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The shock of the old: How a local currency's transition from digital to paper deepened monetary conscientization

La sorpresa de lo antiguo: Cómo la transición de una moneda local de digital a papel profundiza la concienciación monetaria

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ABSTRACT: "Now that it doesn't come from the phone, where is the money coming from?" asks a member of Wazee Hukumbuka during one of the farmers' cooperative's community meetings. Silas, a local leader knowledgeable about community currencies, answers swiftly. "As Wazee Hukumbuka, you are paying members for their seeds from a sort of cooperative fund. That's where the money is coming from. It's just that you are not aware of it". Soon after, members excitedly discuss activities and goods to include in the rules governing the creation of their local money: waste collection and up-cycling into fertiliser, a member's honey production, the work of ploughing and weeding the land. They have become aware that how their local currency is issued shapes the social, political and material space in which they live. Building on empirical material produced through individual and group interviews as well as ethnographic participation, this article analyses the process of monetary learning ignited by the transition from digital to paper of a community currency in Aboke, a rural area in Kenya. Inspired by Paolo Freire's *Pedagogy of the Oppressed*, the article develops the concept of "monetary conscientization" as the process that expands the agency of users of money. In Aboke, monetary conscientization was brought about through the transparency of old technologies, which showed users of money how to relate to money politically as issuers of money.

Keywords: local currency; mutual credit currency; monetary silencing; monetary conscientization

RESUMEN: «Ahora que no sale del teléfono, ¿de dónde sale el dinero?» pregunta un miembro de Wazee Hukumbuka durante una de las reuniones comunitarias de la cooperativa de agricultores. Silas, un líder local conocedor de las monedas comunitarias, responde rápidamente. «Como Wazee Hukumbuka, pagas a los miembros por sus semillas a través de una especie de fondo cooperativo. De ahí viene el dinero. Es sólo que no eres consciente de ello». Poco después, los miembros discuten con entusiasmo actividades y bienes para incluir en las reglas de uso que rigen la creación de su dinero local: recolección de desechos y reciclaje en fertilizantes, la producción miel de un miembro, el trabajo de arar y desherbar los campos. Se han dado cuenta de que el soporte en que se emite su moneda local da forma al espacio social, político y material en el que viven. A partir de material empírico generado a través de entrevistas individuales y grupales, así como de la participación etnográfica, el artículo analiza el proceso de aprendizaje monetario iniciado por la transición de lo digital al papel de una moneda comunitaria en Aboke, zona rural de Kenia. Inspirándose en la *Pedagogía del oprimido* de Paolo Freire, el artículo desarrolla el concepto de «concientización monetaria» como el proceso que expande la agencia de los usuarios del dinero. En Aboke, la concientización monetaria fue provocada por la transparencia de las viejas tecnologías, que visualizaban a los usuarios del dinero cómo relacionarse políticamente con el dinero como emisores de dinero.

Palabras clave: moneda local; crédito mutuo; silenciamiento monetario; consciencianción monetaria

1. INTRODUCTION

The Nobel Peace Prize of 2006 was the culmination of a «poverty capital» paradigm (Roy, 2010) in approaches to poverty alleviation. As the prize motivation read «[a]cross cultures and civilisations, Yunus and Grameen Bank have shown that even the poorest of the poor can work to bring about their own development». Providing credit to individuals whose friends and neighbours committed to vouch for them, microfinance was hailed for how it enabled individuals to build on their social capital, entrepreneurial initiative and innovation capacity to «bring about their own development» thus «creat[ing] economic and social development from below» (from the Prize motivation). But, as individual indebtedness rose to untenable levels, suicides spread (Narula, 2011), prompting popular anti-debt mobilizations and scholarly critique of microfinance as a mechanism that, through the financialization of communal relations, transfers wealth from impoverished populations to global financial actors, thereby intensifying exploitation, extending debt-enslavement, and eroding communal solidarity (ex. Karim, 2011; Federici, 2014).

Acknowledging the critique of microfinance and alongside the diffusion of communication technology, a new paradigm has come to dominate the field of poverty alleviation – one Bill Maurer calls «poverty payment.» Poverty payment refers to the «idea that the design of digital platforms for the transfer of value, agnostic as to what value is being transmited […], has positive spillover effects that ultimately benefit poor people» (Maurer, 2015:129); hence the development industry's turn to fintech. Whether it is to facilitate remittances and cash-transfers or to extend banking services to the unbanked, fintech is seen as building the payment infrastructures that will enable the inclusion of vulnerable communities into global financial flows, thereby – it is assumed – contributing to economic development and poverty alleviation (see, Arner *et al*., 2020; Makina, 2019). Shifting the poverty problem from capital to payment infrastructure, the new development paradigm reframes money as the technology of value transfer, which involves the «rails or pipes» through which value flows and the terms through which that value is denominated.

Indeed, within the variety of fintech, hopes are particularly placed in mobile money technologies that allow the unbanked to transfer, pay and save value – denominated in national currencies or other (Roca *et al*., 2023; Ussher *et al*., 2021) – with their phones, M-pesa constituting the epitome of the fintech-led revolution. Launched in 2007 by Safaricom – Kenya's telecom operator –, by 2016 over 96% of households used M-pesa regularly to pay for daily purchases, save in traditional savings groups and transfer money to relatives and friends (Suri & Jack, 2016). The speed and scale of adoption led actors in the «fintech-philanthropy-development complex» (Gabor & Brooks, 2017) to praise mobile money as an effective development intervention with low infrastructural and investment requirements (Ndung'u, 2018). And yet, anthropologists studying the use of various fintech innovations, mobile money in particular, describe how, bridging formal and informal economies, these new payment infrastructures assimilate local savings groups and mutual help networks into new credit markets, contributing to further subject individuals to poorly regulated digital loans, expanding over-indebtedness among vulnerable communities, and rearticulating flows of extraction towards new private actors in the payment and credit landscape (Foster, 2024; Rodima-Taylor, 2022; Park, 2020).

To the financial focus of microfinance's «poverty capital» paradigm, fintech's «poverty payment» paradigm adds techno-reach and speed; the result are techno-financial infrastructures that further entrench dependence of poor communities on the monies, technologies and practices of a larger set of external actors. Far from promoting «development from below,» fintech imposes a form of «development» that is rather subjugation from the top. Additionally, this article argues, the invisibilisation of the payment infrastructure that comes with its digitalisation makes poor communities further dependent on the knowledges, understandings, and economic paradigms of the fintech-philanthropy-development complex. But, instead of making the argument by way of observing and critically analysing the workings of fintech, the article builds its argument by examining the workings of old pen-and-paper payment technology in Aboke, rural Kenya. The analytical contrast is made all the more revealing by the fact that, while fintech is imposed from outside, the old technology emerged as a spontaneous response to the limitations that Aboke farmers were experiencing with their local digital payment infrastructure.

In Aboke, switching from a «modern digital technology» to old paper-records shocked community currency members with a new understanding of how money and payment work – what I call «monetary conscientization».

The epistemic shock of the old aroused questions concerning the origin of money («where is the money coming from?»), the rules for its use («can we pay for services?»), the value of money («value is not on the paper») and the worth of community. The visibility, manuality and everydayness of recording payments as they went about their tradings gave villagers an intimate insight of how the local currency in which transactions were denominated was being created as they traded and paid. And, as trading and recording continued, villagers realised the space for action they had as money users – steering how money moved through monitoring value-flows, informing pricing practices and instituting market days in the local currency – and as money issuers – deciding how much money to create and what for. That is, in contrast to the dependence-building and subjugation dynamics entrenched by microfinance and fintech development strategies, in Aboke, an old technology open up the mechanics of money and payment, thus devolving agency and empowering the impoverished.

The article builds on empirical material coming from ethnographic observation as well as individual and group interviews conducted during three visits to Aboke during the fall of 2023 and spring of 2024 as villagers were moving their local payment infrastructure from the mobile phone to paper records. Findings suggest monetary conscientization had already started with the introduction of the digital local payment system yet deepened with the transition to transparent paper records, an «old» technology that visualised for local money users how to relate to money politically as money issuers. The article ends with a discussion of the potentially larger consequences of the democratization of monetary knowledge induced through involvement in community currencies in general, and paper-based community currencies in particular.

2. MONETARY KNOWLEDGE AND LIBERATION

Whether in the Global North or the Global South, the vast majority of people relate to money as a «thing» that we either have or do not have; something we work hard to acquire and that, despite painstaking economising efforts, we seldom seem to have enough of. As users, we experience money as an external object that we can earn, save and spend, borrow and repay. In a monetary system where our only possible role is as money users, our economic agency is reduced to that of workers, savers, consumers, borrowers and investors. It, too, induces us to understand money as a thing, a commodity whose origin lies outside our everyday activities; it is either there or it is not. Few stop to question where this money comes from, how it is created, on what basis, for what purpose, and by whom. An understanding of money as a thing not only reduces our economic agency to that of money users struggling to acquire and retain it, it also prevents us from understanding how money works, or rather, how money is *made to work* (Barinaga, 2024). Blind to the internal design of money, ignorant of the money creation process, unaware of the continuous need to manage money to meet the changing needs of an ever-moving economy, we are thus unable to articulate political demands about how money *should be made* to work.

In *Moral Economies of Money*, Jakob Feinig coins the term «monetary silencing» to refer to those knowledges, practices and processes that «reduce money users to individuals who have no role in shaping money creation» (Feinig, 2022, p. 9); processes that disconnect money users from knowledge about how the form money takes shapes the socioeconomic dynamics of the community that uses that money; processes, therefore, that deprive individuals and communities of any possibility of agency over the institutional form of money and thus its role in the constitution of their society (Desan, 2014). Feinig shows, too, that such state of affairs has not always been so. Through a wealth of examples from North America's history, Feinig describes institutional arrangements that made the money creation process visible to the wide population: pay tokens and bills that mentioned the purpose for which they had been created, identified the legislation that authorised them, and named the treasuries that received them in payment of taxes; elected settlers' and state assemblies that governed the «printing, signing, distributing, and burning of currency» (p. 68); Treasury currencies issued directly into the hands of money users to fund war efforts. The visibility of the money creation process enabled widespread monetary knowledge, enhancing voters' capacity and willingness to take part in the politics of monetary design and policy: from settlers' setting ablaze a warehouse to revolt against the decreased quality of the tobacco backing the notes, or their demand that money be issued against landholdings, to union farmers marching to protest against Federal Reserve's credit restriction during the Great Depression.

In contrast, today's institutional arrangement hides the money creation process from the general population and their elected representatives. Indeed, a poll conducted by *Positive Money* in 2017 among members of the British parliament found out that as much as 85 per cent of them did not know who created the bulk of our money, nor how money was created or what it was created for (Clarke, 2017). A survey administered to 23,000 citizens in 20 countries representing 75 per cent of the world economy showed the general public was similarly ignorant. To the question of who they thought created more than 95 per cent of the money in circulation, 20 per cent of world citizens compared to 15 per cent of British parliamentarians correctly answered 'private/commercial banks'. Financial professionals, who directly or indirectly work with money creation, knew only slightly better, 26 per cent of them acknowledged private banks' central role in creating the vast majority of our conventional money (Lampert & van Tilburg, 2016). Today's opaque and distant monetary institutions alongside confused rhetoric on money disconnect money creation from public knowledge about it, thus depriving money users and their representatives of the possibility to exercise political agency in monetary matters (Valayden & Feinig, 2022).

A journalist from the US antebellum period succinctly captured the direct relationship between the degree of visibility of the monetary process and the nature of monetary knowledge a population holds: «the money circulating among the people is a powerful educator. It teaches either truth or falsehood» (in Feinig, 2022, p.82). In Feinig's many US-centred historical examples, two dimensions of money seem determinant for its visibility and thus, general intelligibility. The first relates to the territorial proximity to the populace of the monetary institutions and authorities. The second concerns the possibility of the people to democratically participate in the monetary decision-making process. It is their smaller, proximate scale and their governance by popular assemblies that turned the currencies of North America's Colonial era into «monetary schools», empowering settlers to politically articulate monetary demands with the ambition to shape society and their position in it. Similarly proximate and participatory, today's complementary currency experiments not only constitute, by themselves, a different way of doing politics (Dini & Kioupkiolis, 2019), they too serve as spaces revealing the malleability of money (Barinaga & Zapata Campos, 2023) and thus hold the potential to enlarge money users' political agency.

Inspired by Paolo Freire's notion of *conscientizaçao*, this article develops the concept of «monetary conscientization» as the process that reverses monetary silencing and enables money users to conjure up monetary agency. In *Pedagogy of the Oppressed* Freire uses *conscientizaçao* to refer to the critical awareness that awakens when people learn to see the social, political and economic conditions that shape their reality and their position/situation within it. Learning to see themselves «in a situation» dilutes the dense reality that oppresses them, transforming it into an «objective-problematic situation» that they can instead act upon. As the oppressed critically reflect on the situationality of their existence, they «acquire the ability to *intervene* in reality as it is unveiled» (Freire, 2006/1970, p. 109, italics in original). In Freire's pedagogy, the epistemic process of conscientization is tightly connected to the emergence of empowered agency, and thus to the possibility of the oppressed becoming agents of their own liberation.

Following Freire, I use the term «monetary conscientization» to refer to the epistemic process that expands the agency of money users in their roles as both users and issuers of the currency. Countering monetary silence, monetary conscientization consists of practices and processes that reveal for money users knowledge about the relationship between the form money and payment takes and the socioeconomic dynamics of the community that uses it; practices and processes, therefore, that empower individuals and communities to take agency over the institutional form of their money and thus of their money's role in the constitution of their society. To proximity and participation as two qualities of the monetary system that enable monetary learning, the events that unfolded in Aboke as they moved from digital to pen-and-paper payment technology highlight the manuality of the technology as a trait that visualises the money creation process, furthering monetary conscientization and therewith politico-monetary agency.

The argument that digital payment technologies hide monetary processes to the detriment of those the technology is supposed to empower is not new though. To take but a few examples, Janet Roitman (2023) points at how mobile money applications hide the financial process that keeps the unbanked at the margins of the monetary system; Daivi Rodima-Taylor (2022) unveils the ways in which FinTech commodifies traditional local social networks for the profit of global private capital; Vincent Guermond (2022) traces the way in which the digitalisation of remittances diminishes the capacity of the migrants who send and the recipients who receive to strategise economic and social reproduction. Indeed, scholars working in the field of financial inclusion and FinTech in Africa have exposed many of the ways in which the invisibility of financial and payment technologies rests on uneven economic conditions, extends extractive colonial relations, and perpetuates racial and political domination (see Langley & Leyshon, 2022; Langley & Rodima-Taylor, 2022).

This article builds a similar chain of argument: first, the degree of visibility of the money creation and transfer processes; second, shape the character of knowledge about money (explicit and public, or tacit and secluded); finally, opening (or closing) the possibility of politico-monetary agency. Yet, the article builds its argument from a directly opposite starting point: instead of focusing on money silencing, the article focuses on money conscientization; instead of looking at novel digital technologies, it investigates the knowledge transmitted through the use of old fashioned pen and paper technologies; and, lastly, instead of eliciting the ways the digital money-tech assemblage further exploits the already dispossessed, it points at the ways the paper money-tech assemblage contributes to emancipate money users from financialised networks of extraction and oppression. The form of reasoning is thus symmetrical yet reverse: if digital technologies contribute to hide monetary processes, impoverish general knowledge of money and thereby reproduce extractive and oppressive practices, technologies that open the money creation process to the scrutiny of its users should help advance monetary knowledges that are potentially liberating. Reversing the point from which the argument develops does, hopefully, help us elucidate an epistemic trajectory for emancipatory monetary action.

3. A LOCAL CURRENCY COMES TO ABOKE

Located in Siaya County, northwestern Kenya, Aboke is home to some 250 residents. Subsistence farming driven by small-scale land-holders is the main economic activity, amounting to over 60% of employment opportunities in the region and taking over 75% of the County's arable land. The rest of the region's arable land remains for the most part idle (Juma, 2019). Aboke's position some 25 km. from Lake Victoria – the third largest fresh-water lake in the world – gives it an enviable humid climate and two seasons of reliable rains. Although Siaya County is home to lakes, rivers and swamps, with inexistent irrigation infrastructures and with inadequate water harvesting and storage, over 90% of agricultural production is rain-fed, a highly risky mode of farming to which neither established banks nor micro-finance institutions are willing to extend credit.

It was against this context of unused resources (idle land and unemployed labour) co-existing side-by-side lingering hunger and money scarcity that, in January 2022, Wazee Hukumbuka (WH) – a cooperative of 17 farmers at the time – asked my colleagues and I to help them introduce a local digital currency. Funded by The Danish Ministry of Foreign Affairs, we had been studying local currencies in Kenya and helping communities in Western Kenya introduce their own currency since 2019 (see Barinaga & Zapata Campos, 2023).

In February, we trained WH's members to set up the currency and payment infrastructure in their phones; and by the end of March, they were using Aboke-pesa (Ap), a digital currency with a mutual credit design. Probably the most common monetary design among community currencies – for examples, see the WIR (Vallet, 2016) and Sardex (Bazzani, 2020) – mutual credit currency systems build upon the triple idea of 1, a group of individuals agreeing to buy from each other; 2, group members granting each other individual interest-free credit lines up to a limit; and 3, these credit lines being denominated in the group's own community currency. This means that a group member can trade with other members even when s/he has no conventional money and the balance recorded in his/her individual community currency account equals 0. In such a situation, the system records a debt in the buyer's account and a credit in the seller's account, thereby creating money as they pay.

This type of money, that is, is created as group members trade among themselves, while debts and credits are cleared as trade carries on. This implies that in a mutual credit system money users act, also, as money issuers. The possibility for them to issue money as they go about their trades makes them independent of external actors to access this kind of money. By deciding the level of credit to grant to each other and by realising those credit levels through trading relationships, the community of money users are de facto making decisions on the money supply.

By September 2022, the currency was used by some 36 persons and their gross expenditure for the last quarter of that year amounted to 16,832 Ap. Though a relatively small expenditure, those using the currency were growing increasingly aware of how money circulated in their community. As Jane put it, «before Aboke-pesa, I bought in Kenyan Shillings, but that did not benefit me because money is going away. I didn't understand this before, but after the teaching by other members, I was impressed.»

Use of the digital local currency multiplied discussions about money, community members progressively realising the paths through which conventional money left their community.

> We wrote lists of what we sold and what we were buying from outside. We asked members 'what do you spend money daily on?' The majority had cooking oil. We found that oil was in every family's list and this was when [the price of] oil was sky-rocketing [following the war in Ukraine]. – Silas, February 13, 2024

To arrest Kenyan shillings from flowing out of Aboke, farmers decided to plant sunflower and produce their own oil. In May 2023, sunflower grew throughout Aboke. By June, the number of farmers members of WH had boosted to 149. We helped them find funds for an oil-press and, in September, a sunflower oil-press was installed. By December, WH counted 240 members. The rapid growth of members in the farmers' cooperative brought however a radical technological transformation in their local currency: it moved from digital to paper.

3.1. ABOKE-PESA MOVES FROM THE PHONE TO PAPER LEDGERS

It happened spontaneously. The number of villagers wanting to join Aboke-pesa was growing yet few of them had mobile phones, let alone smartphones. Alice – a member of WH – came with a creative solution. She bought a notebook and recorded members' transactions in it: negative figures for buyers' expenditures, positive figures for sellers' earnings; each recorded transaction denominated in Ap. A similar development happened at WH's office. As a formula to integrate their sunflower-related productive activities with the local currency, the agreement between the farmers' coop and its members was that the cooperative would buy the seeds and pay for them partially in Ap. WH would then process the seeds into oil and sell the oil to its members also partially in the local currency. Once more, however, lack of phones limited the possibility to exchange and WH started recording payments on loose pages neatly collected in colourful folders.

When I visited Aboke in September 2023, villagers were brimming with questions. How could they better integrate the activities around seeds and oil production with stronger use of Ap? Should bigger farmers, with stronger buying and selling capacity, have higher credit and debit limits? One question troubled them most. WH was paying farmers for their seeds in Ap. «Now that it doesn't come from the phone, where is the money coming from?» A still embryonic, rudimentary transition from digital to pen-and-paper ledger money was provoking profound questions on the creation, management and social life of money.

Up to this moment, the epistemic process farmers had undergone followed a steady progression in their degree of monetary conscientization. Along with it, villagers ceased to relate to money through apolitical acquisitive practices, and started to understand and relate to money politically. Through the mere introduction of a local currency, villagers gained an understanding of the political character of money use. As money users, monetary conscientization resulted in localising consumption patterns as well as augmenting the range of products they farmed (to include, among others, sunflower for oil processing), which in turn led to a growing number of villagers willing to enrol in the local currency. To accommodate to the lack of phones of many of these new members, the community spontaneously moved Ap to paper ledgers (passbooks). The change in technology prompted further monetary conscientization, as they started to understand themselves as money issuers. It is to this development in awareness that I now turn.

4. VISIBILITY AND MANUALITY OF MONEY CREATION AND USE

Analysis of empirical material revealed *visibility* and *manuality*[1] as two crucial aspects of the new money, contributing to deepen monetary conscientization. The need for members to manually record their transactions in their own

1 I coin the term «manuality» to refer to the practice of performing tasks *by hand*. From the Latin *manus* – hand –, I use manuality to indicate the manual character of a process, in this case, the process of producing money and of recording trades.

ledgers and to verify the correct recording in their trading partner's passbook situated all members in the midst of the mechanics of issuing and using the local currency. What the digital technology had done automatically and invisibly, they now had to do manually and visibly. At first, mistakes were common regarding the positive and negative signs on the records. They learned quickly, as they traded, recorded and validated their counterparts' records. Seeing the numbers move up and down in their passbooks triggered further learning regarding their roles as both *users* and *issuers* of money.

4.1. DEEPENED CONSCIENTIZATION AS MONEY USERS

As money users, a deepened understanding of how money worked manifested at two levels: 1, at the individual level, members gained a more intimate knowledge of the financial process of their particular business; 2, at the collective level, their market transformed from a space of competition to one of cooperation.

Individual level: Business Monitoring and Financial Literacy

Manually recording every trade on a paper-ledger visualised their cash-flow in real time, giving them a moment-by-moment picture of how much they had to spend or needed to sell. Rose put it succinctly: «the book teaches us to keep records, if you buy and sell, it helps you learning how you go with your trading». Alice, pointing to the line-by-line records in her passbook, was more detailed in her explanation. Michael translated:

> «She says she now monitors how her money moves, what she earns, spends, and saves. She can now keep track of the business process at each stage by looking at the records, she is able to detect some growth in her business or not. The passbook helps tracking how business is moving.»

Silas similarly stressed the importance of visibility in understanding business performance:

> «The passbook has made it easier to understand how money is created. You see the negatives and the positives whereby you know money is going out, money is coming in. You can actually see the tradings. In digital, you do something but you don't make the brain think. You are just trading but you don't understand how the trading is working. With the paper, it opens up your mind. It makes you understand how money works, how you are trading.»

The possibility to monitor their business had an immediate impact on their financial literacy, as they now understood how much they earned relative to spending. Silas continued:

> «There are people who have been doing business in the market and they have been trading all along, and they don't know if they are making profit or loss; trading is just a routine. Like my mum used to trade, she could trade and at the end of the day, she buys fish or something with the money that she's earned and when it comes now to buy again, she doesn't have money and you have to send her money again. But with [the passbook], they are also learning about profit and losses, how to balance when you're trading, meaning that when I buy this, I'm supposed to sell. This is my profit, that I can eat, and this is my capital, that I cannot use.»

Increased financial literacy made them aware of the need to balance their trades. Silas recounted: «They started balancing, and then they started being cautious of the profit, and cautious of the capital. Because, the profit margins for most products here in Kenya are quite minimal». Such financial awareness had the immediate effect of members strategising their pricing practices. Lilian shared:

> «[at the Aboke-pesa market] we talk about balancing. I buy avocado and sell milk, so everything is balanced. Unlike Kenyan currency, you're forced to inflation and so you don't have much money. Example with fish. You cannot buy fish now so you have to buy omena [a tiny fish] to feed your family. But in the group, you can buy fish partly in Ap, partly in Shillings. So even if prices go up, you still can buy.»

To facilitate members balancing their trades, members agreed to organize regular market days in Ap every Wednesday, at which I observed intense and joyous haggling. Silas later explained:

> «[the passbook] has also enabled them to understand how they need to operate their businesses in terms of profit and capital. You notice when you are in [Ap] market day, you could hear arguments [I twitch my face and raise my shoulders to gesture that I hadn't understood the conversation]. Maybe they were speaking luo. The arguments are more on negotiating prices. And when they negotiate the prices they negotiate with the profit in mind [eb. Hm, which they didn't before?] Initially they were not doing. Before, it was just 'I send you this much, give me' and the other person is happy because it is a phone, meaning he has some money in his phone.»

Cash-flow, profit, capital, margins, balancing – all these were new concepts members learnt as they manually recorded their trades in the visible paper. What appeared to be an innocent transition from «modern» digital to paper records provoked a process of deep individual learning about the cash-flows of their business that strengthened their ability to improve their economic situation. In a process that unfolded as they traded, the visibility of the calculations ignited epistemic awareness that strengthened their agency as money users.

Collective level: A sense of community

Sociologist Viviana Zelizer (2001) and local currency scholars (Bazzani, 2020; Fare & Ahmed, 2017) have identified local currencies as prototypical examples of commercial relationships that, far from the impersonal markets and cold money often portrayed in economics, are imbued with values of caring for one another and a sense community. In this respect, the sentiment of «togetherness» Aboke villagers expressed was independent of the transition from digital to paper. However, transition from digital to paper highlighted the role that the materiality of the monetary technology plays in the construction of this sentiment.

Indeed, implicit to the individual epistemic process provoked by the transition to paper was a realisation of inter-dependence. One's possibility to trade in the local currency hinged on the willingness of other members to accept it in payment for their goods. Often, members praised the local currency for the possibility it enabled of buying food despite their lack of conventional money, which was contingent on the existence of a market in Ap. While this was the case whether the local currency was digital or paper-based, the need to record one's trade *and* validate one's counterpart's brought the physical market into existence. As Silas explained:

> «With digital, it doesn't need energy or time to do the transaction. But with paper, you see people have to sit down. It has brought the concept of a market day where goods are brought together and they trade. […] With the phone you could trade even if you were far.»

Alice confirmed Silas description (Michael translates): «it has brought them together; because they now come together with items to sell. This was not possible before.»

Held every Wednesday, «Aboke-pesa market» has become a regular event, members eagerly anticipating the different foods they can buy in Aboke-pesa that they wouldn't have bought in Kenyan shillings. Jane recounts:

> «This [Aboke-pesa market] has changed things for my family. With Aboke-pesa, I go back with different food: banana, oil without chemicals. It's a big change to me. My children say 'mum, when you go on Wednesdays you come with different food, different vegetables.' They're happy. It's a big change. Even money. I have money every time because I am able to sell in Aboke-pesa and I always have Aboke-pesa. This money is doing something.»

The regularity of the market and the joy of being able to provide a more varied family diet thanks to each other has led to an appreciation of their mutual dependency. Lilian encapsulated such insight matter-of-factly: «we exchange commodities among ourselves, the group comes together, there is team-work.» Mathilda, an elder illiterate woman, expresses it more distinctly (Lilian translates): «She knows that what she doesn't have, she'll get in the group, and what she has helps somebody in the group. So the togetherness is being built there, in the trading with Aboke-pesa.»

For Aboke-pesa users, the satisfaction of food and other material needs thanks to the local currency is no mere trading relation that ends when the exchange is completed. Acquiescing to trade in Aboke-pesa implies committing time to meet regularly, learning of others' economic needs and at times prioritising their needs over one's own by selling in the local currency instead of in conventional money. The market transforms from a space of competition to one of cooperation and care. Shedrack explains and Lilian translates:

> «When they were in WH before Aboke-pesa, they used much Kenyan money, but with Aboke-pesa, you can get things even if you don't have money. […] they got ties as friends; it got them together as a community. You see your neighbour as friend instead of as enemy. […] there is a friendship among those members using Aboke-pesa; not as much with the other members [of WH who do not use Ap].»

During the group interview, Shedrack explains the difference between barter and complementary currency in terms of the sense of community the later engenders. Silas translates:

> «As a child, his mother sent him to sell cassava to the market and he would be given fish. So he exchanged cassava for fish, no money. But Aboke-pesa has brought them together; they buy and sell many products and has deepened their relationship. The other one, there is no relationship. It was just exchange of cassava for fish and that was that. This has brought them together, they want to trade with each other.»

«They *want to* trade with each other» – such feelings were often adduced, and many emphatically affirmed to remain in WH precisely because of the friendship, the care, and the mutuality that they found in their markets. Bita, «the honey man,» put it typically (Lilian translates): «He lives far from Aboke, but trade relations make him stay. When WH started, there was no Aboke-pesa. He stayed because of the trade relations.»

Transitioning to paper technology posed a number of challenges for illiterate members – typically the eldest among them – as well as for many members who had difficulty adding and subtracting. Indeed, arguments for promoting fintech to address poverty in the Global South are based specifically on the digital technology's ability to reach the illiterate (Donovan, 2012). In Aboke, however, it was precisely two characteristic aspects of paper-based technology – visibility and manuality – that projected members into regular, intimate, and caring trading relationships. The need to record and validate each other's passbooks required them to share time and space for trading; it also forced them to understand each other's businesses and economic circumstances, thus leading to the development of a sense of community. With the notion of «togetherness» they pointed to a new sense of belonging and possibility; a sense that further developed as they became aware that beyond money users, they were also issuers of their own local money.

4.2. NEWFOUND CONSCIENTIZATION AS *MONEY ISSUERS*

For a majority of members, the most startling insight triggered by the transition from digital to paper was the epistemic realisation of their power to create money. Rose's marvel is representative: «It's wonderful! Because you start with 0 [in the passbook] and then you have something to put in your pocket. So you can't go empty; you can bring home something to eat.» The visibility and manuality of the paper ledger evidenced that «money is not coming from the phone» but rather that «we are creating it ourselves». The perceptual shift from being mere users of money to also becoming issuers of that money manifested, at the individual level, in a sense of awe. At the collective level, their newfound awareness as money issuers opened a space for monetary agency that gave way to two collective debates: the first concerned the group's money supply policy; the second concerned the value of money.

Individual level: Epistemic shift

Members repeatedly expressed the importance of the manual recording of transactions in developing a new kind of knowledge about money. The fact that conducting transactions was a slow process visible to all helped them both to understand how local money was created and to reflect on their role in creating it. Charles put it concisely:

> «With the passbooks you can see your neighbour doing it and you do it, he signs and you sign. So you see you're making your own currency. You can buy by making your own currency without using Kenyan shillings.»

Stephen similarly stressed the importance of the manual nature of paper-passbook money:

> «It changes how we think of Aboke-pesa because we have to work our mind, we have to do it practically, every time.»

The manual and visible mechanics of «making your own currency» gradually shifted their understanding of the local money. This resulted in fewer questions to the cooperative's management team as well as in enhanced trade. William, president of WH, expressed relief:

> «Because of the overdraft in the phone, we thought that the 500 limit we had we could withdraw [convert for Kenyan shillings] and use it. Just the way M-pesa works. People were asking, 'I cannot withdraw this?!' But now, with writing on passbook, now they understand we cannot withdraw it; we create it ourselves. There are no more questions coming to us [WH management]. With digital there were sooo many questions on how I can withdraw this money. Since the passbooks started […] that question is not there any more. […] it has become much easier to trade.»

Silas confirmed William's observation:

> «With digital, they thought of it as M-pesa because it is common here to buy goods and services with M-pesa. The digital concept was 'we trade through the phone'. So this is like M-pesa. So they thought someone was coming and putting money in their phone. But they couldn't convert it! It didn't bring clearly that people were creating their own money. You don't get to understand how it is created from back of the phone. As a layman you don't get it and the only common way to look at it was M-pesa.»

With the new understanding of the local money and of their power to create it, they started to perceive it as a tool to loosen their oppressive dependence on conventional money. Alice complimented:

> «I'm grateful that you came here. You made us think differently about money. [eb. In what sense differently?] For example, in the area of access to basic food items, it is easy now because you do not depend on Kenyan shillings; it's just a matter of exchanging and using Aboke-pesa.»

For some members – admittedly, still far from most – the epistemic shift prompted them to think beyond Ap and critically assess the value of the national currency on which they depended. Silas was one of the most sophisticated in his critical awareness. Regarding the value of conventional money, Silas meditated on a discussion he had had a few days earlier with WH's management team:

> «You are able to transact by just writing. That's money! You're exchanging goods and services through just writing in a book, whereas before you would have looked for money to exchange. It creates that awareness. […] it makes you think that when you look at the value of Kenyan shillings, it is all paper. Through this, it has made me think that it is not even about the value of the thing that is used for trading. Like before, there maybe was gold and silver that gave it value. But currently, the value is not on the paper per se.»

Pointing to her passbook, Alice articulated the space for monetary agency that such an epistemic questioning of the value of conventional money was opening up for them:

> «this is just a book, but maybe having something small, like notes labelled 20 or 10 Aboke-pesa so we can use them the same way we use Kenyan shillings. How could we make them be used everywhere?»

Although Aboke-pesa was still a small local currency with reach among farmers without formal education, the transition from automatic digital technology to manual paper-based passbooks triggered a profound learning that shifted the paradigm through which they conceived money. Money ceased to be a thing someone external sent to their phones, to become the evidence of trade relationships they conducted and recorded in the passbook. The epistemic shift provoked by an old-fashioned technology, precisely because of its «old-fashioned» characteristics – being manual and thus making the internal mechanics of money creation and transfer visible – went beyond simply rethinking their own local currency to provoke a critical reflection on dominant money. This had implications for the monetary agency they now felt they had collectively.

Collective level: Governing the monetary supply

Gradually, as they repeatedly performed – and recognised – their role as money issuers through the manual recording of their transactions, they began to take collective steps to intentionally exercise monetary agency. In particular, this took the form of intense debates about 1, the debit/credit limits of individual accounts and 2, the uses of the Community Fund. In other words, they discussed how to manage the money supply – How much to issue? What for? And to whom? Such discussions were not simple pleas for more external money. Rather, they were sophisticated discussions that tried to figure out how various monetary policies (implemented through account limits) would affect community dynamics.

First, the debit/credit limits of individual accounts. While several members deemed the limits too low – «the limit is very small, so [I] cannot buy everything from members» – they nonetheless acknowledged their significance in compelling them to trade back – «if I'm at +480, I am locked, I cannot sell more because of the 500 limit, so I need to buy to be able to sell» – and avoid debt – «I am not overspending when using Ap because of the limits». Indeed, most members showed awareness of the multifaceted effects limits had on their trading dynamics. This provoked engaged discussions concerning the level of the limits of individual accounts. The following exchange is enlightening. WH management along with several members were considering whether to double the standard limit from 500 to 1000 Ap:

> «Silas: the limits have been helping group members to keep trading. If you increase to 1000, the member just continues buying, buying, buying so he ends up owing the community a lot. Maybe we should ask, has there been any member not able to trade because of the limits?
>
> William: I want community members to have ambition, to be big businesses, so I say we should increase to 1000.»

Doubling individual limits means the possibility, as a community, to double the money supply which, they realised could facilitate business growth but also increase individual members' indebtedness. The discussion testifies to monetary conscientization of the responsibility that comes with the possibility to create one's money. The discussion however continued to consider their factual use of the currency. Silas intervened:

> «the problem is that we are not aware of the effects of limits. [the conversation turns into luo, more members get engaged, and the volume raises. After a while, Silas summarises in English] we saw that on average, [as individual businesses] we accept only 10% of the price in Ap. […] And now the chairman [William] says that 500 limit is ok because we want to be trading much in Ap.»

Firmly grounded on close observation of members' trading practices and money use, the group connects the discussion on money creation to their collective commitment. Epistemic monetary awareness enables members to relate money supply policy to their practice as money users (percentage of price accepted in Ap); the underlying question being, how are we going to use our individual capacity to issue money? Debate on the specific user-issuer relation took the form of what percentage of the price to accept in Ap relative to the issuance capacity enabled by the limit. After lively deliberation, Silas observed:

> «Now, accepting only 10% in Aboke-pesa doesn't have much impact. The trading in Aboke-pesa is small, the savings we have in Kenyan shillings are small. So, the discussion now is, are we ready to increase the proportion of Ap from 10% to 30%? Because that would allow for more trade within the community.»
>
> Alice answers in Luo. Silas translates: «She has a good example. She buys oil in bulk from WH. If we have a low limit, she cannot buy a large quantity from WH. So this example brings up how we

> anchor Aboke-pesa in oil production. The discussion of proportion of prices in Aboke-pesa is a discussion of how we as a group are limiting our businesses.»

Apart from their productive capacity and their individual commitment to Aboke-pesa, another factor they considered when debating changes in limits was the fairness of various policies. For example, when debating the possibility of higher limits for members with larger businesses, Silas questioned the potential effect on inequality within the community: «does it become advantageous for the person with the higher limit?»

Eventually, after two weeks of debate, members collectively agreed to raise individual limits to 1000 parallel to a requirement of at least 30% of each transaction being conducted in the local currency. The debate on limits, that is, was not merely a debate on how much members could spend as individual money users. It was a debate through which they critically reflected on the relationship between money use and money issuance, a relationship first made visible with the paper-passbook.

The second debate brought by their newfound money issuance awareness concerned the communal activities against which WH Community Fund would create the currency. As a community, the first decision they took when they moved onto the passbooks was to coordinate sunflower oil production with their Community Fund, WH buying the seeds from members in Ap and selling the pressed sunflower oil back to members in Ap. Two other areas they were discussed in order to strengthen the community through their money issuance capacity waste management and farm labour. Silas recounts the previous day's communal conversation:

> «One area that we did not capture was services. They were focused on products and forgot services. […] Hand-driven plowing machine that is cheaper. The big machine they talk about costs millions. […] WH could own the hand-driven machine and then pay people with Aboke-pesa to plow farmers' plots.»

In linking money issuance to job creation activities, Silas demonstrates a heightened awareness of the space for collective agency opened up by their newfound ability to create money. Women also recognised this possibility. Echoing scholarly analysis of the gendered dimension of money creation (McCaster, 2018; Jennings, 1994), monetary consciousness provided women in the community with a new opportunity to advance equal conditions. Lilian and Jane coincided on the gendered division of tending work at funerals and the counter-agency enabled by the ability to issue currency:

> «*Lilian*: We need to widen. Like funerals, catering for funerals. Imagine. You're bereaved, don't have money, and you have lots of expenses in Kenyan shillings. So instead we could use community currency and not Kenyan currency for the catering in the funeral.
>
> *Jane*. I didn't know you [Lilian] had catering! We have to start an 'Aboke-pesa catering group'. If you already have the equipment [Lilian: I have tent, chairs, cooking utensils for catering], then why are we not using Lilian for the funeral this Saturday?!
>
> *Lilian & Jane*: we need to talk to the community about this.
>
> *Jane*: Full combat!»

Because the passbooks required manually and repeatedly recording the monetary transactions on paper, members gradually gained awareness of their collective power to create the local money. The epistemic shift was rapidly reflected in intentional policies to connect the money supply to the promotion of activities that benefitted community, either through enabling employment generating activities or through further savings of Kenyan shillings. Silas words provide a laconic overview of the direct relation between (1) visibility of the money creation process, (2) character of monetary knowledge, and (3) shape of monetary agency: «Digital limited growth of the community currency because they didn't know they were creating money. It only helped when the passbook came».

5. DISCUSSION: MONETARY CONSCIENTIZATION

Impoverished populations in the Global South are the object of multitude development projects that entrench a logic of dependence and oppression. Whether these be financial literacy initiatives that make them passive recipients of someone else's knowledge, philanthropic cash-transfer programs that address them as beneficiaries of someone else's money, microfinance products that turn them into grantees of someone else's credit, or financial technologies that includes them as users of a technology governed by someone else, such efforts to extend knowledges, monies, financial products and technologies to the poor simultaneously objectify them into a categorical group that needs external help and devoid them of agency to themselves change their world. Well-intentioned as these development initiatives may be, they however reproduce a dichotomy of givers and takers, benefactors and beneficiaries, teachers and learners that position poor populations as dependent on external actors, thus perpetuating power relations that are at the root of their oppression. Monetary silencing becomes the condition enabling the reproduction of oppressive and extractive relations, for lack of knowledge of how money is created reduces the agency of the poor to users of other people's money, and who therefore can but passively accept their subjugation.

In contrast, the introduction of a local currency issued by those who were to use it opened up the possibility for the poor to become active participants in their own liberation process. Coexistence of two monies made them aware of how differently these monies circulated in the community – national Kenyan shillings swiftly flowing out of the community; Aboke-pesa remaining locally for the benefit of the community. The epistemic process ignited by the new money from its digital inception translated into farmers' decision to farm sunflowers and cooperatively coordinate sunflower oil production. Though still incipient, conscientization as money users expanded their agency, enabling them to shape their socio-material space.

The monetary epistemic process sharply accentuated when members spontaneously moved the local currency from the digital payment platform to pen-and-paper passbooks. Not only did the technological change make villagers independent from external technology providers. Forcing members to manually record their trading activities, the old technology made the money creation process visible for all. Repeatedly, every time they recorded a payment and validated one's counterpart's records, members learnt to read cash-flow movements and understand the financial needs of their businesses. Every recording act evidenced their capacity to both use and issue money, thus reminding them of their socio-economic interdependence, animating a sense of community, broadening their collective political horizons, and bolstering their capacity to be designers and actors of their own social transformation process. In other words, the shock of the old manifested both as epistemic shift and as agentive catalyst.

The events that unfolded in Aboke as they moved from digital to pen-and-paper payment technologies highlight the paradox built into digital local currencies in particular and fintech more generally. On the one hand, they give communities the capacity to create their own monies. On the other hand, the digital technology hides knowledge about how the rules governing money creation and transfer shape their social relations and economic possibilities. Promising to empower communities, the digital aspect of the local currency however hides (Feinig's silencing) the very knowledge that could transform them into political beings able to formulate demands on how to design money in order to reorganise society to their advantage. In other words, digital technologies perpetuate monetary silencing thus reproducing a relation of dependency towards those that design and govern money.

While few would deny that education is instrumental to ignite social change (Dewey and Freire are just two key figures) and while Jakob Feinig has shown the centrality of the monetary design for the generalisation of monetary education, the events in Aboke also highlight the role of technology in hiding monetary processes – and thus in reproducing extant power relations of dependency and oppression – or, alternatively, in making money creation visible – and thus in enabling emancipatory social transformation. This shifts the conversation from concerns about the extractive transfer of wealth from the «poor» via (or rather, made poor by) microfinance and fintech, to concerns that unite the world's impoverished with all other populations in questions of how money works and how it is made to work. Moreover, rather than limiting the possibility of monetary agency to the small and the local, the lessons from Aboke suggest that transparency and participation in monetary governance could be leveraged to articulate political demands about how money *should be made* to work, thereby extending an ethics of care and economic democracy beyond the boundaries of any single community.[2] In other words, monetary conscientization has the potential to radically transform our relationship to money, to others, and to the world, thereby re-constituting how we go about doing community and re-making the world.

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2 Although the analysis in this article builds on Feinig's insights regarding the importance of proximity and participation in enabling monetary learning, it is important to stress that democratization of monetary knowledge need not be confined to small, territorially proximate communities. Scott Ferguson (2018) argues that a Chartalist approach to money opens up the process of money creation and makes the user-issuer relationship explicit. This should hold potential for advancing monetary conscientization at larger scale—from local communities to entire regions and countries. I thank an anonymous reviewer for this insightful comment.

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