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MANAGING COMPLEMENTARY CURRENCIES AND THE BLOCKCHAIN TECHNOLOGY: A CONVERSATION WITH BERNARD LIETAER

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ABSTRACT

For more than twenty years, Bernard Lietaer, one of the pioneers of, and most emblematic leading thinkers on complementary currencies, analyzed and theorized monetary systems. Building on his historical expertise and contemporary experiences, he advocated monetary plurality and the need to establish different currencies at various scales for economic, social, and environmental purposes. In this conversation, Bernard provides his insights on changes in the management of complementary currencies that he personally witnessed and accompanied, and expertly comments the growth of cryptocurrencies and blockchain technology, and the challenges they pose.

KEYWORDS

Blockchain, Complementary Currencies, Cryptocurrencies, Bernard Lietaer

1. INTRODUCTION

The surge in the growth of cryptocurrencies and digital money has recently caught the attention of management scholars and practitioners (Dodgson et al., 2015; Posnett, 2015; Seidel, 2018; Wang & Vergne, 2017). Yet, cryptocurrencies are only one of the latest forms of complementary currencies (CCs). Before cryptocurrencies emerged, complementary currencies were mainly issued by citizens, nonprofits, businesses, and even local public administrations, and circulated within a defined geographical region or community (Cohen, 2017). Also known as local, social, regional and alternative currencies (Blanc, 2011; Larue, 2020), these currency systems have often been developed to respond to societal needs and aspirations that official currencies did not address (North, 2007; Meyer & Hudon, 2019). Specifically, they can be used in business-to-business networks in order to facilitate the exchange of goods and services between small and medium-sized enterprises (Stodder, 2009), or can be set up to promote sustainable development and build community social capital (Gomez & Helmsing, 2008; Seyfang & Longhurst, 2013; Meyer & Hudon, 2017). These monetary experiments raise questions for management theory and practice in terms of the organization and monitoring of monetary diversity, and the potentially disruptive effect of cryptocurrencies.

Bernard Lietaer enjoyed a long career as a leading thinker and advocate of complementary currencies. He studied and worked in the financial sector for more than thirty years in a broad range of capacities, including as a central banker, a fund manager, and a consultant to national governments, multinational corporations, and community organizations. Combining practical knowledge with academic experience as a long-time research associate at the University of Berkeley, from 1999 he published many articles and books on complementary currencies (e.g. Lietaer, 1999; Lietaer et al., 2012; Lietaer & Dunne, 2013). Thus, he closely followed the evolution of multiple currencies; while these monetary schemes usually restricted themselves to the local scale, he observed the rise of cryptocurrencies and their global impact. Many scholars valued Bernard's pedagogic skills and his great conviction as a specialist of complementary currencies. His work has inspired many practitioners either to start or develop a complementary currency.

We interviewed Bernard at his home in July and December 2018; sadly, he passed away in February 2019. This article is dedicated to Bernard's contributions to theory and practice, i.e. his efforts to understand and explain monetary diversity. It has a special focus on management issues in the field of complementary currencies, namely governance, scaling, and distributed trust in these systems. This interview captures the genesis of his intellectual journey, defines some of the main challenges faced by complementary currency management, and proposes avenues for future monetary developments. The objective of this interview is to expose management scholars and practitioners to the broad diversity of complementary currencies and demonstrate their potential and limits for economic, social, and environmental purposes. It contributes to an open discussion about alternative approaches to monetary development and innovative business models (Markman et al., 2016) that aim to create social value (Lazzarini, 2020; Markman et al., 2016).

To this end, we structured the conversation into two sections. First, we gathered Bernard's considerations—as a leading thinker and advocate—on the evolution of complementary currencies and highlighted that management issues regarding these systems have long been neglected. His lessons can certainly be helpful for all scholars who wish to have a first opinion on the topic and, also, to evaluate two important theoretical contributions related to the notion of resilience and trust in monetary systems. Second, we wanted to have his opinion—as the recently appointed director of the Bancor Foundation—about the promises and pitfalls of cryptocurrencies and the blockchain technology. Here, the interview

builds on the recent debate around cryptocurrencies (Seibel, 2017) striving to position these types of money as a new form of complementary currency based on decentralized governance.

2. THE INTERVIEW

Picture 1. Bernard Lietaer



Photo: Suddhasattwa Barik

Interviewer:

You have worked on complementary currencies since the 1990s and acted as a key leading thinker in this domain. To start this interview, what brought you to this topic?

Bernard:

I have been interested in the monetary aspect forever. When I received a job offer at the Central Bank of Belgium in 1978, I thought that it was kind of a figure of destiny. So I decided to accept that position and I spent five years at the Central Bank, working on what eventually became the euro. Actually, I was part of the process of the creation of the euro, and I found out that there was no way from doing anything different from the existing monetary system. Then, I had a conversation with the President of the Bank for International Settlements in Basel. He had read my book about Latin America and told me: "Bernard, what are you doing at the Central Bank?" and I told him: "Well, it is a place where you can introduce change". He replied: "No, you don't understand. We, the Bank for International Settlements and every central bank in the world, exist only for one purpose: to keep the system going exactly as it is. However, you are right. The system is systemically unstable and the initiatives to solve that will be taken by the private sector". So, this was when I resigned from the Central Bank and decided to look at what was happening in the world. I found out about complementary currencies and about local currencies at the time and decided that I would write a couple of books about that, which I have done.

Interviewer:

Hence, you decided to leave the Central Bank. Was it during this period that you started working specifically on complementary currencies?

Bernard:

Prior to working at the Central Bank, I worked in the management of currency funds offshore. This was when the financial system showed that the instabilities were due to one individual, Soros at the time: that one individual could tip one entire system. I started managing offshore funds. These funds were very successful and that actually stopped with the Soros speculation on the pound, when he made a billion dollars. He showed in 1992 that one individual could provoke systemic instabilities. So that's when I stopped managing currency funds. After that, the only mentor I ever had, who was Willis Harman in California, basically said: "Bernard you have been trained for twenty-five years to understand money like nobody ever has. You should write down what you learned". I decided to do that and the first book, *Future of Money*, came about.

Interviewer:

One of your central ideas at this point was to move to a basket of different currencies, rather than a single currency, is that how it started?

Bernard:

We need to have a diversification of currencies, which is of course something that is/was completely unorthodox. I found additional justification for the diversification of currencies much later again, back at the beginning of this century, in 2012. I did some work with Bob Ulanowicz, who was the founder of quantitative ecology at the University of Maryland. In our collaboration [see Goerner et al., 2009; Lietaer et al., 2010; Ulanowicz et al., 2009], we actually suggested that anything that is a complex flow network can only be stable if you do have a minimum level of diversity of both the agent and the products involved. So, an economy is an entity where money circulates, just like an ecosystem is an entity where biomass circulates. The same rules apply to both, because those rules are totally universal for anything that is a complex flow network. I actually joined Goerner and Ulanowicz's team because of the lessons from my book, the *Future of Money*: we need to rethink the financial system as an ecosystem. Ecosystems have characteristics: that diversity is by definition part of the process. Diversity is an automatic result of a lively ecosystem and the rules of a lively ecosystem apply in exactly the same way because it is a complex flow network. That applies to any complex flow network, including the monetary system.

Interviewer:

We are hearing more about complementary currencies, including in management sciences. How do you see the evolution of the phenomenon and the increase in interest on the part of the general public?

Bernard:

I think it is too slow. That is my opinion. Yes, there is a growing interest and yes, it is too slow. I don't believe we are going to have a system in place, capable of resisting another shock to the banking system and to the

monetary system. After the shock of 2007-2008, after that crisis, which was the worst in human history in terms of scale, nothing was changed.

Interviewer:

In a report for the Club of Rome in 2012 [Lietaer et al., 2012], you already argued that the current monetary system and systematic flaws will continue to engender banking crises. How do you view this statement today, and how could the creation of a monetary ecosystem with complementary currencies increase the resilience of the financial system?

Bernard:

I think we are going to have a repeat at some point. The current episode is about Italy; if Italy is about to get in trouble, the Eurozone then gets in trouble, etc. So that is the latest episode, a new episode, and it doesn't matter if that episode is solved because there will be another episode: it is systemic. Because an economy happens to be a complex flow network, and the work with Ulanowicz has shown at a totally general level that, independently of what flows are in it, there are needs to have a balance between efficiency and resilience—and that requires automatically a level of diversity. Having a monopoly is more efficient, and that is also one of the arguments that conventional economists provide against the idea of having diversity. It is correct, but it is also therefore automatically unstable. We know that from both experience and theory now [Lietaer et al., 2012]. This is the answer to your second question: why I think complementary currencies could increase resilience. The theory for me came after the facts, after having written about the need for these things, that's

when I met the theory of Ulanowicz, which actually proved it in biology.

Interviewer:

Today there are hundreds of complementary currencies. Yet, it is not always obvious to identify the main promises of complementary currency systems. What is your opinion on this?

Bernard:

Any medium of exchange that is accepted within a community (a community can be the users of that complementary currency) as a mean of exchange, is a complementary currency if it is not a national currency. That is the way it is defined. Now, I would say intuitively that we can see this monetary diversity automatically increases resilience. It is similar to having a spare wheel in your car: is that stupid to have space taken for that? Maybe, except when you need to have a spare wheel, then it becomes very important. That is the intuitive level, which is fairly simple. The fact that diversity increases resilience has been proven mathematically on the basis of entropy, which is the most universal law in the universe. So, you know, theory is more solid than just intuition. But, intuition by itself gave me enough data at the time to actually feel that we needed complementary currencies.

Interviewer:

So, the main promise of complementary currencies would be resilience, is this what you mean?

Bernard:

No, it is not what I mean. In fact, the promise depends on the system. And each complementary currency has an objective, or is supposed to have an objective. An objective can be completely unrelated to resilience, i.e. it can be helping poverty in India, it can be providing services for elderly people, and nothing beyond. You can actually motivate people to use these systems for elderly people, like *Fureai Kippu* in Japan, to provide these kinds of services without costing the government [Lietaer, 2004]. So each complementary currency has its own objective, and its own objective has the promise it will make and they will vary.

There are very few things one could say about complementary currencies that apply to all of them. Very few things. Always, the first answer for me is typically: it depends on the system, on your objective, and so on. Particularly from a management perspective, the kind of people that you need around the table depends on the system you want to implement, e.g. who is involved, are there businesses involved, are there social dimensions involved, are specific age classes involved? These people are the key people with whom you have to design the system. One of the things I very often say to my students is: you don't create a system for people... you create it *with* them! So it is an important aspect from a managerial perspective. It looks obvious but it is particularly relevant for complementary currencies: you need to have the right people at the table.

Actually, the main success criterion that we found was suggested by the founder of the Time Banks, and I would agree with him: the only leading indicator of success of a complementary currency system is the leadership and the quality of the leadership. That is the most important thing. But that is probably true for most project of a social nature: it depends on who will do it, not the model. All the rest is less important than who is around the table, and who is involved in designing the system, to make sure that the people you are trying to design it for are involved.

Interviewer:

My next question is quite related to what you just said: Managing and maintaining complementary currencies is a key challenge for practitioners, especially since some complementary currencies stopped only a few years after their implementation. What are the main challenges they face?

Bernard:

I would say, probably the most frequent reason for the system to stop is when the initiators run out of steam. It is a very time-consuming process and it is not rewarding economically. You need a kind of a "saint" in order to start such a system because there is no money to be made out of it, with the exception of some virtual currencies. So, the most important reason why CC systems die is because they run out of steam with the original team. I'm hoping, and I'm actually thinking, that the new technologies that are coming up—with blockchain in particular—will provide a very different environment and different means of executing the projects, as well as other possibilities.

Interviewer:

Complementary currencies differ from traditional monetary systems, especially since many of them have a more inclusive governance. What are the governance mechanisms of complementary currencies?

Bernard:

I will refer to Elinor Ostrom's work [e.g. Ostrom, 1990] to answer your question, because actually what we are talking about is creating commons. The complementary currency is a commons for the users and so, managing that commons has some rules. One of the best classical studies is Ostrom's work, for which she got the Nobel Memorial Prize in Economic Sciences in 2009: there are eight criteria that can actually be introduced as a list. They all apply. Nevertheless, I think the game may be becoming different with the new technologies, as I just said. I can't really answer what will happen but there are signs that we are seeing new ways and governance mechanisms. But they are not totally implemented yet, so we need another five years to see how that works.

Interviewer:

Trust is key for monetary systems to function as a social and economic institution. A few authors (Dai et al., 2016; Weber et al., 2017) suggest that trust is essential, particularly in decentralized and participatory networks such as complementary currencies. How is trust established and managed in complementary currencies? Is there variation in trust depending on the complementary currency system?

Bernard:

Yes, it depends on the scale of the project. When you have a monetary system, whatever the type, if people stop trusting it, you stop having a monetary system. Period. There is a totality there for me. Trust and money are the same thing. Whatever you chose as money, it will stop being money when people lose trust. And that can be national currencies, it can be the dollar or whatever you want to do.

Interviewer:

You mean there must be trust before you start the monetary system?

Bernard:

The people who accept the currency by definition have to trust that it is worth something. Otherwise, why would they accept it? So, in that sense yes, trust is a prerequisite, because if I don't accept the currency, well, that's it: it's not a currency.

Interviewer:

And how do you manage this trust? Because obviously, there is a risk that users may lose the trust they have in the system at some point.

Bernard:

One of the features, fairly classical when you are dealing with a paper currency: you have to take precautions, so that photocopy machines cannot reproduce it at will, like we had the case in Argentina at some point [with the Trueque complementary currencies]. In other words, this is a technical detail that is relevant. There are other aspects, too: the rules of the system, how is the money created, is it a mutual credit system, is it backed by something, how is the backing secured, and how is the backing materialized. In other words: how can you make it really backed by things and not just believing that it will happen. It also depends

on: who are the people who are initiating the currency. If you happen to have an airline issuing a currency (e.g. air miles), people expect the airline to be there. In other words, if I were to issue a currency, it would not be relevant for the simple reason that I cannot deliver the good. I don't have the credibility that I can bring people to a place with an airplane. And that's true for everything.

Interviewer:

Is there anything that can be done to establish trust in these networks?

Bernard:

Yes, there are things that can be done: guarantees on the support, communication about the system, transparency towards the users. All these things are highly recommended and are not always present.

Interviewer:

In a recent paper, Seibel (2017) stresses that cryptocurrencies affect the legitimacy and power benefit of centralization. Do you think it is the case for all complementary currencies, and thus also those that are not virtual or crypto?

Bernard:

Not for all, again it depends on the system. But I think it gives a whole new way of providing trust and also communicating results. In other words, we are dealing with a whole new way: It is the first time that we can actually have user-issued currency and that it is credible.

Interviewer:

Compared to other types of complementary currencies?

Bernard:

Yes, but that is one new variety of systems. You know, complementary currencies are usually not user-issued, unless you are looking at mutual credits, in which of course by definition the user is involved on both sides. That's also one of the reasons why mutual credit is so widely accepted: it's because it is so easy to do. But blockchain is a whole new set of tools, challenges and, probably, risks. I'm still trying to find the limits of what is doable with blockchain and I haven't found them yet.

Interviewer:

We are now going to talk specifically about cryptocurrencies, since you recently endorsed the position of president of the Foundation linked to the Bancor cryptocurrency. What are the main specificities of cryptocurrencies compared with other complementary currencies?

Bernard:

The first specificity is that a cryptocurrency has to be on the Internet and only on the Internet. They only exist in that space and you need to go to that space in order to be able to use them. But, as I said, one of the problems is that I don't see the limits. I have been looking at what the limits of blockchain are. I feel more

comfortable when I know the limits of an instrument because it enables you to take into account the new risks. When you go beyond the limits and provoke a collapse, that's what you risk when you don't know what the limits are. And I haven't found the limits of the blockchain technology yet. I think it will depend on the new regulations, which will undoubtedly come in some way. Although I'm not sure at all that they will be successful in terms of suppressing this technology. I think that blockchain is definitely going to be part of the future but it can be part of the future in so many different ways: all the way from conventional bank—using them to reduce their back-office costs—to governments for purposes other than money creation, like controlling diplomas. There are all kinds of fields where the same technology can be used, and successfully used, but we are really at the beginning of this. It is fascinating. I am really focusing on finding out what this will bring for us in the future but, honestly, I don't know and I don't believe anybody knows.

Interviewer:

Some analysts suggest that cryptocurrencies could be a bubble, what do you think?

Bernard:

It depends on what you call a bubble. Clearly, part of what happens with Bitcoin is a classic speculation process. Bitcoin for me is not a currency, it is actually a speculation tool and the currency is the mean of exchange. So, the purpose is different. Let me put it this way: We probably have now close to one thousand, perhaps more, new things that are already in the public domain of new blockchains. I would say that probably 50% of those will disappear in the next five years and become irrelevant. But there will be 10% that will change the world, and could change the world very dramatically. I am seeing the possibility of having an impact of the same scale as the Internet itself. In the value domain, as opposed to the information domain, but that is so huge. Could anybody imagine in 1985–1990 that we would have Uber and Wikipedia, and that it would have an impact on whatever else you could think of. I haven't seen anybody in the 1990s predicting what we are living today, and I would say that probably 10% of these things that will create breakthroughs will have completely different ways of solving problems, and solving and having the economy operate, but which 10% will it be? I am not ready to make a forecast and, actually, I have seen a lot of these forecasts—part of the “who will change the world with these” and I see that every week, I don't believe it yet. I need to know more.

Interviewer:

Do you think these cryptocurrencies will be assimilated by the established actors or, even, replace them sometimes?

Bernard:

I already mentioned the case of the banks. Santander has made a study showing that just for the banking system in Europe, blockchain would reduce staff requirements by close to 50%, that's a saving of five billion dollars a year. Then you have your case. Will banks forego the idea of reducing their staff requirement for the back-office with the same level of security? I don't think so. They are not in the process of doing that; they are actually in the process of hiring people right now. As another extreme example, Dubai has announced that all the paper work, from driving licenses to birth certificates, will be delivered by blockchain. So the entire country will be managed on blockchain basically. Any documentation that is needed. Facebook is talking about creating a blockchain currency [the Libra cryptocurrency has been

officially launched in June 2019], will it be a success or not? I don't know, but definitely something is brewing. That's why I'm claiming that there is no way that we will not have blockchain in the future.

Interviewer:

Do you think that decentralized governance of several cryptocurrencies can maintain itself or will it need to be centralized at some point?

Bernard:

By definition the design of a blockchain is *not* centralized. So that structure can't be used by centralized organizations. I just gave you the example of banks and governments. Banks will not be centralized for doing that, they will just decentralize some of the functions, like the clearing processes that are currently involved in central banks, and therefore can apply these techniques effectively.

Interviewer:

Some companies or startups have financed the implementation of their operations, or a large part of it, with cryptocurrencies through Initial Coins Offerings (ICOs). To what extent could ICOs be mainstreamed and what are the risks?

Bernard:

They are becoming mainstream. I don't remember the numbers anymore, because they change every week, but I think one billion dollars have been raised already. It is definitely a much cheaper and effective way to raise money than to go to the stock market, which requires, you know, tens of millions of dollars of legal costs and, of course the risk will be that some of these things will not be honest; but that's part of the process now. I'm expecting that some of them will fail because they are not honest. They should fail and they will. There is also talk of the central banks starting to issue central bank money using blockchain.

Interviewer:

According to you, what are the risks of ICOs?

Bernard:

The level of control against false advertising and promises made is just not there. I mean: A white paper can be five or ten pages and doesn't have to say a hell of a lot. So some of them will fail because they are not honest. Will that mean it's the end of it? No, I don't think so. I think that we are going to have some rules, and they are already well in place at the SEC [U.S. Securities and Exchange Commission]; in America, they are already in the process of introducing some rules and regulations on ICOs. The Chinese have simply outlawed it. It's not a good idea, it's not enough; they won't go away by making them illegal. They will just go underground.

Interviewer:

Because it's true that cryptocurrencies are often considered as speculative products and as especially fostering unethical activities.

Bernard:

That's certainly the case for Bitcoin, which is a prototype of cryptocurrency. It is a pure speculation tool, and I already made a comment about that. I don't consider it as a currency because it is limited to speculation. However, the blockchain technology is the first tool created over the last 300 years that enables to circumvent, bypass the banking system to control monetary issuance, including central banks. This is huge! It has never occurred before. Cryptocurrencies are currencies that can bypass the banking system. It is a tool for this purpose and we have not used it appropriately yet.

Interviewer:

Concluding remarks: If you had to make a choice, what would you consider the most important and original finding, or contribution, of your work to complementary currencies and complementary currency scholars and practitioners?

Bernard:

I have written many papers and fifteen books so far, most of them in English, and I believe it is probably the book *Au Coeur de la Monnaie* [Lietaer 2011], written in French, which is my most important contribution. Unfortunately, it is among the very few that is not in English.

It deals with the collective emotions towards currencies across times. It deals with the history of different types of money and different ways of organizing society. And one of the things that I found out is that all patriarchal societies have imposed the kind of currency that we have now, i.e. a monopoly with interest. Interest was invented in Sumer at the beginning of patriarchy and the centralized control of the money system: a monopoly managed by the elite.

Matrifocal societies, societies based on feminine values and women, have not done that. They have always created multiple forms of currencies, like I have been recommending: creating an ecosystem of money. The three best examples I have found enough data about is Central Europe-Middle East, dynastic Egypt for several thousand years, and the Tang dynasty, the only dynasty that had a feminine Emperor in China [Lietaer, 1999]. In these three cases, every time we had two different types of currencies: we had currency like the one we have now, to trade with people at a distance, and a second type of more localized, community currency system in parallel. I think that is going to be valid fifty years from now, everything else I have written will be out of date in maximum ten years.

3. CONCLUDING THOUGHTS

This interview with Bernard highlights some of the main challenges and promises of monetary diversity. While most of the literature on complementary currencies (CCs) addresses this phenomenon through economic or sociological lenses (e.g. Blanc, 2011; Gomez & Helmsing, 2008; Stodder, 2009), this interview highlights crucial issues regarding the management and governance of these systems. In particular, it points out that their management practices, leadership, values and goals vary and that this affects their sustainability. While experiments with complementary currencies continue to develop in many countries, this interview stresses how important the leadership of these systems is for their success (Bolden & Regan, 2018; Kim et al., 2016). As emphasized by Bernard, systems that implement a robust and inclusive governance can even be considered as *commons*, and therefore contribute to the common good. The

participation of users in CC projects has potential both on the local and global scales, based on different levels of trust (Seidel, 2018).

To conclude, this interview sheds lights on the complexity of establishing robust business models, forms of leadership, and resilient organizations to sustain external shocks and create social value (Lazzarini, 2020). However, one should be cautious before drawing firm conclusions because of the diversity of objectives that may be pursued by complementary currencies, as is the case with other socially-oriented organizations (Mersland et al., 2019). Hence, Bernard's interview provides original ideas about the crucial role of values in the organizational set-up of complementary currencies, linking monetary systems to ethical traditions. As he claimed in this interview, his main contribution to the field was probably his humanistic or philosophical approach to monetary systems, opening up new avenues for research on the management and governance of complementary currencies.

BIBLIOGRAPHY

- Blanc, J. (2011). Classifying 'CCs': Community, complementary and local currencies. *International Journal of Community Currency Research*, 15(D), 4–10.
- Bolden, R., & O'Regan, N. (2016). Digital disruption and the future of leadership: An interview with Rick Haythornthwaite, Chairman of Centrica and MasterCard. *Journal of Management Inquiry*, 25(4), 438–446.
- Cohen, B. (2017). The rise of alternative currencies in post-capitalism. *Journal of Management Studies*, 54(5), 739–746.
- Dai, Y., Roundy, P. T., Chok, J. I., Ding, F., & Byun, G. (2016). 'Who knows what?' in new venture teams: Transactive memory systems as a micro-foundation of entrepreneurial orientation. *Journal of Management Studies*, 53(8), 1320–1347.
- Dodgson, M., Gann, D., Wladawsky-Berger, I., Sultan, N., & George, G. (2015). Managing digital money. *Academy of Management Journal*, 58(2), 325–333.
- Goerner, S. J., Lietaer, B., & Ulanowicz, R. E. (2009). Quantifying economic sustainability: Implications for free-enterprise theory, policy and practice. *Ecological Economics*, 69(1), 76–81.
- Gomez, G. M., & Helmsing, A. H. J. (2008). Selective spatial closure and local economic development: What do we learn from the Argentine local currency systems? *World Development*, 36(11), 2489–2511.
- Kim, S. M., Lough, B., & Wu, C. F. (2016). The conditions and strategies for success of local currency movements. *Local Economy*, 31(3), 344–358.
- Larue, L. (2020). A conceptual framework for classifying currencies. *International Journal of Community Currency Research*, 24 (Winter 2020), 45-60;
- Lazzarini, S. G. (2020). The nature of the social firm: Alternative organizational forms for social value creation and appropriation. *Academy of Management Review*, 45(3), 620-645.
- Lietaer, B. (1999). *The future of money: Creating new wealth, work and a wiser world*. London: Random House Business.

- Lietaer, B. (1999). *The mystery of money*. Munich: Riemann Verlag.
- Lietaer, B. (2004). Complementary currencies in Japan today: History, originality and relevance. *International Journal of Community Currency Research*, 8(1), 1–23.
- Lietaer, B. (2011). *Au cœur de la monnaie: Systèmes monétaires, inconscient collectif, archétypes et tabous*. Gap: Yves Michel.
- Lietaer, B., Arnsperger, C., Goerner, S., & Brunnhuber, S. (2012). *Money and sustainability: The missing link*. Report from the Club of Rome. Devon: Triarchy Press.
- Lietaer, B., & Dunne, J. (2013). *Rethinking money: How new currencies turn scarcity into prosperity*. San Francisco: Berrett-Koehler Publishers.
- Lietaer, B., Ulanowicz, R. E., Goerner, S. J., & McLaren, N. (2010). Is our monetary structure a systemic cause for financial instability? Evidence and remedies from nature. *Journal of Futures Studies*, 14(3), 89–108.
- Markman, G. D., Russo, M., Lumpkin, G. T., Jennings, P. D., & Mair, J. (2016). Entrepreneurship as a platform for pursuing multiple goals: A special issue on sustainability, ethics, and entrepreneurship. *Journal of Management Studies*, 53(5), 673–694.
- Mersland, R., Nyarko, S. A., & Szafarz, A. (2019). Do social enterprises walk the talk? Assessing microfinance performances with mission statements. *Journal of Business Venturing Insights*, 11.
- Meyer, C. & Hudon, M. (2017). Alternative organizations in finance: Commoning in complementary currencies. *Organization*, 24(5), 629–647.
- Meyer, C., & Hudon, M. (2019). Money and the commons: An investigation of complementary currencies and their ethical implications. *Journal of Business Ethics*, 160(1), 277–292.
- North, P. (2007). *Money and liberation: The micropolitics of alternative currency movements*. Minneapolis: University of Minnesota Press.
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. Cambridge: Cambridge University Press.
- Posnett, E. (2015). The Sardex factor. *Financial Times*. Retrieved from: <https://www.ft.com/content/cf875d9a-5be6-11e5-a28b-50226830d644>
- Seidel, M. D. L. (2018). Questioning centralized organizations in a time of distributed trust. *Journal of Management Inquiry*, 27(1), 40–44.
- Seyfang, G., & Longhurst, N. (2013). Growing green money? Mapping community currencies for sustainable development. *Ecological Economics*, 86, 65–77.
- Stodder, J. (2009). Complementary credit networks and macroeconomic stability: Switzerland's Wertschaftsring. *Journal of Economic Behavior & Organization*, 72(1), 79–95.
- Ulanowicz, R. E., Goerner, S. J., Lietaer, B., & Gomez, R. (2009). Quantifying sustainability: Resilience, efficiency and the return of information theory. *Ecological Complexity*, 6(1), 27–36.

Wang, S., & Vergne, J.-P. (2017). Buzz factor or innovation potential: What explains cryptocurrencies' returns? *PLoS One*, 12(1).

Weber, C., Weidner, K., Kroeger, A., & Wallace, J. (2017). Social value creation in inter-organizational collaborations in the not-for-profit sector—give and take from a dyadic perspective. *Journal of Management Studies*, 54(6), 929–956.