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Money and the Commons: An Investigation of Complementary Currencies and their Ethical Implications

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JEL Classifications: F35, G21, G28, L31, M14.

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Abstract

The commons is a concept increasingly used with the promise of creating new collective wealth. In the aftermath of the economic and financial crises, finance and money have been criticized and redesigned to serve the collective interest. In this article, we analyze three types of complementary currency (CC) systems: community currencies, inter-enterprise currencies, and cryptocurrencies. We investigate whether these systems can be considered as commons. To address this question, we use two main theoretical frameworks that are usually separate: the “new commons” in organization studies and the “common good” in business ethics. Our findings show that these monetary systems and organizations may be considered as commons under the “common good” framework since they promote the common interest by creating new communities. Nevertheless, according to the “new commons” framework, only systems relying on collective action and self-management can be said to form commons. This allows us to suggest two new categories of commons: the “social commons”, which fit into both the “new commons” and the “common good” frameworks, and the “commercial commons”, which fit the “common good” but not the “new commons” framework. This research advances a new conceptualization of the commons and of the ethical implications of complementary currencies.

Keywords: Common good, Commons, Complementary currencies, Community currencies, Cryptocurrencies, Ethics in finance.

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1. Introduction

Ethical issues in finance have been drawing growing academic attention. Incorporating social and environmental criteria into the management of financial resources is supported in particular by social bankers (Cornée and Szafarz, 2014), social movements (Arjaliès, 2010) and religious organizations (Louche et al., 2012). However, most of these organizations or movements rarely discuss the fundamental ethics of traditional methods of money creation and distribution.

Official monetary systems are being increasingly challenged by complementary currencies stemming from both local and global initiatives that exist alongside conventional currencies and circulate within a defined geographical region or community (Lietaer, 2001). Proponents of such alternative systems argue that the mainstream monetary system increases economic and social disparities (Daly and Farley, 2011) and leads to unsustainable consumption patterns. These new forms of monetary exchange thereby question the ontology of money and its functions in society (Dodd, 2015), reviving the debate around the role of monetary systems at the service of the common interest.

The concepts of the common good and the commons — in their varied nuances and conceptualizations — can increasingly be found in social movement discourses and the academic literature. Based on a critique of the market's expansion into all areas of life (e.g. Klein, 2001), activists refer to the commons as democratic alternatives aiming to re-socialize and re-politicize the economy (Bollier and Helfrich, 2012; De Angelis, 2007). In the field of organization studies, the commons refer to the collective governance of shared resources, and the corresponding organizational and institutional arrangements (Hess and Ostrom, 2011; Lohmann, 2016), which traditionally are related to environmental resources (Hardin, 1968;

Ostrom, 1990; Ansari et al., 2013). In the field of business ethics, the common good refers to the ethics of living in a community whose purpose is both individual and collective flourishing (Argandoña, 1998; Dierksmeier and Celano, 2012; Melé, 2009, 2012; O'Brien, 2009).

Despite some shared assumptions about how to organize collective action, these two conceptualizations of the commons have rarely been associated in the literature. However, both are present in the many community organizations that foster cooperation at the local level (Martí, forthcoming; Peredo and Chrisman, 2006; Tedmanson et al., 2015). Hence, the concept of the commons has been applied to several grassroots and civil society initiatives (Fournier, 2013). In this paper, we will extend the concept to money by analyzing monetary resources created and managed by local organizations, as well as business networks and online communities.

The notion of complementary currencies (CCs) refers to monetary systems that supplement official national or transnational currencies (Lietaer, 2001). CCs are legal tender in defined communities, whether ad hoc or territorial, and are conceived and issued by citizens, nonprofits, businesses, and even local public administrations (Ingham, 2004). They serve to exchange goods and services that are sometimes not valued by the market-driven pricing system (Gomez and Helmsing, 2008). Hence, they are often developed to respond to societal needs and aspirations that official currencies do not address (North, 2014a). For example, CCs can be designed to promote sustainable behavior (Joachain and Klopfert, 2014), build community social capital (Seyfang, 2004), and foster trade and local development (Kennedy et al., 2012; Vallet, 2016). This is not a small-scale phenomenon: Seyfang and Longhurst (2013) made an inventory of more than 3,000 community currency projects worldwide organized by citizens' associations and nonprofits.

By exploring new ways of conceiving money, CCs provide an interesting object of inquiry to examine whether money can be considered as commons (Dissaux, 2016; Paraque, 2016; Servet, 2015). To address this question, this exploratory article will investigate three categories of CCs, namely ‘community currencies’, ‘inter-enterprise currencies’ and ‘cryptocurrencies’. All these currencies rely on a certain peer-to-peer production, whether between citizen or business peers. However, these peers are coordinated according different mechanisms driven by market or reciprocity principles. From this perspective, users’ participation in production and governance can be more or less democratic and participatory, coordinated by a central entity or decentralized. The nature of these monetary commons will vary according to the community created and its values.

Our contribution to the literature is twofold. First, this article provides a new conceptualization of the commons by distinguishing the approach of "common good" in business ethics and the approach of "new commons" in organization studies. This distinction enables to set up a new typology which differentiates between “social commons” and “commercial commons”. Our analysis of CCs shows that some of them are shared resources institutionalized through collective action and self-management. We classify these systems as “social commons” because they promote an objective of social change that leads to a more solidarity-based and inclusive socio-economic system.

The other CCs may only be considered as commons according to the “common good” framework. Similarly to the other CCs, they promote cooperation and common interest by creating new communities, but they are not commons according to the “new commons” framework. We will call them “commercial commons” since they relate more directly to commercial and market activities, whereas “social commons” are closer to traditional models

of social economy organizations that take collective action for social purposes. This categorization goes beyond the case of CC systems and could be applied to other sectors.

Second, this article discusses and examines ethical issues related to monetary systems. More precisely, our findings suggest that complementary currencies can contribute to the collective interest in a manner different from official currencies. In particular, CCs take multiple forms of commons depending on the communities, values and organizational processes involved in their production and distribution. Adopting a monetary institutionalist approach, we consider that monies rely on and create communities, and often promote the sharing of common objectives and beliefs. This is particularly the case in complementary currencies since these monies often advance collective benefits at local or societal level and develop new social bonds for stronger cohesion.

The remainder of the article is structured as follows. First, we review the conceptualizations of the commons and the common good in organization studies and the business ethics literature. Second, we present the three main categories of complementary currencies. Third, we analyze to what extent CCs can be considered as commons, and then present our main findings. Finally, we discuss the theoretical and ethical implications of the findings, and draw some conclusions.

2. Theoretical Background to the Commons

The concepts of the commons and the common good are often used synonymously. But even though the two terms share the same etymological roots in the Latin word *communis*, meaning “common” and “which belongs to several or all”, academic traditions make clear distinctions between them. We shall examine two conceptualizations of the commons: the organization

studies approach related to the collective and self-governed dimensions of shared resources, and the concept of the common good discussed in the business ethics literature.

2.1. The “New Commons” in organization studies

The commons is a term that refers to a resource shared by a group of people collectively elaborating a set of rules for governing the shared resource (Coriat, 2015; Hess and Ostrom, 2011). Traditionally, this relates to natural common-pool resources with two characteristics: subtractability and non-excludability (Ostrom, 1990). Non-excludability implies that it is extremely difficult, but not impossible, to deny someone access to the resource. Subtractability means that the resource is depleted following individual consumption. Traditional examples of common goods are fish stocks in the sea and wood resources in communal forests.

However, this classification and categorization of goods is evolving, and some scholars have argued that subtractability and excludability are dynamic characteristics that may change over time (De Moor, 2011). For example, new technologies and pollution may affect the subtractability dimension whilst the excludability criterion may be viewed as the product of a social process. In this regard, Helfrich states that “a common good does not *have* the characteristic of non-excludability; rather, it is *given* this characteristic” (2012: 65 [italics in the original]).

Because they are non-excludable, commons can potentially be overexploited by users willing to maximize their own benefit on collective resources. However, this “tragedy of the commons” (Hardin, 1968) can be avoided if users cooperate actively in setting up appropriate institutional arrangements (Ostrom, 1990). In her seminal *Governing the Commons* (1990), Elinor Ostrom

analyzed multiple, enduring long-term community arrangements for sustainable management of shared natural resources. More precisely, she investigated the institutions for collective action and defined eight design principles present in sustainable commons institutions. Key elements are collective-choice arrangements, which enable users to participate in setting rules, as well as monitoring conditions and recognition of rights by authorities. The biophysical dimension of the resources is also essential as it will ensure that the shared resources are renewed (Dedeurwaerdere, 2009).

Drawing on Ostrom's research on commons institutional arrangements, "new commons" are defined as "shared resources that have recently evolved or have been recognized as commons" (Hess, 2008:1). In other words, the recognition of resources as commons emanates from their collective management, especially user involvement in the co-production of management rules for shared resources (Coriat, 2015). Thus, new commons are often governed in the framework of self-managed organizations and citizens' nonprofits (Bollier and Helfrich, 2012; Dardot and Laval, 2014), but also in peer-to-peer networks (De Filippi, 2015) which foster cooperation among users usually in online community. Hence, new commons include "new forms of social action and communal entrepreneurship" (Tedmanson et al., 2015) characterized by voluntary action and community purposes (Lohmann, 2016). Thus, the new commons refer to institutional arrangements and social practices (Bollier and Helfrich, 2012) in which a community or a group of citizens collectively pool and share resources, while managing them through participatory governance.

2.2. The common good in business ethics

The second conceptualization of the commons has to do with the sense of community. Indeed, this approach focuses on the creation of communities, the values and ties binding social actors,

and the positive impacts human activities can have on society. This philosophy can be approximated to the concept of the common good (Akrivou and Sison, 2016; Sison et al., 2012), relying on the Aristotelian tradition and the social doctrine of the Catholic church (Argandoña, 1998; Dierksmeier and Celano, 2012; Melé, 2012). According to these traditions, humans are social beings that satisfy their own needs and develop themselves as persons in collaboration with others. According to Melé (2009: 235), “[t]he concept of the “common good” appears when considering the social dimension of human beings. People belonging to a community are united by common goals and share goods by the fact of belonging to the community”. In practice, such concern for the collective interest occurs when community’s members strive to improve its well-being in order to contribute to human flourishing.

This conceptualization of the commons is based on the ethics of virtue, first inspired by Aristotle’s philosophy (Sison and Fontrodona, 2012). The Aristotelian approach to business ethics stresses virtues and considers corporations primarily as communities (Solomon, 2004: 1023). Improving a community is concomitant with the personal fulfillment of its members and should neither reduce nor contradict human dignity or individual needs. The right policy for citizens or managers would then be defined by the interests of a community. Theoretical frameworks that focus on the role of communities in generating moral norms are usually related to communitarian ethics (Donaldson and Dunfee, 1994).

The common good is closely linked to the personalist principle, which considers that respect for human dignity and individual rights is sacred (Dierksmeier and Celano, 2012; Melé, 2009; O’Brien, 2009). The common good appears to be one of the means for individuals to realize their personal objectives and fulfilment (Argandoña, 1998), also known as “personal good” (Frémeaux and Michelson, 2017). Therefore, all human communities should provide social

conditions that foster their members' flourishing through the achievement of their personal goals within those communities (Melé, 2009, 2012). This notion is not restricted to traditional communities but can be extended to many complex sets of relationships in which members conceive of themselves as interdependent and share common interests. Following the common good does not foster instrumental collaboration between community members, which would reduce them to rational, self-interested individuals; instead, it entails cooperation, including a more humanistic, altruistic and responsible vision of humans (Melé, 2012). Table 1 summarizes the two theoretical approaches and frameworks used in our analysis.

---Insert Table 1---

Recently, Tirole (2017) has argued that the very purpose of economics conceived as a science is to promote the common good and improve society's well-being. Tirole's conception of the common good is slightly different from the one used by business ethicists (e.g. Argandoña, 1998; Dierksmeier and Celano, 2012; Melé, 2012). Indeed, although his argument proposes to understand when individual and collective interests converge, Tirole adopts an epistemological assumption of society relying on methodological individualism and the maximization of individual and collective utility. The common good from a business ethics perspective also considers rational dimensions in decision-making but includes sociological and moral elements. Indeed, this latter vision of the common good strongly takes into consideration the very social nature of humans, their values, dignity, sociability, and "need for cooperation and community" (Sison et al., 2012: 208); attributes that are not fully considered in Tirole's perspective.

3. The Diversity of Complementary Currencies

The issuance of official currencies is nowadays greatly done by private banks, through credit-based money, and only a few by central banks, through banknotes and coins (Ingham, 2004). Nevertheless, this dual institutional issuance by the market and public sector has been challenged by new forms of decentralized monetary systems (Dodd, 2015), referred to as alternative, complementary, community, social or local currencies (Lietaer et al., 2012). These multiple currencies have the attributes of currency systems, as they are means of exchanges and units of account, and sometimes store of value. In this section, we present the complexity and diversity of complementary currencies.

3.1. The emergence of new monetary systems

Complementary currencies are devices used to foster exchanges and trade among users in specific communities (Dodd, 2015; Ingham, 2004; North 2014ab). Over the last decades, they have emerged as an innovative tool developed by territorial and value-based communities to fulfill economic, social and environmental requirements (Gomez and Helmsing, 2008; Michel and Hudon, 2015). They supplement official currencies and meet socio-economic needs that are underserved by them (Lietaer, 2001). There is a vast array of complementary currencies, ranging from commercial loyalty schemes to community currencies, the latter being crafted and managed with a view to promoting local and sustainable development (Blanc, 2011). This is a worldwide phenomenon since alternative currencies are present on every continent (Seyfang and Longhurst, 2013).

Considering the diversity of this phenomenon, classifying complementary currencies is a challenge due to the rapid innovation of the field and the weakening of borders (Blanc, 2011;

Martignoni, 2012). For example, Joachain and Klopfert (2011) classify some central CC parameters in a “taxonomy” which consists of three main elements: the rules, the user access points and the management features. Also, an analysis of organizational structures helps to understand the impact of CC. As a way of illustration, North (2014ab) stresses some organizational structure and designs that can make them more or less efficient in terms of social change: their methods of valuation, the currency design and circulation forms, their convertibility, the currency supply, the convertibility mechanism and the geographical space covered by them.

On top of these organization features, a few authors have provided a typology, or categorization, of complementary currencies. However, the multiplicity of typologies shows that there is no consensus on a systematic classification of CCs. Indeed, as argued by Blanc (2017: 3), ‘attempts to construct typologies and proposals for naming moneys have generally proved disappointingly incoherent or unsystematic, as if the subject of analysis itself were not amenable to any stringent form of classification’.

Most of CCs typologies and classifications have focused on community currencies, particularly linking these monetary tools to sustainable development and social economy. Yet, most of this research stream rarely includes reference to inter-enterprise currencies (Kennedy et al., 2012; Vallet, 2016) and crypto or virtual currencies. Nonetheless, these two types of CCs are becoming increasingly important in business and finance (Brière et al. 2015), and cryptocurrencies make up a huge share of complementary currencies, with more than a thousand digital cryptocurrencies based on blockchain technology.

3.2. The diversity of CC: a non-exhaustive overview

We will not restrict our analysis to existing typologies of community currencies, but also include business-oriented and blockchain CCs. Therefore, we investigate three categories of CCs: community currencies, inter-enterprise currencies, and cryptocurrencies. These three categories have internal common features and show several differences among them, which can provide powerful insights into the multiple ways that CCs can be commons. We study each of these categories by using several examples of CCs present in each of these. In this regard, we refer to specific CCs that are well-documented, whether they are precise cases, networks or general categories. Table 2 provides elements on each category.

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Although this classification has limitations, it provides a spectrum of the complementary currency phenomenon for the management and business ethics community. First, community currencies show how citizens and communities can develop monetary instruments to build social capital and cohesion, as well as support territorial development. Second, inter-enterprises currencies aim to provide additional liquidities to businesses with the objective of supporting local economy. Third, cryptocurrencies are increasingly used to finance start-ups and new technologies. Hence, each category responds to specific economic and ethical issues.

The first category we investigate is ‘community currencies’. This category encompasses a broad diversity of CCs that are conceived and developed by civil society groups and non-governmental organizations (North, 2014a; Seyfang and Longhurst, 2013) to promote sustainable development in its broad acceptance (Michel and Hudon, 2015), e.g. by building

social capital and cohesion (Sanz, 2016; Seyfang, 2002), by fostering economic and territorial development (Kennedy et al., 2012), or by valuing work and competences that are not valued by labor markets (Gomez and Helmsing, 2008). In doing so, they are often considered as a tool for poverty alleviation in both Northern and Southern countries (Fare and Ould Ahmed, 2017). Several classifications of CCs include local currencies, grassroots mutual exchange systems, or 'barter clubs' in this category. These systems differ in terms of social and economic objectives and the presence of reciprocity and market principles.

As a way of illustration, the Palmas local currency promotes territorial development in the neighborhood of Conjunto Palmeiras, a deprived and marginalized community on the outskirts of Fortaleza in northeastern Brazil (Melo and Braz, 2013). The Palmas is issued and managed by Instituto Banco Palmas, a community self-managed microfinance organization established in 1998 with the objective to generate employment and income for community members (Hudon and Meyer, 2016; Meyer, 2012). The currency was conceived to boost consumption within the neighborhood. As a result, 93% of community inhabitants were consuming within the neighborhood in 2011, compared with only 20% in 1997 (França Filho et al., 2012). Banco Palmas served as an example of grassroots experiment for poverty alleviation and further generated a model of community development bank mixing microcredits and CC; model that has been diffused in more than a hundred communities in Brazil.

LETS systems are a multilateral currency allowing users to exchange goods and services (Blanc, 2011). By LETS systems, we refer to the general category of CC replicating and adapting the model of local exchange trading schemes developed in Vancouver Island in 1983 by Michael Linton (Fare and Ould Ahmed, 2017; Seyfang and Longhurst, 2013). LETS systems were invented in response to economic depletion, when community members were

unable to trade because of monetary scarcity. LETS were thus an alternative scheme to exchange goods and services produced by and for users. These systems rely on debits and credits created during the exchange, when the producer creates a unit of currency and the receiver is debited in the same amount (Seyfang, 2002). The credit is free of charge, and exchanges are recorded through a central structure, generally a nonprofit organization.

Trueque systems are barter market currencies operating in Argentina. Developed in the mid-1990s, this general category of CCs mixes characteristics of local currencies and mutual exchange systems (Seyfang and Longhurst, 2013). They are used in a ‘barter market’ which takes place within a defined space at a certain time during the day. To access the currency, users have to register with the barter market organization. They receive a certain amount of money and must then provide goods and services to retain their access (Gómez and Wit, 2015). The goods exchanged are generally self-produced, or are second-hand products and prices are set by the exchangers. These CCs reached a significant number of users during the Argentinian crisis in the early 2000s, which saw the formation of more than 4,700 Clubes de Trueque with over two-and-a-half million members (Gomez and Helmsing, 2008). Nevertheless, according to Gomez and Helmsing (2008), 2003 saw sharp declines in the number of barter markets (1,000) and users (fewer than 500,000).

The second category is ‘inter-enterprise currencies’. These currencies are mainly used in business-to-business networks in order to facilitate the exchange of goods and services between small and medium-sized enterprises (SMEs). Often emerged in a context of financial crisis for SMEs, these inter-enterprise currencies are parallel currencies created ex nihilo by specific organizations that play the role of clearing houses registering business exchanges. The currencies are in parity with official currencies and can be combined with official currencies

during payments. Businesses decide what price percentage they are willing to receive in inter-enterprise currencies, and some debit and credit limits can be fixed between businesses and the clearing houses. Inter-enterprise currencies act as substitutes for scarce official monetary means of exchange, by establishing a structure in which participants can trade the goods and services they produced thanks to a CC (Kennedy et al., 2012).

Created in 1934 during the great recession, the WIR currency in Switzerland is the oldest inter-enterprise currency in the world. It is issued and controlled by the WIR bank, a cooperative organization, and 60,000 businesses (including 50,000 SMEs) were part of the network in 2013 and exchanged WIR for a total of 1.43 billion Swiss francs (Vallet, 2015). The currency is issued when businesses decide to trade: the credits and debits are created at the same time. In addition, businesses can ask for WIR credits at the bank directly. Indeed, in 1998, the WIR Bank transformed as a bank and now proposes different financial products, such as savings and credits in both WIR currency and Swiss francs. To cover operational costs, WIR Bank ask 1 to 3 percent of the transaction amounts (Vallet, 2015). The headquarter of WIR Bank is present in Basel, but the system is developed in the whole country with six branches and agencies in other cities.

The WIR currency is not the unique inter-enterprise currencies, since other similar systems emerged more recently. In Europe, the RES was conceived in 1995 in Belgium with the same objective, whilst the Sardex emerged in the Italian island of Sardinia in 2009 to provide additional liquidity and access to credit to SMEs. This latter system scaled up in activities and counted about 3,000 business members in 2015 for a trade volume of 51 million Euros (Sartori and Dini, 2016). Similar to WIR, Sardex currency is in parity with the Euro official currency. Membership is ensured through a contractual agreement certifying that businesses will avoid

persistent large positive or negative balance (Motta et al., 2017). Yet, no interest is charged in case of negative balances, but business debits ‘need to be recovered through the sale of products or services within 12 months or they will need to be repaid in Euro’ (Sartori and Dini, 2016).

The third CC category analyzed in this article is ‘cryptocurrencies’, a subset of digital or virtual currencies (Chuen, 2015). Other examples of digital currencies are air miles or game tokens for computer games. In their pure form, cryptocurrencies are a peer-to-peer version of electronic cash (Chuen, 2015). They are created and regulated through blockchain technology. A blockchain consists in a ledger that registers all the transactions in these CCs from their origins. Such chains are a succession of blocks of transactions that are certified and cryptographed by a network of computers. In cryptocurrencies, “miners” competitively use computer resources to solve cryptographic problems and verify the validity of transactions (Velde, 2013). This is a decentralized organization establishing monetary and financial movements, in contrast with banks or governments/central banks that traditionally centralize and assume a role of certifying transactions in official currencies. Although it emerged with the bitcoin, the blockchain is not confined to cryptocurrencies but is adapted to other domains of economic activities.

Bitcoin is the first cryptocurrency, created in 2009 after the publication of open-source software invented by Satoshi Nakamoto (Dierksmeier and Seele, forthcoming). Bitcoin was the sole cryptocurrency for some years, before other computer experts developed their own software and algorithms. As a consequence, as at April 2018, there were more than one thousand five hundred cryptocurrencies for a total market capitalization of US\$ 326.171.216.306 ¹. In this

¹ These numbers were retrieved on April 16th, 2018 on the [Cryptocurrency Market Capitalizations](https://coinmarketcap.com/all/views/all/) website :

<https://coinmarketcap.com/all/views/all/>

landscape, Bitcoin is currently the leading cryptocurrency, with a more than 40 percent market share.

It is debated whether a cryptocurrency can really be considered as true money. For instance, Yermack (2014) argues that the most famous cryptocurrency, the Bitcoin, does not meet the three traditional attributes of currency: a medium of exchange, a unit of account, and a store of value. While it is increasingly used as a medium of exchange by merchants and users, Yermack (2014) considers that it poorly meets the conditions of unit of exchange or store of value. Similarly, Baeck and Elbeck (2015) argue that Bitcoin should be seen as a speculative commodity rather than a currency.

Nonetheless, there is an increasing financial and virtual community using cryptocurrencies. Indeed, these CCs facilitate financing of internet start-ups via Initial Coin Offerings (ICO), an emerging way of raising funds and capital for internet ventures. It is also established that some cryptocurrencies are now widely used as means of payment over the internet (ECB, 2012) or as an alternative asset class. In addition, CCs are part of a libertarian project for contesting banks and State control of monetary movements, as well as a seek for privacy and anonymity. These aspects generated a key debate linked to the transparency and governance of these CCs.

4. Exploring the Commons Characteristics of Complementary Currencies

In this section, we investigate the extent to which CCs can be considered as commons. First, we investigate the mode of collective coordination of CCs. Building on the theoretical framework of new commons, we analyze the institutional arrangements enabling the creation and change of rules for CCs production and distribution. Second, we study if CCs can promote

the common good. To this end, we examine the nature of the communities created and their impact on the whole society.

4.1. Organizing CCs collectively

Conceptualizing CCs as commons necessitates to investigate what is the resource that is shared, the community that shares it, and the institutional arrangement supporting resource governance and allocation. We consider that the shared resources are the monetary systems and units, whilst the community of users will stronger differ according to the core values and objective of each CC. CCs have well-defined boundaries enabling to identify members and non-members. In this section, we explore several characteristics of the institutional arrangements supporting CCs existence. More precisely, we focus on the governance and participation mechanisms, and if they allow users to co-produce and change CCs rules.

4.1.1. Grassroots community currencies

Community currencies are usually created and coordinated in a grassroots and bottom-up manner. These CCs are self-managed, and users' rights and obligations are collectively defined through participative governance. The communities sharing these CCs vary according to the type of CC. For example, local currencies such as Palmas concern a territorial community, in a specific neighborhood, whilst LETS will be linked to an *ad hoc* community created for the CC and less based on territory. These CCs fall under a collective property rights regime since no one formally owns the system. Nonprofits are responsible for issuing the currency, and the association's members are its owners.

The initial functioning and operational rules of these systems have usually been established collectively by users and community members. As such, Palmas have been developed through community members' consultation, and there is still the possibility for discussion or adaption of rules in their issuing organizations (Hudon and Meyer, 2016). Trueque have been managed and governed at local level, each Club de Trueque being responsible for specific rules and price setting. However, Trueque's governance has lately been debated for more centralization due to the growth of such systems (Saiag, 2013).

There are formal and informal selection mechanisms, based on values and applicable to citizens, consumers and businesses (Blanc and Fare, 2016). Indeed, citizens and consumers need to adhere to the values and objectives of the CC to buy-in (North, 2014a). For businesses accepting the Palmas currencies, there is a selection process based on specific criteria and values. This can consist in adhering to a charter or being approved and screened by a special committee.

The rules on currency acquisition and provision are laid down collectively by users. Even if the different CCs often adopt a similar "skeleton", common features are adjusted to, and embedded in, the local context. Such adjustments are enabled by the existence of collective-choice arenas that include local actors. For example, some LETS systems include shops and professionals, while others refuse to work with them. Even if the Palmas currency system has not established partnerships with the local municipality, some local currencies replicating the Palmas model have partnered with local public authorities. Thus, local stakeholders set their own specific rules of issuance, use and circulation at their level.

However, as it is often the case in grassroots and community organizations, participation is difficult to ensure over time. Indeed, it requires the establishment and consolidation of

collective-choice arenas and a strong community members' involvement. Users, businesses, and volunteers may lose interest over time. Thus, Seyfang and Longhurst (2013) refer to the 'lifecycle' of some community currencies that attract attention from several stakeholders at their launch, but then this enthusiasm falls and the CCs most rely on motivated activist that are less numerous. Participation can decline in such a fall. A specific group, whether businesses, local nonprofits or politicians, can also take advantage of the CCs to serve their collective interest.

4.1.2. Cooperative inter-enterprise currencies

The inter-enterprise currencies have governance mechanisms involving their members but are less participatory and democratic than community currencies. For instance, WIR is issued by a cooperative bank, which theoretically ensures a participatory governance system and enables users to participate in organizational strategic choices. Only SMEs (up to 250 employees) can become full members of the cooperative, while larger companies can trade with WIR credits but cannot become full member (Kennedy et al., 2012). To become members, SMEs must have a two-year record of trading and invest swiss francs in the cooperative, what give them voting rights. The cooperative makes a distinction between 'official members', who are fully registered members with positive trading record and investment, and 'silent members', who 'outnumber official members by two-to-one across all sectors' (Kennedy et al., 2012: 35). Full voting membership is therefore restricted to SMEs.

The cooperative form of the organization ensures that members have only one vote each, whatever the size of the company, what can favor SME to maintain control over the organization. However, the WIR structure evolved over time to offer more financial services to

businesses. After serving as a cooperative organizing mutual credit exchange in WIR franc among SMEs since 1934, the organization started to engage in more traditional banking activities in 1998 (Vallet, 2015), such as providing loans and savings in Swiss francs.

The participation in Sardex governance is also limited. The Sardex company, which issues the CC, is a privately-held commercial credit platform. Hence, its governance is not different from private corporations. According to Sartori and Dini (2016), the governance is initially confined to manage applications to join the circuit and checking business information to ensure the contract-based membership. However, Sartori and Dini (2016: 13) argue that ‘a more participatory governance framework with an advisory board drawing on network members is one of the organizational innovations Sardex is currently considering’. Counter-balancing this less participatory structure (compared to community currencies), it is worth mentioning that, in these two cases, the enterprises themselves decide of monetary creation through creating debits and credits. This therefore confers a certain autonomy and decentralizes monetary issuance.

4.1.3. Decentralized cryptocurrencies

The governance of cryptocurrencies is frequently praised for its democratic nature and for transparency arguments (Shermin, 2017). Cryptocurrencies pool and share some financial and/or computer resources on the internet to create an infrastructure. Cryptocurrencies transactions using blockchain are transparent in the sense that each transaction is publicly announced on the blockchain (Angel and Mc Cabe, 2015). A large number of competing “miners” then verify the transactions. Instead of a centralized government or central bank, as is the case with traditional currencies, there is a de-centralized incentive for honesty due to the network system. Transparency is limited, however. For instance, the names of the parties are

not always disclosed, such as in the Bitcoin. The Bitcoin system aims to mimic the anonymity of cash in the digital domain (Weber, 2015). This limited transparency facilitates tax evasion and money laundering (Evans-Pughe et al., 2014) or more generally illegal and immoral transactions that can happen in their networks (Dierksmeier and Seele, forthcoming).

Most cryptocurrencies set up some democratic space to discuss their functioning. They include forum with discussions on various issues related to the network. Collective-choice arenas exist and benefit from all the new possibilities offered by internet exchanges. They are thus more democratically governed, more inclusive in their governance than the traditional (fiat) currencies. Moreover, major evolutions in the system are announced in advance so that they are foreseen by all members. We can thus infer that many cryptocurrencies are self-managed to a certain extent and use more “decentralized” and “spontaneous” coordination systems than traditional currencies (Shermin, 2017).

Nevertheless, the initial functioning and operational rules of several cryptocurrencies have not been defined in forum or in a fully participative way. The original rules are most often set up by a group of users or a founding father. In addition, the decision process is not fully democratic because of the influence of the foundations that back some of the leading cryptocurrencies (De Filippi and Loveluck, 2016). These foundations, such as the Bitcoin foundation, have been criticized because they would lead some changes in the cryptocurrency systems. While everyone can participate in the discussions, the final setting of the system is thus strongly influenced by a small group of users (De Filippi and Loveluck, 2016; Shermin, 2017). The influence of this small group is however limited by the option of miners not to follow their guidelines and thus create an alternative new system which will co-exist next to the older one.

Because of this option, the smaller group usually tends to find the most efficient and thus consensual solution to the problems or challenges.

4.2. Monies for the common good

CCs can create communities by connecting participants or strengthening their existing connections. Community members can be individuals, private firms, nonprofit organizations or local public agencies. CCs represent a new medium of exchange for these local actors who have voluntarily decided to use, and sometimes create, a complementary currency for exchange and payment. To understand if these currencies promote the common good, we analyze how they can contribute to fulfil individual persons' or organizations' needs—and therefore respect the 'personalist principle' (Melé, 2009)—whilst promoting the interest of the community, especially through the creation of new social relationships.

4.2.1. Inclusive community currencies

CC systems can contribute to the common good of communities and their members by meeting the needs of individual members and building communities. Indeed, CCs try to respond to the individual needs of users, who acquire goods, services and skills for their personal interest and development. In particular, CCs facilitate the procurement of goods and services that users could not access without the complementary monetary systems. Some studies conducted on LETS and Trueque showed that these currencies enable their users to develop new competences and social ties, as well as to increase their consumption (Gomez and Helsming, 2008; Seyfang, 2002, 2004). In this regard, community currencies contribute to individual flourishing in the sense that they constitute both a new medium for personal realization and a survival strategy.

These CCs are often conceived as a project to include economic actors and citizens who are excluded from the official currency system. They can also be implemented as a political project to empower citizens and give them control over money creation to support an economy based on cooperation and solidarity (Blanc, 2011; Meyer and Hudon, 2017).

As a way of illustration, Palmas and trueque were designed to include low income populations excluded from both the economic and the political systems (Melo and Braz, 2013; Saiag, 2013), and LETS are predicated on the idea that everyone is able to produce and offer goods or services for collective wealth (Kennedy et al., 2012). Many of these CCs address unskilled persons who, typically, have limited reserves of legal tender (Gomez and Helmsing, 2008). The inclusion dynamic is reinforced by free access to credit. For example, consumption loans in the Palmas currency are free of interest — only a small administration fee is charged—and LETS do not charge any interest to users who make credits.

The objectives of these CCs are tied to promoting collective interest for community members and beyond. On a local scale, they promote collective interest as they value and aim to address community preservation by building social capital and cohesion (LETS, Trueque, Palmas), sometimes supporting local businesses and handicrafts (Palmas), and fostering a solidarity economy and cooperation. In this regard, CCs such as LETS are more concerned with cohesion and solidarity on a local, limited scale, while others are involved with more general societal concerns, such as poverty alleviation (Palmas and trueque). Organizers of local currencies postulate that communities would be impoverished if their financial resources were to exit the territory without being replaced by the same amount of investment (Melo and Braz, 2013). Thus, one objective of Palmas is to slow down the extraction of financial resources from the

community. The retention of resources is supposed to stimulate internal development and create employment for community members.

Nevertheless, we would like to raise two limitations. First, these CCs may not be able to include all citizens, particularly the most deprived. These CCs may face challenges to reach the poorest members of the communities (Barinaga, 2017; North, 2014ab), who probably do not always feel confident to join these communities or currencies. Second, the creation of communities may be limited, even if existent, due to the fact that the exchanges in CCs remain a small proportion of the total interactions of the members with their environment. Many impact surveys highlight that the economic activity of CCs is too low and not significant in macro-economic terms (Michel and Hudon, 2015).

2. Inter-enterprise currencies

Inter-enterprise currencies seem to have a positive impact on business activities, even if sometimes limited. CCs do not only provide an easier access to credit, they also have a marketing effect since businesses appear on the listing system of the organization, what can create new partnership for trade (Stodder, 2009). Participating in the currency system also ensures participation in the business network, what bring new clients. Hence, according to Vallet (2016:482), there is a network effect: “The more the money is used, the higher the incentive for others to use it: companies are willing to be paid in WIR because they know they will be able to use it again”. This network effect is obviously not specific to the WIR but to the very social nature of money: the more it is used, the more useful it is.

In addition, inter-enterprise CCs generate communities of businesses based on socio-economic values and trust. In his socio-economic investigation of WIR, Vallet (2015, 2016) emphasizes that the business network, created around the CC, generates an additional dimension in trade; a dimension that is more social and cooperative. Trust emerges from the ‘club’ (Vallet, 2016) characteristic of the systems, because a tie emerges by creating debit-credit relationships and the promise to pay. Hence, Vallet (2016: 486) argues that the WIR system ‘is more than just a network; it is a community in which payment has a higher status than reciprocal transfer, an economic and social chain whose links rely on successive but equilibrated claims and debts according to the choice of a special money’.

There are also ties between participants and the WIR banker. Indeed, as it happens in social banks (Cornée and Szafarz, 2014), there is a personal relationship between the saver, the banker and the borrower that is produced during lending. The sharing of social values creates reciprocity and trust among all these actors, which is also present when WIR bankers provide WIR loans to businesses (Vallet, 2016).

Being part of these systems/communities can have positive impacts for SMEs to face financial crises. They compensate part of the loss in official currencies by trading in inter-enterprise currencies. This is an additional feature contributing to the sustainability of individual businesses, but has also impacts on the whole economy. A study conducted by Stodder (2009) shows that the WIR had countercyclical effects in times of crisis. In particular, he shows that the demand of WIR increases during periods of crisis and decreases during economic growth. Hence, the WIR system provides additional liquidity and creates parallel markets for their members.

Investigations on the Sardex share similar conclusions on the creation of communities of businesses facilitated by inter-enterprises currencies. According to Motta et al. (2017), Sardex builds ties and mutual awareness between participants, by the network and promotion effect. By favoring promixity-based trade, Sardex contributes to local and territorial development and favors the creation of a ‘novel economic space’ (Sartori and Dini, 2016) for a small resilient trading community. Also, the currency can potentially generate shared meaning and social values by inserting trust, community identity and cooperation in trade.

Nevertheless, the interactions between the members of the community may remain limited, depending on the involvement of the members and the scale of the network. In the case of low involvement or small community, the creation of a new community is less stringent. Moreover, in some cases, most of the interaction of the members are still done in the traditional currency, limiting the amplitude of the community creation.

4.2.3. The common good in cryptocurrencies

Cryptocurrencies, like Bitcoin or Ethereum, are open-source projects. This means that anyone willing to be part of and interact with the network to process information can do it by downloading the software. The community is therefore open. Dierksmeier and Seele (forthcoming) detailed the ethical implications of cryptocurrencies, and how they can be beneficial, detrimental, and sometimes ambiguous for society. Cryptocurrencies favor anonymity, which can enable citizens to escape from intrusive governments or respond to their privacy aspirations. Also, cryptocurrencies could theoretically play a role in poverty alleviation since they could reduce transaction costs for money transfers and remittances (Dierksmeier and Seele, forthcoming). Nevertheless, the cost of entry linked to the purchase of IT equipment may exclude the poorest from using cryptocurrencies. In addition, the complex functioning of many

cryptocurrencies also represents an entry barrier for citizens who are less educated and trained in technology and finance.

Cryptocurrencies are increasingly used to finance enterprises by initial coin offerings (ICOs). Indeed, cryptocurrencies have recently acquired the function to finance new ventures in the internet, and particularly in the emerging blockchain economy. Several start-ups have raised more funds by ICOs than traditional venture capital². In exchange of cryptocurrencies, investors acquire a newly issued cryptocurrency or tokens. Tokens can be spent by using the future service of the start-up or sold to other investors if its value increases.

In some exceptional cases, cryptocurrencies are used for social and environmental benefits. For example, FairCoin is a cryptocurrency with the objective of financing the social and solidarity economy sector, and particularly Faircoop, an international network of cooperatives. Another example of cryptocurrency with socio-environmental objectives is SolarCoin which aims to promote the production of solar energy by rewarding solar electricity producer. From this perspective, cryptocurrency can benefit to the development of the new blockchain economy, as well as finance economic activities with positive social and environmental impacts. These outlets offer new perspectives of these CCs, and change the general perception they had so far of facilitating money laundering and illegal activities.

Nonetheless, the nature and features of the cryptocurrency communities have been subject to debate. For Dupré, Ponsot and Servet (2015), the Bitcoin community favors and relies on competition. Monetary scarcity is increasing, what benefits to early adopters and is detrimental to new comers. For these authors, the Bitcoin relies on a competition logic and personal accumulation, what is contrary to the common good which is implemented for the service and

² Information retrieved on October 15th, from <https://www.cnbc.com/2017/08/09/initial-coin-offerings-surpass-early-stage-venture-capital-funding.html>

benefit of a community. The global dimension of cryptocurrencies, their potential to cross national borders, as well as the difficulties in setting a participatory coordination tend to complicate the creation of community (Dupré et al., 2015).

5. Discussion

Our investigation provides new theoretical insights into the commons and complementary currencies. Complementary currency systems and organizations can thus be considered as commons when they promote the common interest by creating new communities as well as shared values and objectives. The three categories of complementary currencies decentralize monetary issuance and management, contrary to the more hierarchical official currencies controlled by private banks and central banks. This commons feature is reinforced when CCs rely on collective governance and self-management, which is particularly the case for community CC. These monetary resources are shared by a community of users and create collective purposes and, in some cases, interest between users. Drawing on our analysis, the discussion is organized in three parts. First, we propose a new typology of the commons. Second, we provide elements for an ethos of social commons, and third consider the ethical dimensions of confidence in CCs.

5.1. Typology of the commons

Our investigation shows that some monetary systems can be considered as commons according to the two theoretical frameworks we have used. Nevertheless, the two frameworks differ in terms of which CC they would consider as commons. On the one hand, all CCs are considered as commons according to the common good. They all generate some collective benefits and

create some collective action. On the other hand, not all CCs can be considered as commons following the new commons approach: in this approach, only community currencies, emerged in a grassroots dynamic and using some collective decision-making process, would be considered as such. Despite these differences, the collective dimensions of these CCs make it possible to extrapolate two types of commons. This typology distinguishes these types of commons according to their institutional dynamics, governance structures, and values. Therefore, each community has different characteristics and purposes.

The first type of commons, which we call “social commons”, follows the commons dimensions of the two theoretical frameworks. These systems have a clear dominant institutional logic (Kent and Dacin, 2013) that favors social or development goals rather than financial ones. The primary values are solidarity, reciprocity and stewardship. In this type of system, members are active in management and general governance and are involved in decision-making processes. Most of these organizations and their members are nonprofit organizations and active citizens. The term social commons also echoes social enterprises that frequently have a highly participative governance structure (Defourny and Nyssens, 2010). According to Nyssens and Petrella (2015), the goods and services provided by such social enterprises and collective organizations directly benefit users and the community as a whole. They aim to generate positive externalities, such as social cohesion and local, sustainable development (Haugh and Talwar, 2016).

The second type of commons follows the common good framework but not the new commons framework. We call this “commercial commons” since its dominant institutional logic is market-driven, and the governance structure is more centralized. The notion of sharing is therefore not confined to the collective governance of a resource, and its inherent attribution of

rights and duties, but rather to the understanding of shared responsibility to all related stakeholders. In this way, the organizations providing commercial commons acknowledge that they are part of nested networks and that they constitute communities. The use of inter-enterprise CCs enables the creation of a community of businesses, and fosters cooperation among them. These currencies strengthen the resilience of the local economic system and therefore generate some positive externalities within their environment (Stodder, 2009). Table 3 summarizes the characteristics of this new typology of the commons.

---Insert Table 3---

Some scholars could argue that commercial commons are not different from traditional private goods in the sense that markets and private interests can contribute to the common good. By providing private goods, private enterprises can generate collective wealth and benefits as well as contributing to society through job creation or corporate social responsibility. Nevertheless, such private interest can also be the cause of collective damage, human exploitation, and excessive competition that leads to global instability (Daly and Farley, 2011; Lagoarde-Segot and Paraque, 2017). Therefore, the pursuit of private interest based purely on a strict profit- and utility-driven approach can lead to corporate social irresponsibility (Lange and Washburn, 2012). On the contrary, commercial commons aim to contribute to the common good that includes both communities and individuals. As suggested by Frémeaux and Michelson (2017), the pursuit of the common good includes both individual fulfilment at personal and corporate level as well as concern for community wellbeing and development. Hence, “community good” (Frémeaux and Michelson, 2017) is both a condition and an outcome of “personal good” and fulfilment. In other words, commercial commons are more than private goods, as understood

by the liberal tradition, and include the concern for community based on principles of responsibility and long-term commitment.

The boundaries between these two types of commons are somewhat blurred, and CCs can be placed differently on a continuum between commercial and social commons. Typically, community currencies are social commons, since they combine participatory decision-making and have explicit social objectives. However, the position of local currencies, like the Palmas, is unclear because their members are frequently for-profit organizations, as shops and producers, and therefore can situate themselves at the boundary of commercial commons. On the other hand, inter-enterprise currencies are clearly commercial commons, driven by for-profit objectives and relying on a less decentralized, participatory structure.

Cryptocurrencies can potentially be commercial and social commons. The peer-to-peer blockchain technology enables a certain self-organizing format for decentralization of monetary issuance and management (Blanc, 2017), but we showed that the governance system can be centralized and not very participative (De Filippi and Loveluck, 2016). Hence, both the governance structure and the prevalence of for-profit or socially-driven objectives will determine the position cryptocurrencies in this commons continuum. As a way of illustration, by its inherent speculative and market-driven nature, Bitcoin can be considered as commercial commons, whilst other cryptocurrencies that would be more participatory and socially-oriented could be considered as social commons.

5.2. Defining the ethos of social commons

The commons and the common good frameworks could be combined in what we will call an ethos of social commons, a principle that consists in organizing the commons through both collective action and ethical concern for human flourishing. In other words, this ethos can be defined as resource-sharing practices and the philosophy underpinning these collective initiatives.

Our analysis has identified three elements for this ethos of the commons. First, organizing the commons requires the establishment of institutional arrangements and the setting-up of norms and rules for governing a shared resource around a common interest. In their grassroots dimension, these institutions are collectively managed through a collective-choice arena and are not confined only to economy-based interests. Second, the commons can emerge from a variety of private, public, toll and common goods and, as such, are not confined to traditional common-pool resources (Hess and Ostrom, 2011) such as knowledge. Such goods and services should have positive externalities for the community (Nyssens and Petrella, 2015). Third, the philosophy of the commons is anchored in the tradition of the common good. An action with a common dimension creates new interpersonal relationships between resource users, as well as new relationships between individual members and the group as a whole. Members are part of a collective system that provides useful elements for their personal fulfillment.

In many cases, social commons organizations have a holistic project whose aim is to reorganize economic and social activities for the purposes of sustainable development and social cohesion (Dardot and Laval, 2014; Paraque, 2016). The nonprofit and solidarity dimensions of human activities are used to support a political project, in this case the re-appropriation and democratization of money. By creating their own institutional arrangements, citizens “dis-enclose” decision-making power; this allows them to consciously and actively decide which

direction the monetary system should take (Barinaga, 2017; Meyer and Hudon, 2017; Périlleux and Nyssens, 2017). Hence, a project of social transformation is visible in several CC systems: a socio-political transformation towards a monetary system governed by human needs, not capital returns.

This can potentially affect the goods provided by organizations. In this regard, we argue that commons' goods and services are socially constructed. This statement is particularly true for human-made resources. These resources, such as culture, healthcare services, education, and finance, do not have any intrinsic characteristics of inclusion or exclusion; they are created by the organizations and institutions that set the norms and rules for provision and consumption. The underlying values, logics and philosophies of the provider organizations have an impact on the excludable dimension. Therefore, exclusion is always possible for financial services. It will depend on allocation criteria that can rely on social needs, repayment capacities or both. In this regard, community finance organizations can differ from private and public banks as they target different objectives, and the allocation criteria are linked to these objectives (Melo and Braz, 2013). This assumption is equally valid for natural commons. Indeed, it is easy to conceive that the excludability dimension of water will greatly differ if its provision is organized by the community, the market or public organizations.

5.3. The ethics of and confidence in CCs

Confidence and social approval are crucial for the functioning and sustainability of monetary systems. The use of money by citizens and businesses relies on trust both in horizontal relationships between users and in vertical relationships between users and the authorities guaranteeing the money's acceptance (Aglietta and Orléan, 1998). Precisely, the monetary

institutionalists Aglietta and Orléan (1998) defined three components of monetary confidence: methodical, ethical and hierarchical. Methodical confidence relies on the routine, daily use of money and the practical knowledge that it will be accepted for payment. Ethical confidence lies in the agreement on the values that underpin the monetary policies and system, whilst hierarchical confidence is present in the trust that users give to the issuing entity responsible for guaranteeing the functioning of the currency. These three forms of confidence are mutually reinforcing and contribute to establishing a community of payment around a sense of collective belonging as social, political and economic community. The emergence of cryptocurrencies challenges these forms of confidence by adding the notion of trust in technology.

The literature suggests a significant degree of ethical confidence in community currencies. Users often adhere to the project behind these CCs and to their values of cooperation, reciprocity and sustainability (Bland and Fare, 2016; Fare et al., 2015). Nonetheless, we have seen how the importance of shared values in these systems can also confine their use to a restricted category of users. Hierarchical confidence may be mitigated in these CCs since they are issued by nonprofits and citizens' organizations, and are often not regulated (Lietaer et al., 2012).

Confidence in inter-enterprise currencies may differ from other types of currencies due to the more economic purpose of these schemes. As a medium of exchange facilitating and galvanizing trade, these currencies are not related to a political project and have limited objectives of social change in comparison with both community currencies and cryptocurrencies. The ethical confidence in these schemes is therefore tied to forms of market values attached to official currencies. Hierarchical confidence in these currencies is probably stronger than in community currencies, since the organizations issuing them are more regulated

and their for-profit status might build confidence for local businesses. In both community and inter-enterprise currencies, the diversity and number of users, as well as the geographical reach of the CCs, may strengthen or limit methodical confidence (Blanc, 2011).

Confidence in cryptocurrencies is also multifaceted. Indeed, the blockchain technology creates trust since the system can keep track of all transactions among users (Casey and Vigna, 2018). The decentralization of the validation process by, and the storage of data in, multiple independent computers makes it possible to reject transactions that are not valid according to the shared algorithm. Hence, the decentralized public ledger fosters ‘distributed trust’ (Casey and Vigna, 2018) since no single entity is controlling the system. This traceability and transparency is supposed to create a new form of trust that is decentralized, digital and technological. Decentralized trust can provide new insights on the concept of hierarchical confidence. As seen in the findings section, the role of shared values is important for adhering to and participating in cryptocurrencies. So far, the nature of the communities created is related to the libertarian ideology and is composed of individuals having profit maximization objectives (Dierksmeier and Seele, forthcoming) – although some socially oriented cryptocurrencies are also emerging. Finally, the major fluctuations in the value of some cryptocurrencies, such as Bitcoin, can affect the methodical confidence users and purchasers have placed in these CCs because of the uncertainty linked to their stability and spending capacities.

To conclude, it is important to highlight that all CCs systems have some limitations. The importance of ethical confidence and the values they convey make them less neutral than conventional currencies since membership, or access to technology, is made into a criterion (Blanc and Fare, 2016). Some CCs could thus easily become some sort of organized interest or

organization fulfilling unethical objectives. Localism or regionalism is also a common objective in many CCs (Marshall and O'Neill, 2018), a situation that may also generate discrimination. For this reason, some CCs may be less efficient for small-scale or local networks due to limited economic scope.

The supposed neutrality of official currencies makes them more readily accepted by citizens and organizations. However, this acceptance is based not only on the supposed neutrality or superior economic efficiency of official currencies, but also on the multiple overlaps between the economic, social and political communities sharing the same official currencies. Non-acceptance of complementary currencies for paying taxes is also a crucial element affecting the confidence in and durability of these monetary systems (Lietaer et al., 2012).

6. Conclusion

Reorganizing currencies in the common interest is the challenge taken up by CCs. In this article, we shed light on the multiple meanings of these alternative modes of exchange, the values they convey, and their potential for creating and strengthening communities. We examined to what extent these currencies have allowed money to constitute “commons” and serve communities. Our analysis has shown that there are two alternative views about the potential of CCs to be considered as commons. On the one hand, the new commons framework suggests that only systems relying on collective action and self-management should be considered as commons. This builds the collective dimension around a shared resource and its organization under what we have named the “social commons”. On the other hand, all CCs can be considered as commons according to the common good framework since they promote the common interest by creating new communities. We may consider that complementary currencies that cannot be considered as commons within the new commons framework but do fall under the common

good framework are “commercial commons” that primarily focus on strengthening a network of economic actors without any explicit participative governance. To conclude, this article contributes to the literature by providing a new conceptualization of the commons and by identifying the contribution and limits of CCs to be conceived as commons. In doing so, this article advocates an ethos of social commons. This ethos may be defined as a principle that consists in organizing commons practices both through collective organization and through ethical concern for human flourishing.

Appendix

Table 1: Two main theoretical frameworks

Terminology used in analysis	Field, and literature streams	Theory	Authors (examples)
New commons	Organization studies, economics and nonprofit studies	Institutional theory; institutional economics	Hess and Ostrom (2011), Lohmann (2016), Ostrom (1990)
Common good	Business ethics	Virtue ethics; communitarian ethics	Argandoña (1998), Melé (2009, 2012), O'Brien (2009), Solomon (2004)

Table 2: Categories of complementary currencies investigated in this article and some of their attributes.

Categories	Objectives/function	Issuing organizations	Examples
Community currencies	To contribute to building social cohesion and inclusion, supporting territorial economy and sustainable development	Grassroots organizations, local non-profits and non-governmental organizations	LETS, trueque, Palmas
Inter-enterprise currencies	To provide additional liquidity to SMEs and support local economy	Forprofit organizations, sometimes cooperatives	WIR, Sardex, RES
Cryptocurrencies	To provide a virtual mean of exchange that is independent from government and bank interference	Decentralized network of participants using the blockchain technology	Bitcoin, Ethereum, Litecoin, Bancor

Table 3: A new typology of the commons

Characteristics	Commercial commons	Social commons
Dominant institutional logic	Market logic	Social or development logic
Governance	Mainly top-down, with some participation possible	Bottom-up and participative
Members' characteristics	Mainly for-profit organizations and profit-seeking individuals	Mainly nonprofit organizations and socially active individuals
Core values	Responsibility and cooperation	Solidarity, reciprocity and stewardship

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