The money makers: The institutionalisation of alternative currencies in North-West Europe

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Chapter 4

Running in Circles: Algorithmic Reason and the Political Physiology of Money

> Money is like water; and the economy of a city is like a bucket. A full bucket means that local residents have plenty of resources to be able to buy what they need for a good quality of life. The bucket of the conventional monetary system leaks, significantly so. Because for every pound or euro spent, 80 cent flows away towards global financial centres and off shore tax havens. What remains, is a monetary desert. (Ward and Lewis 2002).

The Money Makers at STRO, Qoin, and the Bristol Pound produce this money-as-water metaphor time and again on websites, in YouTube videos, in press releases, performance reports, and during interviews. They call this the 'leaky bucket' argument, as presented in the practitioner handbook called 'Plugging the Leaks' (Ward and Lewis 2002), and use it to explain why money needs to be actively bordered, walled in as it were, in order for it to 'work for the local economy'. In a YouTube promotional video (Bristol Pound 2014) describing the rationale for using the Bristol Pound, an actual bucket pops up which is being filled with tiny blue and white Bristol Pound logos. While the alternative currency continues to pour into the metal container, the voice-over explains:

> Think of the local economy as a bucket. The Bristol Pound helps keep the bucket in good repair. The money circulates within it, and the more it comes in, the more we have. When someone gets paid wages or a business makes a sale, it fills the bucket. With normal pounds, the bucket is full of holes. These are made by bigger chain companies that want to take money out of Bristol. So most normal pounds leak straight out, almost as soon as they arrive. Even if we spend it at local shops, the money still very quickly leaves Bristol. Spending in Bristol Pounds fills up the bucket and plugs the holes. The money sticks to Bristol. Every pound is spent, again and again.

The leaky bucket argument is instructive for how, to my informants, money should function. What, specifically, is the work money is supposed to do in society? What are the design flaws in the current system which an alternative currency might remedy? And, consequently, how can this be done? The notion of 'plugging the leaks' emphasizes that the main monetary intervention of alternative currencies is not to create *more* money or even—for that matter—*another* money. Instead, the

intervention is to prevent it from leaking away from the community. This is, as I will show, a question of control. In building what they term a 'monetary ecosystem', the Money Makers emphasize that, rather than a linear in- and out motion over which local communities have lost control, there should be circularity in the way money flows. Much like the water cycle of an ecosystem, the Money Makers design currencies to travel in a circular motion within the boundaries of the bucket so that they do not—uncontrollably—leak away. The management of money's movement is at the core of the perspective I call 'the political physiology of money'. I borrow the phrase 'political physiology' from socialist-feminist theory (Haraway 1978), and put it to work ethnographically to uncover the perspective that guides the purposeful management of money.

Whenever we talk about money we are often concerned with its movement. Moreover, in describing how money moves, both the English and Dutch language are rife with aquatic expressions. Money flows, circulates, or stagnates. We might be flushed with cash, swimming in money, dip into our savings, or conversely our bank account is drained when our funds dry up. Companies are liquidated or might have their assets frozen. In Dutch, *we geven geld uit als water* (we spend money like it is water)*, geld stroomt binnen* (money streams or flows in), or *het spaargeld is opgedroogd* (the savings have dried up). Companies have *liquide middelen* (liquid assets). If you have *een gat in je hand* (a hole in your hand), money leaks away through it, much as water would. A *bodemloze put* (a bottomless well) is where money goes that is wasted away. *Het hoofd boven water houden* (keeping your head above the water) means that you have precisely enough money to make ends meet. Like ebb and flow, money comes and it goes.

The conceptual 'money as water' metaphor has a long history in philosophy and economic thought and is deeply entrenched in our everyday discourse on money. Such metaphors are a way to make sense of abstract, complex, systems or concepts. They also reveal something about our mode of being and acting in the world; cognitive linguists claim that metaphors are not just expressions, as language

characterizes thought and structures action (Lakoff and Johnson 1980). The conceptualisation of money as water and the emphasis on circularity is not arbitrary; it reveals something about the way the Money Makers also think about and act upon money. 'Circulation' became a dominant metaphor for the use of money from the mid-seventeenth century onwards. Political philosopher John Locke first used the word 'currency' to denote the circulation of money in 1699. The Latin present participle *currens* means 'running', which also extends to 'running water', embedding a sense of circulation or flowing. Currency is therefore sometimes defined in etymology databases as 'condition of flowing'. Some centuries earlier the notion of circulation compared directly the movement of money with the circulation of blood in a body. Take for example the fourteenth century French philosopher Nicholas Oresme (1320–82), who described the force of money within the state as the flow of humours in the body politic (Johnson 1966, 119–22). Hence the 'leaky bucket' view of the economy builds upon a long legacy wherein money is equated with a primary life force—being either water or blood—that is contained within a body. Money circulates and it is vital that it does so; yet its circulation is contingent upon an inside, a boundary, and an outside. As such, money's connection to the body politic emerges.

In her paper on domination, Donna Haraway writes about the notion of the body politic as an organism; 'political physiology' describes how human groups, in this projection, come to mirror natural forms (1978, 21)—such as, indeed, bodies of water or ecologies—and the consequences this has for the distribution of control. This chapter examines the political physiology of money. Though it is tempting to contribute to discussions about its nature,[60] my aim here is not to develop an ontology of money. Instead I am concerned with two fundamentally political questions that the Money Makers bring to the fore: 'What should money do?' and

[60] Delineating what money *is* remains an ongoing task, as it is something even the Bank of England refuses to irrefutably and categorically define: 'Despite its importance and widespread use, there is no universal agreement on what money actually is' (McLeay, Radia and Thomas 2014, 5).

'How should it be done?', with the ideal on the one hand and the pragmatics on the other. These questions are political not only because both the ideal and the pragmatics are in constant dialogue with each other, but because they are guided by the stakes of a group. An alternative currency is framed as a matter of collective action in the interests of that collective—a body, of sorts. Hence it is not only important what type(s) of money fills 'the bucket', and how it leaks or circles around, but also which people, organisations and institutions float in there and who gets to determine its boundaries.

The Money Makers employ a discourse of regaining authority and control over the local economy through their currencies. For example, the slogan of the Bristol Pound is 'Our City, Our Money'. Yet the contours of this new form of control initiated by the Money Makers remain opaque as I will show; the new regulator is the software system Cyclos, designed by STRO. Lowrie (2018, 352) notes that 'the financial system is probably the most thoroughly computationally automated terrain in contemporary society.' Alternative currencies form no exception. The Money Makers all firmly hold that a central feature of professional currencies is that they are (also) digital. To them, the structure of authority, power and control embedded in the global monetary system is fundamentally problematic; the digitalization of local money is a way to regain this control. But who, then, gains control? This question of authority is clouded by the veil of a technology that steers the money flows, rather than democratic community decisions as suggested by the discourse of community ownership.

The architecture of Cyclos quite literally determines the scope, uses, and exchange experiences of the currencies by STRO, Qoin, and the Bristol Pound. It is through this software that communities are created and visions of economy are articulated. In this chapter I introduce the term 'algorithmic reason' to argue that in such computational realities, authority is enfolded into the performance of the system. There is a transposition of agency from the Money Makers onto the technology. I use Friedrich Engels' ([1872] 1978) tale of a cotton mill, where he states

that the fully automated system of 'the steam' holds authority over the operation of the mill; the agency of capitalism becomes naturalised in the machine. Ultimately, this chapter asks: if money is a political design of power from the state and banks, what is the political design of alternative money?

What Should Money Do?

Tobias draws a large, somewhat wobbly, circle at the heart of a flip chart [Figure 7, image 1]: 'Imagine this is an economy. Any economy. It could be a country or a region. But for now, it represents the economy of Utrecht.' Drawing a thick arrow into the imaginary urban economy [Figure 7, image 2], he goes on, 'So there is money flowing into this economy. For example, when I receive my salary.' The second arrow he draws extends from the core of the circle towards the empty blank space of the chart [Figure 7, image 3]: 'Most of the time, this money coming in leaves the area really quickly. Not only when I pay for a mortgage, also when I buy groceries at the Albert Heijn [a large Dutch supermarket chain store]. You see: this business spends only a small percentage of its income locally, like on salaries for cashiers. The bulk is sent to its headquarters in Zaandam, or even across the [national] border.'[61]

His audience is nodding. It is about eight pm and already dark outside; the reflection in the bare windows gives the illusion there are more than ten heads bobbing up and down. From my vantage point, forward-facing the small meeting room, I can tell Tobias' presentation is going well. The local entrepreneurs that have gathered to learn about STRO's recent alternative currency the *Utrechtse Euro* are listening attentively. The notion of an economy as a bounded circle, where money flows in and out, seems to land well. Encouraged, Tobias goes on:

> Money leaks away from the community. Shopping at a chain store, the impact of my spending is only once. With a local currency, we aim to keep money inside the circle. So we put it inside software and make it travel in loops six or seven times. If I spend my money at a local supermarket, who then spends it at a local wholesaler, who uses it to buy

[61] Meeting - STRO 171107.

> batches of bread from the bakery, the baker all of a sudden has money to pay for new business cards at, say, *my* print shop.

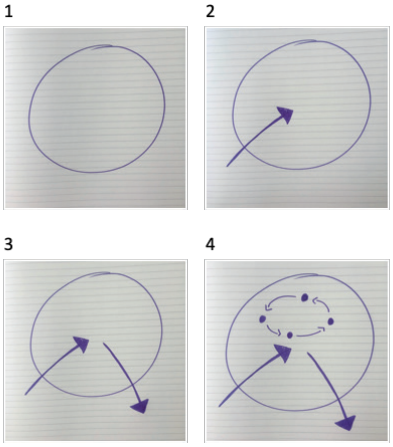

Figure 7—Flow local currencies

This flow of transactions is illustrated with a few dots inside the economic sphere. Tobias connects the dots with a series of arrows to represent the monetary transactions [Figure 7, image 4]. One entrepreneur speaks up: 'But why do we need another money for this? Can't people just choose to shop at independent shops with euros?'. He leans back in his chair and crosses his arms. It is a common question for informative gatherings like this one. I catch myself in a moment of ethnographic laziness; absently gazing into the reflection of the room in anticipation of what I know will be Tobias' answer. 'Sure,' he says, 'but it doesn't only matter where *you* spend your money, it also matters where the people you give it to spend it.' He continues,

> If I shop with euros I have no idea what happens after I've spent it. With the Utrechtse Euro I am certain the business will re-invest this money in the local economy. To facilitate a circular economy, you need a different kind of money. You need money with a purpose.

'Money with a purpose' is STRO's catch phrase to describe the particular type of currency they offer. This purpose is to make money available to local entrepreneurs, who are seen to be struggling in the face of crisis and globalisation, whereas multinational corporations and monopolists are thriving. And the purpose is to make money work for communities. As Tobias explained visually during the entrepreneurs meeting, the justification for 'purposeful money' is that communities have no control over the flows of mainstream money. It leaves smaller cities or poor neighbourhoods quickly; this means there is always a lack of money (a 'monetary

desert') in precisely the places where it needs to circulate. Documents, conversations, opinions: all are seeped through and through with this logic. This explicit desire for localised monetary circularity is also prominent across (and beyond) Qoin and the Bristol Pound alike. The Bristol Pound even depicts their city as an island in their promotional material [Figure 8]: the island has steep cliffs and conveys the image of local money as unable to leave the city. The text—'Our city, our money, our future'—conveys a strong sense of regaining ownership.

Figure 8 - Bristol Pound marketing material

To understand better this desire for control and what it is that, according to my informants, money *should* do as well as why this is different from conventional money—it is instructive to examine how the Money Makers understand money. Knowledge of how the current financial system operates is vital in grasping the logic of alternative currencies. This system is, after all, the current authority in managing its flows. The Money Makers poured much time and effort into economic education and knowledge dissemination. To them, one beneficial effect of alternative currencies, beyond their practical use, is that they teach people about what money is and how the monetary structure is governed. 'It is difficult for people to understand money,' Bristol Pound director Caleb told[62] me one afternoon, 'It's like how fish think about water: they don't.' The first step in regaining control, then, is becoming aware of the 'water'.

The Money Makers spent a great deal of time mulling over the nature and purpose of money in relation to existing theory and historical records in order to situate, and sell, their activities. In doing so, they have devised their own 'money talk'. In thinking about money, there are, broadly, three perspectives that are relevant to my interlocutors, who take a particular stance towards them. They are always

[62] Conversation - Caleb 180428.

present in the practitioner literature and concern (1) the origins of money, (2) modern types of money, and (3) its functions. In what follows, I present these perspectives not as a literature review, but through the shared narrative of STRO, Qoin, and the Bristol Pound; it is, therefore, my own categorical analysis of their, theoretically informed, 'money talk'. Throughout, I refer to the relevant practitioner literature addressing these issues.

There is a vast body of practitioner literature (Boyle 2002; Dodd 2016; Douthwaite 1996; Hopkins 2008; Lieater 2001; North 2010) on which the Money Makers actively rely. David Boyle is a British historian and writer whose books have helped to launch timebanks in the UK; Nigel Dodd is a British sociologist; Richard Douthwaite was a British economist and ecologist; Rob Hopkins is a leader in the transition movement of the UK, of which the Totnes Pound and later also the Bristol Pound form part; Bernard Lietaer was an economist and monetary expert from Belgium; Peter North is a British geographer. I have only selected key figures: the field of practitioner literature is more expansive than the works of these (European, mostly British) authors. Yet their works do give a good insight into the way the Money Makers have come to understand economy and money. Understanding these perspectives and the money talk that surrounds them is vital, because they make the political physiology of money tangible by evidencing ideas of authority in monetary systems and by explicating normative thoughts of what function money *should* have—according to the Money Makers.

The first perspective is a historical one and concerns the origins of money. It is called the metalist vs. the chartalist debate, or alternatively the commodity vs. credit theory of money. It does not feature prominently in everyday discourse on designing money but I touch upon it here because this debate is ultimately about power and authority over the creation and regulation of money—and it positions the Money Makers within a particular ontology of money as a social construct. First, the metalist theory holds that the basis of money was originally, and should be, real intrinsic value (e.g. gold). Usually this argumentation calls upon four criteria for

proper money (valuable, durable, portable, divisible) that have been—incorrectly (see Bindewald 2018)—derived from Artistole's Politics.[63] As such, it portrays an evolutionary account of the development of money from inconvenient barter to spontaneously ensuing exchange through the medium of a precious commodity (Menger 1892). Here, rather than an act of officialdom, money is in its essence market activity. My informants discount this perspective on the emergence of money as 'faulty mainstream economic thought', in the words of Bristol Pounds' Caleb, because it fundamentally neglects power relations. As Bernard Lietaer says in his famous book *The Future of Money*, 'money is not a thing' (2001, 46). Rather, 'the game of money […] is a confidence game' (2001, 46). Currency, the Money Makers know, is always administered.

Therefore, they instead side more comfortably with chartalism, or the state theory of money. This theory holds that moneys value is derived from it being state-issued and sanctioned or even created by private enterprise (Dodd 2016). Money is a credit instrument rather than necessarily backed by precious metal. Nigel Dodd writes how mercantile credit systems, in existence since the middle ages, began competing with sovereign money. This led to the 'great monetary settlement' with the creation of privately owned, but state chartered, central banks like the Bank of England in the 17th century (Dodd 2016). Following this reasoning, the employees of Qoin for example regularly emphasize that money is a social construct; created through conscious choices and power mechanisms.

The idea that money has a constitutional agent, but that it is not necessarily the state, is referred to as 'neochartalism' (Dodd 2016, 106). In informational documents about the properties of money, Qoin writes: 'Money is not neutral; it is politically charged. This means it serves the interests of some better than others, and it serves particular goals better than others.'[64] Hence, for the Money Makers it follows that a) money could be created by anyone (it is the task of getting it accepted

[63] Aristotle is also mentioned as the founder of the competing chartalist theory in his Nicomachean Ethics (ca 340 BC).
[64] Documentary analysis - Qoin 160217.

that poses the greatest challenge), and b) the rules by which it functions are not set in stone. With this approach to the foundation of money in mind, Qoin, STRO. and the Bristol Pound make the case that money should not be the sole possession of states or banks, but belongs to the community and its institutions.

A second perspective concerns the forms of modern money. Because in the modern economic system, there are in fact multiple types of money. Here, I rely on a Quarterly Bulletin released by the Bank of England (McLeay, Radia and Thomas 2014) to describe the two predominant forms of money[65] that currency practitioners use in their understandings of the modern economy. The first is 'fiat currency'. Fiat is Latin for 'let there be,' as in *fiat lux*, let there be light; hence, *fiat denarii*, let there be euros or pounds. The term refers to currencies being conjured out of nothing, so to speak. All national currencies are fiat currency since the dollar became 'free-floating'; detached from the gold standard after the Bretton Woods system[66] collapsed in 1972. Where I have been referring to 'modern money' or 'conventional money' to differentiate official money from alternative currencies, the Money Makers would use the term 'fiat currency' when talking about euros or pounds (see also North 2010, 22). This use of language connects to their positioning within the chartalist theory of money. On the CCIA community currency knowledge gateway—to which especially Qoin has contributed—fiat currencies were explained as being 'issued 'out of thin air', by decree, with no other concrete value relation (e.g. backing) but the will and authority of the issuer' (CCIA, n.d.). According to the Bank of England, fiat currency comes in the form of notes and coins and present an 'IOU' from the central bank to the rest of the economy. Fiat currency is thus presided over by central banks—and accordingly, by the state.

[65] The third type of modern money discussed in the bulletin concerns central bank reserves and describes the debt relation between commercial banks and central banks. Its precise workings are not relevant to my discussion here.

[66] I repeat note 3 here for clarity: Bretton Woods system refers to a type of monetary management devised after the Second World War (1944) to guarantee the conversion of the dollar to gold. It anchored all other world currencies through their exchange rates to the dollar, as an intermediary to gold, to guarantee economic recovery and the circulation of money without hyperinflation. New institutions monitoring this system where the World Bank and the International Monetary Fund.

However, the Money Makers maintain that governments hold no sway over these free-floating currencies. The first chapter of the widely read practical guide *Short Circuit,* by Richard Douthwaite (1996), is called 'Out of Control'. It describes the instability of the world economy since the 1970s start of decoupled world currencies, subsequent global trading treaties, transnational common markets like the EEC, and the end of exchange controls. In short, the globalisation of the world economy left countries 'without most of the powerful economic management tools [they] had previously used to create the space within which governmental policies could be carried out' (Douthwaite 1996, 42-43). As a rule, before they lay out the possibilities for an economic overhaul on a local level, the practitioner literature starts with describing the faults of the current monetary system wherein control is not even in the hands of states anymore, but of capital and the perverse tendencies of the global systemic design.

Though fiat currency is often used to refer to the entire monetary structure of the conventional economy, physical notes and coins are in fact a small fraction (around three percent) of the entire money supply of a country. The main shape of money in Europe is that of bank deposits. These are, for example, electronically recorded current accounts or savings accounts at a commercial bank like Barclays or ING: basically, they refer to a bank account. Bank deposits act as a medium of exchange in place of physical, central bank issued, currency. It is here, in the issuance of bank deposits, that Money Makers find fundamental fault with the workings of the conventional economy. For, rather than being created and controlled by governments, ninety-seven percent of a country's monetary supply results from the creation of loans by commercial banks (McLeay, Radia and Thomas 2014). Most money, then, is debt (see also Graeber 2011).

Two problems flow from this. First, this interest-bearing money that is created by private enterprises as debt demands incessant growth (Douthwaite 1996, 191). This is unacceptable to the Money Makers because they consider this an unsustainable system in a world of finite resources (Hopkins 2008). Second, the

disparity in obligation created by interest sets the direction of monetary flows and determines or solidifies power relations (North 2010). Here, the movement of money is a motion towards financial centres that have the power to loan money and command more of it back through interest. This point is fundamental to the rationale for setting up a local currency: at its core, there is a power struggle that is about regaining control.

This struggle for control is palpable in the money talk. 'Governments', says Douthwaite (1996, 191) have too little control over the amount of money put in circulation.' In addition, 'The big banks, who are developing the electronic money systems, will not allow their power to create money to be eroded without a struggle […] power is never given away by the powerful, it has to be taken by the weak' (1996, 204). In *The Ecology of Money*, Richard Douthwaite (1999) says that money can be created by three actors: banks (as interest-bearing debt), governments (through taxing mechanisms), or people (resource-based by means of mutual agreement). Peter North adds in *Local Money: How to Make it Happen* that the emphasis is usually on the former two and that 'money often feels like something 'done' to communities' (2010, 15). He later comments that 'money is a central part of our lives, but we are not in charge of it,' because 'the amount of money in the economy, how it is regulated, and who has access to it is controlled by an elite of private bankers and politicians, and this gives that elite huge power to enrich themselves and control the rest of us' (North 2010, 52).

As the world economy is out of control and 'poses more dangers than we had imagined' (Lietaer 2001, 21), communities should, in the words of Douthwaite (1996, 64) 'limit the scope of the industrial system and its individualistic culture […] and create a protected space'. The solution to these local currency advocates is self-evident: 'A community wishing to minimize the hardships it would suffer if the world financial system collapses should obviously make monetary independence its first priority' (Douthwaite 1996, 89). Accordingly, STRO, Qoin, and the Bristol Pound argue that money should be controlled by a community and its institutions.

What these communities should do, in turn, is to optimize money's function as a medium of exchange.

This brings us to the third perspective on money, which is the one most concerned with its movement. It focuses on the way money is used, and in turn how the 'monetary independence' of communities is brought into being. Monetary orthodoxy holds that money has three functions: as a 'unit of account', a 'medium of exchange', and a 'store of value' (Douthwaite 1996, 155; North 2010, 63). These functions describe what money does, rather than define its nature or origin. The 'unit of account' function means that money is used to measure the quantitative value of goods and services. In theory, alternative currencies introduce a new unit of account, for example by measuring the value of a loaf of bread with Bristol Pounds rather than in pounds sterling. In practice, however, there is usually a one-to-one exchange rate with fiat money.[67] Hence the 'accounting' is not very different. The loaf will cost two Bristol Pounds or two pounds sterling.[68] More important to the Money Makers, is money's function as a medium of exchange: this means that money acts as intermediary in transactions by providing a way to translate the value of products and services in relation to each other. Following the economist Irving Fisher, and particularly his book *Stamp Scrip* (1934), the Money Makers actively work to increase the function of money as a medium of exchange. At Qoin and STRO, they say in Dutch *geld moet rollen* (money must roll, or move around). Note the closeness here of seeing money as rolling, running, or flowing.

Alternative currencies intentionally alter the rules of exchange by limiting *what* the currency might be exchanged for (only local produce or services), and *where* it circulates (a defined geographical region, or 'protected space' as Douthwaite (1996, 64) says). Chain stores are not welcome as a member of alternative currency schemes and for example Bristol Pounds cannot be spent in London. Michael Linton, the

[67] Remember one of the lessons learned from LETS in chapter three: this conversion rate is a conscious decision by the Money Makers on the route to professionalisation. It makes the currency easier to understand and only minimally impacts upon the bookkeeping practices of businesses.

[68] Other types of alternative exchange systems, like timebanks, do introduce a completely different unit of account (hours, or minutes, of work).

developer of the LETS I described in chapter three, states in a popular public address that money circulating in a limited geographical area is preferable to conventional currency because it increases the spending power of money in a community. Moreover, altering money to function more effectively as a medium of exchange and diminishing its capacity to store value over time is at the core of alternative currency designs. I will examine the way Money Makers relate the 'medium of exchange' function to the 'store of value' function in more detail, because it speaks to the centrality of movement in the political physiology of money.

Money moves from payer to accepter. It continues to move if this action is carried out regularly. However, because conventional money has the capacity to retain or potentially increase its value, it can be stored for later use. Such 'immobile money' is highly undesirable in the eyes of my informants. 'To properly work as a medium of exchange,' STRO's front man Theo says, 'money must move around.' The 'medium of exchange' function epitomizes the desired circularity of monetary flows. Yet moneys capacity to be potted up, stored, so that it accumulates over time, distorts this principle purpose of money. So, the fact that money might act as store of value is highly problematic to Theo and his currency colleagues because it negatively impacts upon moneys function as a medium of exchange. In one of STRO's publications, he says:

> Money is used for two incommensurable goals: the trader wants to trade and the rent seeker[69] wants to become rich. The first would like plenty of money in circulation to be able to trade easily, the other's interest is best served by having less money in circulation. This increases the value of money. Because the rent seeker prefers to keep his money close, store it, there is less money circulating in the economy. Money becomes scarce.[70]

[69] Note on translation: I translated the Dutch term *rentenier* with an economic term that refers to a person that seeks to increase their existing wealth without creating new wealth.
[70] Documentary analysis - STRO 171022.

Removing money from the realm of exchange ensures scarcity; money, therefore, is artificially made scarce (North 2010, 51). For Qoin, STRO and the Bristol Pound scarcity in money supply is undesirable; this creates 'monetary deserts' since—as the leaky bucket argument illustrates—money leaks away to the financial centres where it is stored, because of the inherent power dynamics I described above.

In order to stress the intervention of their alternative currencies, Qoin explicitly refers to a theoretical formula of exchange by Irvin Fisher.[71] The original formula by Fisher is PQ=MV. Which means price (P) multiplied by quantity (Q) equals the amount of money (M) multiplied by the velocity of money (V). The formula Qoin uses is 'simplified', in their words, to E = M * V. Here, the size of the total economy (E) equals the amount of money (M) multiplied by the velocity of money (V).[72] The size of the economy, Qoin stresses, should be defined as a city. So the ways in which the Money Makers do away with scarcity by altering its functionality reveals two key differences with conventional money. For one, the Money Makers seek to limit the area of circulation so the 'medium of exchange' function is normatively altered by directing money flows to local businesses and away from multinational corporations. Second, alternative currencies are interest-free and aim to do away with the 'store of value' function.[73] Sometimes they even introduce a negative interest, called 'demurrage', in order to speed up the velocity of exchange (North 2010, 63). In short, the bucket leaks and its content seeps away too quickly so that it does not benefit localities. This is a systemic design over which even governments have lost authority. The power to control money, then, should in the eyes of the Money Makers be in the hands of the communities in which it circulates. Moreover, the computational approach of Qoin is telling of *how* the

[71] Documentary analysis - Qoin 160208.

[72] Documentary analysis - Qoin 161118.

[73] To be sure, lowering interest rates is also a key tactic of central banks in times of recession in order to encourage spending. At the time of writing, the interest set by the ECB and BoE is (near to) zero. Yet the option that interest might be raised again is inherent in the monetary design of the euro and the pound.

Money Makers seek to regain control over the movement of money. This is the focal point of the next section.

How Should It Be Done?

A key element, says Bernard Lietaer in *The Future of Money*, of 'the new money frontier' is the 'cybersphere' (2001, 39). Hence, to quote Lietaer (2001, 25) at length:

> The future of money therefore lies not only with the further computerization of our conventional currencies - such as dollars, euros or yen via smart cards and other new information technologies. Such changes will happen. But these same information technologies also make it possible for new non-conventional complementary currencies to enter the mainstream and provide new tools for addressing some of our most pressing challenges, both locally and globally.

As I described in chapter three, the emergence of the internet was instrumental in the continuous spread and popularity of alternative currencies, starting with basic online ledgers for LETS currencies. STRO has subsequently made the most significant contribution to the digitization of alternative money through their software, Cyclos. The currencies of STRO, Qoin, and the Bristol Pound all run on Cyclos; their purpose of localising money as a way of controlling its movements, then, is made actionable by having money enter a closed software system. In the words of STRO, the algorithm of Cyclos 'conditions money to circulate in a defined area'.[74] And Qoin calls Cyclos a 'transaction engine'.[75]

STRO started to developed Cyclos in the 1990s. The first stable version of Cyclos was released and published, open source, in 2005. Since then, currency initiatives around the world have adopted the system as their means of materialising a different economy. Both Qoin and the Bristol Pound use this particular software to operate their digital currencies—though Qoin repackaged the open source

[74] Documentary analysis - STRO 171111.
[75] Documentary analysis - Qoin 170608.

version by programming a different interface and rebranded it 'Qoinware'. Cyclos, then, is central in answering the question of *how* monetary innovation should be attained. Thus far in this chapter I have shown the central ideal of controlling circularity in talking and thinking through various facets of what money should do according to STRO, Qoin, and the Bristol Pound. This section interrogates Cyclos as the primary way through which this goal is achieved. For alternative, professional, currencies, software sets the terms for the way money moves as well as the boundaries of the bucket. Indeed, the notion of 'control' is key here: there is a particular 'algorithmic reason' ascribed to Cyclos as being the authorative agent in creating alternative economies.

Pablo Velasco González (2017) examines the Bitcoin Blockchain and the power relations that are enfolded into this system. In many ways, his analysis is applicable to the local currencies using Cyclos. I build on his use of Friedrich Engels' essay 'On Authority' ([1872] 1978). Engels questions which shape authority might take in a fully automated system of a cotton mill. He describes a hypothetical arrangement of cooperative labour, where capitalism has been overthrown so that the means of production are held collectively and power is decentralised. 'Will authority have disappeared,' Engels asks, 'or will it only have changed its form? Let us see' ([1872] 1978, 1). The question is rhetorical. Engels argues that the operation of the cotton mill, like many factories of 'modern industry' ([1872] 1978, 1) falls increasingly 'under the dominion of the machine and of steam' ([1872] 1978, 1). Once the machine takes over, a certain sequence and rationale in its operations, as well as a rhythm of work, becomes enforced. The mill does not require a recognizable leader but is nonetheless an authoritarian system, because it functions through 'the authority of the steam' (Engels [1872] 1978, 2). Authority, here, is not external but embedded within the very operational work of the machine itself. After the workers of the factory have, albeit collectively, set the rules for its functioning, once the system is operational the authority of the steam takes over.

Engels' story of the cotton mill is a pertinent allegory for the digital machine the Money Makers designed (the software Cyclos) and for the steam that runs it (its computational procedures and algorithms *built by them*). In *The Ethics of Coding*, Colman, Bühlmann, O'Donnell, and Van der Tuin define algorithms as '[…] a finite set of instructive steps that can be followed mechanically, without comprehension, and that is used to organise, calculate, control, shape, and sometimes predict outcomes, applied across various fields' (2018, 8). I argue that particular meanings of control, trust, and authority are enfolded into the instrumental operation of production and recording of Cyclos' digital ledger—which are 'followed mechanically'. This 'algorithmic reason' remains obscure, clouded, by the validation of currency software as democratic, community ownership over money. The intention of Cyclos is the displacement of control in social and political relationships from the production and recording of global markets, to localised computational production and recording. As such, control, trust, and authority is built into the system. Transfer conventional money into Cyclos, and it will, almost magically, transform itself into community money—with all the values of solidarity, locality, and sustainability attached. As such, Cyclos becomes an 'object endowed with agency' (Colman et al. 2018, 8).

Anthropologists of digital systems and algorithms have revealed the social processes behind this naturalisation of the 'countable' and have uncovered how they embed, and are embedded in, values and cultural meanings (Seaver 2017, 7). Nick Seaver for example points to the value-laden subjectivity of software. Conway's Law, a well-known axiom amongst programmers, holds that software systems mirror the organisations that make them (Seaver 2018). It is equally true, however, that organisations—their ideals, their pragmatics—take the shape of software systems. And not only organisations: these systems also impact upon society and the actors they interact with. There is a growing body of work in anthropology on the power of code. Steiner (2012) for example argues that algorithms 'rule our world', and other critical scholarship of algorithms (Cheney-Lippold 2017; Hallinan and Striphas 2016)

emphasize their 'inhumanity' and all-encompassing power over human judgement and decision-making. Meeting these positions somewhere in the middle, Seaver (2018) writes against the view of algorithms purported 'technical rationality' and 'killing blow to what remains of the free, serendipitous spirit of human existence'. Instead he observes the individuals that are constantly 'tweaking and tuning, repairing and refactoring' the complex responsive software we have come to interact with on a daily basis: 'social structures emboss themselves onto digital substrates; software is a kind of print left by inky institutions' (Seaver 2018, 375). Seaver thus argues for a view of algorithms in software as complex sociotechnical systems. Building on these theories, in what follows I ethnographically unravel the algorithmic reason of Cyclos in order to reveal the structures of power and control that are enfolded within its operations.

One time during lunch at STRO's office, I asked Theo why they decided to call the payment platform 'Cyclos'. The flash of surprise crossing his face was brief but unmistakable; I could imagine him thinking 'this anthropologist is fishing for obvious answers again'. He said no such thing. Instead he smiled, and said, 'Well, uhm, we thought of Cyclos because we want money to circulate, you know, it being cyclical.'[76] This is all I managed to find out about the etymology of STRO's leading payment software. At the time, Theo's one-sentence reply was somewhat of an anti-climax. I'd asked Cyclos manager Stefan earlier about the origin of the name; he had replied he wasn't there when the software was born so I should ask Theo about it. After this I had secretly hoped for a captivating origin story. Back then, I failed to grasp the beauty of the plain, straightforward answer Theo had given me: they want money to circulate, and Cyclos makes this happen.

As I have made clear, technology is central to the Money Makers' approach in innovating money to attain its circular purpose. In fact, all financial innovations have been technological innovations[77] and advances in technology have been central

[76] Conversation - Theo 171025.
[77] For example the credit card system, the Dutch iDeal payment method, automatic teller machines (ATM's), sub-prime mortgages, high frequency trading, or blockchain currencies.

to the dissemination and development of multiple currency forms. This connection is not just inspired by practical functionality; for the Money Makers the possibilities of online interconnections encompasses ideals of freedom and autonomy. In the mid-1990s, about the time when the Canadian-born Local Exchange and Trading Systems landed in Europe, the internet materialized a network of communications throughout society. Lawrence Lessig (1999, 3) writes about this emergence of cyberspace and the utopia of freedom it inspired:

> The space seemed to promise a kind of society that real space would never allow—freedom without anarchy, control without government, consensus without power. In the words of a manifesto that defined this ideal: 'We reject: kings, presidents and voting. We believe in: rough consensus and running code'.

Important to note here is how the notion of organised freedom as sovereignty without a state became entwined with the promises of digitization. So too for the currency pioneers of STRO. In one of STRO's mainstream publications, they discuss the realisation that led to developing Cyclos:

> I recognized how well computers are able to communicate with each other. I realised how successfully those beeps could transfer information about debt relations—hence be a type of money. Intuitively I was convinced this was the way to create a kind of money that couldn't be disqualified by the law and banking monopolies. Bits and bytes of information about transactions can circulate within a closed administration, as long as there is no formal exchange of money […] The key to the alternatives we are developing, is that you can organise trade based on claims. (Toxopeus 2014, 196).

As a software program, Cyclos brings into being a different type of money and directs its flows. How does its digital dynamic enable or constrain the space in which new economic behaviours might emerge? And what happens when the desire for decentralized monetary governance and community ownership is apparently embedded in software?

There are not a lot of software programs that allow for the design, implementation, and management of digital money. Banking software needs to be secure, safe, easy to use, flexible as well as free or cheap. Developed as a poverty amelioration programme in Latin America, Cyclos is now used all over the world software for regional banking, barters, LETS, timebanks, and micro finance institutions. Customers for example include MobiCash, which is licensed by Banque de la République du Burundi, Centrale Bank du Congo, National Bank of Rwanda, Bank of Uganda and Bank of Botswana. The practicalities of maintaining the software or adding new rules to the code are also global: the team of about ten programmers is based in Porto Alegre and Montevideo. This is because the development of Cyclos started in the early 2000's as a subsidised project in Latin America, and STRO decided to localise its creation there as much as possible. The activities or names of these programmers are rarely, if ever, mentioned at the office in Utrecht. Even the commonly shared personnel file with names and functions of all paid staff and volunteers just notes the vague collective term 'programming team Cyclos', whose function consists of 'programming Cyclos'. The only way these people enter STRO's headquarters—though inaudible—is through ongoing Skype and Google hangout chats with Stefan. This tangible absence of those who actually *program* is intriguing for an organisation that holds FinTech innovation at its core.

The software product consists of three versions: Cyclos 4 PRO; Cyclos 4 Communities; Cyclos 3 Open Source. I focus exclusively on the latter two because these are used by communities creating their own currency. Bristol uses a free social license for Cyclos 4 Communities and STRO's currencies do as well. Qoin uses Cyclos 3.7 open source with a user interface for web and smartphone usage they built themselves, relabelling the software to 'QoinWare'. The core of all Cyclos activity consists of users making payments to other users. Hence according to STRO's Cyclos manager Stefan, the software is, at its core, 'just a score board'. What I have come to learn about Cyclos is that it is basically a huge ledger that keeps track of the currency accounts within the community. Cyclos thus works from a closed

database; therefore—different from decentralised cryptocurrencies like blockchain—there is necessarily a central agent that manages the infrastructure. In the final section of this chapter I show how this works in practice for one particular currency, the Bristol Pound, particularly how meanings of control, trust, and authority are enfolded into the instrumental operation and recording of Cyclos' digital ledger.

The Monetary Ecosystem of the Bristol Pound

Bristol Pounds come into circulation when sterling, in the form of fiat currency (coins and notes) or bank deposits (online funds), are exchanged for the local currency. Once these pounds are converted into Bristol Pounds, they are, as one Bristolian using the local currency put it, 'locked' into 'the system'. As I have shown, this move of 'locking in' and 'creating boundaries' is crucial to the ideals and pragmatics of alternative money. Yet, to almost all of Bristol Pounds' users, and the majority of its employees, 'the system', and how it succeeds at creating circular local money—keeping money in the bucket—is somewhat of a black box.

Victoria is the latest addition to the Bristol Pound team and one of the few women working in the professional local currencies world. She's a longstanding friend of Bristol Pounds CEO Jack and has recently agreed to manage the finances of the organisation. Her title is that of Finance Officer. Like Chief Technology Officer (CTO) Oliver, Victoria prefers to start work early. This way, her afternoons are free for her daughter, her accountancy degree, and her favourite past-time, climbing. On a sunny morning in April—three months into my fieldwork—I push open the heavy door to the office and walk into a familiar scene. Health-conscious Oliver stands behind his computer, elevated by boxes and books, with ear plugs in. He turns half-way and greets me cheerfully. Victoria sits across from him. She is surrounded by black binders and shuffles through a pile of papers. Though her long thick hair falls down and obscures her facial expression, I can hear her exhaling through her teeth. 'Hiya Victoria,' I call out, 'You all right?'. She briefly glances up

and gives me one of her characteristic wide smiles: 'Not too bad. Yourself? This system here is driving me crazy though.' Victoria is charged with the internal accounting of the Bristol Pound now that her senior, Finance Director Johanna, is due to leave the organisation. It's been a real struggle for her to wrap her head around the accountancy empire Johanna has built from the ground up—let alone, Victoria had told me earlier over tea, how exactly the Bristol Pound currency functions. I had to admit that I wasn't quite sure either.

Today we are both in luck. A short thirty minutes after I arrived, Bristol Pounds' front man Jack swoops through the door. As it is his job—besides managing the company's operations—to be the voice of the local currency, arrange funding, and ensure political support, it is rare to find Jack at the office. He seems to be in a good mood and apparently has time on his hands. Because when Victoria, happy for some distraction, calls out 'Great to see you Jack! Tell us about how our elusive Bristol Pound money system works, would you?', he marches straight into the adjunct meeting room and starts wiping clean the caulk board. Our curiosity piqued, we follow him. Oliver has gone out for an appointment, so Jacks audience consists of me, Victoria, and David—the new Membership Manager who had also arrived in the meantime. As Jack scrubs away at the smears of white chalk, he says: 'It is really good to have a broad conception about what's happening to the money. If you want to understand the reconciliation. If you're trying to explain to people, 'is my money safe?'. And what Coco is doing, to understand how the regulation works.' It is a subtle reference to his audience's respective jobs and focus areas at the Bristol Pound. Victoria working on finance, David on marketing, and me on regulatory compliance. He continues: 'The starting point—what we're going to do is that there are different flows of money going on. So, there's one Bristol Pound in terms of marketing. But in reality, there are two types of Bristol Pound.' Jacks explanation turns out to be a long one—just short of 30 minutes, and the three of us listen attentively throughout his talk. The end result is a visualisation of, what he terms,

'the monetary ecosystem of the Bristol Pound' (Figure 9, adapted by me). This brings into focus again the political physiology of money.

It is important to understand this monetary ecosystem consists of two parts which are—uncharacteristically for an ecosystem—*not* in dialogue with each other. One part is the Bristol Pound paper money. Its structure corresponds to the left column of Figure 9. Jack just took a bare five minutes to explain, in his words, 'the paper stuff' before moving on to Cyclos for the rest of his talk:

> The paper stuff is a voucher. It's a non-redeemable voucher. And it has to stay that way for regulatory purposes. Or remain that way. We [the Bristol Pound CIC] sell it into the world like you might buy a book voucher. So for every sale of a paper Bristol Pound we receive a pound sterling that has to be kept to one side in a trust account, because at some point in the future the person with the voucher would go to a business (…) The individual cannot redeem it—hence the name non-redeemable voucher. But a business can take it and basically change it back into sterling.

The Bristol Pound Community Interest Company (CIC) issues denominations of one, five, ten and twenty paper Bristol Pounds at a one-to-one ratio with sterling. At the moment of my fieldwork in mid-2018, a new edition of Bristol Pound notes was launched which are bound to expire in 2021. To the Bristol Pound itself, the 'paper stuff' is principally symbolic. The 'notes' are visually attractive and, as I have been told numerous times, mostly sold as

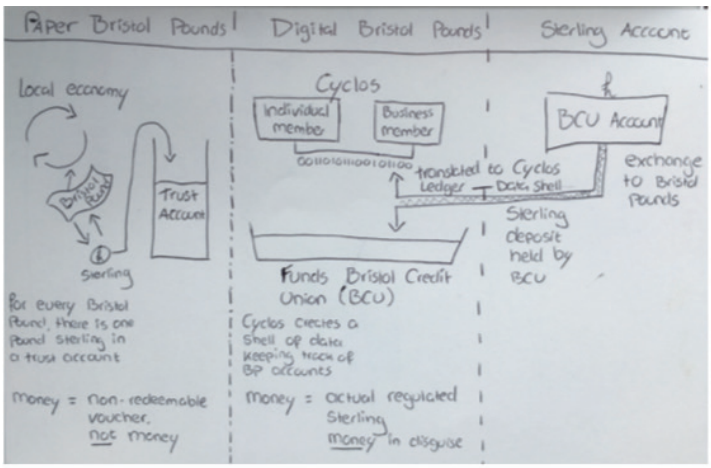

Figure 9 - Monetary ecosystem of the Bristol Pound

souvenirs to visiting tourists. Though I have no way of fact-checking this myself, because the flow of the paper money cannot be traced, there are some tell-tale signs that reveal the veracity of this statement: (1) the fifty business members I spoke to all say they rarely deal with the paper money, and (2) every time an edition of the Bristol Pound paper money expires, there is an impressively large sum of the 'old edition' which will never be exchanged for the new money.

This implies it is not in use and does not circulate through the local economy. The organisation is very much aware of this and not at all secretive about the selective usage of their paper money. In a series of blogposts from 2019, the staff and directors of the Bristol Pound even muse over the notion of a cashless society—and consequently, whether the current edition of paper money will be the last one. One blogpost emphasizes that 'While the Bristol Pound is possibly most famous for its paper notes, denoting Bristol's radical and creative culture, it is the digital Bristol Pounds which account for most of the activity.' The organisation is, to be sure, most proud of their technical innovation. The blog post goes on to say:

> Over the five years it has been in circulation there have been 80,000 digital transactions made by text, app and online banking. 1433 personal account holders pay the 620 business account holders, and those businesses trade with one another. (Hemley 2019).

Back in the meeting room with Jack, Victoria is nodding impatiently at his explanation of the paper pound system. She knows how it works; it's the digital Bristol Pounds that confound her. We both move a bit closer to the caulk board as Jack begins to sketch the right side of the ecosystem. The far-right column, 'where it all begins', he says, is labelled 'Sterling account'. Digital Bristol Pounds only come in to circulation when someone opens a specific account at the Bristol Credit Union (BCU). This local financial institution has agreed to partner with the Bristol Pound by operating the online reconciliation of sterling and Bristol Pounds within the existing legal frameworks. Therefore, in this particular currency and legal context,

the first step in the birth of online alternative money is opening a sterling account at a local bank. This ensures membership of the BCU cooperation (there is a one-pound membership fee) and requires members to abide by the BCU terms and agreements. Next, in order to be able to trade with Bristol Pounds, a *separate membership* of the Bristol Pound CIC[78] is required. With both memberships in place, the pounds sterling on the BCU bank account are transferred, by the BCU, to a deposit fund under their management.

The transformation into Bristol Pounds happens when the deposited amount travels, *as information*, to the central column of the ecosystem into the banking software Cyclos. This is executed and monitored by the credit union. Jack describes the work of Cyclos as 'creating a shell of data keeping track of the exchanges in the Bristol Pound accounts'. All the pounds sterling that have been converted into Bristol Pounds then sit together in a fund—depicted in the model as a pool of water—and Cyclos tracks the movement of the corresponding alternative currency in a huge ledger. So that, administratively, the amount of sterling allocated to each member's BCU account is correct at any given time. Users can transact and keep track of their digital Bristol Pounds through the website, an app, and through text messages. Digital Bristol Pounds thus exist as a set of data in software.

The credit union owns, monitors and keeps track of the digital money as a set of data, and the CIC stipulates the central rule of transaction (namely that the currency can only circulate locally) by setting the terms of membership to the Bristol Pound. Because the Bristol Pound CIC decided that membership of the Bristol Pound is restricted to residents and businesses of the Bristol postal code alone, they can only do so within that particular area and with other members of the Bristol Pound. Cyclos can also be used to program conversion rules. For example, in the Netherlands STRO works towards integrating a timer-function so that the alternative currencies can be converted back into fiat currency only after they

[78] Following the Money Makers, I use the organisational abbreviation 'CIC' (pronounced as 'kick') when referring to the Bristol Pound Community Interest Company. I use the term 'BCU' to refer to the Bristol Credit Union. This because 'the Bristol Pound' as an organisational noun is confusing since it is run by two entirely separate legal organisations.

circulated for a set period of time within the software. The Bristol Pound CIC at first instituted a conversion fee, to discourage businesses and individuals from exchanging Bristol Pounds back into pounds sterling. However, per decree of financial regulators, the 'data' travelling into the Cyclos environment to become Bristol Pounds can be exchanged back into fiat at any time without a conversion charge. How the managerial structure and the rules of the currency are entwined with regulatory demands is the topic of chapter five. For now, I wish to emphasize that the monetary design, made practicable through Cyclos, is crafted by the Money Makers and implemented in conversation with other institutions.

However, this infrastructure, with managing agents and distributed responsibility, is decidedly not how Cyclos is understood, portrayed, and communicated. 'Using Cyclos,' the Money Makers repeatedly stress, 'money can be reprogrammed to circulate longer in a region.' This point is made prominently and visibly in the communications and advertising of local currencies. For example, it is mentioned on the website of Cyclos itself, and it is part of the argument that a local currency ensures that the person you give it to will also invest locally—as Tobias mentioned during the entrepreneurs meeting at the start of this chapter. The digitization of alternative currencies also speaks to funders (Lung et al. 2019), as evidenced by the DigiPay4Growth project[79] that piloted Cyclos across a range of European currencies. Within this project, Cyclos is explained as creating 'a system where purchasing power is 'trapped' within a local system' (Martinello 2017). This view of *reprogramming money* which, by virtue of its new features, aids the local economy, is echoed by the users of the Bristol Pound. The owner of a cafe, a longtime member of the Bristol Pound, mentioned during an interview how he 'is very much in favour of a system that keeps money in Bristol.' He described the digital currency as 'an advanced app and payment system that keeps money flowing around here'.[80] In all these instances, Cyclos is portrayed as a dam or a bucket. As

[79] This project is outlined in Chapter three.
[80] Interview - business user Bristol Pound 180309.

such, the software itself, being key in how money should be stopped from 'leaking away', becomes imbued with agentive powers.

In this image, regaining control over the local economy thus entails relinquishing this control to a software program. Like in Engels' parable on the authority of the steam, automation takes over the running of the economy (in Engels example: the factory), but then naturalises the operation of an alternative currency into the logic of a machinery—rather than revealing the organisations that design and manage the software. This understanding of Cyclos, whether it in fact uses algorithms or not, is an instance of what I call 'algorithmic reason'. Digital infrastructures tend to be somewhat of a black box (Seaver 2018). In talking about the way a software programme functions, neither programmers, nor developers, nor its users can identify what, exactly, creates the digital money. Yet, it is Cyclos that ultimately creates the alternative economy. Judith Butler has noted that an economy 'only becomes singular and monolithic by virtue of the convergence of certain kinds of processes and practices that produce the 'effect' of the knowable and unified economy' (2010, 147). These processes and practices, in the case of Cyclos, are made legitimate through its automation. Clouded within its mechanics is an 'authority of the steam', whereby in fact a system is created over which the Money Makers preside both as central banks and ministries of finance. They determine the borders of the currency and track its movement meticulously by means of software. Cyclos hosts the alternative currency, steers its flows, and logs the social pathways it intersects.

This algorithmic reason for a large part propels the imaginative power of alternative currencies. The political design of an alternative currency is different from the design of conventional money by virtue of its existence in Cyclos. In effect, because the locus of power and control is clouded in automation, this transposes the uncontrollability of global markets into a new shape. There is still 'a system' at work that 'makes an economy', yet how it does so and who makes these decisions remains opaque in the way Cyclos is understood and spoken about. Even though the money in digital Bristol Pound accounts is essentially re-labelled pounds sterling, there is a

different measure of control over the monetary flows: the money is designed to circulate within a limited geographical area and it does not, like sterling does, bare interest. The Bristol Pound CIC wanted to institute a conversion fee, but was not allowed to do so. Where the paper money, as non-redeemable vouchers, cannot be exchanged back into pounds sterling, the digital money under the auspices of the credit union is, by law, free to travel back into a 'regular' bank account at any time. This means that the borders of the alternative currency are easily crossed. Yet, still, while it exists in Cyclos, money cannot 'leak' away to financial centres—which are extending loans and commanding interest—because it is tethered to Bristol as much as it is incentivised to flow. These are conscious and purposeful decisions made by the Money Makers, in dialogue with institutions and regulators, rather than with a community of users.

* * * *

In the previous chapter, I introduced the disposition of 'failing forward' and the structural conditions that hinder or facilitate a currency. I visualised the organisational development of STRO, Qoin, and the Bristol Pound in a diagram - which also functions as a list of currency failures. For the Money Makers, the many failures in the history of alternative currencies can also be viewed as success(es) towards an ambitious goal—which is always in the future.

In this chapter, I zoomed into the 'money talk' employed by the Money Makers in order to distil the issue of losing control and regaining control that is central to their world view. The political physiology of money provides a perspective on money that uncovers ideas about what money should do, and how it should be done. Using widely-read practitioner literature, I showed why the Money Makers think the current monetary system is at fault and how it should be remedied. Likening this system to the natural form of a body of water, they hold that when money works well, it flows and does not stagnate. Specifically, it should flow within a contained basin to prevent it from leaking away. In the second part of the chapter I focused on Cyclos and the monetary ecosystem of the Bristol Pound. I highlighted

how the agency of the Money Makers is enfolded into Cyclos, to show ethnographically what the consequences are of the theoretical framing of 'algorithmic reason'. Money, the Money Makers hold, is automatically reprogrammed, to work for the community as soon as it is 'poured' into the black box of the machine, Cyclos. The software is imagined and portrayed as a dam, or a bucket, keeping the flows of money within the city. I showed how the agency of the Money Makers becomes embedded in the rules of a software system, and how this is premised on a political physiology of money that is encompassed in the powerful water metaphor, which the Money Makers use to communicate their ambition to 'make money circulate' in a controlled way in a controlled space.

As the Money Makers work to bring about this ambition, they incorporate themselves into legitimate enterprises in order to secure the financial sustainability of their currencies. The next chapter details how this incorporation positions them securely in a vast field of regulatory constraints and financial oversight.