1990). Whereas the economies of nonmodern societies have always struggled with local, natural constraints, it can be argued that the technologies of the Industrial Revolution represent the emergence of strategies to displace such constraints to other parts of world society.

⁵ *Ibid.*, (p. 100).

⁶ Marx cited in Burkett and Foster (2006, p. 120).

⁷ Mirowski (1989).

⁸ Gudeman (2001, p. 106); emphasis added.

⁹ Gudeman (2012).

¹⁰ Hornborg (2001).

¹¹ Zalasiewicz et al. (2017).

¹² The term ‘metabolism’ generally refers to the processes of energy conversion that sustain living organisms.

¹³ Dorninger et al. (2021).

¹⁴ Bunker (1985).

a mythical prophecy that has been thoroughly debunked.¹⁵ The notion of a systematic recycling of materials is similarly misguided, as it neglects the great quantities of energy required for such recycling to take place¹⁶ as well as the economic logic that systematically makes it more profitable to use low-wage labor in the peripheries to extract new resources than to use high-wage labor in core areas to recycle them. Such oblivious schemes for achieving sustainability must fail because of the incongruity of economic models and incontrovertible physical facts. The logic of regular money is ultimately at odds with the law of entropy, but mainstream economists have been able to cultivate their models in isolation from the implications of thermodynamics.

Questioning not just how money is managed, but how it is designed

In focusing exclusively on the logic of the artifact of general-purpose money (GPM), neoclassical economics since the 1870s has detached itself from the biophysical context that would need to be included in any account of deepening global inequalities and unsustainability. It is the generalized commensurability posited by GPM that encourages people to buy distantly derived commodities produced with minimal wages and environmental controls. To reject such a rationality—and the mainstream economic definition of market ‘efficiency’—should entail changing the design of the tokens through which we conduct our exchange. It would mean limiting the geographical reach of much of the money with which we provision ourselves. Such a currency would have more in common with the special-purpose moneys (SPM) documented by anthropologists. From the perspective of northern Europe, for instance, a currency that genuinely promotes economic localization should not be convertible into coffee from Kenya or kiwi fruit from New Zealand. In restricting the bulk of subsistence consumption to what can be locally sourced, the widespread use of such a currency would inhibit agro-industrial monocultures, global transports, and ecologically unequal exchange, while enhancing local food security, diversity, and resilience.

In recent decades, there has been increasing interest among sociologists and other social scientists in recognizing the causal role (or even ‘agency’) of non-living artifacts in organizing social relations. This approach is particularly pronounced in the school known as Actor-Network Theory (ANT).¹⁷ A very simple illustration of this kind of thinking might begin by considering a game of chess. The outcome

of the game will in part be determined by the features of the pieces as established by the rules of chess. The characteristics attributed to each piece generates the logic of the game and influences the relation between players. This perspective can be generalized to apply to the use of all the various artifacts and technologies that mediate relations between humans in modern society. Given this insight, it will be evident that a crucial consideration, if we are interested in influencing human behavior, must be how artifacts are designed. As some social scientists have noted, ‘we design artifacts, and the artifacts design us back.’¹⁸ Politics, in other words, should be recognized as very much a matter of how artifacts are designed.

If we apply this perspective to economics, we must observe that the mandate of economists has not been to think about how money could be redesigned. Their task has been to understand how GPM works. This means that the voluminous criticism of economics is not quite fair. The economists have meticulously and with great methodological sophistication traced how markets operate, given GPM. Their concepts of ‘efficiency’ and ‘rationality’ have been conditioned by these circumstances. However, they have been at a loss to figure out how to deal with challenges such as increasing global unsustainability and inequality, because these trajectories appear to be inscribed in the logic of the artifact (GPM) that defines the operation of the world market. When maximum ‘efficiency’ is defined in terms of making the best deals, and this in turn means buying goods produced with the lowest-paid labor and the least rigorous environmental legislation, market rationality will inexorably promote wider global wage gaps and increasing environmental degradation. These are ultimately consequences not of how economists think but of the design of the artifacts that *shape* how they think.

The countless critics of mainstream economics have rarely acknowledged that the problem is the design of the artifact that economics studies. Critiques have generally focused on other things such as who own the means of production, how money is produced, the conditions under which it can be borrowed, whether it yields interest, whether its value is pegged to gold, the design of taxes and subsidies, and so on. All these aspects have their relevance, but none of them changes the fundamental logic of GPM. Modern money encourages people to make good deals at the expense of the biosphere and the global poor. To constrain this logic, an obvious option mentioned in the previous section is to constrain the global commensurability that is inscribed in GPM. To change the way the world market works, we can consider redesigning money. Like Nigel Dodd, we suggest that ‘the problem is not that money exists at all, but rather

¹⁵ Schandl et al. (2016), Parrique et al. (2019).

¹⁶ Georgescu-Roegen (1971).

¹⁷ Latour (2005).

¹⁸ Cf. Escobar (2018).

that it has been badly designed.’¹⁹ Dodd recognizes that proposals for redesigning money are ‘utopian’ in the sense that they ‘imagine how money might be used to improve our social world.’²⁰ To put it philosophically, humans must learn how to master the artifact that has become *their* master.

Assessing earlier experiments with special-purpose money

In contemplating a redesigning of money along these lines, the first thing that comes to mind is ‘local money.’ The idea is simple and persuasive. In creating a special kind of money that only circulates within a given geographical area, it is assumed that people will be able to control the flows of labor and other resources that leave or enter their community. In reaction to the destructive and exploitative consequences of GPM, experiments with such money have been conducted since the early nineteenth century.²¹ Over the past four decades, a great number of experiments with local community currencies have appeared throughout the world. Pioneering and famous are the so-called LETS systems originating in Canada in 1983.²² Glancing again at my bookshelves, I note how such projects have been promoted by visionaries like Michael Linton, Ross Dobson, Richard Douthwaite, Peter North, and Bernard Lietaer. A survey of community currencies in 23 countries, published in 2013, found a total of 3418 local projects.²³

Although these efforts to localize economies are highly justified and certainly strengthen the case against GPM and business as usual, they generally have not accomplished what they were intended to do.²⁴ They have failed to decisively challenge the logic of globalization. There are several reasons for this. One is that the category of people engaged in these projects tend to belong to arbitrary networks of dedicated acquaintances with limited goods and services to offer for exchange, which means that most of their provisioning will continue to be through GPM and the regular market—and that their engagement will only last as long as their enthusiasm. The possibilities of earning and spending the local currency will be very uneven, and the long-term viability of local currency projects quite dubious.

Another circumstance that should be a recurrent source of dismay is that there are few chances of distinguishing local *purchases* from local *produce*. Even if a person restricts his

or her purchases to a given locale, such as the city of Bristol, the products sold there may derive from the other side of the planet. ‘Local money’ thus does not effectively localize the economy in the way many expect.²⁵ While it may encourage people to turn to local retailers, those shops will generally have used regular GPM to access their wares, which means displacing work and environmental loads in accordance with the general logic of globalized capitalism.

However, these two recurrent obstacles to using community currencies to achieve more sustainable and equitable economies—the marginal involvement of users and the inability to seriously challenge globalization—could be overcome by finding ways (a) to encourage most people to use them and (b) to link them to goods and services that are to a large extent locally produced. To accomplish both these objectives is possible by combining two distinct ideas that have been advanced as separate solutions to the shortcomings of regular market exchange: that of (a) a universal basic income (UBI) and that of (b) a complementary currency (CC). The combination of UBI and CC has huge potential because each of the two proposals compensates for the shortcomings of the other: a society using a CC can specify how it is to be used but may find that only a minority of people gain access to it (by offering their goods or services), while a society with UBI will provide general access but is unable to specify its use (which means simply reinforcing globalized capitalism.) In combination, however, UBI and CC makes it feasible for a society to simultaneously promote economic security and sustainability.

After decades of deploring that the social and ecological aspirations of individual nations have been unable to challenge the logic of globalization, which tends to displace social injustices and environmental degradation beyond national borders, we may thus begin to discern a possible way forward. By establishing a special-purpose CC, national or municipal authorities would be able to promote consumption patterns that comply with democratically embraced ideals, such as increasing sustainability, local diversity, or global justice. By distributing it as a UBI for all members of society, they can encourage universal use of the CC and simultaneously provide a basic social security as protection against the precarious vicissitudes of the world market.

One of the closest examples I have encountered of an initiative in this direction is the recent experiment with ‘universal basic vouchers’ (UBV) in Korea.²⁶ UBV has been

¹⁹ Dodd (2015, p. 2).

²⁰ Ibid.

²¹ North (2007).

²² Bowring (1998), Dobson (1993).

²³ Seyfang and Longhurst (2013).

²⁴ Blanc (2012), Dittmer (2013, 2015).

²⁵ Marshall and O’Neill (2018).

²⁶ Seung-Yoon Lee et al. (2020). I thank Ester Barinaga for bringing this initiative to my attention. There are additional examples that could be mentioned as approximating the system advocated in this article, but none that implement a truly *universal* basic income in combination with a CC with the kind of reach and applicability delineated here.

categorized as an intermediate form of benefit between cash payments (UBI) and access to ‘universal basic services’ (UBS).²⁷ Distributed in the form of paper or electronic vouchers, rather than cash, UBV can be used to induce specific kinds of consumption. However, vouchers are used only for one-way transactions. They are converted into particular goods or services but do not circulate beyond that point. To qualify as a complementary currency (CC), the tokens of exchange should be possible to recycle through an indefinite number of transactions, while retaining the limitation to specific kinds of goods and services. The crucial design feature of a CC established to localize the economy would be that it can only be exchanged for a category of goods and services deemed to be largely produced within a given geographical radius from the point of purchase. In other words, it would inscribe a spatial dimension in the special-purpose currency as a means to localize substantial aspects of social metabolism.

In an online lecture on April 29, 2021, the economist Joseph Stiglitz praised the Korean initiative for enabling the distribution of vouchers that can benefit the local economy. American cash handouts, he observed, tend in part to go to other countries. In order to counter the logic of globalization, in other words, GPM must be replaced with tokens of exchange with limited commensurability. The category of ‘vouchers’ is currently the closest concept at hand, but it would be theoretically possible to design a CC that is similarly limited. Such a system would require that goods and services are ‘transport certified,’ that is, marked in terms of the distance between their origins and the point of purchase. The idea is more complex than conventional certification schemes such as Fair Trade or Organic, but not at all unfeasible. The maximum transport distance should vary depending on where in a country a person resides, with the category ‘locally produced’ being more generously defined in areas with less agricultural land and other resources. A simplified alternative would be to define ‘locally produced’ with reference to a set of neighboring municipalities, or to the distance between the residences of buyer and seller.

A second consideration is the proportion of a commodity that derives from local production processes, rather than from distant sources. Such estimations are more problematic for manufactured products than for services and agricultural and other primary products, which suggests that the system might initially focus on the latter. It is reasonable to expect the circulation of large quantities of a CC seeking locally sourced purchases to encourage the development of diverse new local products and services. The establishment of such a CC should stimulate a long-term transition toward an

economy that generates less transports (and thus greenhouse gas emissions) and enhances local diversity and resilience.

A requisite of this kind of system is that it is administered by authorities, whether at the federal or local level, as this would be a feasible way of organizing a system of ‘universal’ benefits such as UBI or UBV. This in turn has several important implications. It means that it will need to have the support of a political majority and cannot simply operate as a bottom-up movement with ideological overtones challenging established economic institutions. The advantages of having such a foundation are numerous in terms of impact, efficiency, and fairness, but an obvious *disadvantage* is that such ‘localising’ money cannot be conjured as a grassroots initiative, without the support of political authorities.

There is, in other words, a big difference between the system considered here and the idea of ‘local money.’ I am not suggesting local money in the sense of geographically delimited currencies, but *one single* national currency that can only be used for local transactions. There is no question of reverting to a cumbersome patchwork of local currencies as in premodern times, but of creating a currency whose reach is defined with reference to the geographical location of each individual. The main thing is not where goods are purchased but how far they have been transported before being purchased, which could be certified much as we are today accustomed to finding dairy products marked with packaging dates. As consumers we are entitled to information not just about the time that has elapsed since production, but also about the distance that the product has been transported.

Some design features of a special-purpose money conducive to sustainability

Given the ‘utopian’ character of proposals for redesigning money,²⁸ it follows that such proposals must be based on imagined futures rather than limiting themselves to the study of past or existing experiments. Although we certainly have reason to scrutinize earlier experiments, the aim should be to learn from their shortcomings in order to develop new ways of avoiding them. Among recurrent failures reported from attempts to establish complementary or community currencies are: low levels of participation among citizens as well as enterprises; inefficient administration; instability over time, due to unpredictable commitment of key proponents; limitation of transactions to a narrow range of goods and services; negligible impact on consumption and resource flows; uneven distribution of credit, providing some individuals with unfair advantages; and confrontational rather

²⁷ Ibid., (p. 6).

²⁸ Dodd (2015).

than cooperative relations with authorities.²⁹ The system that I outline in this article is intended as a suggestion on how these deficiencies could be avoided.

The challenge of designing an economic system that encourages sustainable practices is to envisage organizational features that provide incentives for various actors to engage in such practices. We thus need to ask what could motivate individual consumers to use the CC, why an enterprise would accept payment in it, and why the authorities might want to promote it. To begin with, we can assume that the individual consumer will view the monthly receipt of an allotted quantity of CC as a welcome addition to his or her income, even if its potential for purchasing goods is geographically circumscribed. At the outset of the reform, the range of purchases accessible with this currency may be restricted to services and locally produced food, but over time it would be likely to expand significantly. An immediate effect of the CC will be to liberate a portion of the person's regular income that had previously been spent on products and services that could in principle be provided locally—for instance, vegetables, carpentry, and baby-sitting. We can thus expect incentives to utilize the CC income to the greatest possible extent. One objective is to stimulate a diversification of local enterprise to the point where the monthly income in CC will be able to provide for an individual's most basic needs.³⁰

As enterprises will be offered the opportunity to pay taxes in CC, and perhaps also to exchange, through the authorities, a proportion of their CC income into regular money, they can be expected to welcome additional business conducted in CC. Moreover, there will be incentives for the establishment of a wide range of new enterprises catering to the substantial new niche represented by the great demand for local products and services created by the CC. To encourage this process, the authorities may provide economic help to entrepreneurs starting up new local businesses, particularly in high-demand repairs (such as tailors, shoe repairs, bicycle maintenance) and recycling.³¹ The creation of the CC economy as a distinct sector or 'sphere of exchange' would generate symbiotic, positive feedback processes linking individual needs and entrepreneurial initiatives at the local

level. The CC distributed by the authorities would circulate between households and enterprises, organizing local flows of goods and services while continuously being returned to the authorities as businesses pay taxes and convert some of their CC income into regular money. The rate at which CC is returned to the authorities can be increased or decreased by adjusting the exchange rate between CC and regular money, thus encouraging or discouraging conversion.³²

The conversion of CC into regular money is pivotal, as it is the point at which the actual cost of the system is revealed. By depressing the exchange rate, the authorities can encourage enterprises to use their CC to source, as far as possible, their labor and other production inputs from the local market. In diminishing the input of regular GPM into local social metabolism, they correspondingly reduce the demands of the community on global resource flows. By modifying the conversion rate, the authorities can thus successively augment the economic diversity, autonomy, and resilience of communities. This should not only improve sustainability, global justice, food security, and community cohesion, but also reduce the public costs of transport infrastructure, emissions reductions, waste management, social security, and undoubtedly also health care. In the long run, the implementation of a CC sector may prove to be less of a strain on public finance than the currently escalating costs of business as usual. A more immediate way of financing the reform would be to successively make a proportion of social security payments—such as pensions, sickness benefits, unemployment insurance, and family allowance—in the form of CC.³³ Faced with ever higher costs for mitigating climate change, reducing traffic accidents, counteracting eutrophication, maintaining biodiversity, and keeping people economically secure and healthy, there may come a time when national authorities would welcome a reform such as this, even for purely financial reasons. Technically, the reform is not more complex than establishing the Euro, but in the opposite direction. A crucial point is that the CC is not offered as a challenge to globalized currencies, but as a complement to them. Sustainability should be sought in their *relation*. Rather than local vs. globalized production processes competing on the same market, systematically benefitting the lowest-paid labor and the least rigorous environmental legislation, they would complement each other in accordance with the conditions at hand. The use of the CC, to the extent circumstances permit, would make local economies more secure, resilient, and sustainable.

²⁹ Blanc (2012), Dittmer (2013, 2015).

³⁰ To the extent that this objective is accomplished, it should in principle be possible for individuals wishing to do so to subsist largely or even entirely on CC. This would mean not having to rely on formal employment or social security, but liberating individuals to pursue whatever social and creative activities they fancy. In effect, this would dissolve the proletarian condition—the imperative to sell one's labor in order to survive—that Marx identified as the foundation of capitalism.

³¹ Visions of a 'circular economy' may thus be more likely to materialize through such structural changes of the economy than through attempts to technologically reorganize production.

³² This would be the main tool through which the authorities could regulate inflation in the CC economy.

³³ Note that this would only apply to a *proportion* of such payments, as it is crucial that everyone has adequate access to both currencies.

The key to redesigning the economy in this way is the recognition of a distinction between two separate kinds of values that are not easily commensurable. While GPM and modern business as usual recognizes no such distinction, the existence of a special-purpose money signifies that a distinction is made and codified in social institutions. How the distinction should be characterized is a debatable point, but categories such as ‘local’ vs. ‘global’ and ‘long-term’ vs. ‘short-term’³⁴ seem relevant. From the perspective of a philosophy of money, the distinction between (a minimum of) two different kinds of money is requisite to curbing the runaway logic of GPM that inexorably pursues endless accumulation and growth, the flip side of which is ecological degradation and deepening inequalities. We need to understand that the notion of universal interchangeability of values is detrimental to the biosphere, human society, and culture. The magic of GPM derives from a sign that can stand for anything at all that its owner wants it to represent—a sign, that is, without a referent (Hornborg 2023). This is what drives ecological, economic, and existential impoverishment. In positing a significant difference between the local and the global and between the long term and the short term, a CC designed along the lines sketched here would encode *meaning* into the fabric of the economy.

The seemingly obvious assumption that an hour of human labor in the Global North should be convertible into several hours of labor in the South (whether expended in manufacturing, food production, or resource extraction) is ultimately a notion as remarkable and insidious as the magical aspirations of alchemy. The difference is that it has very real, material implications throughout the world. To seriously address the mounting challenges of climate change, ecological degradation, and global inequalities, the mandate of economics must be not just to study the logic of general-purpose money, but to envisage ways of curbing it. This article has suggested a possible way of doing so.

Concluding reflections

In his monumental history of debt, the economic anthropologist David Graeber (2011) posits an oscillation between historical periods dominated by ‘commodity money’ and periods when money serves more as a unit of account, that is, as a ledger to keep track of social obligations. During the former periods, he argues, there is an increase in commercialization, warfare, and slavery. When tokens symbolizing social obligations are reified into desirable objects that are counted, hoarded, and plundered, the result is what Marx called ‘money fetishism.’ Given the digital technologies

for managing electronic money that have been developed since the abandonment of the gold standard in 1971, we may glimpse the possibility of an economy where money serves humans, instead of the other way around. The system of complementary currencies advocated here could potentially be managed without any physical tokens to fetishize.

Finally, are utopias like these at all credible? This question must be related to the urgency of our global predicament. If we are prepared to concede that the global economy is propelling us toward an uninhabitable planet, utopias should be in high demand, and the assessment of their credibility no more of a problem than the credibility of neoclassical economics.

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³⁴ Cf. Bloch and Parry (1989).

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