

Myths of the Sharing Economy: drivers of and barriers to real sharing practices

"Eureka!" – State motto of California, land of opportunities.

"Mitákuye Oyás'íŋ" (All Are Related) - expression from the Lakota language.

Buen Vivir or *Sumak Kawsay* – quechua word of the ancestral cosmic vision

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Abstract: Since the early 2000s, when the term “sharing economy” started spreading, it has gained momentum worldwide, in cities of every size and among people with different social cultures and practices. Today, the sharing economy is seen to comprise a big share of a growing market that is expected to increase exponentially in the near future. Digital technologies, in particular, facilitate reduction of market barriers and increases in the scale and efficiency of exchanges through online platforms that today, it is often claimed, constitute an answer to many needs in our lives. Notwithstanding definitions of the sharing economy based on concepts such as collaboration, common resources, reciprocity, and access-based ownership, the lack of a common definition and a legislative framework raise questions about the sector’s contribution to a just and sustainable societal transition. This work analyses and compares several sharing practices, in two phases.

First, sharing economy platforms are analysed according to pre-defined indicators in order to describe existing sharing practices, identify alternatives to the current sharing economy and highlight what impedes or drives diffusion of these practices, from a social, economic and environmental perspectives. Second, three types of sharing communities are conceptualized and described according to their sharing patterns. The selection of platforms, types of community and indicators is based on literature reviews and expert interviews. In addition, public opinions from a “Practice sharing” World Café in Santa Cruz, CA, are offered here, and the sharing communities or platforms found in that city are listed according to the previous definitions and differences.

This study frames a comprehensive methodology for analysing and distinguishing several examples of sharing practices and highlights values and counter-values related to them. Our results show how these practices influence society, the economy and the environment, and could constitute a relevant factor in addressing behaviour change in relation to sustainability.

Keywords: Sharing Economy; Commons; Collaborative consumption; Behaviour change

1. Introduction

In the midst of the massive problems nowadays faced by our planet under pressing economic development and population growth, societies are experiencing modifications in lifestyles, behaviours, energy consumption and land use practices (Intergovernmental Panel on Climate Change (IPCC), 2014). Problems like environment degradation (wildfires, decrease of biodiversity, resources dwindling, ecosystem shifts, species extinction, etc.), climate change, conflicts, diseases and the breakdown of social cohesion, unequivocally affect humans and, at the same time, are caused by them. For the past fifty years, society encouraged us to live beyond our means, both financial and ecological (Botsman & Rogers, 2010). Currently, rich world material “living-standards” are grossly unsustainable and impossible for all to share (Swim, Clayton, & Howard, 2011; Trainer, 2011). Nevertheless, people tired of hyper-consuming and asset-heavy lifestyles are increasingly adopting new practices of consumption, revising the dominant ownership mind-set and interacting in ways that partly recall traditional sharing practices (Finley, 2013).

Nowadays, *Sharing economy* is quite a widespread buzzword, also referred to by many other names, such as *collaborative consumption*, *collaborative economy* or *peer-to-peer economy*. All terms relate to many different practices of exchanging, redistributing, renting, sharing, lending, trading, bartering, donating and swapping information, goods, space and talent, either offline or through the mediation of a digital platform (Heinrichs, 2013). About 15 years after the phenomenon started spreading as a grassroots business model that allowed people to extract more value from their current possessions, it is now essential to millions of peoples’ lives worldwide, a \$15 billion globally valued sector estimated to rise to \$335 billion by 2025 (PwC network, 2015). Sharing is one of the oldest human behaviours and for centuries the most reliable source of security came from building social connections and respecting the commons (e.g. water, forests, public transportation systems, public health, human knowledge and, nowadays, also the Internet) (Conrad, 2014; Rinne, 2013). The sharing economy, leveraging the power of online social networks and smartphones, provides an innovative way for old business models to thrive on a scale we have never witnessed before, while disrupting outdated patterns of consumer behaviour. It represents both a cultural shift that builds trust between strangers; an economic revolution where a new class of micro-entrepreneurs unlocks the idling capacity of their goods and assets and allows people to access them, as an important and fashionable alternative to ownership; and an environment-friendly practice that enables to use resources with higher efficiency and less waste. The sharing phenomenon is spreading across sectors from transportation to tourism, from job to housing, from fashion to knowledge and everything in between (Conrad, 2014). Clearly, the sharing economy will provide new opportunities for cities to redefine public services and foster civic participation while decreasing pollution, freeing up space and disposable income for every member of the community. Often, however, outdated regulatory frameworks hold back innovation being silent about sharing activities. Issues related with taxation, insurance, zoning

and licensing, and consumer protection leave in a regulatory limbo such activities which, thus, result neither legal nor illegal (Conrad, 2014; Rinne, 2013).

Given the controversial feelings about the sharing economy, this work aims to untie contradictions and reveal principles toward a real sharing transition, where goods and services are made available by everybody to everybody, without money or special interests at stake. As for responding to climate change, people and society have been undertaking adaptation and mitigation measures, in form of both engineering, technological, institutional and social solutions (Intergovernmental Panel on Climate Change (IPCC), 2014), and we regard the “sharing economy” and the spreading of other traditional sharing practices as a societal response to the adverse effects of the current socio-economic system. We, therefore, want to investigate their role in mitigating such effects and in propelling peoples’ awareness. In this regards, first, a theoretical and empirical elaboration of the basic concepts of the sharing economy is presented. Then, according to the first step of the behaviour-change technique called *Community-based social marketing*, we identify barriers to and potential drivers toward a “sharing society” (Markowitz & Doppelt, 2009), both in environmental, economic and social terms. On these bases, we attempt to define and identify alternatives to the current sharing economy narrative, and provide a conceptualization of different types of sharing communities and, according to such framework, we catalogue the initiatives located in Santa Cruz and based on sharing patterns.

2. Literature review

In the early 2000s, when the term “sharing economy” started spreading, what mostly began in large metropolitan areas then proliferated to cities of all sizes and among people with different needs, cultures and habits. “Sharing” recalls positive symbolic meanings and reproduces and multiplies the number and the type of offline collaborative consumption and production activities allowed by older types of companies and organization, such as libraries, cooperatives and neighbourhood clubs (Rinne, 2013). The over 7500 platforms globally existing and responding to different needs in our lives reflect the multi-faceted nature that sharing has taken nowadays and the growing trend of the sector (Matofska, 2015). Companies now cater to everything from accommodation (AirBnB, Couchsurfing, Homeswap, etc.), to office space (Pivotdesk, LiquidSpace, NextSpace, etc.), to pieces of land (Shared Earth); from cars (Blablacar, Zipcar, Getaround, etc.) to bikes (Vélib, Bicing, etc.); from goods (Freecycle, SwapTree, Library of Things etc.) to dogs (BorrowMyDoggy, DogVacay, etc.); from skills (Chegg, Thinkful, etc.) to services (Rentafriend, Postmates, etc.); from data (Youtube, Linux, Instructables, etc.) to knowledge (Gibbon, academia, etc.). However, the blurry and baffling boundaries of the term’s definition, anarchically entrusted to the platforms themselves or to the press, and the opportunistic use of the positive meanings it recalls, reasonably generate mixed sentiments toward this new exchange model (DuPuis & Rainwater, 2015; Schor, 2014). Many articles, as well as some books and academic papers, have been written about the topic

ranging from the economic to the social psychology sector (Botsman & Rogers, 2010). Looking back in history, we can see that sharing has always been a form of interaction between and within communities, both in the form of group cooperation to obtain collective benefits and in the form of goods exchange. Anthropologists who have looked at childhood behaviour argue that empathy and cooperative behaviour without expectation can be found before the age of three, after which we start to be influenced by culture-shaped “social norms” (Botsman & Rogers, 2010). Originally, exchanges were based on mutual expectations and responsibilities among individuals that were used as social currencies to measure routine non-market interactions. Once exchanges started to be based on formal equality, reciprocity and hierarchy, then inequalities tended to be institutionalized in customs and castes (Graeber, 2011). The sharing economy model originated from business ideas born in the San Francisco Bay Area. In the 1990s, R. Barbrook and A. Cameron attributed the phenomenon to what they call “Californian Ideology”, a combination of hippie culture, neoliberalism, deregulation and tech-utopianism (McBride, 2015). The diffusion sharing experienced before the great recession of 2008 proves that the society as a whole had an early reaction to the traditional, neither healthy nor sustainable model of hyper-consumerism, encouraged by an unregulated financial system (Botsman & Rogers, 2010). Indeed, this model has led to the exhaustion or impoverishment of many natural resources, to the boom in population and urbanization and to the accumulation of underutilized assets and idle resources. Therefore, the sharing economy was a societal response to such model that complemented the circular economy principles of cradle-to-cradle and material sustainability already implemented within the industrial sector (Rinne, 2013).

The introduction of digital technologies as a means of communication constituted a revolutionary innovation that helped the collaborative models of consumption and production to gain momentum. The creation of an unbounded marketplace allowed efficient exchanges on a scale that was never possible before and solved what economists call the “coincidence of wants” (Botsman & Rogers, 2010). The exchanges started online in form of comments, posts, available media, doc files, open source code, etc. The success of the sharing economy platforms reflects the present cultural acceptance of the ideas embedded in them. The merged motivations of making extra money and having new social connections, without worrying about liabilities and with a high degree of flexibility, are driving the emerging socioeconomic groundswell. In addition, platforms that are not intended to be for-profit are contributing to the cultural shift and paving the way for the emergence of similar revenue-based businesses (Botsman & Rogers, 2010).

Today, however, with the corporatization of a number of the leading platforms (including couchsurfing), their tendency to scale uncontrollably, and the commodification of what once was shared, the role of the sharing economy in fostering a just and sustainable transition is questionable (Schor, 2014).

3. Data and methods

This work was performed in California through literature review, web search of the sharing economy platforms, interviews, and the organization of a *World Café* entitled “Practicing the Sharing Economy”. The research was primarily based in Santa Cruz, where I had the opportunity to visit local initiatives, such as two co-housings, an urban garden, a co-working place and some of the student co-ops on campus. Interviews were also conducted in San Francisco, Oakland and Marin County. In addition, I visited *Omni Commons*, a community warehouse, a family farm and a project called *West Marin Commons*, which aims at creating common spaces and infrastructures for fostering community activities. The literature review was based on keywords such as “sharing economy”, “commons”, “sustainability”, “behaviour change” and “practice theory”. It allowed us to define the context related with the subject of this study and to confirm the fieldwork empirical findings.

In total, 98 different online sharing economy platforms were identified, systematically analysed in their contents and rules through their page “How it works”, and catalogued according to several criteria. The choice of platforms and the cataloguing criteria depended on the time available and on the reviewed literature, whose screening continued until the new platforms did not present any new relevant characteristics. Differences were found in the users (P2P, B2C, B2B), in their financial goals (for-profit or not), in the type of exchange (site-specific, social) and economic sector served (good, service, housing, mobility, etc.), in the accounting mechanism (numerical value or reciprocity-based), means of interaction (transaction review, messaging), type of good or service exchanged (rival and/or excludable), platform’s use conditions (paying a fee per transaction or free use). Interactions are considered site-specific when they happen in a physical space, rather than online. By “social” platforms, we mean those facilitating meetings and allowing potential long-lasting relationships among users. The accounting mechanism can be based on an objective numerical value, corresponding either to the exchanged good or a service’s market price or to the time spent for providing that service (e.g. Time banks). By contrast, it is reciprocity-based when mutual interests and platform regulations allow non-monetary or disinterested interactions (e.g. Couchsurfing, Time bank, BorrowMyDoggy). A distinction has also been made between the platforms allowing publicly visible comments or reviews, meant to inform other users about the success of the transaction, and the ones enabling private messaging as a tool for building social bonds. Finally, a good is rival or subtractable when its consumption by one consumer prevents simultaneous consumption by other consumers; it is excludable if non-paying consumers can be prevented from accessing it. This process resulted in a matrix that shows the main recurrent and common features found among the analysed platforms and that allowed for further elaborations. Even though the matrix presents only an indicative and non-exhaustive list of the many existing examples of platform around the world, we attempt to give an overview of the main differences according to these characteristics.

Seven semi-structured interviews were conducted between January and March 2016 with a number of people involved to different extent with the theory and practice of the sharing economy. The number of interviewees increased with time and with the proceeding of the literature review to include, through snowball sampling, 1 scholar, 1 expert of the sharing economy, 3 experts of community building, development and organization and 2 community members (see Annex A for a detailed list of interviewees). Questions were mainly dependent on the interviewee's experience and role. When directed at experts, the interviews were designed to understand theories, regulations and best practices of the sharing economy narrative; when directed at users, they were crafted to analyse practices and opinions. Moreover, thanks to the support and the space provided by the Kresge Common Ground Center, on March 9, 2016, a *World Café* named "Practicing the sharing economy" took place (see the poster in Annex B). The *World Café* is a community-gathering event that aims at stimulating the collective intelligence through semi-guided social interactions. UC Santa Cruz has an eight-year tradition of weekly World Café gatherings, the longest in the USA, and this was the first attempt of using such an event as a research method. Participants included university students, faculty and community members, all with different level of expertise or involvement in the topic. They were divided in small groups and given the three following questions to discuss for a defined period of time:

- 1) *Think of a time when you shared something. What was it, who did you share with, how and why?*
- 2) *How is the sharing economy already being practiced in our community, and how might we get more of that?*
- 3) *What challenges exist for practicing the sharing economy? How might we overcome them?*

For each question, the main points discussed by each group were shared with all the participants who then switched positions and mixed with each other in order to form new groups for the next question. This resulted in heterogeneous qualitative multi-source data reflecting the participants' different perspectives fostered by their interactions during the event. This methodology resulted in a conceptual analysis of the sharing economy phenomenon and helped identifying environmental, social and economic drivers of and barriers to the diffusion of sharing practices. Finally, reviewing the literature posed also the theoretical basis for the further elaboration and conceptualization of three different types of sharing communities. Sharing initiatives that were found in Santa Cruz have, then, been catalogued according to that framework.

4. Results

4.1 Matrix

In order to obtain a conceptual understanding of the distinctions between the several platforms allowing different types of sharing activities, we developed the following matrix identifying a set of recurring characteristics that were found to be relevant for further analysis.

Sector	Example of platform	For-profit	Peer-to-peer (P2P)	Business-to-consumer (B2C)	Business-to-business (B2B)	Site-specific	Social interaction	Accountability-based	Reciprocity-based	Transaction review	Messaging	Rival	Excludable	Fee per transaction	Description
HOME, PARKING SPACE or LAND	AirBnB	Y	Y	Y		Y	Y	Y		Y	Y	Y	Y	Y	Acomodation or park space rental
	Couchsurfing		Y			Y	Y		Y	Y	Y	Y			Reciprocal accommodation availability
	Landshare		Y			Y	Y	Y	Y		Y	Y			Green space availability/in exchange of gardening
WORK	CloudPeeps	Y	Y	Y	Y			Y		Y	Y	Y	Y	Y	Freelance marketplace
	LiquidSpace	Y		Y	Y	Y	Y	Y		Y		Y	Y	Y	Shared workspace rental
SERVICES and SKILLS	Skillshare	Y	Y	Y				Y		Y	Y	Y	Y	Y	Online classes for creators
	TaskRabbit	Y	Y	Y	Y	Y		Y		Y	Y	Y	Y	Y	Errand outsourcing
	Time banks		Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Skill share by hour
	BorrowMyDoggy		Y	Y		Y	Y	Y	Y	Y	Y	Y	Y	Y	Available dog sitters
	KhanAcademy			Y				Y	Y	Y	Y				Free online classes
	ebay	Y	Y	Y	Y			Y		Y	Y	Y	Y	Y	Second-hand selling or rental adds
GOODS	Freecycle		Y			Y			Y		Y	Y			Goods free exchange
	RentMyItems	Y	Y	Y		Y		Y		Y	Y	Y	Y	Y	Private items rental
MONEY	Go Fund Me	Y	Y	Y	Y	Y		Y	Y		Y	Y	Y	Y	Crowdfunding
	Upstart	Y	Y	Y	Y	Y		Y		Y		Y	Y	Y	Money lending
	Bitcoin		Y	Y	Y	Y		Y				Y	Y		Alternative virtual currency
MOBILITY	Zimride	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Car/bike sharing
	Jojob		Y	Y	Y	Y	Y	Y	Y		Y	Y	Y	Y	Car pooling
	Uber	Y	Y	Y		Y	Y	Y		Y	Y	Y	Y	Y	Ride sharing on demand
NETWORKING	Facebook		Y	Y	Y	Y	Y	Y	Y	Y	Y				global social network
	NextDoor		Y	Y		Y	Y		Y	Y	Y				Local social network
INFORMATION, CODE and DATA	Linux		Y						Y						Open source
	OZ0	Y	Y					Y		Y		Y	Y		Content marketplace

As a result of this elaboration, it is possible to compare and evaluate the differences between the platforms regardless of their specific sector.

In general, almost the whole sample of platforms allows peer-to-peer interactions (97%), many of which are site-specific (56.5%) and half of which enhances social interactions between actors. The majority of the platforms allows transactions based on accounting mechanisms (65%) even if not all of those are for-profit (52%), while half of the sample is based on reciprocity models. Finally, half of the platforms require a fee for each transaction.

The non-profit initiatives show to be almost exclusively based on peer-to-peer interactions (36% of which are complemented also by B2C and B2B models), to foster social connection (72.7%) and to be based on reciprocity mechanisms (only 27.3% are also based on accounting mechanisms). The users chat with each other (81.8%) and post comments and reviews (45.4%) both as a means of interaction and for assuring mutual reliability. A small portion (9.1%) requires a fee to finalize the transaction.

In contrast, the for-profit models show a significantly higher participation of business companies and venture capitalists (75%). Economic interactions are based on accounting mechanisms (16.6% of which are also reciprocal). Social interactions between users are almost absent (33.3%) instead mediated through reviews (91.6%). Moreover, the big majority of platforms withholds a transaction fee (91.6%).

Most of the platforms that enhance social interactions are also site-specific (83%), mainly based on reciprocity mechanisms (75%) and only few exclusively on monetary accounting (25%). They allow transaction reviews as well as private messaging (92%) and some require the payment of a transaction fee (41.6%). Platforms intended for sharing rival but non-excludable goods exclusively use reciprocity rather than accountability mechanisms, do not withhold a fee per transaction and allow site specific and peer-to-peer interactions. By contrast, platforms dealing with excludable and either rival or non-rival (e.g. for-profit online classes) goods are still based on accountability mechanisms and a vast majority of them (80%) requires a transaction fee for finalizing the transaction.

4.2 Social barriers and drivers

Cities are the largest beneficiaries of forms of collaborative consumption that can help redefine public services, infrastructures and civic engagement. However, in another study, a survey administered to the city officials in more than 200 cities, even if resulting in a general positive feedback, raised concerns about public safety, workers' rights and in general compliance with the community interests (DuPuis & Rainwater, 2015). From the demand side, a barrier has been identified in the lack of trust between people (Matofska, 2015). In addition, current habits, routines, social norms and cultural values constitute what is known as the consumer "lock-in" that leads people to behave unsustainably and, thus, is another barrier to the diffusion of sharing mechanisms. Since the wartime ethic of thrift and reuse was abandoned, a culture of "Throwaway living", of repetitive consumption and disposability, has been encouraged and fed by the

temptation of immediate self-gratification and by the *neophilia*, as Colin Campbell, professor of sociology, has named a “novelty seeking disease” (Botsman & Rogers, 2010). In addition, according to the sociologist Robert K. Merton, particularly relevant to hyper-consumption are ignorance and immediate interest, that result in people ignoring any long-term unintended effects (Botsman & Rogers, 2010)(I#2) and make the time needed to learn new platforms and get started an obstacle to people’s participation (Matofska, 2015). Moreover, the intangibility of a real sharing narrative, with access-based consumption and a full mutuality and reciprocity of the exchanges, makes the transition still unlikely (I#4). The World Café revealed other social causes preventing people from sharing, such as the transient and busy nature of our present lives, with few moments dedicated to explore our feelings and our relations with others, as well as the lack of education toward a culture of sharing and trusting, instead of wasting and fearing. The nature of the platforms themselves constitute another possible barrier. Some platforms seek legitimacy with allusions to non-capitalist social bonds (McBride & Borowiak, 2015); some mark communities without fostering communities, but instead having a top-down structure (I#2); others offer connections instead of real interactions (I#4) and enable people to outsource errands. These latter often promote a weird sense of entitlement in terms of who has financial capability to buy somebody else’s time for doing “gigs” that do not require any kind of particular skill (I#1)(McBride, 2015).

Nevertheless, several social drivers of sharing have emerged. First, it is useful to look at movement for defending civil or race rights, where people identify themselves within the same social group and are driven by the same concerns. Those people are keen to cooperate and share commitment toward the improvement of their status (I#3). Therefore, communities’ needs and priorities to which sharing can constitute a response, once defined, can be turned into drivers in order to promote the needed cultural shift from individualism to collectivism and cooperation (Selzter, Smith, Cortright, Bassett, & Shandas, 2010). In addition, fostering a sense of community enables connections to be durable and trustful. Another cultural push in the diffusion of sharing practices is what has changed in the way people define their social status: experiences are regarded as more relevant than material possessions. In addition, the level of flexibility inherent in sharing practices is appealing and plays an important role in their successful spread (PwC network, 2015). The global diffusion of digital technologies, the user friendly interface and the promise of trendiness and novelty associated with the sharing platforms (Schor, 2014) have a high impact on increasing their diffusion. They allow interactions mediated by the self-correcting mechanism of feedbacks and reviews and, in case of site-specific networks, assure discussions that are even more respectful, given the lower degree of impunity allowed on other global networks (I#6). In case a new platform is released, people are more willing to join the network if they receive a recommendation by other users, as a form of insurance from unwanted effects (I#5). Sharing has been looked at as useful to help the needy (Matofska, 2015) and to identify with them, but also as a means for achieving personal satisfaction (I#5). At the World Café, practicing sharing was regarded as valid for creating connections,

building relationships and fostering community growth; for increasing the possibility to be more self-reliant and efficient as part of a community rather than as an individual (e.g. community gardens, class action (I#6)); for meeting new cultures and having new experiences (e.g. sharing accommodation, trips, information); for having a positive influence on others; for learning reciprocity as a form of equality or for simply respecting the rules and conventions (sharing lane at the swimming pool).

4.3 Economic barriers and drivers

Among the economic barriers, interests in gaining the better deal, the myth of private property and constraints due to planned obsolescence have been highlighted (Botsman & Rogers, 2010), revealing the necessity to design for sharing, through focus on durability, sharing logistics and Cradle-to-Cradle (C2C) principles (Rinne, 2013). In addition, these business models are evolving in a highly connected and fast-changing world that threatens their duration. Sharp and creative ideas for innovation (PwC network, 2015) as well as respect for market regulations and compliance with standards are required to assure fair competition with the traditional industries and service providers (DuPuis & Rainwater, 2015). The decentralization of goods and services supply has been disruptive for those industries that rely on the mediating role of firms, such as retail, rental or service firms, which buy commodities in stock, then coordinate and centralize their provision and advertisement. This, together with the emphasis upon use instead of ownership, leads the consumers to dematerialize the experience that the platform provides, to underestimate the labour behind it and, thus, to collaborate in making workers underpaid and precarious (McBride & Borowiak, 2015). In addition, a few venture capitalists and platform developers seek to concentrate and amass in their hands the private wealth and impose their own governance on sharing platforms. Furthermore, the sharing economy is still at the periphery of formal economic activities (I#1), which explains why it is affected by a lack of regulatory frameworks and why some platforms tend to scale and dominate (Schor, 2014). Policies drafted in the ownership era do not encompass the nuances of these new business models, resulting in contentious issues about taxation, insurance, zoning, licensing, consumer protection (Rinne, 2013), labour exploitation, race to the bottom dynamics and inequalities that result in a risk-shifting from companies to micro-entrepreneurs (Schor, 2014). For example, digital platforms provide big data over real time information about the demand of a commodity or a service that are then elaborated through an algorithm to calculate the price associated with such demand, rather than with the worker's productivity (McBride & Borowiak, 2015). Furthermore, thanks to immediate service platforms, the ability to hire remote software developers results in a delocalization of labour and generated revenues (I#1). The sharing economy has been proven to thrive where there is more income inequality, often within working-class, poor and minority communities. It can also be vehicle of classism and racism (e.g. through the screening of potential trading partners by grammar, education or skin colour) and contribute to accentuation of socio-economic gaps (I#1). Moreover, it can jeopardize the survival of existent non-digital

sharing practices, imposing itself over them and alienating people who daily share “off-site” (McBride, 2015; Schor, 2014). In some cases, these models lead to a new form of gentrification, excluding from the community those not able to pay to be part of it or to share equally valuable items (e.g. cases of eviction due to the AirBnB pressure on the accommodation market) (I#7).

According to the above-mentioned survey, the sharing economy results in service improvements and increased economic and entrepreneurial activities (DuPuis & Rainwater, 2015). In addition, economic and political systems are said to benefit from the large amounts of data provided by these platforms to look at patterns of consumption in a more detailed and discrete way (I#6). Therefore, Government-to-peer (G2P) schemes are emerging for many public goods, harnessing the models that start-ups of the sharing economy have already put in place but with a democratic structure and based on replication rather than on indefinite expansion (I#2; I#1). An economic driver from the demand side is the doubtless convenience of making extra-money out of the idle capacity of the surplus of goods due to nearly two decades of intense import, purchasing and consumption (Schor, 2014), and of capturing assets that are already in existence but not used to capacity (e.g. ready-available spare rooms (I#1)). In addition, the possibilities of avoiding the burden of owning, insuring, storing and disposing (McBride & Borowiak, 2015), of accessing on-demand and of having more choices available on the marketplace (PwC network, 2015) are also important drivers to the diffusion of these platforms. They aggregate different producers or suppliers, providing comprehensive services, geographically unlimited opportunities and flexible supply to meet rapidly changing demands (McBride & Borowiak, 2015). Moreover, despite on-site exchanges still represent examples of more trustful and fairer transactions (I#6), these platforms are regarded as reliable intermediaries for exchanges on global scale. They allow secure payment through digital systems, make trustworthy the whole process (Botsman & Rogers, 2010) and reduce the costs per transaction (McBride & Borowiak, 2015). In addition, the attractiveness of becoming a micro-entrepreneur with flexible working hours plays an important role (McBride, 2015). The World Café highlighted the need to differentiate sharing from gifting and charity. While charity implies a condition of disparity, gifting can happen either between peers or between people with different level of wealth. Gifting to somebody who belongs to a lower-income class, starting from a condition of affluence, can even amplify the inequalities and create a sense of resentment. Therefore, sometimes it is easier to give starting from a condition of scarcity (I#5). If the actors in a transaction share a condition of affluence, instead, the exchanges are more likely to be fairer and mostly without money involved, because none of the parties has interest in getting the better deal. If they share a condition of scarcity, instead, the two possible reactions are mutual help or fight for gaining advantage over the other (I#5; I#6).

4.4 Environmental barriers and drivers

Although it is usually argued that sharing economy platforms foster a sustainable marketplace (Hamari, Sjöklint, & Ukkonen, 2015), this phenomenon has been found to have a perverse eco-impact (Schor, 2014). The main barrier to sustainability can be synthesized by the concept of rebound or ripple effect, also known as Jevons Paradox: the increase of consumption rate that occurs when costs decrease. In this case the creation of new markets expands the volume of trades to the already utilized assets or to the “gigs” offered by non-professional, part-time available workers that, according to what the *New York Times* reported in July 2015, are performing almost 18% of all jobs in the United States (McBride & Borowiak, 2015). As emerged also from the World Cafè, the disconnection from Nature, from the limited resources we share, in turns, disconnects us from each other and results in lack of awareness, reckless dynamics of interactions (I#4) and higher ecologic impact in terms of energy and resources consumption, pollution and waste generation (Schor, 2014).

Likewise, environmental awareness is surely an important driver to sharing, fostering it as a means for promoting a different consumption paradigm. From this perspective, people should be encouraged to perform sharing practices, by the platforms above presented, mutually influence each other and promote environmentally sustainable principles, such as reuse and efficient use of resources (Cuddy, Bos, & Doherty, 2012). Proximity is regarded as another driver to efficient exchanges (I#6), as well as the possibility of satisfying each one’s own needs by exchanging resources within the community. This gives a positive sense of self-reliance and self-sufficiency that were lost with the externalization and industrialization of the means of production (I#5). Although the Jevons paradox above described can occur, in a study aiming to collect global data on the sharing economy sector, sustainability appears to be one of the main motivations to participate (Matofska, 2015).

4.5 Alternatives

Several older types of companies and organizations – such as libraries, tool libraries, cooperatives, seed banks, repair collectives, neighbourhood clubs, etc. – have been facilitating collaborative consumption and production since they were founded and they are now experiencing increased membership and growth, showing that such models can exist across the value spectrum (Rinne, 2013). In addition, the solidarity economy is regarded as an alternative to the contradictions of the sharing economy model illustrated above. The initiatives that fall into this category reflect a different orientation to ownership and profit, toward cooperation, respect for diversity, democratic self-management and collective ownership. They provide different experiences of social interaction and economic empowerment and have potential for fostering innovative solutions to the problems generated by the current economic system (McBride & Borowiak, 2015). Like the sharing economy, solidarity economy practices are at the periphery of the formal market (I#1), especially because are not mediated by digital platforms but in fact mostly happen “off the

grid". Such initiatives come in many forms, from housing to consumption, from working to purchasing or producing cooperatives, but also the eco-villages, the volunteer collectives and any kind of organization characterized by collective ownership, shared risk and democratic self-management. These come in different sizes and operate in different sectors, can have adopted a hybrid form and can be or not be formally recognized according to the legal requirements that vary from state to state. This sector has the explicit objective of boosting the resilience of both workers and communities. Workers are integrated in the ownership and management of their firm, sharing the profits—where they exist—but also being involved in the democratic decision making process. This creates responsible citizens and therefore can have a positive spill over effect on society (McBride & Borowiak, 2015). In addition, big movements are involving entire cities, such as Paris with its annual "OuiShare" fest, Seoul with its "sharing city" project, and even countries, such as Colombia, the sharing hub of Latin America and Ecuador where "Buen Conocer" was launched, introducing principles of open networks, open production and an economy of the commons (Schor, 2014).

4.6 Sharing communities

This section aims to analyse the various types of community organization, defining their premises, features and evolution in order to gain a better understanding of the dynamics involved and results obtained. In general, all such the initiatives aimed at achieving sustainability, both in ecological, economic and social terms. Differences rely on the spatial, cultural and temporal context, on natural capital endowments, technological innovation and the initiator of change (government, business or community). These differences influence the range of choices available for people to organize their daily activities (mobility, energy, food), depending on the physical form given to the space, their access to those spaces and their behaviour.

Based on those differences, three main distinctive types of communities have been identified and analysed focusing on the patterns of sharing that characterize each of them:

- Outward community: usually pursued and financed by government or organizations for development. Allow members to share access to the same technology and infrastructure, regardless of social interactions, of values and of each one's individual behaviour, and without affecting the concept of private property;
- Connected community: where members share access to material (goods) and non-material (skills, time, knowledge, etc.) assets. The interactions between members take place according to defined rules;
- Inward community: self-managed initiatives where members share believes, behaviour practices and attitudes toward the implementation of common technologies, infrastructures and property.

The following table shows the main aspects that have been observed to be differing between the listed communities.

	Initiator	Private property	Values	Regulation	Social interaction	Funds	Motivation	Sharing
<i>Outward</i>	Top-down	Business-as-usual	Individual	External	Not necessarily	External	External (e.g. increase efficiency or literate level)	Access to technology/in frastructure
<i>Connected</i>	Business driven	Traded access or exchange	Partially shared	Internal (Self-regulated with the feedback system)	Not necessarily	Internal (secondary market)	Internal (e.g. additional income source, flexibility, reciprocity)	Goods, services and knowledge
<i>Inward</i>	Bottom-up	Coexisten t with common spaces	Shared	Internal (Common agreement)	Essential	Internal	Internal (e.g. living style or common goal)	Values and attitudes

4.6.1 *Outward community*

An Eco-district can be regarded as an example of this type of community. It refers to a geographically defined space where neighbours, institutions, and businesses, jointly with city leaders and utility providers, work to meet ambitious sustainability goals and co-develop innovative projects. The eco-district scale overcomes the limitations of the household or building level and is a reference size for governance decisions and resource allocation, therefore having potential to scale up (San Francisco Planning Department, 2012; Selzter et al., 2010). Within an eco-district, neighbours share mobility solutions (car or bike sharing), renewable energy heat and power plants, as well as weatherization interventions. Therefore, eco-districts are the practical vectors to implement cities' climate actions, where mainly technological and infrastructural interventions are implemented while fostering community-driven projects to integrate culture in public space (San Francisco Planning Department, 2012) and to enhance the creation of shared values and identity. Here, private property is still regarded as an individual possession not available for other members of the community and not necessarily interacting with each other. Examples falling into this category include schools, where students share the service and the facilities, but also municipalities, cities, regions and states as a whole, where inhabitants share services and infrastructures at different levels.

4.6.2 *Connected community*

These are business-driven sharing communities where the use of private property or the access to it, on a time or service base, is sold on a secondary market. The above discussed phenomenon of the sharing economy is one of the model falling into this category, characterized by the mediation of digital technologies that allow reliable and trustful transactions via the self-regulating mechanism of reviews. The participation in this kind of community does not require shared beliefs or common values, but only respect

for the rules and ownership of assets made available for exchange. Social interactions are not particularly fostered, often limited to the time of the transaction, but pragmatically allowed up to the point and in the way that the mutual trust on which the whole system relies is guaranteed. The members are motivated by the several benefits that result from being part of these communities, as explained above. Some of the platforms only mediate the first contacts between members interested in the exchange, while the rest of the transaction happens offline. Some are structured in a way that automates the whole process, so that the two parts never need to meet up in order to complete the interaction. The members of these kinds of communities, thus, have access to a pool of resources that are effectively exchanged between them, with different accounting methods and mutuality mechanisms.

4.6.3 *Inward community*

Intentional community are aggregations driven by a common set of values and rules, either for a long or short term, where members interact with each other in order to pursue common objectives. Eco-villages are suitable examples, but initiatives not related with environmental issues can also be included in this category, such as religious communities, scout groups, co-housing, worker or housing co-ops, indigenous villages, volunteer organizations, etc. For each of those, members share the culture, the identity and the values that the community is built on, in an equal and collaborative framework toward the goal of implementing communal and equal facilities. The community building process can be voluntary or can happen over time, evolving semi-unconsciously from generation to generation and gradually becoming common denominator, in a process such as the one that for example in each country has led to develop languages. The generation of these communities is mostly driven by internal motivation of reciprocity, thus members do not have any personal interest in each other but only shared with each other. This enhances attitudes toward the sharing of infrastructures and assets, embedding characteristics from the first two types of community above described.

4.6.4 *Santa Cruz case study*

In the State of California the sharing economy shows all its different nuances. During some of the interviews and the World Café, a number of platforms and initiatives based in Santa Cruz have been mentioned. Here, we list and relate them to the types of community defined earlier.

Outward community	<p>Seed Library: where people can borrow packets of seeds of locally adapted varieties of plants for each season.</p> <p>Co-working: flexible working space and collaborative environment are the benefits provided by this new concept for the office space. In Santa Cruz this is possible at <i>Nextspace</i>.</p>
Connected community	<p>Nextdoor: a web network that allows neighbours to rapidly communicate over topics ranging from crime and safety to lost pets, from yard sales to recommendations about a necessity.</p> <p>Free radio SC: the city's public radio based on private donations.</p>

	Ride sharing: allowed by digital platforms such as <i>Uber</i> .
Inward community	Co-housing: new living concept, fostering community building between the residents of the same building or group of houses through gathering events and common areas. In Santa Cruz, <i>Coyote Crossing</i> and <i>Walnut Commons</i> are two applied examples of this concept.
	Student Co-ops: different example of student-driven sharing initiatives such as college gardens, food co-op, housing co-op, etc. In the case of the garden and food co-ops, the students benefit from the control over the food supply on campus, rather than relying on the business-driven shops and canteens. The housing co-ops constitute an alternative to the prohibitive housing market.
	Urban gardens, such as the <i>Flat Beach Community Garden</i> .
	Bike repair shop: a community-driven initiative based on voluntary work and the D-I-Y principle. An example in Santa Cruz is the <i>Bike Church</i> .
	Hub for sustainable living: a collective of several local associations addressing sustainability that use this hub for establishing shared action plans.
	Little free libraries: bottom-up initiatives creating small niches in town where it is possible to exchange one second-hand book with another.
	Food Not Bombs: non-profit association that, since it started in 1980, has now spread all over the world, collecting food that would otherwise be thrown away and cooking it for homeless people.
	Time bank: the association that allow exchanges using time as a currency
	Free events and entertainment: in town and on campus many periodic events are organized to foster interactions between students and enhance their knowledge of the facilities available
	Hitchhiking: common activity for student heading to or leaving the campus, given the almost constant car flow coming from or going there.

5. Discussion

The matrix offered above reveals how interactions allowed by the sharing economy platforms are, for the most part, still based on formal accounting methods, even if not always monetary-based (e.g. time banks), and only in some cases complemented by a certain degree of reciprocity. This, together with the payment of a fee required by some of the platforms, constitute the first contradictions inherent to this model, since sharing interactions should not be based on monetary transactions. The for-profit models, not aiming at establishing long-lasting relationships between the actors of a transaction but to maximize assets and revenues per transaction (Schor, 2014), are structured for allowing fast and efficient interactions, where reviews are intended mainly to enforce trust. Non-profit initiatives, instead, aim at serving needs mainly at the community scale, and their success is directly proportional to the number (Schor, 2014) and reliability of transactions. Therefore, they enhance social connections and reciprocity mechanisms that either come from belonging to the same network (e.g. Bitcoin, that allows people to take part to a secondary, community-supported market), or derives from the expectation of potential non-monetary benefits (e.g. crowdfunding, where people support ideas that they consider worthy to develop). Businesses' interest in taking part in non-profit platforms can be understood in terms of opportunity for low-cost

promotion. In addition, the matrix suggest that people meeting also in real life, rather than interacting only on online networks, establish more effective personal connections and are more willing to exchange with reciprocal patterns. Distinctions between rival and excludable goods and services, finally, show how such connotations determine the exchange model: non-rival goods or services are generally made available online and freely accessible; while those excludable are only shared on platforms based on accounting mechanisms, both monetary and non-monetary (e.g. time banks).

The evaluation of social barriers and drivers to sharing highlight how trust is an essential precondition to a successful transition. Trust is the social glue that enables these platforms to function and results in building people's reputation over time (Rinne, 2013). Therefore, when trust is missing, concerns about frauds, privacy and safety risks arise (Matofska, 2015). Trust is also propelled by fostering a sense of community and by spreading the cultural shift that is already allowing access-based paradigms to subvert the ownership-based model and the "throwaway living" culture promoted so far. Learning to share would also lead people to self-improvement by taking from those in the community can provide something, and giving to those who, instead, may need something.

From the economic point of view, the main barrier involves the illusion that the sharing economy is, somehow, challenging the market fundamentals of private property and capital accumulation through proposing an efficient model for using the idle capacity of spare goods or time and through the anti-monopolistic potential of diffused renters and owners. In reality, outside of the legal borders, capital can be amassed in venture capitalists' hands while risks are allocated to the workers, with unwanted effects on local and global economies, as well as on social classes and on virtuous traditional habits. Such effects originate from the same ambiguity found in normal market mechanisms, such as digital payment systems and reduced costs per transaction that, at the same time, are mining the potential to devise a real sharing society. Inasmuch as current standards and regulations are outdated and don't address the market novelty represented by the sharing economy, together with the public institutions adopting the platform and managing democratically its functioning in a G2P model, a legislative update is essential to counteract the phenomenon tendency to escalate uncontrollably and to become disruptive to economy and society. Moreover, on a theoretical basis, questions arise about whether the best driver to share is scarcity or affluence. It would be interesting, in current societies where relationships are affected by and depend on the relative level of wealth, to assess the changes which would derive from equalizing every one's income-levels.

The role of affluence shows a nonlinear association with environmental outcomes, especially beyond the point in which societies are service-based rather than good-based and in which there are actions towards energy efficiency, technological innovation, climate policies formulation, and relocation of production means to other countries (Carson, 2010). However, the sharing economy is creating economic activities and needs that would not have existed otherwise, and is increasing the demand for those already

existing (more travels, more car rides, etc.). By decreasing costs, hiding materials from consumers and depersonalising labour behind their experience, sharing can facilitate the rebound effect, the disconnection from society and the environmental crisis. In this context, awareness is at the same time a driver to, a purpose and an effect of sharing practices that foster the application of sustainable principles into environment-friendly behaviours, currently enforced through technological innovation and regulation.

In the final part of the results session, alternatives to the current sharing economy narrative are mentioned, both inspired by traditional and modern initiatives. Differences with the sharing economy regarding the governance model (directed from outside the community of the platform's users vs democratic self-management) and risk management (shifted to micro-entrepreneurs in the first case vs shared between community members in the second) must be addressed. Finally, alternatives question also the concept of private property, proposing a communal ownership model. Similar to the sharing economy, the solidarity economy has an inspiring effect on society as a whole and, due to its unequivocal definition, is also better integrated into the legislative framework. The definition of the sharing communities, finally, can be seen as a first attempt to define characteristics and evaluate dynamics within and between themselves.

6. Conclusions and considerations

The environmental crisis is impacting the economy as well as the society. Worldwide and, over time, such impact is spreading, regardless of class, origin or level of knowledge. Since we are sharing limited resources in a world with limited carrying capacity and live in a society increasingly specialized, where everybody is interdependent and relies on each other skills, we should address climate change and other environmental-related issues coherently and at the global level. The key building blocks for any collective action include developing a shared understanding of long-term goals, building effective institutions for co-operation, demonstrating leadership and working to build trust with others (Stern, 2006). Thus, a "sharing" and a collaborative mind-set, in opposition to the individual ownership and the competitive attitude that have been regulating the majority of the societies so far, would make individuals feel part of a community, increase their awareness and their sense of responsibility over each one's share of common resources and highlight their personal roles in addressing common issues.

Therefore, sharing and collaboration are not only about efficient redistribution and about reuse of resources, but also constitute alternatives that are more preferable and more effective than conflict and competition in the action against climate change. The achievement of shared environmental goals is more likely to happen if the commitment is perceived as shared among everybody, and is not a "solo" but a community challenge.

Douglas Rushkoff, in his book *Life Inc.*, pictures how, in the 1950s, with the dawn of hyper consumerism, the perception of society as formed by a group of citizens was replaced by the self-reliant vision of the individual consumer. Therefore, the challenge should be to restore the "social capital" defined

by political science professor, R. Putnam, as “the trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions” (Botsman & Rogers, 2010).

In this work there is a first attempt to envision a sharing society where the drawbacks of the sharing economy can be overcome. This vision implies a shift from a self-centred to a selfless culture in which sharing becomes the custom. It is based on reciprocal equity among the community members and results in a better use of resources, time and space. The argument, then, is that sharing practices should be included in the broader branch of sustainability that is addressing peoples’ behaviour.

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Annex A

List of interviewees

<i>Interviewee #</i>	<i>Expertise</i>
1	Professor at the Politics department of USFCA
2	Writer and content strategist focused on coworking, collaboration and community
3	Chair of West Marin Commons Founding Board of Directors
4	Activist and community developer
5	Writer about economics and radio broadcaster
6	Community member in Santa Cruz, CA.
7	Counsellor for community organizing. Member of the Board of Directors of Common Counsel Foundation in Oakland, CA.

Kresge Common Ground Center and Politics Department Present

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FULVIA CALCAGNI, is a graduate student in Environmental Science at the Autònoma University of Barcelona, with an undergraduate in Environmental Engineering at Tor Vergata University of Rome. She is a visiting scholar at UCSC for the winter quarter, performing a research project on the contribution of sharing practices to foster sustainability at the local scale.

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