Alternatives to Money-As-Usual in Ecological Economics: A Study of Local Currencies and 100 Percent Reserve Banking

Kristofer Dittmer

Ph.D. thesis

Doctoral dissertation

Alternatives to Money-As-Usual in Ecological Economics: A Study of Local Currencies and 100 Percent Reserve Banking

Kristofer Dittmer

September 2014

Institut de Ciència i Tecnologia Ambientals (ICTA)
Universitat Autònoma de Barcelona (UAB)

Ph.D. Programme in Environmental Science and Technology
Ecological Economics and Environmental Management

Supervisor:

Dr. Louis Lemkow
Professor
ICTA and Department of Sociology
UAB

Table of Contents

Abstract v

Resumen vii

Acknowledgements x

Preface xii

1. Introduction 1

  1.1. Subject of research 1

  1.2. Ecological economics 4

  1.3. Frederick Soddy's contribution to the ecological economics of money 9

    1.3.1. The debt relation and the second law of thermodynamics 11

    1.3.2. Money things and the first law of thermodynamics 15

    1.3.3. Scales of measurement and the politics of money 21

  1.4. A note on the chapters 24

  References 25

2. Local currencies for purposive degrowth? A quality check of some proposals for changing money-as-usual 32

  Abstract 32

  2.1. Introduction 34

  2.2. Degrowth and monetary alternatives 36

  2.3. LETS 40

  2.4. Time banks 46

  2.5. HOUR currencies 50

  2.6. Convertible local currencies 53

  2.7. Discussion 58

    2.7.1 Local currencies: Problematizing the prospects 58

    2.7.2 Local currencies as two varieties of utopian socialism, and a less utopian alternative 61

  2.8. Conclusion 66

  References 68

3. Case study: Motivation and methodological considerations 82

  References 86

4. Communal currencies in Venezuela: An introduction 89

  Abstract 89

  4.1. Introduction 90

4.1.1 The Bolivarian Revolution 90
4.2. The emergence of barter systems in Venezuela 92
4.3. Legislation of the *trueke* 96
4.4. Basic functioning of the barter systems 97
4.5. Ideological features: indigenity, socialism, and agroecology 99
4.6. Conclusion 102
References 104
5. Communal currencies: The Chavista experiment with non-capitalist money 108
Abstract 108
5.1. Introduction 109
5.2. The Chávez government's experiment with communal currencies 110
5.3. Strong cultural optimism 115
5.4. Understanding money and barter 118
5.5. Has state support benefitted the communal currencies? 125
5.6. The difficult search for ecosocialism 128
5.7. Conclusions 131
References 134
6. 100 percent reserve banking: A critical review of green perspectives 141
Abstract 141
6.1. Introduction 142
6.1.1. Outline and history of proposals for 100 percent reserve banking 142
6.2. Controlling scale by limiting private investments to the availability of savings 147
6.3. The issuer of money determines what gets done in the economy 153
6.4. Reducing debt levels to counter the growth imperative of interest 159
6.5. Can money creation be monopolized in a market economy? 164
6.6. Conclusion 165
References 166
7. Conclusions 174
7.1. Contributions to local currency research, and some extensions of the argument 174
7.2. Local currencies for involuntary rather than purposive degrowth 178
7.3. C-PeRB and politics 182
7.4. Future research 186
References 188

Abstract

This thesis aims to contribute to the debate in academia and beyond concerning the case for certain alternatives to the monetary systems of existing capitalist economies. Two families of alternative monetary organization are researched; local currencies (or synonymously, community currencies) and 100 percent reserve banking (C-PeRB). The present work focusses mainly on assessing their contemporary relevance to potentially wide-ranging improvements in social equity and ecological sustainability. The methodological approach is issue-driven interdisciplinarity. The introductory chapter argues that there is much scope for the development of ecological economics perspectives on alternatives to money-as-usual. A brief exposition of the contribution of Frederick Soddy to the ecological economics of money is offered, arguing that future research along these lines should involve more consideration of the politics of money.

Chapter 2 introduces the degrowth movement and its advocacy of local currencies as tools for advancing socially equitable and ecologically sustainable degrowth. The chapter reviews the academic research about four widespread local currency types – LETS, time banks, HOUR currencies, and convertible local currencies – to assess their performance with respect to four degrowth-related criteria: community-building, advancement of alternative values in economic exchange, facilitation of alternative livelihoods, and eco-localization. We conclude that existing research provides a very weak basis for advocating local currency networks as tools for a purposive degrowth transition, i.e. an intentional departure from growth-based society meant to pre-empt further environmental destruction and human suffering. The chapter develops the application to such networks of the Marxian critique of utopian socialism.

Chapters 3-5 present a case study of Venezuela's communal currency experiment, which is unique worldwide as a central government initiative. In view of the experiment's lack of success, we discuss its foundation on strong cultural optimism and on confused concepts of

the nature and origins of money. It is argued that government support has been a mixed blessing, helping to spread a single, unadaptive model of isolationist-egalitarian 'barter' systems. The present condition and future relevance of Venezuela's communal currencies is discussed in terms of the government's stated goal of transitioning to ecosocialism. The outcome of the experiment suggests that initiating a transition to ecosocialism requires the huge disincentive of near-zero gasoline prices to be tackled before ecologically sensible alternative economies can be constructed in Venezuela.

Chapter 6 assesses the case for C-PeRB – essentially a proposal to make money creation an exclusive privilege of the state – as an element of a steady-state economy. We identify three groups of green arguments in favour of C-PeRB, namely that it would help to: (1) limit economic growth by constraining new investments by the availability of savings; (2) potentially elevate environmental considerations in decisions about resource allocation by increasing the role of the democratic state as an economic actor; (3) drastically cut debt levels to counter a presumed growth imperative associated with a 'debt-based' bank money system. We offer criticisms of each of these points, and suggest that the green case for C-PeRB is not very solid as it stands.

The concluding chapter argues that we may distinguish between the relevance of local currencies to a purposive degrowth transition vs. involuntary degrowth in the context of a long-term crisis of global capitalism. The existing track record of local currencies is arguably more relevant to the former scenario, and their role in the second is more speculative. Furthermore, by offering a brief example concerning C-PeRB, we suggest that proponents of particular visions of socio-ecological transition, such as the steady-state economy, should deepen their engagement with political theory of social change. In sum, more efforts need to be made to raise the level of debate about what alternatives to existing capitalist monetary systems are theoretically and practically possible.

Resumen

Esta tesis tiene como objetivo contribuir al debate, en el mundo académico y más allá, sobre los argumentos de ciertas alternativas a los sistemas monetarios de las economías capitalistas existentes. Son investigadas dos clases de organización monetaria alternativa: las monedas locales (monedas comunitarias) y la banca de reserva 100% (C-PeRB). El presente trabajo se centra principalmente en la evaluación de su relevancia contemporánea para mejoramientos, potencialmente amplios, de la equidad social y la sostenibilidad ecológica. El enfoque metodológico es la interdisciplinariedad orientada al estudio de problemas. El capítulo introductorio argumenta que hay mucho margen para el desarrollo de las perspectivas de la economía ecológica sobre las alternativas al dinero de siempre. Se ofrece una breve exposición de la contribución de Frederick Soddy a la economía ecológica del dinero, con el argumento de que las futuras investigaciones en esta línea deberían dar más consideración a la política del dinero.

El capítulo 2 presenta el movimiento decrecentista y su promoción de las monedas locales como herramientas para avanzar el decrecimiento socialmente equitativo y ecológicamente sostenible. El capítulo revisa la investigación académica sobre cuatro tipos comunes de moneda local – LETS, bancos de tiempo, monedas HOUR, y monedas locales convertibles – para evaluar su rendimiento con respecto a cuatro criterios relacionados con el decrecimiento: la generación de comunidades, la promoción de valores alternativos en el intercambio económico, la facilitación de medios de vida alternativos, y la relocalización económica. Llegamos a la conclusión que la investigación existente constituye una base muy débil para abogar por las redes de moneda local como herramientas para una transición decrecentista intencionada, es decir, una salida intencional de la sociedad basada en el crecimiento para prevenir la continuación de la destrucción ambiental y el sufrimiento humano. El capítulo desarrolla la aplicación a este tipo de redes de la crítica marxista al socialismo utópico.

Los capítulos 3-5 presentan un estudio de caso del experimento con las moneda comunales en Venezuela, que es único en el mundo como una iniciativa del gobierno central. Dada la falta de éxito del experimento, consideramos su fundación en un optimismo cultural fuerte y en conceptos confusos sobre la naturaleza y los orígenes del dinero. Argumentamos que el apoyo gubernamental ha tenido sus pros y sus contras, ayudando a difundir un solo modelo, poco flexible, de sistemas de 'trueque' aislacionistas-igualitarios. La condición actual y la relevancia futura de las monedas comunales de Venezuela son aquí tratadas en términos del objetivo declarado del gobierno de emprender una transición hacia el ecosocialismo. Los resultados del experimento sugieren que el comienzo de una transición al ecosocialismo requiere que el enorme desincentivo del precio casi nulo de la gasolina sea abordado antes de que se pueda construir economías alternativas ecológicamente razonables en Venezuela.

El capítulo 6 evalúa los argumentos a favor de C-PeRB – esencialmente una propuesta para hacer de la creación del dinero un privilegio exclusivo del Estado – como un elemento de una economía de estado estacionario. Identificamos tres grupos de argumentos verdes a favor de C-PeRB, a saber, que esta reforma ayudaría a: (1) limitar el crecimiento económico al subordinar la inversión a la disponibilidad de ahorros; (2) elevar potencialmente las consideraciones ambientales en las decisiones sobre la asignación de recursos, mediante el aumento del papel del estado democrático como actor económico; (3) reducir drásticamente los niveles de deuda para hacer frente a un imperativo de crecimiento presuntamente asociado a un sistema de dinero bancario 'basado en deuda'. Ofrecemos críticas de cada uno de estos puntos, y sugerimos que el discurso verde en favor de C-PeRB no es muy sólido en su forma actual.

El capítulo final argumenta que se puede distinguir entre la relevancia de las monedas locales para una transición decrecentista intencionada, y para el decrecimiento involuntario en el contexto de una crisis a largo plazo del capitalismo global. Puede decirse que el historial de las monedas locales es más relevante para el primer escenario, mientras que su papel en el segundo caso es más especulativo. Además, a través de un breve ejemplo del caso de C-PeRB, sugerimos que los partidarios de ciertas visiones de transición socio-ecológica, como la economía de estado estacionario, deben profundizar su interacción con

la teoría política del cambio social. En síntesis, se necesitan más esfuerzos para profundizar y ampliar el debate sobre qué alternativas a los sistemas monetarios capitalistas existentes son teóricamente y prácticamente posibles.

Acknowledgements

I would like to thank all those who have made this thesis possible.

I gratefully acknowledge the financial support of the Spanish Ministry of Education through a four-year *Formación de Profesorado Universitario* grant (FPU AP2008-04624). I also acknowledge the financial support of the Spanish government through the project CSO2011-28990 BEGISUD (Beyond GDP growth: Investigating the socio-economic conditions for a socially sustainable degrowth).

Many thanks to my PhD supervisor Louis Lemkow for his constant support and for showing much confidence in me. I am grateful to the senior researchers at ICTA who have shown interest in my work and helped me during my doctoral years: Joan Martinez-Alier, Giorgos Kallis, Jeroen van den Bergh, and Mario Giampietro. Thanks also to my many ICTA colleagues who have made this experience more enjoyable and rewarding, and to the ICTA administrative staff. I would also like to thank the participants of the Barcelona degrowth reading group for our many stimulating discussions.

Many thanks also to Pete North for hosting me at the University of Liverpool and for getting me thinking and researching about money and alternative economies. At the University of Liverpool, the School of Environmental Sciences – Department of Geography kindly provided me with an excellent working environment over my seven-month stay in this amiable city. Thank you to my colleagues there, and to Tayo Aluko. I also want to thank the editors of the databank cc-literature.org, and the reviewers of the articles contained in this dissertation. I am grateful to Marcelo Gryckiewicz, Sheryle Carlson, Mattias Börjesson, Andrea Cardoso, Tarik Serrano, and Tom Purcell for their useful advice. The usual disclaimer applies. A posthumous thank you to the late Richard Douthwaite for his kind encouragement.

I thank all those who made my fieldwork in Venezuela possible, including of course all my interviewees. Thank you to the *Red Nacional de Sistemas de Trueke* and the *Red Nacional de Comuneros y Comuneras*. For their great hospitality, many thanks to Juan Esteban López, Yolanda Prado, Omar Rodríguez, Pablo Mayayo, Livio Rangel, Minerva Barroso, Juanita Barroso, Elkin Mateus, Nerys Pineda, Tito Quiroz, María Barreto, José Herrera, Vicenta Hernández, Mélida Carreño, and Benali León. Thank you also to the people at the *Ateneo Popular de Caracas* and especially to my banker Gregorio Meléndez.

Finally, I wish to thank ever so much my family and my partner Heidy for all their love and support.

Preface

This dissertation began in autumn 2008 with the writing of an application for a four-year scholarship to undertake a PhD project researching 'The role of the labour market in the transition to sustainability'. The application was made after completion of my master's thesis at ICTA about the socioeconomic impacts of an invasive species, a subject that I did not wish to pursue further. I initiated the PhD project in October 2009. My general interest was in the paradox that economic growth appears to be defended not only in terms of its contribution to the satisfaction of consumption needs, but also in terms of its positive effects on the level of employment, irrespective of whatever is produced. After some months, a brief collaboration was initiated with two senior ICTA researchers interested in policies for working time reduction. However, I ended this collaboration partly because I did not agree with the instruction to start out from mainstream economic theory and aspire primarily to convince mainstream economists about the benefits of such policies. I was further discouraged by criticism from ICTA's annual PhD evaluation committee regarding the feasibility of the intended research. Consequently, in August 2010, I made up my mind to focus instead on local currencies.

My interest in local currencies had been aroused by participation in a workshop at the Degrowth Conference in Barcelona in March 2010, where I had fortunately been asked to participate as note-taker. I also had a growing curiosity about money as a central institution of capitalism and modernity. These subjects were, however, somewhat unusual to ICTA. I wrote to the late local currency practitioner and writer Richard Douthwaite for advice, and he put me in contact with Dr. Peter North of the University of Liverpool. We arranged a stay for me as visiting researcher in Liverpool at the School of Environmental Sciences – Department of Geography between January and July 2011. Peter introduced me to the fields of monetary theory and local currencies, and much else of relevance to my project. This dissertation was only going to be about local currencies, but eventually became also a dissertation about 100 percent reserve banking (here abbreviated C-PeRB). This was partly

because my literature review about local currencies (chapter 2) had concluded with me standing by the pasture fence, asserting that the grass looked greener on the C-PeRB side. I had, in the main, strived to describe the greener grass in the more cautious, general terms of ‘government-centred ecological reform of the monetary system’, but I nevertheless singled out C-PeRB as a promising example thereof. I therefore felt obliged to take a more critical look at this particular proposal, finding rather to my surprise that this had not really been done by ecological economists. When that was done, I could not avoid viewing myself a little like the proverbial grazer.

1. Introduction

1.1. Subject of research

This dissertation is about two 'alternatives' to the conventional monetary systems of contemporary capitalist economies. The first is local currencies, which is a wide category of real-world social experiments.[1] I understand local currencies as social networks using exchange media that are not legal tender, intended to circulate at subnational levels and be administered with significant user influence. They are mostly created by civil society, and sometimes by public authorities. The second is 100 percent reserve banking (C-PeRB), which is a specific proposal for reform of the today ubiquitous system of so-called 'fractional' reserve banking. The basic content of C-PeRB will be explained in section 6.1.1. In a nutshell, it is a proposal to make money creation an exclusive privilege of the state and separate it from the operations of private banking. It is an economy-wide reform that has never been implemented anywhere.[2]

---

[1] The terms 'local currency' and 'community currency' are used synonymously in this thesis, with a preference for the former.

[2] Institutions with elements similar to C-PeRB have existed, such as 'fail-safe' banks of deposit in which deposits are almost fully covered by 'safe' government securities. The US postal savings system is an example that operated in this way (Jessup and Bochnak 1992; Phillips 1995: 40, 183; Simons 1948: 64). Another feature of C-PeRB, namely the separation of current accounts drawable on demand from uninsured investment accounts drawable at maturity, is similar to Islamic banking, although demand deposits in Islamic banking are not covered by 100 percent reserves (Al-Jarhi 2004; García et al. 2004).

My interest in local currencies and C-PeRB arises mainly out of concern about the general path of capitalist development, in particular its social and environmental consequences. Therefore, I am interested in them as 'alternatives' to money-as-usual, and focus on aspects that appear relevant to some form of (potentially large-scale, society-wide) transition to less damaging forms of social organization than existing capitalist economies. Some academics and practitioners prefer to see local currencies as complementary to conventional money, arguing for example that they can operate as a countercyclical mechanism that serves to maintain the economy at full capacity utilization (e.g. Stodder 2009). Many local currency networks can, however, be viewed as alternative in the sense that they aim to challenge fundamental elements of capitalism (North 2010). C-PeRB is clearly an alternative to fractional reserve banking, in the sense that it would completely replace the latter. However, whether an economic system with C-PeRB would necessarily be an alternative to – or merely a different variety of – capitalism, is an unresolved matter, which I will not attempt to settle in this thesis.[3]

[3] This question ties into the debate around whether the steady-state economy as envisioned by Herman Daly would be a form of capitalism or not. Smith (2010a; 2010b) has argued that it would, but Daly (2010; 2014) insists that it would not. Furthermore, as discussed in section 6.3, Mellor (2010) has proposed an economic system based on C-PeRB that rejects many other elements of capitalism. On a more profound level, the question would bring us to the debate about the general nature of money and its possibly distinct nature in modern capitalism (e.g. Ingham 2004b; Rochon and Rossi 2013), and whether it would at all be possible to effectively implement C-PeRB while retaining institutions such as private property, competitive markets, and private banks.

We may express the main research questions of the thesis in the following manner:

- To what extent can local currencies be considered as practical initiatives for improving social equity and ecological sustainability?

- How strong are the available arguments for 100 percent reserve banking as an economy-wide reform measure serving these same ends?

The methodological approach of the thesis is issue-driven – or problem-driven interdisciplinarity (Robinson 2008). This corresponds to the approach of ecological economics, which "seeks to promote truly transdisciplinary research in which practitioners accept that disciplinary boundaries are academic constructs irrelevant outside of the university and allow the problem being studied to determine the appropriate set of tools, rather than vice versa" (Daly and Farley 2011: xxiii). The thesis project has not been undertaken *within* any specific body of theory, whether Marxism or post-Keynesian economics.[4] Neither is it centred on the refinement of any particular research method. Instead, it aims to critically explore the mentioned propositional alternatives to the capitalist monetary systems of today. I have chosen to focus on these two alternatives for two main reasons. First, both seemed appealing to me when I began learning about them. Second, they both have some considerable weight; neither can be dismissed beforehand as the harebrained scheme of some lone "monetary crank" (Clark 2008). Local currencies are a

[4] The closest thing to a theoretical framework drawn upon throughout the dissertation is arguably the neo-chartalist or 'Modern Money Theory' (MMT) mix of credit and state theories of money. I discuss various elements of this theoretical current below in this introduction, and in chapters 2 and 5.

worldwide phenomenon of grassroots economic activism that have experienced a revival since the early 1980s, with roots going back to the utopian socialists of the 19th century (see chapter 2). C-PeRB is a long-standing proposal advocated on conventional economic grounds by influential economists such as Irving Fisher and Milton Friedman, and for broadly green reasons by important figures in ecological economics, in particular Frederick Soddy and Herman Daly (see chapter 6).

1.2. Ecological economics

As the title indicates, this dissertation is largely placed within ecological economics. As an institutionalized field of academic research, ecological economics has only existed since the late 1980s (Røpke 2004). At the time of its foundation, the initiators shared a "basic perspective on the embeddedness of the economy in nature, the importance of considering nature as a life-support system, and the need for understanding ecological and economic systems and their interactions in terms of flows of energy and matter" (Røpke 2005: 267). Although a number of more specific core beliefs were also shared by the initiators (ibid.), controversies about the nature of the field appear to have grown rather than subsided. While some consider it a pluralistic "transdiscipline" (Daly and Farley 2011: xvii) that draws freely upon established disciplines including neoclassical economics, others argue that its boundaries should be clearer and more narrowly drawn, excluding in particular mainstream techniques for monetary valuation of the environment (e.g. Spash 2013).

Such controversies notwithstanding, the basic perspective of ecological economics is arguably an important component for an environmentally informed analysis of phenomena such as local currencies and C-PeRB. Indeed, both are favourably discussed in the ecological economics textbook by Daly and Farley (2011: ch.15). As an element of Daly's vision of a steady-state economy, the link between C-PeRB and ecological economics is evident.[5] Still, although either noted (Jackson 2009: 179) or endorsed (Dietz and O'Neill 2013: 106-7) in important recent works in ecological economics, C-PeRB has not yet been subject to environmentally informed critical analysis. Instead, critical work has been confined to conventional economics (e.g. Admati and Hellwig 2013; Kregel 2012; Wallace 1996), and does not fully address the green case for such reform.

Despite their often manifestly green profile, local currency networks have rarely been the subject of research conducted by ecological economists or published in the journal Ecological Economics. (A relatively early exception is Barry and Proops 1999.) Instead, as noted by Schroeder et al. (2011), they have mainly been researched by sociologists, anthropologists, and geographers. These are disciplines with which ecological economics has engaged insufficiently. Insofar as ecological economics aspires to form part of a heterodox alternative to neoclassical economics, it must do so to a greater extent (see section 1.3.3 on this point for monetary theory). Conversely, it is somewhat unfortunate that virtually no existing local currency research has involved any 'social metabolism' approach to the measurement of materials and energy flows – an important area of

[5] Daly (2012) includes C-PeRB as one in a list of ten (an admittedly arbitrary number) "specific policy proposals for moving from our unsustainable growth economy to a steady-state economy" (p.180).

research in ecological economics. This would provide an additional way of conceptualizing and evaluating the 'alterity' of local currency networks. As noted in section 2.3, an example would be the degree to which local currencies facilitate alternative livelihoods (i.e. freedom from formal employment), which has mainly been evaluated on the basis of subjective accounts or by comparing the 'size' of the local currency sphere with the sphere of formal employment in terms of monetary value or hours of activity. An ecological economics assessment of relative size in terms of flows of energy and materials would complement the picture of true independence from the capitalist system. Such research is particularly relevant in the few cases where more metaphysical approaches suggest a large degree of independence from capitalist markets. As this was clearly not the case for the Venezuelan experiment researched in this PhD project, such research has not been undertaken here.

I will briefly illustrate further the need for a biophysical approach to research on local currencies, or more generally, on post-capitalist 'diverse economies' as theorized in the post-modernist tradition of Gibson-Graham (2006). Consider Williams' (2005) attempt to deconstruct "what is surely one of the last remaining meta-narratives of our times, namely the notion that goods and services are increasingly produced for monetized exchange by capitalist firms for the purpose of profit, rather than by the state or community" (p.2). Against this 'commodification thesis', Williams claims that "for all of the talk of a hegemonic, enveloping, dynamic, pervasive and totalizing commodified realm, there exists in the heartlands of commodification – the advanced 'market' economies – a non-commodified sphere that is not only as large as the commodified sphere but also growing relative to it" (p.7). How does Williams measure this? – Solely with reference to hours of

human activity: “contrary to the tenets of the commodification thesis that declare the disappearance of subsistence work, the populations of the advanced economies now spend the same amount of time engaged in non-exchanged work as they do in paid formal employment. Moreover, the amount of time spent in subsistence work over the past forty years will be shown to have grown relative to the time spent in formal employment” (p.32). On the basis of this finding, Williams claims that “the view of a hegemonic, all-encompassing, totalizing and victorious capitalism has been uncovered as an *illusion*. The result is that alternative futures no longer seem so implausible as when commodification was viewed as a natural and inevitable phenomenon” (p.275). If one accepts Williams’ thesis, “the future would suddenly become much more open and full of endless new possibilities” (p.5). The ecological economist, believing world society to have entered the autumn stage of “fossil energy civilization” (Giampietro et al. 2013: 294), finds it very hard to accept this one-dimensional analysis. No less relevant for theorizing the global dominance – or lack thereof – of capitalism as a system, is the extent to which human consumption of energy and materials is mediated by capitalist (i.e. profit- or growth-oriented, more or less competitive) markets. The advanced economies studied by Williams owe much of their basic social organization to the presence of a continuous supply of cheap fossil energy and materials, largely mediated by capitalist corporations (although we may concede that at least partly state-owned enterprises are often also involved). Corporate control over this lifeblood of human societies is a tremendous source of social power. Metaphorically speaking, the number of hours in a day that humans can remain ‘unplugged’ from this system is less relevant to theorizing power relations than the strength of the imperative to ‘plug in’ for at least a few hours almost every day to meet our endosomatic

and exosomatic energy and materials needs. At the very least, the individual's degree of dependence upon the capitalist economy is not linearly measured along a single scale.

Time is, of course, the fourth dimension of the physical space-time continuum, and Williams' clocktime analysis is in this wide sense also physical. For all the diversity of the culturally conditioned notions of time (see e.g. Harvey 1990), time has a (relatively!) solid basis in physical reality. This observation, however, is hardly of much immediate relevance to the social scientist theorizing socio-ecological transitions from present-day capitalism. Money, on the other hand, is a phenomenon for which an understanding of the links between social and physical reality should be central to such theorizing. This, it may be argued, is because money – by its essence – lacks any solid basis in physical reality, being instead predominantly a set of social institutions. In the following sections, we will briefly discuss some contributions to the understanding of money made by the proto-ecological economist Frederick Soddy. We will also discuss some shortcomings of this pioneering effort. Both the contributions and shortcomings suggest opportunities for fruitful – and long overdue – engagement of monetary ecological economics with other social science perspectives. Such theoretical integration has, however, not been a major purpose of this dissertation, which focusses on the assessment of practical initiatives. Nevertheless, the following discussion will serve to introduce some concepts about money that are usefully kept in mind when reading the subsequent chapters.

1.3. Frederick Soddy's contribution to the ecological economics of money

Since the publication of *The Entropy Law and the Economic Process* (Georgescu-Roegen 1971), an important current of ecological economics has concerned the application of the second law of thermodynamics to economic analysis. Insofar as monetary theory is concerned, however, the main contribution to the entropic perspective remains the work of Frederick Soddy, the English radiochemist. Awarded the Nobel Prize in chemistry in 1921, Soddy dedicated the second half of his life to economics. He denounced the widespread tendency to confuse money with true wealth, which, he argued, was incorporated in goods and services, whereas money was merely a claim on such wealth. In making this argument, he acknowledged the influence of John Ruskin (Soddy 1922; 1933), but can more broadly be said to have followed in the tradition of the

> "[m]any 19th-century economists [who] distinguished material welfare from what Thorstein Veblen called 'pecuniary' wealth. (...) The distinction between 'real wealth' and financial claims was a central theme of Friedrich List's National System of Political Economy (1841), Calvin Colton's Public Economy for the United States (1848) and the American School of technological and protectionist writers in general." (Hudson 2012: ch.19[6])

[6] Amazon Kindle version without page numbers.

Soddy's advance upon this dual understanding – which goes back to Aristotle's *Politics* (I.10) – was arguably to apply the principles of thermodynamics to conceptualize physical wealth as a flow, constituted by degradable energy and matter subject to decomposition, rather than something that can be saved, or accumulated indefinitely at compound interest. As he put it:

> "You cannot burn [coal] and still have it, and once burnt there is no way, thermodynamically, of extracting perennial interest from it. Such mysteries are among the inexorable laws of economics rather than of physics. With the doctrine of evolution, the real Adam turns out to have been an animal, and with the doctrine of energy the real capitalist proves to be a plant. The flamboyant era through which we have been passing is due not to our own merits, but to our having inherited accumulations of solar energy from the carboniferous era, so that life for once has been able to live beyond its income" (Soddy 1933: 30). [7]

In the following subsections, we will discuss three aspects of money, namely the debt relation, the money thing, and the politics of money. Each aspect is associated with a component of Soddy's natural science perspective on money, respectively: the second law

[7] Daly's (1980: 474) warning should be noted here: "That Soddy concentrated on the physical dimension in order to repair the consequences of its past neglect should not be allowed to lead one to suppose that he proposed a monistic physical theory of wealth, a misinterpretation which (...) was fostered by Frank Knight". Similarly, Martinez-Alier (1987: 135) argues: "In the unlikely event that he had been surrounded by economists converted to ecological reductionism, he would have quoted Ruskin at them with his eulogy of the aesthetic objectives of economic activity".

of thermodynamics, the first law of thermodynamics, and the comparison with physical scales of measurement.

1.3.1. The debt relation and the second law of thermodynamics

Soddy focussed much of his critique of the monetary system on the social convention of compounding interest payments. As he put it: “You cannot permanently pit an absurd human convention, such as the spontaneous increment of debt [compound interest], against the natural law of the spontaneous decrement of wealth [entropy]” (Soddy 1922: 30, as cited in Daly 2011: 6). He criticized what he saw as the collective delusion that society as a whole could live off interest, an idea made popular with the war bonds of the Great War (cf. Martinez-Alier 1987: 128-31). People’s desire to hold wealth was limited, because wealth – subject to the forces of entropy – perishes with the passing of time. Therefore:

> “What they desire is not wealth, but debts that do not rot, that are not expensive to keep up and which bring in perennial interest. Individual wealth more and more tends to take the character of legal instruments and agreements – such as money, national debt, loans to and investments in industry, – which determine the distribution of the national revenue as among individuals.” (Soddy 1931: 25)

For conceptual clarity, it is important to understand that what Soddy primarily criticizes here is the interest-bearing debt relation, not money as a medium of exchange. The interest-bearing debt relation is defined by the quantification of the obligation of a debtor to a

creditor by means of a unit of account, or money of account. Once quantified, a debt can become subject – depending on social practice – to the mathematical calculation of simple or compound interest.[8] We will now make a brief historical detour to clarify the fact that Soddy's target – the contradiction between the mathematics of debt and the laws governing natural growth – is an ancient phenomenon.

In the third millennium BCE, the temples and palaces of Sumer developed a money of account denominated in silver weight, setting the value of a unit of silver "equal to the monthly barley ration and land-unit crop yield" (Hudson 2004: 99). Based on the public temples and palaces, the Mesopotamian economies were mainly redistributive, but nevertheless "mixed 'public/private' economies" (ibid.: 104; see Renger 2011 on the economic periodization of Mesopotamian history). On the basis of the accounting equivalence, both weighed pieces of silver and bushels of barley, "and a few other essentials" (Hudson 2004: 100), could be used as means of payment (cf. Renger 2011: 24-6).[9] However, contrary to the orthodox myth of barter, "[e]xchange in Bronze Age Mesopotamia (4500–1200 BC) was conducted along lines similar to those that anthropologists have found in many parts of the world: not by payment on the spot but by running up debt balances. From gift exchange through redistributive palace economies, such balances typically were cleared at harvest time, the New Year, the seasonal return of

---

[8] For example, in ancient Babylonia (ca. 2000 BCE), compound interest would only be calculated on debts older than five years. This is because, at the standardized commercial interest rate equivalent to 20% a year, calculated as simple interest, the debt principal would double – 'mature' – in five years. The mathematics of exponential growth of debts at compound interest was part of the training of Sumerian and Babylonian scribes four thousand years ago (Hudson 2004; 2012: ch.2).

[9] Coins, i.e. stamped and roughly standardized pieces of metal, did not exist before the 8th century BCE.

commercial voyages or similar periodic occasions" (Hudson 2004: 102). As Hudson has documented for 2nd millennium Babylon, "[f]or small retail sales such as occurred when ale women sold beer, the common practice for consumers was not to pay on the spot but to 'run up a tab,' much as is done in bars today" (p.114). "Conducting transactions by running up debt balances enabled money (that is, silver) *not* to be used as a means of payment" (p.115, italics in original). The most important debts were owed to the public bodies "for consigning handicrafts to merchants for long-distance trade, and land, workshops, ale houses and professional tools of trade to 'entrepreneurs' acting as subcontractors" (p.99). Debts owed by cultivators, for instance, would normally be settled at harvest time, and "[t]he tendency was for delays in payment beyond this point to begin accruing interest" (p.110). Hudson explains how the resulting debt problems were managed:

> "Babylonian rulers annulled the accumulation of debts periodically, most notably at the outset of their first full year on the throne. It was these debt annulments that kept Mesopotamia's volume of debt carry-overs within the economy's ability to pay. What distorted Babylonian economic life was not a 'monetary problem' as such, but a rural debt problem. Bumper crops did not lead to a collapse of prices as occurs today. However, crop debts could not be paid when the harvest failed. There was no notion that market shifts in prices or interest rates might have restored equilibrium. Commercial interest rates remained stable at customary levels [at the annualized equivalent of 20 percent] century after century, regardless of the supply of silver. (However, the borrower's degree of distress was a factor in rates charged for barley debts, which varied much more than rates charged on commercial silver

debts.) Monetary adjustments were unnecessary because royal 'debt management' annulled the debts that accrued when crops failed and debts grew too large for the rural economy to pay, especially in times of military conflict" (p.115).

An important difference between debts in ancient Mesopotamia and in modern economies should be noted. In the former, the creation of debt principals was largely constrained by the availability of physical goods (and personal services). Debts were created e.g. by the lending of physical money things, or through consumptive loans and consumer overdrafts (Hudson 2004; Renger 2011). In contrast, in modern economies, there is no physical limit to the debt principals that can be created by banks as they issue demand deposits to borrowers 'out of nothing'. The historical dematerialization of monetary media of exchange – from metals, to paper notes constrained by metal reserves, to unbacked paper notes, to magnetic traces on computer disks transmitted by means of plastic cards – has often been identified as key to processes of financialization, i.e. to the growth of aggregate debt levels (recent examples in ecological economics are Giampietro and Mayumi 2012; Giampietro et al. 2012: 343). Nevertheless, as the Mesopotamian example clarifies, this dematerialization is not the whole story behind the phenomenon of monetary-physical disconnect. Once the principal is given, the debt relation takes on a mathematical life of its own, needing only metaphysical 'scriptural money' or 'book money' in order to grow. (Such moneys may not necessarily be able to function as transferrable means of payment.) In the area of monetary and financial reform, we may therefore distinguish between measures that directly address the debt relation, and others that do so indirectly by constraining the creation of loanable funds.

Soddy's critique of compound interest, based on the entropy law, was arguably his most influential analytical contribution to the ecological economics of money. In contrast, however, when discussing policy measures and reform proposals, Soddy was not primarily concerned directly with the debt relation, but with the way in which monetary media of exchange are created (violating – as he saw it – the first law of thermodynamics; the law of conservation of energy), i.e. with his proposal for C-PeRB. He singled out the C-PeRB opposite – fractional reserve banking – as that to which "the whole hell's brew which the scientific civilisation has become" was to be traced (1933: 10). Conversely, he wrote of C-PeRB that "[i]t would substitute a scientific national monetary system, leaving everything else as it is, and it claims that the recovery of the patient would be swift and complete" (p.vii). Still, Soddy also favoured measures addressed directly at the debt relation, such as "a debt tax whose rate would be set equal to the average rate of compound interest and whose effect would be 'to make all debts terminal by amortization'" (Seccareccia 1997: 133, citing Soddy 1934: 185). However, he appears to have stopped short of recommending the ancient practice of periodical cancellations of private debts by the declaration of debt jubilees, or clean slates, arguing instead that C-PeRB would mostly take care of the elimination of excessive private debts (see section 6.4).

1.3.2. Money things and the first law of thermodynamics

As we have just seen, Soddy focussed most of his action-oriented attention on money's violation of the first law of thermodynamics. In bank money (i.e. demand deposits), he

believed to have found the “outstanding exception” to the “common sense truism that, in the world ruled over by physical laws, it is impossible to get something for nothing” (1931: 31). He argued that “before banking started there was a definite amount of gold and silver coinage only. The first step on the downward path, from money for use to money for usury, was the power conferred upon the Bank of England [established in 1694] to issue bank-notes to a limited extent in return for the loan of money to the Government” (1933: 153). His attempts to apply the law of conservation to money occasionally acquired a distinctively crankish flavour:

> “Let there be no mistake as to what is wrong. It is (...) all banking tricks that could not be performed if the money were made of physical tokens or counters, which cannot be made negative in number. If this were so, then no one whatever, can get money without someone else giving it up, except the State which issues the money in the first instance. (...) Is it so absurd to suggest that the whole complex of the world’s madness could and would be cured by replacing the banker by an honest adding machine?” (Soddy 1934: 215-6)

Soddy did not pursue further the argument that money should be ‘re-materialized’; he was no ‘gold bug’ advocating a return to the gold standard (see e.g. Soddy 1933: 181). Instead, what his argument amounted to, was that only the state should be allowed to violate the law of conservation by creating money ‘out of nothing’ (he was writing before the nationalization of the Bank of England in 1946). Perhaps this inconsistency goes some way to explain why Soddy’s application of the first law to the creation of money has enjoyed less

enduring appeal than his application of the second law to debts (see e.g. Daly 1980; Martinez-Alier 1987: ch. 9). Moreover, in 1940, M. King Hubbert would write – perhaps with Soddy's argument against fractional reserve banking in mind: "We can abandon the fiction that what one is to receive is in payment for what one has done, and recognize that what we are really doing is utilizing the bounty that nature has provided us. Under these circumstances we recognize that we are all getting something for nothing (...)" (M. King Hubbert cit. in Martinez-Alier 1987: 147). Soddy's attempt to single out the bankers and their borrowers as the violators of the law of conservation, robbing the community of its rightfully earned wealth, was not very compelling in view of the fact that, in the fossil energy era, 'we are all' living off the planet's favourable low-entropy energy balance with the sun, accumulated through geological time.

In different terms, Soddy's rejection of 'negative money' may be read as the quixotic argument that a private economic actor A should not be allowed to issue new means of payment with which to pay B (or rather, B should not be allowed to accept them, much less pass them on), giving them value on the basis that A is owed a debt – or simply guaranteed – by the (in B's view) more creditworthy actor C. According to credit theories of money, monetary means of payment can be understood as simply this; a promise to pay backed by a more creditworthy promise to pay. More specifically, in Soddy's mind, no-one should be allowed to do what the Bank of England was set up to do: create effective money (here, bank notes) on the basis of the fact that the government (normally the most creditworthy national actor in a constitutional country) owes it money (here, precious metal coins). Given the fundamental role of credit/debt relations in an entrepreneurial economy based on the

division of labour, it would be quite a challenge to argue persuasively that a stable monetary system in such a society can be constituted by anything but such a hierarchy of promises to pay (see Bell 2001 on the hierarchy of money). The physical perspective that bank money and other forms of credit-money are created 'out of nothing' can be misleading; they are "more accurately, [created] out of the *social relation* of debt" (Ingham 2004b: 63, italics in original). If Soddy would have shared this understanding of the monetary system as a hierarchical network of promises and acceptances, the making of which can hardly be banished by decree, would he simply have argued that the state should stop supporting such activity, i.e. stop stabilizing this network, by no longer standing ready to exchange private promises to pay for promises of its own (i.e. cash and bank reserves) as 'lender of last resort'? As chapter 6 will show, he probably would; this is what the closing of the central bank's discount window under C-PeRB amounts to. It would arguably leave the economy with a mess of unstable private 'near-moneys' (cf. section 6.5).

To Soddy's credit, he understood that money is essentially a social institution rather than a physical thing, and did not advocate commodity money. As is clear in today's world of pure fiat money, since Nixon took the dollar off gold in 1971, the metallist argument that money must itself be an intrinsically valuable commodity is incorrect. The historical persistence of metallist arguments – enshrined e.g. in the gold standard and the Bretton Woods system – may be understood by adopting the view that monetary systems:

> "are essentially social and political arrangements that are based on either an equilibrium of competing interests or consensual agreement, and, as such, they are

> fragile (Douglas 1986). Greater stability is achieved if the social relations can be concealed in the form of a structure that is 'found in the physical world, or in the supernatural world, or in eternity, anywhere, so long as it is not seen as a socially contrived arrangement'." (Ingham 2004a: 179, citing Douglas 1986: 48)

As the following section suggests, Soddy appeared to lack the sociological comprehension expressed in the above quote. Before moving on to this matter, however, a few words will be said about the approach of a contemporary of Soddy's, the monetary reformer Silvio Gesell (1958 [1920]). While Soddy applied the entropy law to debt and the conservation law to money things, Gesell applied the entropy law to money things. Although Gesell did not make his argument in thermodynamic terms, his central argument was nevertheless that money enjoys an undue advantage over goods because the latter are on average more perishable. When withdrawn from circulation by savers, coins and bank notes do not degrade (or become obsolete) as quickly as most goods, such as foodstuffs and clothing, do. This gives rise to the problem of excess hoarding of money things. Gesell's point was famously taken up by Keynes (1936: ch.23 VI) as a cause of deficient effective demand for goods at the macroeconomic level. Gesell's solution was to impose an artificial carrying cost on money by requiring that stamps worth a certain percentage of a bank note's face value be adhered periodically to the note to uphold its value and legal validity. This negative interest on bank notes would be set equal to some average rate of depreciation estimated for goods. In Gesell's words:

> “Money which goes out of date like a newspaper, rots like potatoes, rusts like iron, evaporates like ether, is alone capable of standing the test as an instrument for the exchange of potatoes, newspapers, iron and ether. For such money is not preferred to goods either by the purchaser or the seller. You then part with goods for money only because you need the money as a means of exchange, not because you expect an advantage out of the possession of money.” (Gesell cit. in Seccareccia 1997: 132-3)

A problem with Gesell’s proposal was his exclusive focus on money things, or cash. Soddy wrote of the Gesellians that “[t]hey hardly seem to have got beyond thinking of money as tokens, and seem unaware of the existence of fictitious credit [i.e. bank-created deposits] and its natural consequences” (Soddy 1931: 76). They fail to see that “the problem is not just with the excessive desire for cash *vis-à-vis* physical goods, but the excessive desire for a complete array of objects of liquidity [i.e. financial assets] and the ‘impairing’ effect that their possession has on aggregate demand conditions in the economy (Seccareccia 1997: 133). With Soddy’s proposal for a debt tax equal to the average rate of compound interest, mentioned in the previous section, his “intent was somehow to generalize Gesell’s scheme by imposing a rate of depreciation on all financial assets through taxation” (ibid.). However, as Seccareccia points out, this begs the question why one should follow such a complicated route given that a “persistent policy of inflation would achieve similar objectives of redistributing income and stimulating aggregate demand as would a debt taxation policy” (p.134). For Soddy, money should be an invariable standard, and the purchasing power of money things should therefore be upheld by having the monetary authority maintain a

constant price level. In contrast to Gesell, Soddy's proposal would therefore protect the holders of money against the manifestations of the entropy law. As Seccareccia concludes, "[b]ecause of the obvious incompatibilities in their analysis, these authors faced an uphill battle in selling their ideas" (p.135).

1.3.3. Scales of measurement and the politics of money

Present-day ecological economists recognize that Soddy attributed far too many of the world's evils to the nature of bank money (Daly 1980). Nevertheless, Soddy's analytical perspective remains powerful against the metaphysics of conventional monetary economics. This has even been occasionally recognized by heterodox economists active mainly 'outside' ecological economics. Thus Seccareccia (1997: 137): "Those in the heterodox camp who are dissatisfied with current orthodoxy and who believe that a viable alternative can be built would greatly benefit from Soddy's and Gesell's analyses of money and interest". Although no ecological economist has in similar measure taken up Soddy's injunction to study the monetary exception, elements of his critical perspective have been employed in the context of the recent financial crisis, e.g. by Daly (2011) and Kallis et al. (2009). However, if ecological economics is to follow Soddy's move from critical analysis to prescription for monetary reform, it is useful to consider some shortcomings of his otherwise groundbreaking perspective. Ever the natural scientist, he aimed to set out "a scientific money system" (Soddy 1933: 3; 1934: 3), under which a "disinterested bureau of statisticians" would control the money stock to make money an invariable standard analogous to the scales of measurement of the physical world (1934: 169; see also 1933:

172). He was contemptuous of professional economists: "The very term used by orthodox exponents of monetary science – *monetary policy* – is sufficient to condemn them. For whoever would talk of a *weights and measures policy*" (1933: xvi, italics in original). Given his Ruskian influences, Soddy surely understood that money measures something fundamentally different than physical scales of measurement; not an objective reality existing independently of humans, but subjective values existing only in the human mind. To nevertheless defend his analogy, Soddy would have had to argue that there objectively exists an interpersonally homogeneous mental 'substance' of valuableness or utility, that can be divided into discrete quanta by the application of a monetary measurement scale.

Whereas the philosophy of value is largely beyond the scope of this dissertation, more relevant here is Soddy's claim that the creation of money things – which, as we have argued, by their essence have no solid basis in physical reality[10] – and the determination of their value could, by means of monetary reform, become as depoliticized as "the absolute determination of the standards of weight, length, and volume" (1934: 169). Against this, we may note that even Soddy's own prescription to maintain constant the value of money would be a politically determined, contentious objective. We may also follow monetary sociologists in arguing that money has never been, and can never be made to be, a neutral reflection of some 'underlying' reality, whether of 'real' exchange relations between commodities as in neoclassical economics, or of non-monetary social relations of production

[10] In value-philosophical terms, it may be argued that the reason why money has no solid basis in physical reality is that a distinctive characteristic of money is that of being *abstract value* (cf. Ingham 2004b). It may be noted here that, by this definition, *time banks* are not monetary, because the unit of account (segments of clocktime) is not abstract value, which is why it cannot be practically used to price goods (see section 2.4).

and exchange as in Marxism (cf. Ingham 2004b). Neither, may we add, can money become a neutral reflection of the biophysical metabolism of societies.

It appears more adequate to think of the nature of money as "inherently unstable" (Ingham 2004b: 202). Money's relative scarcity, and therefore its value, can be partly understood as determined through social struggles between debtors (entrepreneurs and consumers) and creditor capitalists over the real rate of interest, often in the shape of struggles over inflation.[11] The degree of stability of the price level therefore represents the degree of power equilibrium between social classes. Furthermore, financial innovation of 'near-moneys' (see section 6.5), and efforts to create alternative local currency networks, suggest that money is an essentially contested social phenomenon. To advance the understanding of the nature of money in ecological economics, it is therefore necessary to deepen the engagement with those social science disciplines that do not conceive of money as politically neutral. This does not include neoclassical economics, which is associated with a concept of neutral money that itself plays a performative role in the social struggle over money (Ingham 2004b: 198).

More generally, as Anderson and M'Gonigle argue, if we revert the current tendency of what goes for 'ecological economics' to increasingly adopt the framework of neoclassical economics,

[11] The real rate of interest equals the nominal rate of interest minus expected inflation.

> “the field would actually be able to explore seriously the economic practices needed for an ecologically balanced and socially equitable ‘steady state’. What might a cost–benefit analysis look like without using capital as the single denominator? What new forms of economic exchange (community currencies, cooperatives, complementary trade, and so on) might minimize entropic effects while supporting dynamic local economies that generate newly understood forms of social and ecological welfare? (...)” (Anderson and M’Gonigle 2012: 44)

This dissertation largely pursues this line of inquiry.

1.4. A note on the chapters

The core chapters of this dissertation (ch.2 and 4-6) are journal articles, either published, in press, or under review. A few typos and minor factual errors have been corrected from the article versions (e.g. in section 4.6, Kirchner changed for Duhalde). The numbering of sections and subsections has been modified so as to constitute a single document. As an addition to the article-chapters 4 and 5, chapter 3 motivates the choice to conduct fieldwork on the Venezuelan communal currency experiment, and discusses some methodological issues.

Chapter 2 has been published as:

Dittmer, K. (2013) Local currencies for purposive degrowth? A quality check of some proposals for changing money-as-usual. *Journal of Cleaner Production,* 54, 3-13.

The article was awarded the ESEE 2013 Best student paper prize at the 10th Biennal Conference of the European Society for Ecological Economics, Lille, 18-21 June.

Chapter 4 has been published as:

Dittmer, K. (2011) Communal currencies in Venezuela. *International Journal of Community Currency Research,* 15(A), 78-83.

This is a peer-reviewed but non-indexed journal.

Chapter 5 is in press as:

Dittmer, K. (XXXX) Communal currencies: The Chavista experiment with non-capitalist money. *Latin American Perspectives,* forthcoming special issue 'The Legacy of Hugo Chávez'.

Chapter 6 is under review as:

Dittmer, K. (XXXX) 100 percent reserve banking: A critical review of green perspectives. *Ecological Economics.*

References

Admati, A.; Hellwig, M. (2013) *The Bankers' New Clothes: What's Wrong with Banking and What to Do About It.* Princeton University Press, Princeton, NJ.

Al-Jarhi, M.A. (2004) Remedy for banking crises: What Chicago and Islam have in common: A comment. *Islamic Economic Studies,* 11(2), 23-42.

Anderson, B.; M'Gonigle, M. (2012) Does ecological economics have a future? Contradiction and reinvention in the age of climate change. *Ecological Economics,* 84, 37-48.

Barry, J.; Proops, J. (1999) Seeking sustainability discourses with Q methodology. *Ecological Economics,* 28, 337-345.

Bell, S. (2001) The role of the state and the hierarchy of money. *Cambridge Journal of Economics,* 25, 149-163.

Clark, D. (2008) Monetary cranks. *The New Palgrave Dictionary of Economics Online.* Palgrave Macmillan. http://www.dictionaryofeconomics.com/article?id=pde2008_M000198

Daly, H.E. (2014) Cold War left overs. http://steadystate.org/cold-war-left-overs/ (accessed 07.08.14)

Daly, H.E. (2012) Moving from a failed growth economy to a steady-state economy. In: Gerber, J.-F.; Steppacher, R. (eds.), *Towards an Integrated Paradigm in Heterodox Economics: Alternative Approaches to the Current Eco-Social Crises.* Palgrave Macmillan, New York, pp. 176-189.

Daly, H.E. (2011) Growth, debt, and the World Bank. *Ecological Economics,* 72, 5-8.

Daly, H.E. (2010) The operative word here is "somehow". *Real-World Economics Review,* 54, 103.

Daly, H.E. (1980) The economic thought of Frederick Soddy. *History of Political Economy,* 12(4), 469-488.

Daly, H.E.; Farley, J. (2011) *Ecological Economics: Principles and Applications.* Second ed. Island Press, Washington.

Dietz R.; O'Neill, D.W. (2013) *Enough Is Enough: Building a Sustainable Economy in a World of Finite Resources.* Routledge, Oxon.

Douglas, M. (1986) *How Institutions Think.* Routledge, London.

García, V.F.; Cibils, V.F.; Maino, R. (2004) Remedy for banking crises: What Chicago and Islam have in common. *Islamic Economic Studies,* 11(2), 1-22.

Georgescu-Roegen, N. (1971) *The Entropy Law and the Economic Process.* Harvard University Press, Cambridge, MA.

Gesell, S. (1958 [1920]) *The Natural Economic Order.* Transl. of fourth ed. Peter Owen, London.

Giampietro, M.; Mayumi, K. (2012) New narratives for sustainability: the red pill for economists. In: Gerber, J.F.; Steppacher, R. (eds.), *Towards an Integrated Paradigm in Heterodox Economics: Alternative Approaches to the Current Eco-Social Crises.* Palgrave Macmillan, New York, pp. 64-93.

Giampietro, M.; Mayumi, K.; Şorman, A.H. (2013) *Energy Analysis for a Sustainable Future: Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism.* Routledge, Oxon.

Giampietro, M.; Mayumi, K.; Şorman, A.H. (2012) The Metabolic Pattern of Societies: Where Economists Fall Short. Routledge, Oxon.

Gibson-Graham, J.K. (2006) The End of Capitalism (As We Knew It): A Feminist Critique of Political Economy. Second ed. University of Minnesota Press, Minneapolis.

Harvey, D. (1990) *The Condition of Postmodernity.* Blackwell, Cambridge, MA.

Hudson, M. (2012) *The Bubble and Beyond: Fictitious Capital, Debt Deflation and Global Crisis.* Islet, Dresden.

Hudson, M. (2004) The archaeology of money: debt versus barter theories of money's origins. In: Wray, L.R. (ed.), *Credit and State Theories of Money.* Edward Elgar, Cheltenham, pp. 99-127.

Ingham, G. (2004a) The emergence of capitalist credit money. In: Wray, L.R. (ed.), *Credit and State Theories of Money.* Edward Elgar, Cheltenham, pp. 173-222.

Ingham, G. (2004b) *The Nature of Money.* Polity, Cambridge.

Jackson, T. (2009) *Prosperity without Growth: Economics for a Finite Planet.* Earthscan, London.

Jessup, P.; Bochnak, M. (1992) A Case For a U.S. Postal Savings System. *Challenge,* 35(6), 57-59.

Kallis, G.; Martinez-Alier, J.; Norgaard, R.B. (2009) Paper assets, real debts: An ecological-economic exploration of the global economic crisis. *Critical Perspectives on International Business,* 5(1), 14-25.

Keynes, J.M. (1936) *The General Theory of Employment, Interest and Money.* Macmillan, London.

Kregel, J. (2012) *Minsky and the narrow banking proposal: No solution for financial reform.* Public Policy Brief No.125. Levy Economics Institute of Bard College, Annandale-on-Hudson.

Martinez-Alier, J. (1987) *Ecological Economics: Energy, Environment and Society.* Basil Blackwell, Oxford.

Mellor, M. (2010) *The Future of Money.* Pluto, London.

North, P. (2010) The longevity of alternative economic practices. In: Fuller, D.; Jonas, A.E.G.; Lee, R. (eds.), *Interrogating Alterity: Alternative Economic and Political Spaces.* Ashgate, Farnham, pp. 31-46.

Phillips, R.J. (1995) *The Chicago Plan and New Deal Banking Reform.* M.E. Sharpe, Armonk, NY.

Renger, J. (2011) The role and the place of money and credit in the economy of ancient Mesopotamia. In: Ganssmann, H. (ed.), *New Approaches to Monetary Theory: Interdisciplinary Perspectives.* Routledge, Oxon, pp. 15-35.

Robinson, J. (2008) Being undisciplined: Transgressions and intersections in academia and beyond. *Futures,* 40, 70-86.

Rochon, L.P.; Rossi, S. (2013) Endogenous money: the evolutionary versus revolutionary views. *Review of Keynesian Economics,* 1(2), 210–229.

Røpke, I. (2005) Trends in the development of ecological economics from the late 1980s to the early 2000s. *Ecological Economics,* 55, 262-290.

Røpke, I. (2004) The early history of modern ecological economics. *Ecological Economics,* 50, 293-314.

Schroeder, R.F.H.; Miyazaki, Y.; Fare, M. (2011) Community currency research: an analysis of the literature. *International Journal of Community Currency Research,* 15(A), 31-41.

Seccareccia, M. (1997) Early twentieth-century heterodox monetary thought. In: Cohen, A.J.; Hagemann, H.; Smithin, J. (eds.), *Money, Financial Institutions and Macroeconomics.* Springer, New York, pp. 125-139.

Simons, H.C. (1948) *Economic Policy for a Free Society.* The University of Chicago Press, Chicago.

Smith, R. (2010a) Beyond growth or beyond capitalism? *Real-World Economics Review,* 53, 28-42.

Smith, R. (2010b) If Herman Daly has a better plan, let's hear it. *Real-World Economics Review,* 55, 120-123.

Soddy, F. (1934) *The Role of Money.* Routledge, London.

Soddy, F. (1933) *Wealth, Virtual Wealth and Debt.* Second ed. E.P. Dutton & Co, New York.

Soddy, F. (1931) *Money Versus Man.* Elkin Mathews & Marrot, London.

Soddy, F. (1922) *Cartesian Economics: The Bearing of Physical Science upon State Stewardship.* Hendersons, London.

Spash, C.L. (2013) The shallow or the deep ecological economics movement? *Ecological Economics,* 93, 351-362.

Stodder, J. (2009) Complementary credit networks and macroeconomic stability: Switzerland's *Wirtschaftsring. Journal of Economic Behavior & Organization,* 72(1), 79-95.

Wallace, N. (1996) Narrow banking meets the Diamond-Dybvig model. *Federal Reserve Bank of Minneapolis Quarterly Review,* 20(1), 3-13.

Williams, C.C. (2005) *A Commodified World? Mapping the Limits of Capitalism.* Zed Books, London.

2. Local currencies for purposive degrowth? A quality check of some proposals for changing money-as-usual

Abstract

This article provides a quality check of the degrowth movement's proposal of local currencies as tools for advancing socially equitable and ecologically sustainable degrowth. The article draws comprehensively upon mainly English-language academic research about four widespread local currency types – LETS, time banks, HOUR currencies, and convertible local currencies (CLCs) – to assess their performance with respect to four degrowth-related criteria: community-building, advancement of alternative values in economic exchange, facilitation of alternative livelihoods, and eco-localization. *LETS* have been found to support alternative livelihoods under quite uncommon conditions, and contribute indirectly to eco-localization by moderately facilitating informal resale, repair, and sharing of commercially produced goods, although their burdensome management and confinement to small memberships limit their usefulness. *Time banks* help expand social networks, and are best at reaching the socially excluded. However, they are confined to unskilled personal services and dependent on grant funding. *HOUR currencies* do not stand out with regard to any criteria, but may have a minor capacity to promote local purchasing. *CLCs* are best at attracting local businesses, but no significant evidence of their said capacity to localize supply chains has surfaced as yet, and their business-friendly design works to the detriment of other criteria. In sum, existing research provides a very weak basis for advocating local

currencies as tools for purposive degrowth. Local currencies are here categorized as two utopian socialist approaches: the *behind-society's-back* variety of LETS and HOUR currencies, and the *appeal-to-elites* variety of time banks and CLCs. Marx and Engels's critiques of these approaches remain valid: successful monetary systems require resources that are not available behind society's back, notably the power to levy taxes and designate by which means they can be paid. Local currencies that appeal for elite support – without mass popular backing – have shaken off most radical connotations, and are vulnerable to changing policy agendas. Given the present historical conjuncture of popular outrage against the banking sector, this paper argues that the degrowth movement would improve its chances of contributing to purposive degrowth by prioritizing government-centred ecological reform of the monetary system over local currencies.

Keywords: Local currencies; Degrowth; Localization; Utopian socialism; Monetary reform

2.1. Introduction

Although largely neglected in mainstream economics and sustainability research, the nature of money is not neutral to the whats, whys, and hows of production and consumption. The manner in which money is allocated determines what gets done in society, and affects the price structure, thereby influencing the behaviour of all participants in the economy. Today, the banking sector enjoys the privilege of creating around 95% of the money supply *ex nihilo* as interest-bearing debt to itself, and sets the direction of the economy by controlling how virtually all money enters into circulation, giving preference to lending for short-term profit over long-term value to society (Robertson, 2012: 105-6). Moreover, as bank money bears interest as a condition of its existence, it has long been argued that a systemic growth imperative, antithetical to the second law of thermodynamics, is inherent to its design (Soddy, 1926). Reflection upon these somewhat underpublicized issues can suggest that the pursuit of the interrelated goals of ecological sustainability and social justice calls for changes to money-as-usual. This article focuses on the degrowth movement as a novel actor that argues for changes of this sort, and scrutinizes one of its preferred remedies; local currencies, which may be defined as alternatives or complements to legal tender money that are mostly created by civil society and sometimes by public authorities, and that circulate in a more limited space than conventional money.

The article is structured as follows: section 2.2 introduces the degrowth movement and explains its endorsement of local currencies in terms of four shared criteria: community-building, alternative values, alternative livelihoods, and eco-localization. The section also

presents government-centred reform of the monetary system as another degrowth-relevant alternative to money-as-usual. Sections 2.3-2.6 draw upon the academic literature about contemporary local currencies to assess their performance with respect to the above-mentioned criteria. In this way, the article aims to clarify to what extent local currencies can be considered as practical initiatives for advancing the degrowth project. The literature consulted is limited to mainly English-language research, and the focus lies on four widespread types of local currency, namely LETS (section 2.3), time banks (section 2.4), HOUR currencies (section 2.5), and convertible local currencies (section 2.6). These four are the most important types of local currency together with the barter market currency type, which is best known for attracting millions of participants during the Argentinean economic crisis of 2001-2002. However, barter currencies have not been included in this article, as the Argentinean experience was above all about coping with chaotic, involuntary degrowth, not about purposive degrowth as a route towards social equity and ecological sustainability. Moreover, barter currencies are akin to HOUR currencies in that both are non-convertible paper currencies, essentially subordinated to an official money of account. Section 2.7 presents the key findings of the criteria-based assessment, condensed for comparison across currency types, and problematizes the findings that do suggest prospects for local currency-led degrowth. The currency types considered are then categorized as two varieties of utopian socialism, and the continued relevance of Marx and Engels's critiques thereof is discussed. Finally, it is argued that the bleak record of local currencies, and the present historical conjuncture, suggest that a more likely course of advancement towards social equity and ecological sustainability is the reform of the official monetary system into a truly public resource, and that the degrowth movement would have a larger impact if it

prioritized mobilization for this purpose over local currency advocacy. Section 2.8 concludes. Given the emergent academic and activist interest in degrowth, and the endorsements of local currencies coming from this direction, this critical assessment of the relevant record of contemporary local currencies constitutes a timely quality check of the scientific basis for advocating them as tools for purposive degrowth.

2.2. Degrowth and monetary alternatives

Degrowth is a "missile word" designed to break the armour of the doctrine of perpetual economic growth, denounced by degrowth advocates as a root cause of contemporary global environmental degradation and human suffering (Ariès, 2005). Economic growth was "the universal creed of the twentieth century" in capitalist and communist countries alike (McNeill, 2000: 334), and remains the raison d'être of global capitalism. Degrowth advocates reject the techno-optimism behind proposals for 'green growth', emphasizing instead the worldwide trend of increasing material extraction and consumption (e.g. Dittrich et al., 2012), and the positive correlation between GDP and energy use (Hall and Klitgaard, 2011), to argue that green growth is a chimera. Moreover, the desirability of further economic growth – especially in high- and middle-income countries – is questioned on the basis of evidence from happiness research that the long-term (>10 years) correlation between happiness and income (even in many poor countries) is nil (Easterlin et al., 2010). Degrowth advocates consider the attempts of the last few decades to steer capitalism onto a 'sustainable development' path to have failed, despite the fact that today "it is as hard to

find a politician opposed to sustainable development as it is to find one who is reluctant to kiss babies during election campaigns" (Dobson, 2007: 2). The appeal of degrowth as a slogan for a purposive socio-ecological transition is precisely that it is far less likely to be assimilated and neutralized by pro-growth politicians than its 'sustainable development' predecessor. Much for the same reason, however, degrowth is presently marginal to policy communities, and exists mainly as the banner of a social movement originating in France in the early 2000s (Martínez-Alier et al., 2010), and increasingly also as the subject of academic debate (see e.g. Cattaneo et al., 2012, Kallis et al., 2010, Kallis et al., 2012, Saed, 2012, Sekulova et al., 2013).

The degrowth movement argues that failure to abandon the global quest for economic growth will lead to catastrophic ecological and societal collapse, and aims to preempt this by bringing about a purposive process of degrowth, envisioned as "an equitable downscaling of production and consumption that increases human wellbeing and enhances ecological conditions at the local and global level, in the short and long term" (Schneider et al., 2010: 512). The degrowth project is therefore not a narrow call for GDP reduction, recognizing that this alone merely amounts to economic recession. Rather, it calls for a profound transformation of society, largely of the kind prescribed by what Dobson (2007) has pinned down as the ideology of ecologism, i.e. a less anthropocentric, more frugal, egalitarian, localized, and democratic society. In fact, it does little damage to the degrowth movement to simplify it as an incarnation of Dobson's ecologism, yet distinguished by its less ambiguous position with respect to economic growth. Still, even degrowth advocates believe that poor countries, "where ecological impacts are low relative to their biocapacity",

may justifiably increase material throughput (Martínez-Alier et al., 2010: 1743), and also recognize that the proposed socio-ecological transition involves growth in the economic product and material throughput of some sectors (e.g. alternative energy sources) and some local economies even in high-income countries (Research & Degrowth, 2010, Schneider et al., 2010).

Among the concrete actions endorsed by degrowth advocates is the creation of local currencies (Douthwaite, 2012, Kallis, 2011, Latouche, 2009: 49-50, Declaration Committee, 2010). The period from the early 1980s to the present has seen worldwide experimentation with local currencies at a scale unparalleled since the Great Depression of the 1930s (see North, 2010b for a recent introduction to local currencies). Given the role of the international green movement in their design and diffusion (Helleiner, 2000), their resonance with the degrowth movement is unsurprising. Among the most common motivations for setting up and participating in local currency systems are: community-building, i.e. the resurrection and improvement of local social networks; advancing alternative values mediated through economic exchange (i.e. challenging mainstream values regarding race, class, gender, and nature); facilitation of alternative livelihoods, less dependent on formal employment; and eco-localization, i.e. the ecologically motivated localization of networks of production and consumption. To elaborate briefly on this notion of resonance, the objective of (re)building communities echoes the degrowthist call to "[e]ncourage the 'production' of relational goods, such as friendship and neighbourliness" (Latouche, 2009: 70), hoped to limit the satisfaction of psychosocial needs through material consumption. The use of local currencies to advance alternative values in exchange mirrors

the call for 're-evaluation' (Latouche, 2009: 34), from which changes in production and consumption patterns would follow. The facilitation of alternative livelihoods with local currencies can be viewed as a degrowthist strategy of voluntary simplicity (Martínez-Alier et al., 2010), where larger self-determination over productive activity weakens the imperative to seek employment irrespective of its environmental consequences. Finally, "the localisation of exchange, production, finance and politics is seen as 'the most important strategic means' of degrowth" (Fournier, 2008: 538 citing Latouche). Eco-localization involves growth of some sectors of the local economy offset by reduced imports, and is not to be confused with the occasional promotion of local currencies on the basis of their purported ability to enhance aggregate growth by activating unused productive resources (e.g. Lietaer, 2001).

The degrowth movement's endorsement of local currencies can also be attributed to a preference for grassroots initiatives over government policy-making, as the latter is deemed to have failed to implement effective environmental policies during the sustainable development epoch (Kallis, 2011). This preference, however, is not unequivocal, and the movement has also addressed – to a lesser extent – the issue of government-centred reform of the monetary system. This includes the long-standing proposal of full-reserve banking, whereby the state terminates the privilege of banks to create money (e.g. Fisher, 1936, Soddy, 1934: 211). Although scarcely overlapping with existing degrowth research and activism, there is a growing literature arguing that strongly increased public control over money-creation is a prerequisite for monetary and fiscal policies that give priority to ecological sustainability and social equity over private profits (see e.g. Farley et al., 2012,

Lawn, 2010, Mellor, 2010a, Mellor, 2010b, Robertson, 2012), and a recent emergence of campaign groups advocating related monetary reforms (e.g. positivemoney.org). This literature sees the increase of fractional reserve ratios towards full-reserve banking as a key component for transforming the monetary system into a truly public resource. The curtailment of the discretionary lending powers of banks would enhance governments' control over the money supply, hence over inflation, allowing governments to spend into existence a larger share of the money supply or lend it into existence at low to zero interest rates. This would eliminate (or at least mitigate) the growth imperative of an interest-bearing money supply. It would also allow a shift in emphasis from investment in private goods to public goods, and a shift in decision-making on credit allocation from the private to the public sector, in accordance with the view that a purposive socio-ecological transition requires a more publicly directed economy rather than one dominated by the profit motive. Government-centred reform and local currencies may to some extent be complementary – but sometimes conflicting – alternatives to money-as-usual. Whereas in-depth treatment of government-centred reform is not the objective here, this article notes it as a promising avenue of research and activism, whither the following stocktaking of local currencies prefers to point, rather than towards general gloom (see section 2.7).

2.3. LETS

LETS (usually *Local Exchange Trading Systems* or *Schemes*) are membership clubs using a virtual currency created at the moment of transaction as a credit for the seller of a good or

service and a debit for the buyer. All participants start their accounts at zero, and can spend before they have earned any currency. Individual account balances are disclosed to deter abuse, and some systems apply debit limits, but no interest is charged on negative balances. Printed directories or on-line databases are used to communicate supply and demand, and a centralized accounting system, usually managed by volunteers, registers all transactions. The first LETS was created on Vancouver Island in early 1983 in reaction to an economic recession (Offe and Heinze, 1992: 86-7). The innovation was soon brought to the attention of the international green movement at The Other Economic Summit in London in 1984 (Ekins, 1986), through which it spread to the UK and Australia, and to New Zealand as *Green Dollar Exchanges* (Croall, 1997, Williams, 1996c, 1997). As LETS boomed in these nations in the recession years of the early 1990s, they also reached non-English-speaking countries, e.g. Germany as *Tauschringe* in 1993 (Schroeder, 2006), and France as *Systèmes d'Échange Locaux* (SEL) in 1994 (Laacher, 1999).

Community-building has been a prominent motivation for setting up LETS in the UK (Williams, 1996a) and in Australia (Williams, 1997). According to the main UK survey, 55% of respondents asserted that LETS had helped them develop a wider network of friends; 30% to develop deeper friendships; and 75% to develop self-help networks (Williams et al., 2001). However, a study of Manchester LETS found that because of low trading levels, collective events involving 'commitment-building mechanisms' were necessary for the generation of social networks for all but the most frequent traders (North, 2006a). Another limitation is the vulnerability of LETS to conflicts between social and economic motives for participation (Ingleby, 1998, Lee et al., 2004, North, 2006a), and conflicts over pricing

resulting from different valuations of skills and quality are important disincentives to trading (Lee et al., 2004). The incompatibility between different ethos is such that a distinction has emerged between *LETS schemes* of a communitarian and countercultural nature, and *LETSystems* with an emphasis on economic objectives (Williams et al., 2001). Research on the potential of LETS as tools for social inclusion of the poor and unemployed has identified a number of barriers to participation, suggesting that the usefulness of LETS for *inclusive* community-building is very limited. The informal nature of trading, often taking place in members' homes, makes LETS inadequate for insecure environments characterized by mistrust (North, 1996). Another obstacle is the lack of clarity concerning effects of LETS incomes on unemployment benefits, giving rise to strong – although sometimes unwarranted – unwillingness to join LETS (Seyfang, 2001b, Williams, 1996c, Williams et al., 2001). Ironically, cash costs are also a problem, such as transport to the site of exchange (Aldridge et al., 2003). Although LETS have been found to boost self-confidence (Williams et al., 2001), its persistent shortage among vulnerable populations that feel that they have nothing to offer has been discerned as the major barrier to LETS-based mitigation of social exclusion (North, 1996). The overcoming of many of these obstacles would require that LETS become more mainstream and dependent on the state, a prospect that would gravely jeopardize their 'alternative' and voluntary character (Bowring, 1998).

A great deal of the research on LETS has been concerned precisely with their 'alternative' nature. Thorne (1996) suggests that LETS may be seen as a Polanyian case of 're-embedding' the economy in less unequal and exploitative social relations to the extent that participants affirm the 'principle of abundance', i.e. the freedom to negotiate prices on the basis of

alternative values, generated by the absence of a formally regulated debit limit in most LETS. However, mainstream values have been found to be widely transported into LETS (Aldridge et al., 2001, North, 2006a), so that it may be said that LETS trading is "drenched in mainstream conventions" (Lee et al., 2004: 609). Consequently, wage inequalities based on age, class, and gender are common, as are gendered divisions of labour (Aldridge et al., 2001, Lee, 1996, Williams, 1996b, Williams, 1996d), although positive discrimination has also been observed (Aldridge et al., 2001, Seyfang, 2001b). In other words, the Polanyian countermovement against market values has not been strong in LETS.

Research on the alternative nature of LETS has also explored the extent to which they facilitate the realization of *alternative livelihoods*. The abundance of interest-free currency suggests a relaxation of the compulsion to seek formal employment, allowing larger individual self-determination over the content and extent of the participant's working life (Bowring, 1998). North (2007, 2010a) has noted that this strategy of creating new forms of money to build a more liberated economy and society can be seen as a continuation of the 19th century utopian socialist tradition of Owen and Proudhon. Marx and Engels's dismissal of this approach to societal change as destined to fail may no longer be valid (e.g. Engels, 1950, Marx, 1963), now that "ordinary people in advanced capitalist societies often have access to resources that nineteenth-century proletarians could only dream of" (North, 2007: xxvi). Therefore, the potential of the utopian socialist approach today is a question for research. Case studies of LETS in Manchester (North, 1999, 2006a, 2007) and Hungary (North, 2006b, 2007) conveyed "rather ephemeral economic alternatives that seemed to provide evidence in favor of the Marxist critique of the possibility of building alternatives to

capitalism” (North, 2007: 131). However, the picture constructed from New Zealand’s green dollar exchanges is somewhat more optimistic. The research conducted here suggested that “[w]here participants had access to food from their local area, a part-time job, and a wider network of mutual aid, they often were able to provide for themselves the alternative, freer form of economy they wanted—as long as they were not materialistic” (North, 2007: 178). Some had been doing so for up to eighteen years, since the inception of the oldest exchanges. Unfortunately, it is unclear to what degree such examples constitute a departure from fossil energy- and materials-intensive lifestyles, as more rigorous results would require biophysical research methods that are only recently being applied to alternative livelihoods (e.g. Cattaneo, 2008, Cattaneo and Gavaldà, 2010). Nevertheless, the above conditions for emancipation were not the norm in New Zealand in the 1990s, so the green dollar exchanges failed as self-help networks for the majority of participants in the context of widespread unemployment and a retreating welfare state. For instance, members of the relatively successful Wairarapa Exchange earned an average green dollar income “of approximately G$173 a year to militate against benefit cuts in 1991 of $25 a week” (North, 2002: 491).

The contribution of LETS to *eco-localization* has been rather modest. Case study research indicates that LETS effectively encourage informal resale, repair, and sharing of commercially produced goods, thereby indirectly reducing interregional flows of commodities (Seyfang, 2001a). However, there is also evidence that LETS can fail to boost second-hand trading even among decidedly 'green' constituencies (Aldridge et al., 2003). Furthermore, business participation in LETS has everywhere been insignificant, minimizing

their effectiveness in localizing economies. This is largely due to inherent design issues, such as the fact that anyone can issue currency for as long as there are people willing to receive it, with generally lax enforcement or even absence of debit limits. Consequently, unlike the capitalist economy where the scarcity of currency relative to demand disciplines people into offering goods, services, or labour time, conventional businesses participating in LETS are likely to find themselves earning credits that they cannot usefully spend. Moreover, the lack of sanctions for defection means that individuals as well as businesses can leave the system after incurring large commitments, devaluing the credits earned by fellow participants (North, 1998b). Indeed, the few New Zealand systems that did threaten to take defectors to court to enforce payment of negative balances were among the better-performing ones (North, 2007: 136).

In view of the shortcomings of LETS, Lee et al. (2004: 597) have argued that local currencies "are significant less for their material effectiveness than for their demonstration of the potential proliferation (…) of economic and monetary geographies". Similarly, North (1998a, 2006a) theorizes LETS as a 'New Social Movement' that constitutes a message to the rest of society about the possibility of alternatives to capitalist social relations. Such interpretations draw upon the work by Gibson-Graham (2006), highlighting the role of 'capitalocentric' discourses in reproducing the dominance of capitalism and the apparent weakness of alternative practices. However, the fact that LETS are now on a worldwide retreat (Seyfang and Longhurst, 2013), rather than an emerging alternative to be uncovered by readings for economic difference, suggests that they do more to confirm the continued validity of the Marxist critique than to dispel it.

2.4. Time banks

Time banking (a.k.a. time dollars or service credits) was created in the US in the mid-1980s by civil rights lawyer Edgar Cahn as a contribution to “the fight over being declared useless” (Cahn, 2000: 5) and the reconstruction of the ‘core economy’ of “home, family, neighborhood and community” (Cahn, 2001: 2), his aim being to make social welfare services more effective and humane through a participatory approach to service delivery, eventually labelled ‘co-production’. Cahn’s model, known as person-to-person time banking, formalizes the exchange of personal services by means of a time-denominated currency that assigns a uniform value to everyone’s labour time, relying on a formally employed ‘time broker’ to coordinate exchanges and identify both needs and abilities of all members. This model is often based in mainstream institutions from the education, health, and justice sectors as participatory programmes rewarded in time credits. A later, less widespread model is the person-to-agency time bank, run by a public or third-sector agency as a tool for achieving its goals by changing the incentive structure of the target group, rewarding the desired behaviour (e.g. participation in public planning meetings or in the running of a community organization) with credits redeemable for goods or services to which access is facilitated by the agency. There are also agency-to-agency time banks to assist the sharing of spare capacity between organizations (Ryan-Collins et al., 2008). Rather than separate models, though, these functions may be combined in a single time bank. Time banking was brought to the UK in 1997 by David Boyle and the New Economics Foundation, and has also seen adaptations in a number of other OECD countries (Seyfang and Longhurst, 2013). In the

UK, time banks were not claimed to boost formal employment, but neither were they seen – unlike LETS – as a threat to employment-based society by facilitating informal economic exchange. Instead, they were publicized as a social initiative for the improvement of public services and expansion of volunteering. Consequently, in 2000, the UK government declared time banks exempt from taxation and benefit calculations (Seyfang, 2002), and offered more financial and organizational support than had ever been obtained by LETS (North, 2003). Time banking has grown slowly through the 2000s in the UK, and is also currently growing in the US, Spain, Portugal, Japan, and New Zealand (Seyfang and Longhurst, 2013). Elsewhere, as in Sweden, person-to-person time banking has failed to develop in the absence of favourable tax and benefit rulings (Molnar, 2011).

The stronger uptake of time banking in many policy communities contrasts with the relative lack of academic interest as compared to the intense research activity concerning LETS in fields such as economic geography. In consequence of this, the claims made by time bank advocates are often based on anecdotal evidence, neither supported nor challenged by solid, critical research. An exception may be the claim that time banking is a *community-building* tool, which does at least enjoy the support of two peer-reviewed case studies of person-to-person time banks, one in London (Seyfang, 2003) and another in Glasgow (Seyfang, 2004). These studies also indicate that time banks are better than LETS at breaking out of the 'disenfranchised middle class' niche towards the socially excluded. Accordingly, time banks earn credibility among a larger constituency by being based in mainstream institutions, and improve outreach through reliance on targeted advertising rather than word-of-mouth (Seyfang, 2002). Another advantage is that participants are not required to directly contact

each other and negotiate prices, as this may be off-putting to people lacking confidence and social skills. The broker assists members in identifying their abilities and opportunities for feeling of use to the community, and the fixed hourly rate emphasizes the value of everyday skills (Seyfang, 2002).

Regarding the advancement of *alternative values* and *alternative livelihoods*, Seyfang (2006a) argues that the egalitarian time-based remuneration system characteristic of time banking promotes normally unvalued community work in resistance to the pressures of market prices and employment-oriented government policy. From a degrowthist perspective, this argument implies that time banking can help steer society away from environmentally detrimental economic activity towards benign local community-based services, in line with Jackson's (2009) proposal for a strengthened 'Cinderella economy', where emphasis lies on personal and social services that stand out for not partaking in the continuous, growth-driving labour productivity race, but are precisely the kind of wellbeing-enhancing, materially light services that economic rationality fails to deliver adequately. Jackson seems unsure whether this sector should be promoted through stronger monetary recognition (2009: 233, n.21), although the examples of services he gives are community-based rather than the kind of feminized household services evoked by 'Cinderella' (2009: 129-30), which have long been the subject of debate for and against monetization (e.g., respectively, Dalla Costa and James, 1972, Gorz, 1989). Whereas the issue of conventional monetization of the Cinderella economy surpasses the scope of this article, it is pertinent to consider the potential of time banking for advancing this sphere. First, it is straightforward to observe that time credits are inadequate for trading goods: "how many hours for a pound of organic

carrots?" (North, 2003: 270). Although goods have been available in some schemes in the US, where they are not subject to transaction tax as in the UK, these appear to be donated surplus goods (Cahn, 2000, Seyfang, 2004). Second, time banks suffer from a limited range of services on offer (Seyfang, 2006b), because – as a consequence of egalitarian remuneration – skilled participants are reluctant to offer their highly demanded services and thereby to undersell themselves and their professional colleagues in the mainstream economy (Lee et al., 2004). Except where external funding is available to compensate skilled participants in hard currency, time banking is therefore generally limited to unskilled services. It is a second-rate sphere of exchange, where work effort does not give access to the economy at large, and where the currency can circulate smoothly only in so far as all participants have needs that can be met by unskilled labour. Some bottlenecks may be avoided by donating unspendable time credits, or through partnerships with local businesses and authorities that give access to – for instance – sports facilities, as in the case of Spice, a person-to-agency time bank recently created in the UK (Naughton-Doe, 2011). However, such access may come at a cost, as "the institutional time credits of Spice are presented in a more instrumental fashion than the vision of rebuilding the core economy" (Seyfang and Longhurst, 2013: 74). In view of these inherent constraints, time banking appears inadequate as a tool for advancing the Cinderella economy.

Its confinement to unskilled personal services, which tend to be local in any case, means that time banking is not a tool for *eco-localization* (Seyfang, 2006b). However, it has been suggested that time banking may counter consumerism in a more modest way by changing the vehicle for meeting social and psychological needs from material consumption to human

interaction, but this possibility has yet to be explored through research (Seyfang, 2009). The general dearth of time bank research is probably largely explained by a prevalence among academics of judgements to the effect that whereas LETS "are profoundly radical acts (…), they are profoundly different from 'time banks' (…), which remain a means of supporting existing social relations and institutions and even of commodifying personal relations" (Lee, 2002: 348). In semantically less cautious terms, another senior local currency researcher has suggested on similar grounds that time banks are simply "boring" (Peter North, pers. comm. 11 July 2012). Time banks support mainstream economic geographies by filling a gap in social reproduction (Lee et al., 2004), and the ever-present suspicion is that government interest in time banking, and in co-production in general, is merely a cover for the neoliberal dismantling of the welfare state (North, 2011, Seyfang, 2010).

2.5. HOUR currencies

Perhaps the most straightforward form of local currency is the printed piece of paper that is allowed to circulate freely in a locality with no backing from legal tender. The most well-known exponent of this category is Ithaca HOURS, created in 1991 in the town of Ithaca in upstate New York. Several US currencies have been modelled upon it (Collom, 2005, Schussman, 2007), but Ithaca HOURS alone has been the subject of more than occasional academic inquiry. Like the first LETS, Ithaca HOURS was created in the context of economic recession, but was also a localist reaction to the first Gulf War (Jacob et al., 2004a). Some years earlier, a small Ithaca LETS had failed, and now the objective was to establish "a more

fluid and inclusive medium of exchange" (Jacob et al., 2004a: 6). The new currency was successfully received by the Farmer's Market and gained crucial support from the Alternatives Federal Credit Union, through which one of the initiators, Paul Glover, obtained a first three-year grant to work as full-time developer of the scheme (Jacob et al., 2004a). With their high-quality design and centrally controlled issuance (originally managed at open potluck meetings), Ithaca HOURS appealed to local businesses - initially mainly of the 'alternative' kind (Maurer, 2005: 48) - many of which signed up to accept limited numbers of HOURS in return for free advertising in the newspaper produced by Glover (North, 1998b).

Regarding the *community-building* potential of HOUR currencies, a study of Ithaca HOURS involving a weakly representative sample suggests that the system functions as "a social capital resource", allowing users to help others, develop deeper friendships, and increase their circle of friends to some extent (Jacob et al., 2004b: 42). However, the scheme has only occasionally managed to breach the town's race and class boundaries, with a membership strongly biased towards highly educated, self-employed whites (Papavasiliou, 2008: 135, 211). This situation is consistent with a US-wide study of the demographic and socioeconomic characteristics of the places where local currencies survive (Collom, 2005), indicating that the usefulness of HOUR currencies for socially inclusive community-building has so far been low. Even so, Papavasiliou (2008: 248) argues (on the basis of a small experiment) that the main barriers to social inclusion are perceptual rather than material.

In contrast to its many straightforward features, the unit of account of Ithaca HOURS has been the source of considerable confusion (Papavasiliou, 2008: 150). The currency name

was chosen to express the principle of egalitarian labour exchange, inspired by the labour notes of the utopian socialist Owen (Glover, 2000), and was also a localist exercise in homophony (Maurer, 2005: 48). The time-based unit of account was, however, “never meant as a formal pricing practice enforced by the system” (Papavasiliou, 2008: 150), and the equivalence of $10 an HOUR, which Glover assumed to represent the average hourly wage in Ithaca in 1991, was soon declared as the standard (Maurer, 2005: 48). As Schussman (2007: 76-7) finds in his survey of successors to Ithaca HOURS, this is claimed to visualize the value of labour and demand justification of any deviation from egalitarian rates. However, Maurer (2005: 49) finds that wages paid in a mix of dollars and HOURS are calculated on the basis of the inferior dollar wage alone, and Papavasiliou (2008: 271) finds that “[u]se of standard market prices is the norm”, attributing this to a lack of shared representations of value within the Ithaca HOUR sphere. HOUR currencies do not seem to fare any better than LETS or time banks in advancing *alternative values* in exchange.

Whether HOURS facilitate *alternative livelihoods* has only marginally been addressed by research. In Papavasiliou’s sample of 75 participants, 58 earned Ithaca HOURS from their primary occupation (2008: 136), indicating that it is not a ‘hobby economy’ as suggested by Grover (2006). However, these primary occupations may themselves be of an ‘alternative’ nature, and their viability enhanced by participation. Although this is only a supposition, it fits with the predominance of services such as massage therapy, licensed counsellors, and music lessons in the directory analysed by Grover (2006). Still, these are clearly nonessential services, and their remuneration in local currency causes strain on suppliers of basic goods, such as the local food coop, that struggle with persistent overaccumulation of HOURS

(Papavasiliou, 2008: 157).

Business participation in Ithaca HOURS has been stronger than in any LETS or time bank, making HOUR-driven *eco-localization* more plausible. The currency circulates only within a twenty-mile radius of Ithaca, embracing Tompkins County. Unfortunately, there is no robust research on the subject, leaving it an open question whether the currency "simply follows or actively augments local trade" (Papavasiliou, 2008: 256). Anecdotal evidence supports both possibilities (Papavasiliou, 2008: 259, 268). The reason no research has explored this issue any further is arguably the small size of the HOUR economy, which signals that any localization effect is bound to be minimal. Grover (2006) cites two estimates of annual HOURS turnover, $110.000 and $500.000, which he compares to the annual gross regional product of Tompkins County to the order of $2.200.000.000. For the average participant, HOUR earnings represent less than 1% of income (Jacob et al., 2004b). Ithaca HOURS has been in decline since Glover left town in 2005, costing the system its full-time development worker (Douthwaite, 2012). This is testament to the enduring importance of the key activist for the longevity of local currency schemes (North, 2010c).

2.6. Convertible local currencies

Convertible local currencies (CLCs) are the most recent type of local currency considered in this article, and also the least researched. The most well-known examples are the German *Regiogelder* (regional moneys), especially the *Chiemgauer*; the *BerkShare* of Berkshire

County, Massachusetts; and the British transition currencies. Like HOUR currencies, CLC notes circulate freely within a limited area, the main difference being their backing by a legal tender currency, for which they can be redeemed. The norm is full backing, implying that their issuance does not generate any additional purchasing power, only subjects the existing stock to more spatial friction. The exception to this zero-sum norm is the occasional practice of lending out a portion of the hard currency deposit (e.g. Longhurst, 2012).

CLCs constitute a retreat from the more radical break with the official monetary system represented by LETS, time banks, and HOUR currencies. The poor record of business participation in these earlier currencies has proven their ineffectiveness for localizing the economy, and CLCs – with their more business-friendly properties – are principally intended to address this shortcoming. The CLC approach to economic localization entails the renunciation of most of the other objectives here considered relevant to degrowth. CLCs may have some limited *community-building* potential, e.g. through economically motivated networking or the collective imagery of note designs, but these matters are largely unresearched. The social inclusiveness of CLCs is limited since they are no more accessible to the poor than the official moneys on which they are based, with the minor exception of exchange rate discounts. For instance, consumers obtain 100 BerkShares by exchanging 95 dollars, a discount financed by the corresponding 5% redemption fee incurred as participants – usually local businesses – reconvert BerkShare revenues into dollars (North, 2010b). Each CLC has a unique name for its unit of account – e.g. one *Chiemgauer*, one *Brixton Pound* – but does in fact adopt the money of account of its backer, be it the Euro or the Pound Sterling. As a result of this subordination, and that of their supply to the

availability of official money, CLCs do not facilitate the expression of *alternative values* in exchange. Also as a result of their self-imposed scarcity, they are less likely than more abundant local currencies (like LETS) to encourage *alternative livelihoods*.

The new approach to *eco-localization* has paid off for some CLCs, attracting far more businesses than any comparable contemporary local currency. The most successful in this sense is the Chiemgauer, operating since 2003 in the Chiemgau district of southern Bavaria, with around 600 business members since 2007 and a turnover of 6,2 million euro in 2011 (Gelleri, 2012). The Chiemgauer stands out among its German siblings, its money supply amounting to 64% of the aggregate money supply of 18 Regiogeld currencies (Thiel, 2011). Its success has been attributed to the strong local Bavarian culture, the vitality of the local business community with a tradition of regional sourcing, and the existence of local cooperative banks that are willing to collaborate with the Chiemgauer (North, 2010b). The support from local banks has aided the expansion of the Chiemgauer money supply by means of banks' privilege to issue legal tender as debt to themselves. Whereas the note issue (about a third of the total money supply) is restrained by its backing from a euro fund that can only grow as earnings of the system, the electronic Chiemgauer (the remaining two thirds) are partly issued directly by participating banks, accounting for them as ordinary bank-issued euros (Gelleri, 2012, Christian Gelleri, pers. comm. 7 May 2012), and their supply is therefore limited only by borrowers' ability to go into debt. Local banks offer Chiemgauer microcredits to local businesses since 2010 (Eder, 2011), notably at zero interest in line with Silvio Gesell's critique of rentier capitalism (Gesell, 1958), an important intellectual source for contemporary local currencies in Germany (Schroeder, 2006).

Another Gesellian feature of the Chiemgauer is the requirement to adhere stamps worth 2% of face value onto notes each quarter to uphold their value (Gelleri, 2009). This feature, known as demurrage and likened to a negative interest rate, is meant to deter hoarding and speed up the circulation of the currency. To what extent demurrage is a controlled enactment of Gresham's law ('bad money drives out good') replacing transactions in official currency, or a catalyst of additional – possibly wasteful – consumption, has not been clarified by research. Solid research is also lacking on eco-localization induced by the Chiemgauer. An analysis of the directory of business participants identified a large number of agricultural producers, food retailers, and restaurants (Volkmann, 2009), suggesting a significant potential for material localization. However, as with Ithaca HOURS, existing research has not clarified to what extent the Chiemgauer actually drives the localization of supply chains, rather than just switching the currency in which already local trade is denominated. No evidence of significant localization has emerged from the academic research into British transition currencies – admittedly younger, more spatially restricted, and with much smaller memberships than the Chiemgauer – such as the Totnes Pound (Longhurst, 2012), the Lewes Pound (Graugaard, 2012), and the Stroud Pound (Scott Cato and Suárez, 2012). The Stroud Pound was in fact modelled on the Chiemgauer, and its relative failure can be taken as an indication of the strong context dependence of CLCs. More soberingly still, even the Chiemgauer is a diminutive phenomenon, with a turnover representing a mere 0,01 percent of the economic product of the region according to Der Spiegel (Mennen, 2012).

An interesting CLC development is the Bristol Pound, launched in September 2012 by a local credit union with support from the Liberal Democrat-led city council. The local government has agreed to accept Bristol Pounds in payment of council taxes from businesses in the city (Brown and Kuchler, 2012), an important endorsement of the currency from the point of view of the Modern Money Theory school, according to which 'taxes drive money' (Wray, 1998). However, it also raises the question of the role of the local state in a project of economic localization. A precedent in this regard is the Wörgl experiment, often presented by local currency popularizers as evidence of the promise of local currencies (e.g. Boyle, 2002: 236, Lietaer, 2001: 153-5). In July 1932, afflicted by the Great Depression, the parish council of the Austrian town of Wörgl issued a Gesellian demurrage currency known as labour certificates, 'backed' by an equivalent amount of schillings lent out to local wholesalers (Muralt, 1934). The council went on to undertake an impressive series of public works – all wages paid in labour certificates – cutting unemployment and earning an international reputation as the 'miracle of Wörgl'. As hundreds of townships around Austria considered replicating the experiment, the Austrian central bank brought about the termination of the experiment in September 1933 (Lietaer, 2001). More critical observers have suggested that the ephemeral success may owe a lot to the circumstance that local businesses were able to pay large parish tax arrears in labour certificates (Muralt, 1934, Schroeder et al., 2011), reducing the problem of finding suppliers willing to accept them. Rather than being based on local supply chains, the Wörgl currency would therefore perhaps only have been sustained – had it not been prematurely terminated – as long as its circulation remained dominated by the cancellation of the unusually large fiscal debt of the private sector. The implication of this for the Bristol Pound, and other CLCs seeking similar

fiscal endorsement, is the challenge of balancing the benefits thereof for the general acceptance of the currency with the risk that excessive tax outlets for the local currency revenues of businesses minimize their incentive to localize supply chains. Under the latter circumstance, increased geographical discrimination in public procurement, favouring locally sourced goods, would be necessary on the part of the local state to recirculate tax revenues in a manner conducive to eco-localization. To the extent that eco-localization through the local currency system then becomes contingent upon the broader struggle for sustainable public procurement (Morgan, 2008), the relevance of the local business-oriented currency system itself may be put into doubt.

2.7. Discussion

2.7.1 Local currencies: Problematizing the prospects

As this review will have shown, there are no clear success stories of local currencies satisfying the degrowth criteria here considered. The key findings are summarized in Table 1.

Focusing here on the findings that do suggest prospects for advancing degrowth, there is some evidence that *LETS* can facilitate informal resale, repair, and sharing of commercially produced goods. However, this does not seem to justify the heavy burden of managing LETS (Aldridge and Patterson, 2002, North, 2010c), compared to more straight-forward internet-based platforms like Freecycle and eBay, which unlike LETS have a proven ability to operate

Table 1

Degrowth-advancing performance of local currencies

Criteria	LETS	Time banks	HOURS	CLCs
Inclusive community-building	Improve local social networks, but limited by low trading levels, dependence on pre-existing sense of community, and barriers to participation for the socially excluded.	Improve local social networks. Good at reaching the socially excluded.	Improve local social networks, but membership strongly biased towards highly educated, self-employed whites.	May have some limited community-building potential (research is lacking). Not socially inclusive, because as scarce as official money.
Alternative values	Flexible libertarian measure of value, often failing to resist mainstream values.	Unflexible egalitarian measure of value, therefore largely confined to unskilled personal services.	Claimed to encourage egalitarian valuation of labour time, but standard market prices are the norm.	Measure of value completely subordinated to official money.
Alternative livelihoods	Supports partial autonomy from formal employment under certain conditions: access to land for growing food, a part-time job, and a wider network of mutual aid.	Do not support autonomy from formal employment, since they only give access to a limited range of unskilled personal services.	Possibly supports primary occupations in the 'alternative' service sector (research is scarce), but straining providers of essential goods.	Less likely than more abundant local currencies to support alternative livelihoods, as a result of their scarcity.
Eco-localization	Moderately increases local self-reliance by facilitating informal resale, repair, and sharing of commercially produced goods. Inadequate to business.	Does not increase local self-reliance or localize supply chains, being confined to unskilled personal services, already local in nature.	Possibly facilitates local purchasing (research is scarce). Small scale means any localization effect so far is minimal.	Good at attracting local businesses. Ability to localize supply chains not sufficiently researched.

with memberships of more than a couple of thousands. There is evidence that LETS can support more emancipated, frugal livelihoods, as long as certain – rather unusual – conditions are met. This is a valid basis for emphasizing the breadth of the realm of possibility, although the scarcity of successful examples questions their replicability. However, the long-term outlook of this "Escaping from the economy" approach (Fournier, 2008) is more problematic. Optimistic readings of possibilities for alternative livelihoods point at tendencies of jobless growth that render increasing numbers of people superfluous to the

interests of capital, the potentially liberatory consequence being that "the state cares little how they choose to live their economic lives" (North, 2007: 181). This historical conjuncture may, however, come to an end with the age of cheap fossil fuels (making energy scarce relative to labour), raising questions about the place of this strategy in degrowth visions of socio-ecological transition. This predicament revolves around the uncertainty about the temporal remove of the coming of enduring fossil fuel scarcities, paralleling the ongoing debate about whether proposals for statutory reductions in working time make sense in the autumn of the fossil fuel era (Kallis, 2013, Sorman and Giampietro, 2013).

A scientific basis, although weak, exists for promoting person-to-person *time banks* as tools for inclusive community-building, but the question whether they mitigate consumerism remains unanswered. However, their bureaucratic nature and modest confinement to unskilled services keeps them low on the list of mobilizing degrowth proposals. *HOUR currencies* do not stand out with regard to any of the criteria considered, so there is little to recommend them as concrete proposals for advancing the degrowth project. This is not to belittle the usefulness of non-convertible paper currencies for coping with situations where the formal economy and the state withdraws from covering the consumption needs of the population. Coping with chaotic, involuntary degrowth, as non-convertible barter currencies helped millions of Argentineans do in 2001-02 (Dittmer, 2012, Gómez, 2009, North, 2007), is nevertheless different from advancing the project of voluntary degrowth, which is the subject of this article.

The case for advocating *convertible paper currencies* for degrowth is largely based on their

potential to drive the localization of supply chains. Unfortunately, ten years after the creation of the Chiemgauer, there is still no research clarifying to what extent this, the only clear CLC success, has actually brought about import substitution rather than a mere currency switch. Positive results from eco-localization research are required if the degrowth movement is to advocate CLCs on a solid basis. Moreover, it would have to be ascertained whether CLC-driven localization makes ecological sense. The desirability of CLCs as innovations for degrowth is, however, only partly answered by their eco-localization capacity. Their advantage is that their creation lies within the agency of grassroots groups, and that their fiscal endorsement may lie within the agency of local governments. But this does not qualify them as first-best policy proposals for central governments. In fact, the CLC strategy of creating friction in monetary space (mainly by means of a redemption fee) is arguably a second-best option, since it imposes additional costs on all interregional exchanges, payments, and transfers, regardless of whether they involve interregional material flows or not. This goes against the ecological tax reform principle “Tax bads, not goods” (Daly and Farley, 2004: 385). To the extent that the degrowth movements aims to address central governments with policy proposals for eco-localization, the first-best option would be a tax on transport fuels, not CLCs.

2.7.2 Local currencies as two varieties of utopian socialism, and a less utopian alternative

As noted in section 2.3, local currency activism has been likened to the 19th century utopian socialism of Owen, Proudhon, and their followers (North, 2007, 2010a, Powell, 2002). Taking this further, local currencies can be categorized as two distinct utopian socialist approaches,

which may be referred to as the *behind-society's-back* variety of most LETS and HOUR currencies, and the *appeal-to-elites* variety of most time banks and CLCs. The former are modern examples of the approach that, according to Marx and Engels, "renounces the revolutionizing of the old world by means of the latter's own great, combined resources, and seeks, rather, to achieve its salvation behind society's back, in private fashion, within its limited conditions of existence, and hence necessarily suffers shipwreck" (Marx, 1963 cit. in Levitas, 2011: 61). As North has argued (see section 2.3), the renunciation of society's combined resources is not necessarily a recipe for failure any longer, given the relatively large resources to which ordinary people in advanced capitalist countries have access today. Nevertheless, thinking of the bleak record of LETS and HOUR currencies in terms of the consequences of renouncing society's combined resources retains large explanatory power. For example, a frequent stumbling block of these autonomist currencies is volunteer burnout (Aldridge and Patterson, 2002, Collom, 2005, North, 2010c, Schussman, 2007: 108), a consequence of the divide between organizational resources available vs. required for their management. More importantly, if by "society's combined resources" we understand the state's power to impose tax liabilities on its citizens, it becomes apparent that ordinary people do not today, any more than in Marx's time, command on their own this powerful means of creating demand for a currency. The state's imposition of a tax liability, when burdensome enough to discharge, has been characterized as a sufficient (although not a necessary) condition for triggering general acceptance, as money, of the thing that the state announces that it will accept in payment of the tax (Wray, 1998: ix and passim). This taxes-drive-money argument, the long intellectual history of which is only recently being uncovered (Forstater, 2006), is supported by historical studies of the monetization of pre-

capitalist and colonial societies (Forstater, 2005, Goodhart, 1998, Wray, 1998: 57-61, Wray, 2012).

Time banks and CLCs echo the appeal-to-elites utopian socialist approach that was also criticized by Marx and Engels:

> "Socialists of this kind (…) want to improve the condition of every member of society, even that of the most favoured. Hence, they habitually appeal to society at large, without distinction of class; nay, by preference, to the ruling class. For how can people, when once they understand their system, fail to see in it the best possible plan of the best possible state of society? Hence, they reject all political, and especially all revolutionary, action; they wish to attain their ends by peaceful means, and endeavour, by small experiments, necessarily doomed to failure, and by the force of example, to pave the way for the new social Gospel." (Marx and Engels, 1976: 515)

Appealing to elites is not negative *per se*, but becomes problematic when it involves downplaying radical objectives – rejecting all political, especially revolutionary action – perhaps condemning a local currency to ecological irrelevance from the very beginning. The Bristol Pound has taken the mainstreaming represented by CLCs one step further by excluding any mentioning of eco-localization or even the Transition Network from its webpage (Seyfang and Longhurst, 2012), which may explain its success in obtaining fiscal endorsement from the Lib Dem city council. Future research would have to tell whether the

Bristol Pound and similar local government-endorsed currencies retain any capacity to resist assimilation into conventional local growth agendas, and contribute instead to (zero-sum) import substitution. In the case of time banks, the further deradicalization of an already fairly mainstream innovation – exemplified by Spice – is indicative of the limitations associated with dependence on public funding. Furthermore, opportunistic exploitation of existing policy agendas can lead to catastrophic failure as funding is withdrawn subsequent to agenda changes or negative assessments of the currency system's capacity to deliver on policy expectations (North, 2003, Seyfang and Longhurst, 2012).

In so far as the existing monetary system is biased against social justice and ecological sustainability, the degrowth movement's advocacy of alternatives to money-as-usual is coherent with its objectives. However, the historical conditions for the establishment of strong local currency systems do not seem to materialize, and perhaps never will, given that "the historical generalization that the successful creation of stable monetary spaces has been the work of states is indisputable" (Ingham, 2006: 273). Even if local currency groups adopt a state's money of account (as CLCs and HOUR currencies have, but not time banks or libertarian LETS), they would still struggle to get their money-things accepted unless the state commits to accept them in payment of taxes. Moreover, if the local currency is not the exclusive means of discharging a tax liability, the additional transaction costs it represents vis-à-vis conventional currency would still minimize its acceptability unless the tax liability is sufficiently difficult to meet to make earning local currency worthwhile. Whereas such far-reaching fiscal endorsement, and consequently also strong and stable local currency systems, remain highly unlikely, the time may have come for local currencies as temporary,

unstable coping mechanisms helping people to survive in times of involuntary, chaotic economic degrowth, but that is not the subject of this paper (see e.g. Dittmer, 2012, Sotiropoulou, 2011).

The emancipatory alternative to money-as-usual which does appear to have the historical conditions largely in place, is the reform of the official monetary system into a truly public resource. The financial crisis that began in 2007 has raised widespread popular outrage against the banking system, paving the way for an undoing of its money-creation privilege. Full-reserve banking (see section 2.2) deserves more attention as a potential element of the reconfiguration of power-relations between democratic states and financial capital. However, full-reserve banking is not a sufficient condition for steering money-creation in an ecological direction, as the recent high-profile advocacy of this measure within a growth-oriented framework cautions (Benes and Kumhof, 2012). It is nevertheless an important step towards a more democratically controlled monetary system, which is a prerequisite for public spending and taxation that favours communities, egalitarian values, ecologically rational supply-chains, and other principles that degrowth advocates cherish. In the present historical conjuncture, such reforms appear less utopian (in the sense of unrealistic), i.e. more likely to succeed in generating enduring advances towards socio-ecological transition, than withdrawals into autonomist local currency schemes or appeals for elite support of innovations that lack mass popular backing. This is not to say that the degrowth movement should become an enemy of diversity.[12] But as far as alternatives to money-as-usual are

[12] Consider, however, that full-reserve banking conflicts with the current operation of the Chiemgauer, with two-thirds of the money supply issued by participating banks (see section 2.6).

concerned, it would be better off dedicating its limited resources and opportunities for influencing public opinion to work for government-centred monetary reforms – pushing their orientation towards fairness and sustainability – than advocating local currencies.

2.8. Conclusion

According to the academic research reviewed in this article, there are no clear success stories of local currencies as drivers of degrowth. *LETS* can facilitate informal resale, repair, and sharing of commercially produced goods, but their burdensome management and confinement to small memberships, dictated by their reliance on informal social pressure, limit their usefulness in this regard. LETS have also been found to support alternative livelihoods, but under quite uncommon conditions. *Time banks* help people expand their social networks, and are better than LETS at reaching the socially excluded. However, they are confined to unskilled personal services, bureaucratic, and dependent on grant funding. *HOUR currencies* do not stand out with regard to any of the criteria considered in this article, but may have some potential to facilitate local purchasing; research is inconclusive on this point. The small scale of HOUR economies has arguably dissuaded from further research on this matter. *Convertible local currencies (CLCs)* are best at attracting local businesses, but no significant evidence of their said capacity to localize supply chains has surfaced as yet, and their business-friendly design works to the detriment of other criteria. The Wörgl experiment suggests that a council-tax-endorsed CLC aimed at eco-localization may require the local state to increase geographical discrimination in public procurement, shifting the actual locus of change from the local business-oriented currency system to the

broader struggle for sustainable public procurement. In sum, local currencies do not appear to have more than a marginal role in driving purposive degrowth. Moreover, this paper has problematized some of the routes to intentional degrowth addressed by local currencies. In the context of fossil fuel scarcities, the pursuit of alternative livelihoods supported by part-time employment is a frail political strategy. Eco-localization by means of friction in monetary space is an inferior option to a tax on transport fuels. Local currencies have here been categorized as two utopian socialist approaches: the behind-society's-back variety of LETS and HOUR currencies, and the appeal-to-elites variety of time banks and CLCs. Marx and Engels's critiques of these approaches remain valid: successful monetary systems require resources that are not available behind society's back, notably the power to impose tax liabilities and decide by means of which currency they can be discharged. Local currencies that appeal to elites have shaken off most radical connotations, and expose themselves to the vagaries of policy agendas. Given the present historical conjuncture of popular outrage against finance, this paper has argued that the degrowth movement would improve its chances of contributing to enduring advances towards socio-ecological transition by working for government-centred reform of the monetary system instead of feeding the hype of local currencies against better knowledge. The degrowth movement should not cultivate its aversion to government policy-making, but engage further with the emerging fields of research and activism around government-centred monetary reform, enriching them with its growth critique and vision of a purposive socio-ecological transition.

References

Aldridge, T.J., Patterson, A., 2002. LETS get real: constraints on the development of local exchange trading schemes. Area. 34(4), 370-381.

Aldridge, T.J., Patterson, A., Tooke, J., 2003. Trading places: geography and the role of local exchange trading schemes in local sustainable development, in: Buckingham, S., Theobald, K. (Eds.), Local Environmental Sustainability. Woodhead, Cambridge, pp. 169-194.

Aldridge, T., Tooke, J., Lee, R., Leyshon, A., Thrift, N., Williams, C.C., 2001. Recasting work: the example of local exchange trading schemes. Work, Employment & Society. 15(3), 565-579.

Ariès, P., 2005. La décroissance, un mot-obus. La Décroissance. 26, avril.

Benes, J., Kumhof, M., 2012. The Chicago Plan Revisited. IMF Working Paper. WP/12/202. International Monetary Fund, Washington.

Bowring, F., 1998. LETS: an eco-socialist initiative?. New Left Review. 232, 91-111.

Boyle, D., 2002. The Money Changers: Currency Reform from Aristotle to E-Cash. Earthscan, London.

Brown, J.M., Kuchler, H., 2012. Bristol mayor launches city's pound. Financial Times, online ed. 19 September 2012. <http://www.ft.com/intl/cms/s/0/7080008e-0272-11e2-9e53-00144feabdc0.html#axzz29SVQCV69>

Cahn, E.S., 2001. On LETS and time dollars. International Journal of Community Currency Research. 5 <www.ijccr.net>

Cahn, E.S., 2000. No More Throw-Away People: The Co-Production Imperative. Essential Books, Washington.

Cattaneo, C., 2008. The Ecological Economics of Urban Squatters in Barcelona. Unpub. PhD thesis, Universitat Autònoma de Barcelona.

Cattaneo, C., D'Alisa, G., Kallis, G., Zografos, C., 2012. Special Issue: Politics, Democracy and Degrowth. Futures. 44(6), 515-654.

Cattaneo, C., Gavaldà, M., 2010. The experience of rurban squats in Collserola, Barcelona: what kind of degrowth?. Journal of Cleaner Production. 18(6), 581-589.

Collom, E., 2005. Community currency in the United States: the social environments in which it emerges and survives. Environment and Planning A. 37(9), 1565-1587.

Croall, J., 1997. LETS Act Locally: The Growth of Local Exchange Trading Systems. Calouste Gulbenkian Foundation, London.

Dalla Costa, M., James, S., 1972. The Power of Women and the Subversion of the Community. Falling Wall Press, Bristol.

Daly, H.E., Farley, J., 2004. Ecological Economics: Principles and Applications. Island Press, Washington.

Declaration Committee, 2010. Degrowth Declaration Barcelona 2010. 2nd Conference on Economic Degrowth for Ecological Sustainability and Social Equity, Barcelona, 26-29 March. http://www.barcelona.degrowth.org/Barcelona-2010-Declaration.119.0.html (accessed 31 January 2013)

Dittmer, K., 2012. Two challenges for creating democratically accountable local currencies to cope with unvoluntary degrowth: Lessons from Argentina. Paper presented at the 3rd

International Conference on Degrowth, Ecological Sustainability and Social Equity, Venice, 19-23 September.

Dittrich, M., Giljum, S., Lutter, S., Polzin, C., 2012. Green economies around the world? Implications of resource use for development and the environment. Monika Dittrich and Stefan Giljum, Vienna.

Dobson, A., 2007. Green Political Thought, fourth ed. Routledge, London.

Douthwaite, R., 2012. Degrowth and the supply of money in an energy-scarce world. Ecological Economics. 84, 187-193.

Easterlin, R.A., McVey, L.A., Switek, M., Sawangfa, O., Zweig, J.S., 2010. The happiness–income paradox revisited. Proceedings of the National Academy of Sciences. 107(52), 22463-22468.

Eder, H., 2011. Chiemgauer-Mikrokredite - eine Erfolgsgeschichte. http://www.chiemgauer.info/aktuelles/?tx_ttnews[tt_news]=2334&cHash=5e847079d8019778508fc771abf0779a (accessed 31 January 2013)

Ekins, P., 1986. The Living Economy: A New Economics in the Making. Routledge, London.

Engels, F., 1950. Socialism: Utopian and Scientific. George Allen & Unwin, London.

Farley, J., Burke, M., Flomenhoft, G., Kelly, B., Murray, D.F., Posner, S., Putnam, M., Scanlan, A., Witham, A., 2012. Monetary and fiscal policies for a finite planet. Paper presented at the International Conference on Degrowth in the Americas, Montreal, 13-19 May.

Fisher, I., 1936. 100% money and the public debt. Economic Forum. April-June, 406-420.

Forstater, M., 2006. Tax-Driven Money: Additional Evidence from the History of Economic Thought, Economic History and Economic Policy, in: Setterfield, M. (Ed.), Complexity, Endogenous Money and Macroeconomic Theory: Essays in Honour of Basil J. Moore. Edward Elgar, Cheltenham.

Forstater, M., 2005. Taxation and Primitive Accumulation: The Case of Colonial Africa, in: Zarembka, P. (Ed.), The Capitalist State and Its Economy: Democracy in Socialism. Research in Political Economy. Vol.22. Emerald, Bingley, pp. 51-64.

Fournier, V., 2008. Escaping from the economy: the politics of degrowth. International Journal of Sociology and Social Policy. 28(11/12), 528-545.

Gelleri, C., 2012. Chiemgauer-Statistik 2003 bis 2011. http://www.chiemgauer.info/fileadmin/user_upload/Dateien_Verein/Chiemgauer-Statistik.pdf (accessed 26 October 2012).

Gelleri, C., 2009. Chiemgauer regiomoney: Theory and practice of a local currency. International Journal of Community Currency Research. 13, 61-75. <www.ijccr.net>

Gesell, S., 1958. The Natural Economic Order. Peter Owen, London.

Gibson-Graham, J.K., 2006. The End of Capitalism (As We Knew It): A Feminist Critique of Political Economy, second ed. University of Minnesota Press, Minneapolis.

Glover, P., 2000. A history of Ithaca HOURS. http://www.paulglover.org/0001.html (accessed 31 January 2013).

Gómez, G.M., 2009. Argentina's Parallel Currency: The Economy of the Poor. Pickering & Chatto, London.

Goodhart, C.A.E., 1998. The two concepts of money: implications for the analysis of optimal currency areas. European Journal of Political Economy. 14, 407-432.

Gorz, A., 1989. Critique of Economic Reason. Verso, London.

Graugaard, J.D., 2012. A tool for building community resilience? A case study of the Lewes Pound. Local Environment. 17(2), 243-260.

Grover, D., 2006. Would local currencies make a good local economic development policy tool? The case of Ithaca Hours. Environment and Planning C: Government and Policy. 24(5), 719-737.

Hall, C.A.S., Klitgaard, K.A., 2011. Energy and the Wealth of Nations: Understanding the Biophysical Economy. Springer, New York.

Helleiner, E., 2000. Think globally, transact locally: Green political economy and the local currency movement. Global Society. 14(1), 35-51.

Ingham, G., 2006. Further reflections on the ontology of money: responses to Lapavitsas and Dodd. Economy and Society. 35(2), 259-278.

Ingleby, J., 1998. Local Exchange and Trading Systems (LETS) in Australia: a new tool for community development?. International Journal of Community Currency Research. 2 <www.ijccr.net>

Jackson, T., 2009. Prosperity without Growth: Economics for a Finite Planet. Earthscan, London.

Jacob, J., Brinkerhoff, M., Jovic, E., Wheatley, G., 2004a. HOUR town - Paul Glover and the genesis and evolution of Ithaca HOURS. International Journal of Community Currency Research. 8, 29-41. <www.ijccr.net>

Jacob, J., Brinkerhoff, M., Jovic, E., Wheatley, G., 2004b. The social and cultural capital of community currency: an Ithaca HOURS case study survey. International Journal of Community Currency Research. 8, 42-56. <www.ijccr.net>

Kallis, G., 2013. Societal metabolism, working hours and degrowth: a comment on Sorman and Giampietro. Journal of Cleaner Production. 38, 94-98.

Kallis, G., 2011. In defence of degrowth. Ecological Economics. 70(5), 873-880.

Kallis, G., Kerschner, C., Martínez-Alier, J., 2012. The Economics of Degrowth. Ecological Economics. Special Issue. 84, 172-269.

Kallis, G., Schneider, F., Martínez-Alier, J., 2010. Growth, Recession or Degrowth for Sustainability and Equity?. Journal of Cleaner Production. Special Issue. 18(6), 511-606.

Laacher, S., 1999. Nouvelles formes de sociabilités ou les limites d'une utopie politique. International Journal of Community Currency Research. 3 <www.ijccr.net>

Latouche, S., 2009. Farewell to Growth. Polity, Cambridge.

Lawn, P., 2010. Facilitating the transition to a steady-state economy: Some macroeconomic fundamentals. Ecological Economics. 69(5), 931-936.

Lee, R., 2002. 'Nice maps, shame about the theory'? Thinking geographically about the economic. Progress in Human Geography. 26(3), 333-355.

Lee, R., 1996. Moral money? LETS and the social construction of local economic geographies in Southeast England. Environment and Planning A. 28(8), 1377-1394.

Lee, R., Leyshon, A., Aldridge, T., Tooke, J., Williams, C.C., Thrift, N., 2004. Making geographies and histories? Constructing local circuits of value. Environment and Planning D: Society and Space. 22(4), 595-617.

Levitas, R., 2011. The Concept of Utopia, student ed. Peter Lang, Oxford.

Lietaer, B., 2001. The Future of Money: A New Way to Create Wealth, Work, and a Wiser World. Century, London.

Longhurst, N., 2012. The Totnes Pound: A grassroots technological niche, in: Davies, A. (Ed.), Enterprising Communities: Grassroots Sustainability Innovations. Emerald, Bingley, pp. 163-188.

Martínez-Alier, J., Pascual, U., Vivien, F., Zaccai, E., 2010. Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm. Ecological Economics. 69(9), 1741-1747.

Marx, K., 1963. The Eighteenth Brumaire of Louis Bonaparte. International Publishers, New York.

Marx, K., Engels, F., 1976. Manifesto of the Communist Party, in: Marx/Engels Collected Works, vol.6. Lawrence & Wishart, London.

Maurer, B., 2005. Mutual Life, Limited: Islamic Banking, Alternative Currencies, Lateral Reason. Princeton University Press, Princeton.

McNeill, J.R., 2000. Something New Under the Sun: An Environmental History of the Twentieth-Century World. Norton, New York.

Mellor, M., 2010a. Could the money system be the basis of a sufficiency economy?. Real-World Economics Review. 54, 79-88.

Mellor, M., 2010b. The Future of Money. Pluto, London.

Mennen, A.K., 2012. Regionalwährungen: Mit Chiemgauer gegen den Euro-Crash. Spiegel Online. 6 August 2012. <http://www.spiegel.de/wirtschaft/service/regiogeld-ein-waehrungsmodell-ist-gescheitert-a-844830.html>

Molnar, S., 2011. Time is of the essence: The challenges and achievements of a Swedish time banking initiative. International Journal of Community Currency Research. 15(A), 13-22. <www.ijccr.net>

Morgan, K., 2008. Greening the realm: Sustainable food chains and the public plate. Regional Studies. 42(9), 1237-1250.

Muralt, A.v., 1934. The Woergl experiment with depreciating money. Annals of Public and Cooperative Economics. 10(1), 48-57.

Naughton-Doe, R., 2011. Time banking in social housing. International Journal of Community Currency Research. 15(D), 73-76. <www.ijccr.net>

North, P., 2011. Geographies and utopias of Cameron's Big Society. Social & Cultural Geography. 12(8), 817-827.

North, P., 2010a. Alternative currency networks as utopian practice, in: Leonard, L., Barry, J. (Eds.), Global Ecological Politics. Emerald, Bingley, pp. 73-88.

North, P., 2010b. Local Money: How to Make it Happen in Your Community. Transition Books, Totnes.

North, P., 2010c. The longevity of alternative economic practices: Lessons from alternative currency networks, in: Fuller, D., Jonas, A.E.G., Lee, R. (Eds.), Interrogating Alterity: Alternative Economic and Political Spaces. Ashgate, Farnham, pp. 31-46.

North, P., 2007. Money and Liberation: The Micropolitics of Alternative Currency Movements. University of Minnesota Press, Minneapolis.

North, P., 2006a. Alternative Currency Movements as a Challenge to Globalisation? A Case Study of Manchester's Local Currency Networks. Ashgate, Aldershot.

North, P., 2006b. Constructing civil society? Green money in transition Hungary. Review of International Political Economy. 13(1), 28-52.

North, P., 2003. Time banks: learning the lessons from LETS?. Local Economy. 18(3), 267-270.

North, P., 2002. LETS in a cold climate: Green Dollars, self-help and neoliberal welfare in New Zealand. Policy & Politics. 30(4), 483-499.

North, P., 1999. Explorations in heterotopia: Local Exchange Trading Schemes (LETS) and the micropolitics of money and livelihood. Environment and Planning D: Society and Space. 17(1), 69-86.

North, P., 1998a. Exploring the politics of social movements through 'sociological intervention': a case study of local exchange trading schemes. Sociological Review. 46(3), 564-582.

North, P., 1998b. Lets, “hours” and the Swiss “business ring”: alternative currency systems and business development programmes. Local Economy. 13(2), 114-132.

North, P., 1996. LETS: a policy for community empowerment in the inner city?. Local Economy. 11(3), 268-277.

Offe, C., Heinze, R.G., 1992. Beyond Employment. Temple University Press, Philadelphia.

Papavasiliou, F., 2008. The Political Economy of Local Currency: Alternative Money, Alternative Development and Collective Action in the Age of Globalization. Unpub. PhD thesis, Emory University.

Powell, J., 2002. Petty capitalism, perfecting capitalism or post-capitalism? Lessons from the Argentinean barter experiments. Review of International Political Economy. 9(4), 619-649.

Research & Degrowth, 2010. Degrowth Declaration of the Paris 2008 conference. Journal of Cleaner Production. 18(6), 523-524.

Robertson, J., 2012. Future Money: Breakdown or Breakthrough?. Green Books, Totnes.

Ryan-Collins, J., Stephens, L., Coote, A., 2008. The New Wealth of Time: How Timebanking Helps People Build Public Services. New Economics Foundation, London.

Saed, 2012. Introduction to the degrowth symposium. Capitalism, Nature, Socialism. 23(1), 26-29.

Schneider, F., Kallis, G., Martínez-Alier, J., 2010. Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue. Journal of Cleaner Production. 18(6), 511-518.

Schroeder, R.F.H., 2006. Community exchange and trading systems in Germany. International Journal of Community Currency Research. 10, 24-42. <www.ijccr.net>

Schroeder, R.F.H., Miyazaki, Y., Fare, M., 2011. Community currency research: An analysis of the literature. International Journal of Community Currency Research. 15(A), 31-41. <www.ijccr.net>

Schussman, A.T., 2007. Making Real Money: Local Currency and Social Economies in the United States. Unpub. PhD thesis, University of Arizona.

Scott Cato, M., Suárez, M., 2012. Stroud Pound: A local currency to map, measure and strengthen the local economy. International Journal of Community Currency Research. 16(D), 106-115. <www.ijccr.net>

Sekulova, F., Rodríguez-Labajos, B., Kallis, G., Schneider, F., 2013. Degrowth: From Theory to Practice. Journal of Cleaner Production. Special Issue. 38, 1-98.

Seyfang, G., 2010. Time banking: A new economics alternative, in: Fuller, D., Jonas, A.E.G., Lee, R. (Eds.), Interrogating Alterity: Alternative Economic and Political Spaces. Ashgate, Farnham, pp. 193-205.

Seyfang, G., 2009. Low-carbon currencies: the potential of time banking and local money systems for community carbon-reduction. CSERGE Working Paper EDM 09-04. University of East Anglia, Norwich.

Seyfang, G., 2006a. Harnessing the potential of the social economy? Time banks and UK public policy. International Journal of Sociology and Social Policy. 26(9/10), 430-443.

Seyfang, G., 2006b. Sustainable consumption, the new economics and community currencies: Developing new institutions for environmental governance. Regional Studies. 40(7), 781-791.

Seyfang, G., 2004. Time banks: rewarding community self-help in the inner city?. Community Development Journal. 39(1), 62-71.

Seyfang, G., 2003. Growing cohesive communities one favour at a time: Social exclusion, active citizenship and time banks. International Journal of Urban and Regional Research. 27(3), 699-706.

Seyfang, G., 2002. Tackling social exclusion with community currencies: learning from LETS to time banks. International Journal of Community Currency Research. 6 <www.ijccr.net>

Seyfang, G., 2001a. Community currencies: small change for a green economy. Environment and Planning A. 33(6), 975-996.

Seyfang, G., 2001b. Working for the Fenland dollar: an evaluation of Local Exchange Trading Schemes as an informal employment strategy to tackle social exclusion. Work, Employment & Society. 15(3), 581-593.

Seyfang, G., Longhurst, N., 2013. Growing green money? Mapping community currencies for sustainable development. Ecological Economics. 86, 65-77.

Seyfang, G., Longhurst, N., 2012. Grassroots Innovation for Sustainability: A Niche Analysis of Community Currencies. 3S Working Paper 2012-10. Science, Society and Sustainability Research Group, Norwich.

Soddy, F., 1934. The Role of Money. Routledge, London.

Soddy, F., 1926. Wealth, Virtual Wealth and Debt. George Allen & Unwin, London.

Sorman, A.H., Giampietro, M., 2013. The energetic metabolism of societies and the degrowth paradigm: analyzing biophysical constraints and realities. Journal of Cleaner Production. 38, 80-93.

Sotiropoulou, I., 2011. Alternative exchange systems in contemporary Greece. International Journal of Community Currency Research. 15(D), 27-31. <www.ijccr.net>

Thiel, C., 2011. Complementary currencies in Germany: The Regiogeld system. International Journal of Community Currency Research. 15(D), 17-21. <www.ijccr.net>

Thorne, L., 1996. Local exchange trading systems in the United Kingdom: a case of re-embedding?. Environment and Planning A. 28(8), 1361-1376.

Volkmann, K., 2009. Regional - und trotzdem Global: Solidarische Ökonomie im Spannungsfeld zwischen Regionalität und Globalität. Lit, Berlin.

Williams, C.C., 1997. Local Exchange and Trading Systems (LETS) in Australia: a new tool for community development?. International Journal of Community Currency Research. 1, 32-49. <www.ijccr.net>

Williams, C.C., 1996a. An appraisal of local exchange and trading systems in the United Kingdom. Local Economy. 11(3), 259-266.

Williams, C.C., 1996b. Informal sector responses to unemployment: an evaluation of the potential of Local Exchange Trading Systems (LETS). Work, Employment & Society. 10(2), 341-359.

Williams, C.C., 1996c. Local currencies and community development: an evaluation of Green Dollar Exchanges in New Zealand. Community Development Journal. 31(4), 319-329.

Williams, C.C., 1996d. Local exchange and trading systems: a new source of work and credit for the poor and unemployed?. Environment and Planning A. 28(8), 1395-1415.

Williams, C.C., Aldridge, T., Lee, R., Leyshon, A., Thrift, N., Tooke, J., 2001. Bridges into work? An evaluation of Local Exchange and Trading Schemes (LETS). Policy Studies. 22(2), 119-132.

Wray, L.R., 2012. Introduction to an alternative history of money. Working Paper No.717. Levy Economics Institute of Bard College, Annandale-on-Hudson.

Wray, L.R., 1998. Understanding Modern Money: The Key to Full Employment and Price Stability. Edward Elgar, Cheltenham.

3. Case study: Motivation and methodological considerations

The choice to conduct fieldwork on the Venezuelan communal currency experiment was above all based on the striking fact that here was a series of local currencies that had been created on the initiative of the central government. To my knowledge, this was unique among local currencies worldwide, and largely unresearched. I was aware at the time of the chartalist theory of money (Ingham 2004; North 2007), which emphasizes the role of the state in the establishment of stable monetary systems (see chapters 1, 2 and 5 on neo-chartalism, or Modern Money Theory, and its taxes-drive-money argument). Since I found this theory compelling, I was enthusiastically curious about the Venezuelan experiment. A Venezuelan case study would also be an opportunity to satisfy my general curiosity about the Bolivarian Revolution, to which I was superficially sympathetic. Finally, the case suited me as a fluent Spanish-speaker.

In terms of the academic literature, Venezuela's communal currency experiment seemed to represent an unusual and perhaps under-researched category. Social scientists of ecologist persuasions, studying environmentalist proposals taken up by recent Latin American 'radical left' governments, have tended to focus on cultural-political projects centred on Ecuador and Bolivia, such as the constitutional recognition of the rights of nature or the debate around the concept of *buen vivir* (Gudynas 2011; Lang and Mokrani 2013). There is also a sobering literature on movements of environmentalist resistance, exposing failures of these

governments to break with the extractivist patterns of development of the past (Bebbington and Humphreys Bebbington 2011; García-Guadilla 2009; Gudynas 2010). By comparison, research on propositional rather than oppositional environmentalist phenomena of an *economic* nature supported by 'radical left' governments is scarce. This may be expected, since such government-supported initiatives themselves are rare. Among the more well-known are the Ecuadorian government's ill-fated proposal to leave oil in the ground in the ITT field of the National Park of Yasuni in the Amazon (Bebbington and Humphreys Bebbington 2011; Becker 2013; Martínez-Alier et al. 2013), or the 'Daly-Correa tax', a proposed carbon tax on oil exports (Vidal 2012). One of the questions my fieldwork sought to answer is whether the communal currency experiment can be seen as a rare example of ecosocialist institution-building supported and promoted by the central government.

I was first made aware of the Chávez government's experiment with 'barter systems with use of communal currency' at the International Conference on Community and Complementary Currencies in Lyon in February 2011. There I met three Venezuelan 'barter' activists, including one of the architects of the experiment, Pablo Mayayo. In this way, I happened to strike an acquaintance with what would turn out to be one of the key players of my case study. Some months later, I made up my mind to begin exploring the Venezuelan case when I received an invitation to attend the Second International Meeting on Barter Experiences in Venezuela in June 2011. This four-day meeting was held in parallel with the Sixth National Meeting of Barter Systems. During the meeting, I was introduced to Venezuelan barter organizers, participants, ministry officials, and researchers. There was

time for a long interview with another of the barter architects[13], Juan Esteban López, who gave me valuable input regarding my research plans in Venezuela.

On the basis of the data collected at the meeting and other secondary material, I wrote an introductory article about the Venezuelan communal currency experiment (chapter 4). Once published in November 2011, I corresponded with López about the article and translated it into Spanish. He liked it very much and was proud to see research about the Venezuelan experiment published in an international journal. (Note that this article interprets the modest development of the Venezuelan barter systems relative to their Argentine predecessors mainly in terms of external differences in context, not internal design issues.) López's appreciation for my initial work certainly facilitated my subsequent fieldwork. I was occasionally told by interviewees that I had been recommended by him.

In general, the fact that virtually all barter systems were organized in a common national network – the Red Nacional de Sistemas de Trueke (National Network of Barter Systems, RNST) – made it easy to identify and contact the systems.[14] In this sense, the RNST served as my on-site institutional support. I visited seven of the 14 barter systems in the country. One of them acted as host for the international meeting in June 2011. The selection was made to

---

[13] 'Barter architect' is my own *ex post facto* choice of words, referring to the three members of the 'national facilitation team' who formulated the Venezuelan barter system model. The connotation of detailed mental planning preceding actual construction is intentional.

[14] I acknowledge the opinion of "the barter guru" of Medellín (where two of the Venezuelan barter architects began their barter activism), interviewed by Burke (2012: 35), that the word *system* suggests a misleadingly high level of organization and regularity, and that it would be more adequate to talk of experiments or even "demonstrative experiences". However, since 'barter system' is the common term in Venezuela, I adopt it with this proviso in mind.

include systems ranging from the reportedly relatively successful to the clearly stagnant, and older and newer ones. The information for this assessment was obtained through interviews, complemented by an internal RNST document (dated 5 November 2011) containing a diagnosis of the strengths, weaknesses, and current situation of eight of the systems. For the most part, I was able to visit the systems as intended. However, I was unable to visit the Sistema de Trueke de la Confederación de Consejos Comunales José Leonardo Chirino (Falcón), as I had unadvisedly planned to go there on the Carnival weekend, when it turned out impossible to get a bus ticket from Caracas in that coastal direction. The timing for the fieldwork (January 6th to March 23rd 2012) was fair but not ideal. Many barter activists were politically active in other ways, and were already revving up for the presidential elections of October 7th, followed by state and municipal elections. Some interviews were delayed or cancelled with reference to such obligations. Moreover, the upcoming elections made me discard the possibility of a third field visit.

After attending the June 2011 meeting, one of my intentions for the main fieldwork was to study the barter systems' relation to the broader process of building the 'communal economy' and the 'communal state', similar to visions of a 'post-liberal state' (Escobar 2010). This is a stated objective of the government, and perhaps more credibly also of the non-governmental Red Nacional de Comuneros (National Network of Communards, RNC). Given what I had read and heard about it at the time, in the initial article (chapter 4) I made the suggestion that the future of the communal currencies would depend on this process. Consequently, in January and February 2012, I participated in two meetings of the RNC, also attended by a number of barter activists. However, together with my visits to barter

systems, these meetings made me aware that this process had had little to do with the actual, past and present trajectory of the barter systems. Further exploration of the links would therefore be highly speculative. This influenced my decision to focus on the problems of the design of the barter systems themselves.

The primary research method was semistructured interviews, usually lasting 45-90 minutes. Initial developers, government officials, local organizers, and participants were interviewed; in total 29 interviewees. With participants, interviews mainly concerned how and why they participated, and how this was related to their activity in the conventional (formal and informal) economy. Interviews with other actors were largely tailored to the context. This was complemented with many informal conversations, and participant-observation conducted at barter markets and RNST meetings. Visits to individual systems would vary from just a couple of days up to almost two weeks. Given the general stagnation, barter markets were rarely held and sometimes coincided, and I was only able to attend four such events. In view of the barter systems' low numbers of participants, I did not consider quantitative surveys to be a suitable method. It seemed unlikely that I would be able to collect enough survey answers for statistical analysis.

References

Bebbington, A.; Humphreys Bebbington, D. (2011) An Andean Avatar: post-neoliberal and neoliberal strategies for securing the unobtainable. *New Political Economy,* 16(1), 131-145.

Becker, M. (2013) The stormy relations between Rafael Correa and social movements in Ecuador. *Latin American Perspectives,* 40(3), 43-62.

Burke, B.J. (2012) *"Para que cambiemos"/"So we can (ex)change": Economic activism and socio-cultural change in the barter systems of Medellín, Colombia.* PhD thesis. University of Arizona.

Escobar, A. (2010) Latin America at a crossroads: Alternative modernizations, post-liberalism, or post-development? *Cultural Studies,* 24(1), 1-65.

García-Guadilla, M.P. (2009) Ecosocialismo del siglo XXI y modelo de desarrollo bolivariano: los mitos de la sustentabilidad ambiental y de la democracia participativa en Venezuela. *Revista Venezolana de Economía y Ciencias Sociales,* 15(1), 187-223.

Gudynas, E. (2011) Buen Vivir: Today's tomorrow. *Development,* 54(4), 441-447.

Gudynas, E. (2010) Si eres tan progresista ¿Por qué destruyes la naturaleza? Neoextractivismo, izquierda y alternativas. *Ecuador Debate,* 79, 61-81.

Ingham, G. (2004) *The Nature of Money.* Polity, Cambridge.

Lang, M.; Mokrani, D. (2013) *Beyond Development: Alternative Visions from Latin America.* Rosa Luxemburg Foundation, Quito.

Martínez-Alier, J.; Bassey, N.; Bond, P. (2013) Yasuni ITT is dead. Blame President Correa. http://www.ejolt.org/2013/08/yasuni-itt-is-dead-blame-president-correa (accessed 10.08.14)

North, P. (2007) *Money and Liberation: The Micropolitics of Alternative Currency Movements.* University of Minnesota Press, Minneapolis.

Vidal, J. (2012) Oil nations asked to consider carbon tax on exports. *The Guardian.* 21 November 2012.

4. Communal currencies in Venezuela: An introduction

Abstract

Communal currencies, operating in 'barter' systems, have been introduced in Venezuela by the national government over the last few years, making them unique among contemporary alternative and complementary currencies in terms of their institutional origin. The communal currencies are an element of the Bolivarian Revolution, and an example of President Chávez's innovative approach to the construction of 'twenty-first century socialism'. The main ideological features of the *trueke* (barter) are the recovery of indigenous practices, socialism, and agroecology. There are currently 13 barter systems in the country, with a total membership of about 1,500. This relatively modest development is arguably due to socio-economic factors such as the widespread reduction in poverty rates achieved through the regular economy. It is suggested that the future of the communal currencies depends on the broader process of building the 'Communal State', as well as on their relation to the state.

4.1. Introduction

This article aims to introduce the reader to Venezuela's communal currencies (*monedas comunales*) that are used in 'barter' systems (*sistemas de trueke*) and operate in parts of the country since 2007. The article is based on data gathered at the 6th National Meeting of Barter Systems (Ciudad Comunal Laberinto, Venezuela, 23-26 June 2011), as well as other second-hand sources. The article begins by outlining the Bolivarian Revolution, followed by an account of the emergence of the *trueke* as an element of this process. A short section on the legislation of the communal currencies follows, after which the basic functioning of the systems is explained. After a description of the main ideological features of the *trueke*, the article concludes by suggesting some preliminary explanations to the modest development of the communal currencies. It is hoped that this account will provide an initial understanding of Venezuela's communal currencies and their future prospects.

4.1.1 The Bolivarian Revolution

Venezuela's communal currencies have developed with an unusual amount of government support, and should therefore be understood as part of Venezuela's Bolivarian Revolution, the outlines of which I will now sketch briefly. In December 1998, in the wake of two decades of economic decline, widespread discontent with the neoliberal policies implemented since 1989, and the gradual break-up of the 'pacted democracy' instated in 1958, Lieutenant Colonel Hugo Chávez was elected president after a campaign that centred on the need to elect a Constitutional Assembly to draft a new constitution that would create

a Fifth Republic based on ‘participatory democracy’ (see e.g. Ellner 2008, Gott 2011, Wilpert 2007). Chávez’s political project has revived the legacy of Simón Bolívar, the hero of Latin America’s independence wars against Spain, this time with the goal of liberating the continent from the economic and cultural rule of the United States, creating in its stead “a great Latin American and Caribbean union” (Chávez cit. in Gott 2011: 184). As one of the oil-richest countries in the world, Venezuela seemed well placed to take the lead in this Bolivarian Revolution. Sure enough, among the main successes of the Chávez administration in its first year in office was its consolidation of the OPEC, strengthening the cartel’s control over the oil price, the domestic parallel of which was a less successful effort to assert government control over the thoroughly corrupt state oil company, PDVSA (Gott 2011: 169-71).

The first two years of the Chávez presidency brought about the erosion of the political power-centres of the old elite, such as the ministerial cabinet and the judiciary (Wilpert 2007: 21-2), but was relatively moderate in the economic realm. This was to change in November 2001 with the enactment of a package of 49 radical laws that signalled the definitive break with neoliberal socio-economic policy. To the alarm of the privileged classes, the main beneficiaries of these laws were the marginalized sectors of Venezuelan society, especially workers in the informal economy, non-unionized employees in small firms, and the rural workforce (Ellner 2008). This radicalization of the Bolivarian Revolution intensified the polarization of Venezuelan society, uniting the opposition around the goal of ousting Chávez from power. A number of means were used for this purpose – all of which failed – including the coup attempt of April 2002, which was defeated after two days owing

to Chávez's widespread support among the popular classes and within the military, as well as divisions among the coup-makers (Ellner 2008: 112-21). This was followed by a general strike in November 2002-March 2003, which "was actually a combination of management lockout, administrative and professional employee strike, and general sabotage of the oil industry" (Wilpert 2007: 25). As the strike failed, the opposition turned to the Guarimba Plan in early 2004, promoting street violence and confrontation with security forces in a frustrated attempt to induce a military response that would overthrow the government and re-establish order (Ellner 2008: 120, 140). Finally, the opposition organized a presidential recall referendum in August 2004, which merely served to reassert the legitimacy of the president, yielding 59% of the vote in his favour (Ellner 2008: 120). Far from achieving their objective, these insurgent tactics set in train a "dialectic of counter-revolution and radicalization" (Wilpert 2007: 9) that drove Chávez increasingly to the left. Consequently, with the opposition weakened by the repeated failure of their counter-revolutionary schemes, in January 2005 Chávez announced that the aim of the Bolivarian Revolution would be the construction of 'twenty-first century socialism'.

4.2. The emergence of barter systems in Venezuela

Venezuela's barter systems are unique among contemporary alternative and complementary currencies in that the initiative for their creation was taken at the highest political level by President Chávez himself. Chávez first put his ideas for a complement to the national currency – the bolívar – into the public realm in his weekly televised program

Aló Presidente on 18 December 2005, acknowledging Danielle Mitterrand, the widow of the former president of France, as the person who had introduced him to the topic. Mitterrand in turn had met Rubén Ravera and Carlos de Sanzo of Argentina's *Red Global de Trueque* (RGT) (Covas et al. 2007). In the program, Chávez explained his ideas for local community currencies with a limited life span to deter accumulation. In recognition of the mixed origins of the concept of solidarity economy, or perhaps simply in the yuletide spirit of the broadcast, Chávez summed up his ideas thus: "Do you know what this is called? Socialism. Socialism. And even more, I say: Christianism" (Chávez 2005).[15] The following month in Caracas, the 6th World Social Forum served as the setting for the first public demonstration of a barter currency (called TXAI) in Bolivarian Venezuela, the result of a collaboration between the Ministry of Popular Economy (MINEP) and Brazilian solidarity economy organizations (Primavera 2011). Later in 2006, Ravera and fellow RGT founder Horacio Covas were contracted by the National Institute for the Development of Small and Medium Industry (INAPYMI, attached to MINEP) to assist the creation of barter networks (Naishtat 2007). Also contracted in August 2006 were two coordinators of the Santa Elena barter system in Medellín (Colombia), Juan Esteban López and Pablo Mayayo, both of whom have remained deeply involved in the development of Venezuela's barter systems.

The presidential interest in barter currencies at this stage of the Bolivarian Revolution can be understood in the context of Chávez's dialectical radicalization and his reassertion of political authority following the defeat of the counter-revolution, which left ample space for

[15] An edited version of this explanation, which keeps the reference to socialism but not to Christianism, became the widely circulated promotional video *La Parte Roja* (The Red Part) (INAPYMI 2006).

radical policy experimentation, facilitated by the healthy state of public finances resulting from the economic expansion in process since 2003 (Weisbrot 2011). The willingness of the president to experiment with the nature of money, distinguishing him from other leftist statesmen like Lenin and Trotsky who adhered to the sound money creed (Polanyi 2001: 26, Galbraith 1975: 42), makes sense in light of his intellectual sources, specifically Simón Rodríguez, to whom it has been claimed that Chávez "owes more than to Marx or Castro" (Gott 2011: 210). Best remembered as Bolívar's tutor, Rodríguez famously addressed the newly independent nations of 'Spanish America' thus (Cerutti Guldberg et al. n.d., 'Inventamos o erramos'):

> Where would we look for models?...
>
> – Spanish America is *orijinal* [sic] = ORIJINAL must be its Institutions and its Government = ORIJINAL the means of building them both.
>
> *either we shall Invent, or we shall Wander in Error.*

Rodríguez's call for inventiveness has been heeded by Chávez from the start of his political career (Gott 2011: 210), and it is also the source of the 'semiotic insurgence' that is evident in the Venezuelan barter systems' preferred spelling of *trueke* (discussed below).

Chávez's interest in barter currencies at this stage of the revolution can also be understood as a response to the government-led cooperative boom that the country was experiencing, with annual official registrations of new cooperatives mushrooming from 2,280 in 2002 to 41,422 in 2005 (Fagiolo 2009). The government aimed to set up an alternative currency to

promote trading between cooperatives, as well as between cooperatives and the public, so as to consolidate a socialist cooperative sector (Navarrete 2006). It was hoped that barter currencies would provide seedbeds for the development of (cooperative) business ventures, as the Argentine *Red de Trueque Zona Oeste* had previously aspired to do (Gómez 2009). Accordingly, with the participation of 270 cooperatives, the MINEP piloted the *mirandino* currency during a 3-day fair in September 2006 (Navarrete 2006).

No permanent barter system materialized until June 2007, delayed in part by the campaign for the presidential elections of December 2006 (J.E. López, interview). In April 2007, Chávez visited the rural municipality of Urachiche, and suggested that this would be an ideal place to set up a local barter currency (Chávez 2007b). The following month, López and Mayayo commenced training workshops, and on 17 June the newly created *Sistema de Trueke de Urachiche* held its first market (RNST 2010a). Two more barter systems were established that year, and seven more emerged in the first semester of 2008 (one of which was subsequently divided into a northern and southern system). This rate of growth, by far the highest in the Venezuelan experience to date, was achieved "through a marathon effort by the facilitation team, local leaders, cooperatives, producers' associations, Communal Councils, and government institutions that supported the process, such as INAPYMI, *Misión Madres del Barrio* [Mothers of the Barrio Mission], *Misión Cultura*, CONAC [National Council of Culture], among others" (RNST 2010a).[16] The following 4 October saw the foundation of the National Network of Barter Systems (*Red Nacional de Sistemas de Trueke*, here *RNST*), and this day is since celebrated as National Barter Day, the ambition being to turn it into the

[16] Missions are social programs financed by the government.

Global No-Money Day (RNST 2009a: 3). The purpose of the RNST is to function as a tool for mutual support and cooperation, organize national barter events and nation-wide exchanges, and facilitate the formulation and upholding of a common policy (Wilpert 2011).

After the founding boom in the first half of 2008, the pace of expansion slowed considerably. Only one system was successfully established in 2009, with another one discontinued after its inaugural market in December 2009 (J.E. López, interview). The year 2010 also saw only one new system emerge, yielding a total of 13 active systems at the time of writing (October 2011).

4.3. Legislation of the *trueke*

President Chávez, who had long called for a barter law “to speed up the fight against poverty and speed up the construction of socialism” (Chávez 2007a), eventually used an enabling law to dictate a decree on this matter, the publication of which coincided with the conclusion of the founding boom in July 2008 (Bolivarian Republic of Venezuela 2008). The decree postulates a series of objectives and principles of ‘alternative systems of solidarity exchange’ and ‘solidarity exchange groups’, sets out the procedure for the creation of such entities, and defines the rights and obligations of their members. Alternative systems of solidarity exchange are understood to comprise both direct and indirect barter, the latter being the mode that involves an alternative currency, which it terms ‘communal currency’ (*moneda comunal*). It asserts that a communal currency “will only have value within the

territory of its locality" (Art. 28) and will not circulate on a national scale, and that its value should be set at equivalence with the bolívar. The decree prohibits "financial practices, such as charging interest or commissions" within alternative systems of solidarity exchange (Art. 11). To implement the decree, a subsection of the Ministry of Communal Economy (MINEC, formerly MINEP), the Office for Socio-productive Communitarian Organizations, is assigned the function of registering and supervising solidarity exchange groups (i.e. barter systems). In December 2010, the decree is replaced by a law passed by the National Assembly, which maintains the contents of the decree with minor changes (Bolivarian Republic of Venezuela 2010).

4.4. Basic functioning of the barter systems

Trading in the barter systems is primarily based on periodical community markets. Unlike the largely urban Argentine barter clubs (Gryckiewicz 2011, see also Gómez 2009, North 2007), the established Venezuelan barter systems are predominantly rural, with markets mostly held in villages and small towns. This may be explained by the focus on the *trueke* as a means of facilitating food sovereignty, as discussed below. Consequently, agricultural produce, especially moderately perishable fruits and vegetables, constitutes a large proportion of the goods on offer. The frequency of market events vary from once every two weeks to once a month, and this temporality is also influenced by rural factors, such as harvest cycles and large travel distances (M.C. Barreto, conference).

New members are required to attend an induction workshop, in which they are familiarized with the 'attitudes of the good prosumer', as established in handbooks and monthly RNST bulletins, as well as with the legal framework and its declaration of moral principles, rights, and obligations (J. Laurito, conference). Since 2009, a standardized member registration form is used to compile categorized offers and wants, and to confirm the commitment of the signatory to a series of stated principles and values of solidarity exchange (cf RNST 2009b: 6). In spite of the introduction of this instrument, the number of active members in the barter systems is quite uncertain. A recent estimate by one of the RNST spokespersons is that total membership is at about 1,500, with an average of 120 active participants per system (J.E. López, pers. comm.). The participation of cooperatives and other social enterprises is rather weak, despite the recruitment efforts made by some barter systems (T. Quiroz, conference).

In order to advance self-management, new members are expected to participate in any one of the committees that make up the organizational structure of the systems, such as logistics, communications, quality and values, accounting, and training (J. Laurito, conference). Individual members are freely given 100 communal currency units when signing up, and are asked to return the same amount if they leave the system. Although practices may vary from one system to the next, collective enterprises generally receive 200 units, as do families that sign up as a single member. The bolívar is, in principle, not used as means of exchange in the markets, and conversion between the national and local means of exchange is not allowed. Although the law states that "the value of the communal currency will be determined in equivalence to the money of legal tender" (Bolivarian Republic of

Venezuela 2010: Art. 55), the RNST unsuccessfully asked for this formulation be modified so as to prescribe a relation of *initial* equivalence only (RNST 2010b).

4.5. Ideological features: indigenity, socialism, and agroecology

Venezuela's barter systems are a highly political phenomenon. Three themes stand out in the discourse of the RNST: the recovery of the ancestral practice of barter in pre-Columbian America; barter as an element of twenty-first century socialism; and the advancement of agroecology and the quest for food sovereignty. Following Simón Rodríguez, the indigenous theme is apparent even in RNST's preferred spelling of barter: *trueke* instead of the conventional *trueque*, whereby they manifest their desire for "independence from the Spanish Royal Academy of Language and its antiquated and impractical spelling rules, which have never made sense nor been of use to the speech and marvellous languages of these Amerikan [sic] lands" (RNST n.d.). To practice barter is to recover a part of "our native civilizations [which] always knew to live better and had (and have) a lot more knowledge and wisdom (in all aspects) than Occidental civilizations, which the only thing they did was to invade us, breaking our millennial historical vector, bringing pain, backwardness and obscurantism to our sacred earth" (RNST n.d.). The indigenous theme was promoted from the outset by López and Mayayo (J.E. López, interview), and is evident in the names of many of the communal currencies, together with vindications of Afro-Caribbean history and culture, as in the *momoy* (indigenous mythological being), the *cimarrón* (fugitive slave), and the *zambo* (person of mixed African and Amerindian origin).

While the indigenous and Afro-Caribbean themes are apparent on the front of many of the communal currencies, the socialist, anti-capitalist motif is articulated in the text that all systems reproduce (with minor changes) on the back of their notes:

> *This Communal Currency or Barter Facilitator is social property and is only valid for the 'Prosumers' (Producers and Consumers at once) of the [name] Barter System where it remains, identifies, and binds together.*
>
> *It acts as a tool that assists the barter of proportional products, services and knowledges within the System, without accumulating, in a spirit of self-management and socialism. It does not yield interest. On no grounds may it be exchanged for money.*
>
> *The Prosumers of the [name] Barter System, Bolivarian Republic of Venezuela, Union of Nations of the South, believe that our fulfillment as human beings does not have to be conditioned by money or capital. We maintain that it is possible to replace competition and vile selfishness with cooperation and reciprocity between people.* (adapted from Sistema de Trueke Merideño, 2009 ed. note)

Livio Rangel, one of the early promoters of the *trueke*, describes it as "a political tool of the revolutionary process" that aims to strengthen the organizational capacity of the *Chavistas* and constitute a space where social relations based on solidarity can develop, building a

socialist, communal economy (Rangel 2010). Although the initiative to introduce communal currencies came from President Chávez, and the barter systems have developed with substantial organizational and financial government support, the RNST expresses a desire that the barter systems may become entirely self-managed, with no more government involvement (Wilpert 2011). In this regard, Rangel believes that "there is a maturity in the state, and in some public officials, [to understand] that at this stage of the Venezuelan revolution, the state should put itself in accord with the strengthening of the popular movement" (Rangel 2010). Rangel recalls Chávez's words when he first made public his ideas for barter currencies, that they "will be in the hands and soul of the people, with its good judgement; they will be the system, the communities" (Chávez 2005). Reflecting the complexity of the challenges involved, one of the RNST spokespersons laments that the Ministry has not been sufficiently active in promoting the creation of barter systems, but also that "many people do not understand that the barter systems ought to be self-managed" (Wilpert 2011).

The third theme espoused by the RNST is the link between barter systems and the quest for food sovereignty and the dissemination of agroecological practices. According to Rangel, the counter-revolutionary 'general strike' in 2002-2003 exposed the vulnerability of Venezuela's system of food distribution to political sabotage, and this experience motivated the ambition to establish barter systems in areas of high agricultural potential, in zones of resistance able to face up to the situation of permanent global threats to the revolution (Rangel 2010). In line with its celebration of ancestral practices, the RNST calls for the revival of the *conuco* (traditional smallholding), and the exchange of part of its produce through the

barter systems (RNST 2009a: 5). The RNST also embraces agroecology and permaculture, organizing nation-wide exchanges of traditional seeds and agricultural knowledges. Although its vision is the establishment of ecologically respectful local economies (J.E. López, interview), the present spatial pattern of barter systems and the frequency of their interrelations probably owes more than they would like to the national abundance of cheap oil.

4.6. Conclusion

Four years after the inauguration of the first permanent communal currency, the participation in Venezuela's barter systems – estimated at 1,500 members – still pales in comparison with the 80-100,000 people reached in Argentina after three years (Pearson 2003) – one year before the expansion that followed on the launch of the controversial 'social franchise' starter kit in 1999 (Powell 2002), and long before massive impoverishment saw participation peak at a frantic 2.5 million or so in 2002 (Gómez 2009: 107, 113). The main reasons for this disparity are arguably socio-economic. Argentina's *trueque* grew on the back of the economic decline of the middle class – subsequently extending to the 'structural poor' as the crisis turned acute – and retracted partly as a result of the welfare payment introduced by the Duhalde government in May 2002, and the strong growth of the economy since 2003 (Gómez 2009: 6-7, 58-9, 115-18). In contrast, Venezuela's communal currencies have been introduced in the thick of a revolution that has achieved a drop in the poverty rate from 43.9% in 1998 to 23.8% in 2009, with extreme poverty dropping from

17.1% to 5.9% in the same period (Weisbrot 2011). The agricultural produce of the *trueke* 'competes' with public soup kitchens and heavily discounted food products offered in a nation-wide network of government-owned grocery stores and supermarkets that numbered 16,626 in 2008 (Weisbrot 2011).

In spite of plentiful government support, Venezuela's communal currencies have made little headway in a society where almost every long-forsaken corner is now awash with oil money, contrasting with the conditions of popular monetary drought under which alternative currencies prosper, as in Argentina of the early 2000s, or Greece today (Donadio 2011, Sotiropoulou 2011). Still, if the construction of the 'Communal State' advances (Reardon 2010), so that communes and communal councils are given a larger organizational role in the allocation of goods and services, the *trueke* may gain importance as an allocative mechanism. Whether this could bring more local circuits of production and consumption, independent from the oil economy, rather than merely an alternative system of distribution of national produce and imports, remains to be seen. Furthermore, the future position of the *trueke* on the spectrum from autonomous social movement to clientelist institution is uncertain. On this probably depends whether or not it would have the resilience to live up to its ambition of being "the rearguard of the revolution" (P. Mayayo, conference).

References

Bolivarian Republic of Venezuela 2010, 'Ley Orgánica del Sistema Económico Comunal', *Gaceta Oficial No. 6,011 Extraordinario*, Caracas.

Bolivarian Republic of Venezuela 2008, 'Decreto No. 6,130, con Rango, Valor y Fuerza de Ley para el Fomento y Desarrollo de la Economía Popular', *Gaceta Oficial No. 5,890 Extraordinario*, Caracas.

Cerutti Guldberg, H., Magallón Anaya, M., Palacios Contreras, I. & Ramírez Fierro, María del Rayo (eds) n.d., *Diccionario de Filosofía Latinoamericana*, Universidad Nacional Autónoma de México. Available: http://www.cialc.unam.mx/pensamientoycultura/biblioteca%20virtual/diccionario/index.htm (accessed 2011-10-24).

Chávez, H. 2007a, *Aló Presidente No. 280*, 29 March 2007.

Chávez, H. 2007b, *Aló Presidente No. 283*, 22 April 2007.

Chávez, H. 2005, *Aló Presidente No. 242*, 18 December 2005.

Covas, H., De Sanzo, C. & Ravera, R. 2007, *En el 12º aniversario del Club del Trueque*. Available: http://www.autosuficiencia.com.ar/shop/detallenot.asp?notid=1031 (accessed 2011-10-24).

Donadio, R. 2011, 'Battered by economic crisis, Greeks turn to barter networks', *The New York Times*, 1 October 2011.

Ellner, S. 2008, *Rethinking Venezuelan Politics: Class, Conflict, and the Chávez Phenomenon,* Lynne Rienner, Boulder/London.

Fagiolo, M. 2009, 'La influencia de la renta petrolera en el desarrollo de la economía social en Venezuela, 1998-2009', *CAYAPA Revista Venezolana de Economía Social,* vol. 18, pp. 93-116.

Galbraith, J.K. 1975, *Money: Whence It Came, Where It Went,* Houghton Mifflin, Boston.

Gómez, G.M. 2009, *Argentina's Parallel Currency: The Economy of the Poor,* Pickering & Chatto, London.

Gott, R. 2011, *Hugo Chávez and the Bolivarian Revolution,* 2nd edn, Verso, London/New York.

Gryckiewicz, M. 2011, Interview in 'Trueque y Autosuficiencia', *Radio RGT*, Buenos Aires, 30 July 2011. Available: http://redglobaldetrueque.blogspot.com/2011/07/fotos-del-viaje-de-marcelo-gryckiewicz.html (accessed 2011-10-24).

INAPYMI 2006, *La Parte Roja*, Instituto de Desarrollo de la Pequeña y Mediana Industria, Caracas.

Naishtat, S. 2007, 'Chávez importa los clubes de trueque', *Diario Clarín*, 29 January 2007.

Navarrete, P. 2006, 'Ministry of Popular Economy pilots social currency', *venezuelanalysis.com*, 19 September 2006.

North, P. 2007, *Money and Liberation: The Micropolitics of Alternative Currency Movements,* University of Minnesota Press, Minneapolis.

Pearson, R. 2003, 'Argentina's barter network: new currency for new times?', *Bulletin of Latin American Research,* vol. 22, no. 2, pp. 214-230.

Polanyi, K. 2001, *The Great Transformation: The Political and Economic Origins of Our Time,* Beacon, Boston.

Powell, J. 2002, 'Petty capitalism, perfecting capitalism or post-capitalism? Lessons from the Argentinean barter experiments', *Review of International Political Economy,* vol. 9, no. 4, pp. 619-649.

Primavera, H. 2011, 'La monnaie réinventée: quelques leçons de l'Amérique Latine', *Presentation at the International Conference on Community and Complementary Currencies*, Palais de la Mutualité, Lyon, 17 February 2011.

Rangel, L. 2010, Interview in 'Minga!', *Radio Universidad*, Mendoza, 17 October 2010. Available: http://www.laventolera.org.ar/videos/44/427-minga-al-individualismo (accessed 2011-10-24).

Reardon, J. 2010, 'Venezuelan National Assembly passes people's power "Law of Communes"', *venezuelanalysis.com*, 13 December 2010.

RNST n.d., 'Por qué escribimos trueke con la letra "k"', *Red Nacional de Sistemas de Trueke webpage*, n.d. Available: http://rednacionaldetrueke.blogspot.com (accessed 2011-10-24).

RNST 2010a, 'La historia de los sistemas de trueke en Venezuela', *Red Nacional de Sistemas de Trueke webpage*, 26 October 2010.
Available: http://rednacionaldetrueke.blogspot.com (accessed 2011-10-24).

RNST 2010b, *Modificaciones y aportes de la Red Nacional de Sistemas de Trueke al proyecto de Ley Orgánica para el Fomento y Desarrollo del Sistema Económico Comunal*, Unpublished document.

RNST 2009a, *Boletín Mensual de la Red Nacional de Sistemas de Trueke*, no. 4, July 2009.

RNST 2009b, *Boletín Mensual de la Red Nacional de Sistemas de Trueke*, no. 1, March 2009.

Sotiropoulou, I. 2011, 'Alternative exchange systems in contemporary Greece', *International Journal of Community Currency Research,* vol. 15, no. D, pp. 27-31.

Weisbrot, M. 2011, 'Venezuela in the Chávez years: its economy and influence on the region' in *The Revolution in Venezuela: Social and Political Change under Chávez*, eds. T. Ponniah & J. Eastwood, Harvard University Press, Cambridge/London, pp. 193-223.

Wilpert, G. 2011, 'Entrevista con Juan Esteban López, Red de Sistemas de Trueke', *Fundación Rosa Luxemburg webpage*, 20 May 2011.
Available: http://www.rosalux.org.ec/es/analisis/venezuela/item/183-trueke-venezuela (accessed 2011-10-24).

Wilpert, G. 2007, *Changing Venezuela by Taking Power: the history and policies of the Chávez government,* Verso, London.

5. Communal currencies: The Chavista experiment with non-capitalist money

Abstract

Venezuela's communal currencies are unique worldwide as a central government initiative. However, efforts to establish significant currency systems have failed so far. This article interprets their lack of success in terms of the experiment's foundation on strong cultural optimism and confused concepts of the nature and origins of money. Government support has been limited to a single model of isolationist-egalitarian 'barter' systems. Some form of local currency may be relevant to ecosocialist transition in Venezuela, but the current spatial organization of the systems is wasteful of transport fuels, an outcome suggesting that a transition to ecosocialism cannot postpone structural challenges.

Keywords: Local currencies; Barter; Monetary theory; Ecosocialism; Venezuela

5.1. Introduction

In December 2005, President Chávez publicly presented his ideas of community markets using local currencies (Chávez, 2005; see Dittmer, 2011 for an extended introduction). Over the last three decades, similarly unconventional moneys have been the subject of worldwide experimentation on a scale unmatched since the Great Depression of the 1930s, but never before has a local currency – intended to circulate at subnational levels and be administered with significant user influence – been introduced by initiative of a central government. The most significant contemporary types have been LETS (Local Exchange Trading Systems), time banks, and paper currencies of the convertible and non-convertible kinds (for a recent introduction to local currencies see North, 2010; for a research review see Dittmer, 2013). These currencies have tended to remain within small constituencies – often of a 'green' or 'alternative' nature – and have all been minuscule relative to the conventional economy. The exception is Argentina's ephemeral boom and bust of 'barter' currency networks during the crisis of 2001-02, reaching possibly millions of participants (see e.g. Gómez, 2009, North, 2007). Local currencies have generally been hampered by their under-resourced condition as grassroots initiatives, or by governments' unfavourable tax and welfare rulings. In view of this, the governmental origin of Venezuela's communal currencies calls for attention. However, as this article will discuss, efforts to establish any significant communal currency system in Venezuela have so far not been successful.

The following section (5.2) gives a brief outline of the communal currency experiment from its beginnings to the eventual collapses in participation levels. The outcome is explained in

subsequent sections in terms of the experiment's reliance on a strong 'cultural optimist' outlook (5.3), as well as the understanding of money and barter on which it was founded (5.4). Next (5.5), it is argued that government support has been a mixed blessing, helping to spread and perpetuate this particular model alone. Then follows (5.6) a discussion of the present condition and future relevance of Venezuela's communal currencies in terms of the government's stated goal of transitioning to ecosocialism. The article is based on fieldwork conducted in June 2011 and January-March 2012, including visits to seven of Venezuela's 14 communal currency systems. The selection was made to include systems ranging from the reportedly relatively successful to the clearly stagnant, and older and newer ones. Semistructured interviews were conducted with 29 interviewees, including the initial developers, government officials, local organizers, and participants.

5.2. The Chávez government's experiment with communal currencies

The community markets using local currencies proposed by President Chávez were envisioned as a new element of the social and solidarity economy, of which he had become an increasingly radical advocate (Wilpert, 2007: 76-84). Following the government-led cooperative boom, with annual official registrations of new cooperatives mushrooming from 2,280 in 2002 to 41,422 in 2005 (Fagiolo, 2009), these markets were meant to function as spaces for cooperatives to offer a share of their produce at low prices to poorer members of their communities. The markets were also intended to stimulate the latter to launch microenterprises, countering the handouts culture sustained by oil rents. The task of

implementation was taken up by the Instituto Nacional de Desarrollo de la Pequeña y Mediana Industria (National Institute for the Development of Small and Medium Industry—INAPYMI), which contracted two barter activists from Medellín, Juan Esteban López and Pablo Mayayo. Together with a Venezuelan, Livio Rangel, they formed the 'national facilitation team' that would initiate what they called 'barter systems with use of communal currency' in regions of their choice, each with its own currency. Each system would be coextensive with a loosely defined 'bioregion', or an area with a strong history of popular political organizing, and trading would be centred on periodical (usually monthly) market fairs.

The three barter architects taught a particularly isolationist version of barter organizing that López and Mayayo had advocated in Medellín, emphasizing the prohibition of transactions with conventional cash within market fairs, and referring to currency notes as 'barter facilitators' to reduce their association with money (see Burke, 2012 on barter activism in Medellín). The function of the communal currencies would be to complement barter exchange when the value of goods was not equivalent, or serve as a medium of exchange when there was no double coincidence of wants. In line with Chávez's appeals to solidarity and his declaration that the organization "will be in the hands and soul of the people, with its good judgement; they will be the system, the communities" (Chávez, 2005), the team focussed on teaching assembly-based self-management and the correct "attitudes of the good prosumer"[17] (RNST, 2009). López, Mayayo and Rangel also impressed upon the project

[17] Participants are called prosumers – producers and consumers at once – to suggest a break with passive consumerism.

their commitment to agroecology and to reviving *conuco* subsistence agriculture as the productive basis of the systems, focussing therefore on rural small-towns and villages. They characterized the project as a recovery of ancestral economic practices, situating this within Chávez's 'socialism of the XXI century' through the notion of "pre-Hispanic socialism" (Livio Rangel, interview, Sanare, February 26, 2012), inspired e.g. by Fals Borda (2003).

The team's emphasis on solidarity and the mending of cultural-historical ties was, however, muddled with more mundane promises of economic potential. Thus, the project was couched as a solution to the problem of market access: "In Venezuela, small producers (…) do not find where to market their products. We cover that deficit" (Mayayo cit. in Rivas Molina, 2009). The elimination of the intermediary – personifying the greedy capitalist in an economy based on buying cheap and selling dear rather than producing new value – would allow the producers to benefit more from their efforts, and make the Venezuelan economy less vulnerable to sabotage than it had been during the 'economic coup' of 2002-03. The video used to promote the project was highly optimistic about the wealth-creating capacity of local currencies:

> "In the barter groups, all users have unlimited access to facilitators by trading their products or services. This gives rise to a community market that does not allow locally generated riches to escape towards the banks or the international financial capitals. The locally generated wealth remains at the disposal of all in the community, stimulating economic activity and the creation of more wealth." (INAPYMI, 2006)

The first barter system began trading in June 2007, centred on the village of Urachiche (Yaracuy), and within a year ten systems had been created, from Barinas and Zulia in the west to Sucre in the north-east (no systems were established in the central llanos or the Amazon). In July 2008, Chávez dictated a decree to regulate and support the development of the systems (República Bolivariana de Venezuela, 2008), replaced in December 2010 by a law passed by the National Assembly that maintained the contents with minor changes (República Bolivariana de Venezuela, 2010). The government's promotional activity attracted many participants – including many worker cooperatives and farmers – to the first market fairs, preceded by a series of compulsory induction workshops. Most successful in terms of early participation levels were S.T. (Sistema de Trueke—Barter System) l@s Pariagotos (Sucre) with 400-500, S.T. Paraguachoa (Nueva Esparta) with aprox. 350, and S.T. José Leonardo Chirino (Falcón) with 270-300; not very far from the 500 considered ideal by the national facilitation team (Juan Esteban López, interview, Caracas, January 11, 2012). However, the systems that achieved these levels only maintained them for a few months, presenting a pattern of initial boom and swift decline. At the time of fieldwork, only three more systems had been created since the first year, and an earlier one had been divided in two, yielding a total of fourteen systems. All the systems visited were stagnant or in decline (except the newest which was only holding its third fair), with less than 50 participants each, of which only one or two were formal enterprises. Fairs were held irregularly and less than monthly. One system's fair had exceptionally about 100 participants, but this was preceded by a four-month hiatus caused by the absence of the key activist.

In sum, the project of implementing 'barter systems with use of communal currency' can be considered a failure. The national facilitation team failed to manage expectations regarding their economic potential, reproducing the hype-disappointment cycles that are common to local currencies.[18] Many early participants had not understood, despite the preceding workshops, that the isolationist approach meant that they would not be able to sell produce for cash, nor redeem their communal currency earnings for cash. They were not content with spending all their earnings on the things on sale in the barter markets. Others had not taken seriously the project's autonomist vocation, thinking instead – paternalistically – that participation would increase their chances of obtaining a bolivar credit from INAPYMI, and abandoned as they realized that this was not the case. When in mid-2008 the project was transferred from INAPYMI to the Instituto Nacional de Desarrollo Rural (National Institute for Rural Development—INDER), more people left as a result.

Some systems initially benefitted from the participation of larger enterprises. In Lara state, S.T. Saquito Larense sought to attract the agricultural cooperatives of the important Central Cooperativa de Servicios Sociales (Central Cooperative of Social Services—CECOSESOLA). However, these cooperatives only attended one or two markets, explaining that the cost of transportation did not make further participation worthwhile. Saquito Larense then offered to hold its barter markets at the site of CECOSESOLA's own markets, but this was rejected. In neighbouring Yaracuy, two state-owned companies – a corn flour processing plant and a grain packing facility – participated intermittently in S.T. Urachiche over the first year. These

[18] Although Burke (2012: 226) ascribes his false expectations of finding "remarkably successful alternative economies" in Medellín's barter systems to the *Paisa* penchant for hyperbole, this is in fact a broader phenomenon (Aldridge and Patterson, 2002, Seyfang and Longhurst, 2013, Stott and Hodges, 1996).

companies struggled to "figure out what to do with their currency earnings" (Nerys Pineda, interview, Urachiche, February 27, 2012). System members offered to 'help out' at the plants in exchange for communal currency, but having accepted this on a couple of occasions, the companies eventually left the system. The barter system of Isla Margarita initially enjoyed an ample supply of fish, but at the time of fieldwork, the fishermen had lost interest, and a handful of women now supplied the sporadic fairs with what fish they could obtain at a low or no cost from their relatives and neighbours.

The reasons for the project's failure are arguably numerous and complex. In broad terms, it set out to radically challenge too many aspects of existing society at once, following the time-honoured utopian approach of implementing a prefabricated system, as unspoiled by reality as possible. As the following two sections will argue, among the causes of failure were what may be called internal design flaws, namely that the barter system model was based on the rickety foundations of strong cultural optimism and an inadequate understanding of the nature and origins of money.

5.3. Strong cultural optimism

Venezuela's barter systems can be usefully understood in light of Ellner's (2010) characterization of Chavismo as divided along the lines of the "perennial debate" in leftist movements worldwide over how people should be made to engage in productive activity under socialism. This debate confronts the 'cultural optimist' argument "that subjective

conditions are ripe for far-reaching change and that people in general are ready to participate in socialist relations and overcome materialistic aspirations", with the 'realist' position which prioritizes increased production over cultural change, favouring "workable policies such as material incentives and the maintenance, at least for the time being, of certain practices associated with capitalism in order to achieve that goal" (Ellner, 2010: 64). The barter systems have been conceived and implemented from a strong cultural optimist position, presuming a desire on the part of the population to be educated into frugal and egalitarian prosumer lifestyles, accept the inconveniences of barter and 'funny money', and dedicate considerable time and effort to the development of self-managed market fairs.

This cultural optimism is particularly evident in the method of price setting established by the barter architects, which weakens material incentives for supplying quality produce. Each barter system has a 'Value and Quality' committee, responsible for controlling that all goods and services on offer are assigned a price, displayed on a price tag, before trading starts. Prices are expressed in the money of account of each system, e.g. 20 *cimarrones*, but the unit of account is in fact the bolivar, and this is even a legal requirement: "The value of the communal currency will be determined in equivalence to the money of legal tender" (República Bolivariana de Venezuela, 2010, Art. 55). Prices in the conventional Venezuelan economy are taken as reference, and are then lowered roughly 20-50 percent so as to incorporate 'solidarity' with the buyer. This equation of solidarity with low prices is linked to the Chávez government's confrontations with the private sector over price speculation and induced scarcities of basic commodities (Ellner, 2013), leading barter activists to identify capitalism with high prices rather than with its "heavy artillery" of cheap commodities (Marx

and Engels, 1976: 488). In the barter systems, prices are lowered across the board. For instance, an elderly woman living in a low-income neighbourhood sells her handicrafts for 50 BsF at home, but offers them at a 'solidarity price' of 30 at the barter fairs (anonymous-A, interview, March, 2012). The Value and Quality committee controls that all stated prices embody 'solidarity', and that prices are the same for similar goods all across the fair, correcting them when otherwise "to break with competition" (Yolanda Prado, interview, Mamporal, February 1, 2012). One system coordinator explains: "No one can come and say: 'Look, my marmalade costs more than the other one.' No no, they all cost the same, because they all have the same productive effort" (Omar Rodríguez, interview, Mamporal, February 8, 2012). The suppression of any price mechanism capable of reflecting real-world differential production costs, quality, or relations of supply and demand, has resulted in a diminished supply and rationing of sought-after goods, resembling the experience of 'really existing socialism' in the 20th century (Nove, 1991). Productive effort gets de-emphasized: "One always brings anything. (...) Like that, anything. Because you got to bring something there" (anonymous-B, interview, Barlovento, February, 2012). "Here we take what we have at hand, what we can get; we take it with us to barter" (anonymous-C, interview, Isla Margarita, March, 2012).

Consequently, once the initial excitement had waned, participants who persisted often held strong non-economic motives. As a member of an agricultural cooperative – the only such to remain in her barter system – acknowledges: "I have sometimes had problems with [my husband and associate], because he says: 'I don't know what it is you get out of the barter!'" She explains:

> "I simply fell in love with the barter. For the friendships I have made, for all that I have known through the barter. I have visited various states, and made friends in different states. It is not because I am in need, because I am not. I simply fell in love with the barter, I liked it, and there I am." (anonymous-D, interview, March, 2012)

5.4. Understanding money and barter

A striking contradiction about the barter markets is their purported status as spaces liberated from money, and their condition in actual fact of being drenched in monetary relations. The strict prohibition of *cash* (i.e. bolivar notes and coins) in the market fairs contrasts with the zeal with which the Value and Quality committees ensure the assignation of *prices* to all products. The monetary nature of prices is denied by substituting the word 'value' for 'price'; a "language politics" (Burke, 2012: 287, Gibson-Graham, 2006: xi) encouraging participants to pursue the satisfaction of needs with use-values rather than profit-making. Language, however, does not overcome the fact that exchange ratios stated in monetary units *are* prices. They are numerical quantities of abstract monetary units; one bolivar, two cimarrones. In contrast, use-values are concrete and qualitative, and cannot be described in monetary units. Doing so makes them *exchange-values*. One purpose of the communal currencies, in the words of a barter architect, is "to recover the use that money always had – money in its original phase when notes or coins were not used, but instead for instance salt, cacao, coca leaves – which is as a means of exchange" (Livio Rangel, interview,

Sanare, February 26, 2012). Accordingly, what is to be avoided is the use of money as a store of value, which they consider a latter-day, Western perversion synonymous with capitalist accumulation. Unlike the medium of exchange and store of value functions, however, another textbook function of money – being an abstract unit of account – has received little either positive or negative attention from the barter architects. Participants attest that they often renegotiate exchange ratios, in the act of transacting, in ways that approximate 'true' moneyless barter, where "[t]he parties (…) are comparing their individual and immediate needs, not values in the abstract" (Grierson, 1978: 11). However, the barter systems' practice of comprehensive pricing brings them closer to commercial barter or countertrade – customary between contemporary multinational corporations and governments (Howse, 2010) – than to pre-Columbian barter. This is how conventional money is omnipresent in the barter markets, linking (albeit flexibly) the exchange ratios of all products and services to those of the capitalist economy through monetary prices, thereby limiting the scope for renegotiating values.

The ambiguous use of the word 'barter' (trueque) among Spanish-speaking local currency activists appears to originate with the 'barter clubs' created in Buenos Aires in 1995 (Gómez, 2009: 73-4); indeed this soon-to-be massive innovation by a group of suburban middle-class environmentalists is a much closer precedent of Venezuela's communal currencies than any indigenous custom (cf. Burke, 2012: 139). For local currency practitioners, barter can refer to three different phenomena:

(1) Purchases involving physical local currency, dubbed 'multi-reciprocal barter' by the Argentines, also euphemized as 'indirect barter'.

(2) Transactions without physical currency, negotiated *with reference to monetary values*, i.e. commercial barter.

(3) Transactions without physical currency, negotiated *without* reference to monetary values, what we may call 'barter proper'.

The Venezuelan barter architects, devoted to the banishment of cash, conflate (2) and (3) as 'direct barter'. This neglect of money's function as an abstract unit of account may be explained by their belief that "money is only a thing, a tool. Just as we need tables, chairs, tent canopies if it rains, and sound equipment to have a market, we need the medium of exchange" (Pablo Mayayo, interview, Sanare, February 26, 2012). The barter architects' ontology of money as a *thing* used as medium of exchange, and their belief in its origin in certain commodities – 'salt, cacao, coca leaves' – resembles the neoclassical economics creation-myth of money as one among many commodities bartered in a primeval moneyless economy. This conjectural account, epitomized by Adam Smith (1776: I.I.IV) and Karl Menger (1892), and subject to little posterior modification as the orthodoxy of mainstream economics (cf. Graeber, 2011: ch.2), tells that the money commodity achieved its status as the universally accepted *medium of exchange* as a result of the rational economic behaviour of individuals. Thus, to minimize the number of barter transactions necessary to arrive at the goods 'he' desired, 'economic man' perceived the convenience of acquiring the most saleable good in return for his own produce. The precious metals enjoyed superior

saleability because they were already universally coveted for their beauty, and so they were the first to become money.

There is very little support in the anthropological literature for the historical existence of the pure barter economies on which the neoclassical economics creation-myth of money as the *universal medium of exchange* is founded (Crump, 1981: 54, Dalton, 1982, Graeber, 2011: 28-29). Neither does this school, with its ontology of money as a mere material lubricant of barter, have a consistent theory of how a stable *universal measure of value* – the money of account – could have arisen out of barter (Hudson, 2004). Outside orthodoxy, however, the understanding of the nature and origins of money has advanced considerably in recent decades through a confluence of research in sociology, post-Keynesian economics, and 'New Economic Archaeology'. The resulting current, often labelled 'neo-chartalism', is a heterodox body of monetary theory that draws on older credit and state theories of money, and is consistent with economic anthropology (Ingham, 2004, Wray, 2004). For this current, money is not essentially a commodity, nor a neutral reflection of underlying social relations of production and exchange (as for some Marxists), but is in itself a set of social relations, even in its archaic 'commodity' forms (Ingham, 1996). These social relations are ones of claims and obligations – or credits and debts – denominated in an abstract money of account and upheld by some form of authority. Accordingly, emphasis is on this measure or standard of value, the origin of which should be sought in public institutions, not in the individual acts of neoclassical economics' "antigovernment fable" (Hudson, 2004: 118). The temples and palaces of Mesopotamia developed a money of account for calculating debts in the third millennium BCE, more than two millennia before the appearance of coinage

(Hudson, 2004, Ingham, 2000). Coins and other money things are foremost tokens bearing the units of abstract value (Ingham, 2004: 48), constituting claims on goods priced in these units. The domain in which a certain money of account has sovereignty is called a monetary space, and "the historical generalization that the successful creation of stable monetary spaces has been the work of states is indisputable" (Ingham, 2006: 273).

The problem of the creation of a stable monetary space, necessary for the establishment of price lists, has been of no concern to the barter systems, since they take bolivar prices as reference. The communal currencies are subordinate to the official money of account, much like the *arbolito* of the Argentine barter clubs (Ould-Ahmed, 2010). The main difference here is that the Venezuelan barter systems have been able to maintain the fiction that their currencies are equal in value to the official currency without being convertible into it, because they have stayed apart from the prevalent economic struggle for existence, whereas the arbolito suffered hyperdepreciation relative to the peso because it had in fact become a tool in this competitive struggle.[19]

As a system of social relations of credit and debt, money can be likened to a scoring system. It has been called a "memory bank" or "a means of remembering", "to help us keep track of those exchanges with others that we choose to calculate" (Hart, 2001: 17). Given their emphasis on solidarity and generosity, one might expect that the barter architects would

[19] In the crisis of 2001-02, the Argentine barter clubs became essential to the livelihoods of thousands of participants. The haphazard manner by which the notes of the main network were issued and distributed to new clubs all over the country, and perhaps even large-scale counterfeiting orchestrated by the Peronist government to sabotage what it considered a threat to the party's patronage machines (Gómez, 2009: 117), brought about hyperinflation and hastened the nationwide collapse of the barter clubs.

favour a soft, indulgently forgetful scoring system, or even fairs without price lists and currencies altogether. But this is not the case, as the practice of comprehensive pricing indicates. Furthermore, upon joining, participants are 'given in custody' 100 communal currency units, and any subsequent saving or dissaving departing significantly from this number is discouraged, considered inimical to the egalitarian ethos of 'barter'. Instead of rejecting monetary calculation, the chosen strategy has been to play down the valuable nature of the currency, designing notes to have the look and feel of board game cards rather than banknotes, with minimal security features. This rejection of the store of value function is reminiscent of earlier local currency experiments elsewhere, especially LETS, where currency can be created by any member, interest-free, usually up to a personal credit limit. However, largely as a consequence of this abundance of exchange media, business participation in LETS has everywhere been insignificant (Dittmer, 2013). In Venezuela, this approach – rather than dissuading 'accumulation' and the successive build-up of income inequalities within the barter systems as intended – has simply put off many from participating at all. "Many times [new attendees] tell us: 'No way, I don't want that pack of cards!'" (Elsy Delfín, interview, Barquisimeto, February 24, 2012). Progressive governments do not fight inequality in wealth by intentionally undermining confidence in their currency, since this would scare away business, as the Venezuelan barter systems have; they tax wealth instead.

As discussed above, the barter architects seek to recover what they believe to be the original, pre-Columbian form of money. Any serious endeavour to do so would, however, be hampered by the general weakness of conceptual understanding and dearth of adequate

theorizing of pre-Columbian exchange systems in scientific research (Smith and Schreiber, 2005). To the extent that commodities may have circulated as quasi-moneys, they are of little relevance to Venezuela's communal currency experiment, unless one is willing to make a leap in logic from the belief – shared by the barter architects and neoclassical economists – that commonly traded commodities became the original moneys, to the expectation that a new brand of paper notes would now be widely adopted on similar grounds. The communal currencies are token or fiat money, bearers of abstract units of value or purchasing power, the magnitude of which is meant to be higher than their use-value as commodities (printed pieces of paper). The search for pre-Columbian lessons regarding the organization of such a currency system should primarily be sought in currencies that are also tokens, carrying units of a single money of account in a monetary space. The main candidates for having had such systems are the Aztec and Mayan states, since they were the most commercially advanced documented societies of the New World (Masson and Freidel, 2013). But not even these states appear to have achieved the political consolidation required for the establishment of a single monetary unit of account (Gil-Vásquez, 2013: 90, Kowalewski, 2012). For the Aztecs and Maya, cocoa beans may to some extent have been token money, judging by the claim that the beans used as medium of exchange were not of the same sort as those used to make cocoa drinks (Clavigero, 1844 [1780]: 227), or that they often were "defected beans that did not have any other utility but that of serving as symbols" (Gil-Vásquez, 2013: 81).

The cocoa currency, however, was not the pristine instrument, uncorrupted by centralization and accumulation, that the barter architects claim to recover. To the contrary,

cocoa beans were certainly subject to accumulation, as attested by Herrera's (1726 [1601]: Dec.II, 219) well-known account of Moctezuma II's cacao warehouse containing more than 40,000 loads of cocoa beans (presumably of 24,000 beans each), although it is not clear to what extent these were intended for use as currency or consumption. Cocoa also contradicts the romantic notion of uncentralized, democratic money, supporting instead the prevalent view that, to function as bearer of abstract purchasing power, a currency must be held scarce. The Aztecs achieved this through the restriction of ownership of land for cacao cultivation to the nobility, warriors, and merchants (Aranda Kilian, 2005). Hence, the fact that social elites in possession of large productive resources were the issuers of the cocoa currency underwrote its general acceptability despite its low intrinsic value. The culturally over-optimistic barter architects have failed to recognize that this is the money game they are playing, and have consequently not grasped the nature of the challenge, memorably stated by Hyman Minsky: "everyone can create money; the problem is to get it accepted" (Minsky, 2008: 255). The efforts to reinvent a monetary system that would constitute an advance upon the undemocratic tendencies of capitalist monetary systems are laudable, but the forms these efforts have taken are only attractive to a very small number of people.

5.5. Has state support benefitted the communal currencies?

A superficial consideration of the unique government origin of Venezuela's communal currencies may suggest that they would be more successful than other local currencies at solving the problem of acceptability. In the Argentine barter club experience, the six-month

cooperation agreement entered by the original barter club founders in the Programa de Autosuficiencia Regional (Regional Self-sufficiency Programme—PAR) with the ministerial Secretaría de la Pequeña y Mediana Empresa (Secretariat of Small and Medium Enterprises—SEPYME) was crucial to the superior acceptability of their notes: “this short period of six months was sufficient for the social franchise system to multiply exponentially, with the ostensibly unconditional support from the national government” (Primavera, 2003: 129). Apart from illustrating the potentially very important legitimating effect that even merely symbolic government support can have on currency acceptability, the Argentine case does not allow more detailed comparative conclusions to be drawn. This is because the PAR notes solved the problem of acceptability (temporarily) in a context of severe monetary contraction, and in a society familiar with monetary diversity (Powell, 2002). However, the Venezuelan government’s exclusive endorsement of López, Mayayo, and Rangel’s particularly isolationist-egalitarian model of barter organizing predicated on strong cultural optimism – very different from PAR’s professedly unpolitical self-help scheme – has arguably been detrimental to the establishment of communal currencies, even in the relatively favourable context of the Bolivarian Revolution. Through their status as government employees, the barter architects have been able to impose a single model, creating homogeneous barter systems across the country rather than a diversity of organizational forms consistent with evolutionary processes. In October 2008, once ten of these systems had been created, they gathered under the non-governmental Red Nacional de Sistemas de Trueke (National Network of Barter Systems—RNST), run by an ossifying ‘operational committee’.[20] Furthermore, the government was quick to convert the barter

---

[20] The absence of any RNST statute regulating spokesperson rotation precipitated a split in mid-2011. Mayayo

architects' model into law, including its banishment of cash and financial practices. Thus, the government support has served to spread and perpetuate a flawed, unadaptive model. By comparison, the more autonomous Santa Elena barter market in Medellín, which López and Mayayo left for Venezuela, has experienced some healthy self-regulatory evolution, allowing more integration with the conventional monetary economy (Burke, 2012: 173, 202).

Whereas the barter architects and most system coordinators interviewed continue to emphasize the need for cultural change to adjust people to the isolationist-egalitarian model, rank-and-file participants are keen to reconsider the design of the systems to increase material incentives for participation. Proposals range from partly allowing cash sales within the barter markets (anonymous-E, interview, Monagas, February, 2012) to setting up exchange desks where communal currencies could be converted into bolivares (anonymous-F, interview, Isla Margarita, March, 2012). Some participants appear unaware of the extent to which such proposals are rejected by the RNST leadership. For example, one participant affirmed that the introduction of currency convertibility was being discussed with the Central Bank (anonymous-A, interview, March, 2012), in contradiction with López's assertion that "on this I think Pablo [Mayayo], me, the National Network of Barter Systems …this we do not negotiate. It cannot be backed by money in any way" (Juan Esteban López, interview, Caracas, 11 January, 2012). This example supports the observation by a public official formerly responsible for the government's work with the communal currencies: "I

---

and Rangel left the network, claiming that the operational committee had lost its assemblarian ethos, and proceeded to set up a new barter system within the territory of an earlier, stagnant one. The RNST alerted the government that it did not recognize this new system.

think one of the things that impede the strengthening of the barter, and each day it is like sectarianized, in stagnation, is because the baby wants emancipation. And there is a system, the network itself, which does not allow it to emancipate itself" (María Teresa Quintana, interview, Caracas, 14 February, 2012).

5.6. The difficult search for ecosocialism

Does the failure to establish significant 'barter systems with use of communal currency' mean that any alternatives to money-as-usual are fated for a marginal existence in Venezuela? The government has not given up on the barter systems; under the name *grupos de intercambio solidario* (solidarity exchange groups), they are mentioned five times in Chávez's last electoral programme, subsequently adopted by Maduro. This programme also makes a novel reference to ecosocialism, resonating with the environmentalist priorities advanced by the barter architects. The programme includes the objective of "[b]uilding and promoting the ecosocialist productive economic model, based on a harmonious relationship between man and nature, that guarantees rational, optimal and sustainable use and exploitation of natural resources" (Chávez, 2012: 5.1). During the 2012 electoral campaign, the barter systems were officially recognized as an element of the government's stated intention of transitioning to ecosocialism (Torrealba, 2012). However, the potential of local currencies of some form or other to contribute significantly to an ecosocialist transition is far from clear, even if they were made to be more adaptive to real-world conditions than has hitherto been the case. Internationally, there are no

unquestionable success stories of local currencies contributing significantly to socio-ecological transition projects (Dittmer, 2013), but neither has any counted on the government support that appears possible in Venezuela. What kind of government support would be desirable remains a point of contention. A precedent in this regard is the proposal made in mid-2010 by the Vice Minister of the Communal Economy Ana Maldonado, in agreement with Chávez (2010: 103), to link up the barter systems with the public grocery chains Bicentenario, Mercal, and PDVAL. This was rejected by the RNST out of concern for the protection of small-scale prosumers against large competitors, and fear that a massification of the barter systems would endanger their purpose of cultural transformation towards a solidarity economy (María Teresa Quintana, interview, Caracas, February 14, 2012). The RNST leadership made sure that the individual prosumer would remain the basis of the systems, foregoing the option to back the currencies by the productive resources of the grocery chains. This may be taken to indicate the strength of the barter activists' commitment to the 'small is beautiful' principle of radical ecologism. To what extent their model of small-scale production and exchange may be important to an ecosocialist transition is, however, not a matter of principle but of case-by-case research, given, for example, the variability of relations between scale and food system energy use (Pelletier et al., 2011).

Clear, though, is the inability of post-collapse participants to develop environmentally sensible barter systems. The somewhat paradoxical consequence of the barter architects' radically utopian effort towards immediate and profound change at the level of the barter system is the creation of great inefficiencies in terms of energy use for transport.

Participants in the post-collapse systems are dispersed throughout their territories, and long distances must be covered to gather a few dozen barterers in a market. In many systems, it is common for participants to cover one-way distances of 50-75 km to get to market, and neighbouring systems often attend each other's markets. With Venezuelan gasoline prices the lowest in the world at US$ 0.02 per litre (World Bank, 2013), there is little incentive to limit displacements or adapt the systems to the realities of more local communities. In fact, when explaining what they like about the barter, several participants give answers of this kind: "We have travelled to various places, we have represented [our state]. (…) May everything end but the barter (laugh), to travel and visit new places" (anonymous-G, interview, March, 2012). The situation, in terms of energy efficiency, may not have been much better without collapse, since nationwide exchanges have been seen to play an important role ever since the system planning phase (Equipo facilitador nacional, 2008). When industrial capitalism is understood to be interlinked with the extraordinary historical episode of humanity's degradation of the fossil energy stock of the planet, it is straightforward to demand why it should be more consistent with anticapitalist, 'pre-Hispanic socialist' purism to banish modern money (i.e. cash) than to prioritize local economies compatible with low-energy travel.

The barter architects like to see themselves as working to establish non-capitalist islands in a sea of capitalism (Pablo Mayayo, interview, Sanare, February 26, 2012), corresponding to an 'interstitial' strategy of societal transformation (Wright, 2010: ch.10). What separates the islands from the surrounding sea is the absence of cash transactions, the non-convertibility between the communal currencies and money, and the absence of 'capitalist greed' through

the imposition of 'solidarity' prices. As suggested by the mobility aspect, this understanding, which Burke (2012: 326) – following Gibson-Graham (2006) – has appropriately characterized as *capitalocentric isolationism*, hinges upon an inadequate, Manichean concept of the boundaries between the barter systems and the 'surrounding' economy. Acknowledging the extent to which the barter project is entangled in the wider economy of "fossil energy civilization" (Giampietro et al., 2013: 294) would suggest that little advance towards ecosocialism can be made unless the apparently unradical matter of gasoline subsidies is dealt with first. Rather than rejecting money as essentially capitalist, barter activists ought to recognize the importance of green tax reform. The Maduro government's announced intention to raise the domestic price of gasoline is a positive sign in this regard (Vyas, 2013). Many barter activists promote agroecology, the exchange of traditional seeds, and Do-It-Yourself artisanal production; potentially important ecosocialist practices that are not helped by being circumscribed by radically isolationist-egalitarian monetary systems that, compared to their capitalist equivalents, are run on a shoestring.

5.7. Conclusions

Venezuela's communal currencies were introduced by President Chávez as an innovative element of the social and solidarity economy, and are unique among community currencies worldwide in terms of their central government origin. The architecture of the currency systems was largely left to a three-man 'national facilitation team' favouring a radically isolationist-egalitarian version of 'barter systems with use of communal currency'. Despite

initially solid government support, the barter systems went through strong hype-disappointment cycles, with participation levels beginning to collapse after a few months, and remaining low. The failure to establish any significant communal currency system is partly due to their having been conceived and implemented from a strong cultural optimist position. Their lack of success may therefore be taken as an indication of the present inadequacy of this position to socialist transition in Venezuela. Furthermore, the barter architects' embrace of the unfounded conventional wisdom – perpetuated by mainstream economics – that money is a *thing* which historically arose spontaneously out of barter, has not provided sufficient basis for thinking through how new monetary systems could be established. Neither has the claim that the token currencies of the barter systems constitute a recovery of pristine commodity moneys of 'pre-Hispanic socialism'. Further conceptual confusion is provoked by the denial of the monetary nature of the communal currencies and of the prices on which 'barter' transactions are based, resulting from neglect of money's essential function as a unit of account.

Although without Chávez's initiative there may not have been any community currencies in Venezuela in the first place, the government support has also had a negative side. It has favoured the generalization of a model that lacks flexibility because of its identification with monetary isolationism and strong egalitarianism, a situation subsequently maintained by a non-governmental national network. Like many local currencies worldwide, the experiment has involved an environmentalist component, and has been associated with the government's goal of transitioning to ecosocialism. Many barter activists engage in ecosocialist practices, but the ecological rationality of these is not helped by circumscription

to barter systems. To the contrary, the barter system setting increases the need for displacements, since individuals wedded to the isolationist-egalitarian model are few and scattered in space. Theorizing the barter systems as operating in the interstices of capitalism is misleading; they are strongly conditioned by the structures of fossil energy civilization. The experiment suggests that initiating a transition to ecosocialism requires the huge disincentive of gasoline prices to be tackled before ecologically sensible alternative economies can be constructed in Venezuela. To advance in this direction, the ecosocialist grassroots would have to focus more on the general path of the Bolivarian Revolution, confronting the government's penchant for deepened extractivism (Teran, 2012). On the other hand, if the government wants to make a serious effort at turning communal currencies into a relevant element of ecosocialist transition, it may have to assume a more active role in centrally "rectifying pathological or incompetent decision-making in failing groups" (Fung and Wright, 2003: 21). Case studies in empowered participatory governance highlight such supervision as an essential component of successful, coordinated decentralization of economic decision-making, an approach that resonates with Ellner's (2010) call for a synthesis between cultural optimist and realist transitional strategies in Venezuela. Finally, unless the government overcomes the challenges of rampant inflation and a highly overvalued bolivar, it appears unlikely that it would deepen its support of decentralized efforts to expand the supply of exchange media in the economy.

References

Aldridge, T.J.; Patterson, A. (2002) LETS get real: constraints on the development of local exchange trading schemes. *Area,* 34(4), 370-381.

Aranda Kilian, L. (2005) El uso de cacao como moneda en la época prehispánica y su pervivencia en la época colonial. In: Alfaro, C.; Marcos, C.; Otero, P. (eds.), *Actas del XIII Congreso Internacional de Numismática.* Ministerio de Cultura, Madrid, pp. 1439-1450.

Burke, B.J. (2012) *"Para que cambiemos"/"So we can (ex)change": Economic activism and socio-cultural change in the barter systems of Medellín, Colombia.* Unpub. PhD thesis. University of Arizona.

Chávez, H. (2012) *Propuesta del Candidato de la Patria, Comandante Hugo Chávez para la Gestión Bolivariana Socialista 2013-2019.* Comando Campaña Carabobo, Caracas.

Chávez, H. (2010) Aló Presidente No. 362. http://www.alopresidente.gob.ve/Materia_Alo/25 (accessed 17.05.14)

Chávez, H. (2005) Aló Presidente No. 242. http://www.alopresidente.gob.ve/Materia_Alo/25 (accessed 17.05.14)

Clavigero, F.J. (1844 [1780]) *Historia antigua de México y de su conquista.* Vol.1. Lara, México, DF.

Crump, T. (1981) *The Phenomenon of Money.* Routledge, London.

Dalton, G. (1982) Barter. *Journal of Economic Issues,* 16(1), 181-190.

Dittmer, K. (2013) Local currencies for purposive degrowth? A quality check of some proposals for changing money-as-usual. *Journal of Cleaner Production,* 54, 3-13.

Dittmer, K. (2011) Communal currencies in Venezuela. *International Journal of Community Currency Research,* 15(A), 78-83.

Ellner, S. (2013) Social and political diversity and the democratic road to change in Venezuela. *Latin American Perspectives,* 40(3), 63-82.

Ellner, S. (2010) The perennial debate over socialist goals played out in Venezuela. *Science & Society,* 74(1), 63-84.

Equipo facilitador nacional (2008) *Justificación del orden propuesto para la activación de sistemas de trueke entre enero y abril del 2008.* Unpub. document. INAPYMI, Caracas.

Fagiolo, M. (2009) La influencia de la renta petrolera en el desarrollo de la economía social en Venezuela, 1998-2009. *CAYAPA Revista Venezolana de Economía Social,* 18, 93-116.

Fals Borda, O. (2003) *Posibilidad y necesidad de un socialismo autóctono en Colombia.* Universidad Nacional de Colombia, Bogotá.

Fung, A.; Wright, E.O. (2003) Thinking about Empowered Participatory Governance. In: Fung, A.; Wright, E.O. (eds.), *Deepening Democracy: Institutional Innovations in Empowered Participatory Governance.* Verso, London, pp. 3-42.

Giampietro, M.; Mayumi, K.; Şorman, A.H. (2013) *Energy Analysis for a Sustainable Future: Multi-Scale Integrated Analysis of Societal and Ecosystem Metabolism.* Routledge, Oxon.

Gibson-Graham, J.K. (2006) *The End of Capitalism (As We Knew It): A Feminist Critique of Political Economy.* Second ed. University of Minnesota Press, Minneapolis.

Gil-Vásquez, K. (2013) *The Historical Transformation of Indigenous and Colonial Institutions of Central Mexico: The State and Monetary Systems.* Unpub. PhD thesis. University of Missouri-Kansas City.

Gómez, G.M. (2009) *Argentina's Parallel Currency: The Economy of the Poor.* Pickering & Chatto, London.

Graeber, D. (2011) *Debt: The First 5,000 Years.* Melville House, New York.

Grierson, P. (1978) The origins of money. In: Dalton, G. (ed.), *Research in Economic Anthropology.* Vol.1. Greenwich: JAI Press, Greenwich, pp. 1-35.

Hart, K. (2001) *Money in an Unequal World: Keith Hart and His Memory Bank.* Texere, New York.

Herrera, A. (1726 [1601]) *Historia general de los hechos de los castellanos en las Islas y Tierra Firme del mar Océano.* Vol.1. NR Franco, Madrid.

Howse, R. (2010) Beyond the countertrade taboo: Why the WTO should take another look at barter and countertrade. *University of Toronto Law Journal,* 60(2), 289-314.

Hudson, M. (2004) The archaeology of money: debt versus barter theories of money's origins. In: Wray, L.R. (ed.), *Credit and State Theories of Money.* Edward Elgar, Cheltenham, pp. 99-127.

INAPYMI (2006) *La Parte Roja.* Audiovisual material. INAPYMI, Caracas.

Ingham, G. (2006) Further reflections on the ontology of money: responses to Lapavitsas and Dodd. *Economy and Society,* 35(2), 259-278.

Ingham, G. (2004) *The Nature of Money.* Polity, Cambridge.

Ingham, G. (2000) 'Babylonian madness': on the historical and sociological origins of money. In: Smithin, J. (ed.), *What is Money?* Routledge, London, pp. 16-41.

Ingham, G. (1996) Money is a social relation. *Review of Social Economy,* 54(4), 507-529.

Kowalewski, S.A. (2012) A theory of the ancient Mesoamerican economy. In: Matejowsky, T.; Wood, D.C. (eds.), *Research in Economic Anthropology.* Vol.32. Emerald, Bingley, pp. 187-224.

Marx, K.; Engels, F. (1976) *Manifesto of the Communist Party.* Marx/Engels Collected Works. Vol.6. Lawrence & Wishart, London.

Masson, M.A.; Freidel, D.A. (2013) Wide open spaces: a long view of the importance of Maya market exchange. In: Hirth, K.G.; Pillsbury, J. (eds.), *Merchants, Markets, and Exchange in the Pre-Columbian World.* Dumbarton Oaks, Washington, DC, pp. 201-228.

Menger, K. (1892) On the origin of money. *The Economic Journal,* 2(6), 239-255.

Minsky, H.P. (2008) *Stabilizing an Unstable Economy.* Second ed. McGraw-Hill, New York.

North, P. (2010) *Local Money: How to Make it Happen in Your Community.* Transition Books, Totnes.

North, P. (2007) *Money and Liberation: The Micropolitics of Alternative Currency Movements.* University of Minnesota Press, Minneapolis.

Nove, A. (1991) *The Economics of Feasible Socialism Revisited.* HarperCollins, London.

Ould-Ahmed, P. (2010) Can a community currency be independent of the state currency? A case study of the credito in Argentina (1995-2008). *Environment and Planning A,* 42(6), 1346-1364.

Pelletier, N.; Audsley, E.; Brodt, S.; Garnett, T.; Henriksson, P.; Kendall, A.; Kramer, K.J.; Murphy, D.; Nemecek, T.; Troell, M. (2011) Energy intensity of agriculture and food systems. *Annual Review of Environment and Resources,* 36, 223-246.

Powell, J. (2002) Petty capitalism, perfecting capitalism or post-capitalism? Lessons from the Argentinean barter experiments. *Review of International Political Economy,* 9(4), 619-649.

Primavera, H. (2003) Riqueza, dinero y poder: el efímero "milagro argentino" de las redes de trueque. In: Hintze, S. (ed.), *Trueque y Economía Solidaria.* Prometeo, Buenos Aires, pp. 121-144.

República Bolivariana de Venezuela (2010) Ley Orgánica del Sistema Económico Comunal. *Gaceta Oficial,* No. 6.011 Extraordinario.

República Bolivariana de Venezuela (2008) Decreto No. 6.130, con Rango, Valor y Fuerza de Ley para el Fomento y Desarrollo de la Economía Popular. *Gaceta Oficial,* No. 5.890 Extraordinario.

Rivas Molina, F. (2009) El club del trueque bolivariano. http://www.consumid.org/detalle/590/el-club-del-trueque-bolivariano (accessed 17.05.14)

RNST (2009) Boletín mensual no.1. Unpub. document.

Seyfang, G.; Longhurst, N. (2013) Desperately seeking niches: Grassroots innovations and niche development in the community currency field. *Global Environmental Change,* 23(5), 881-891.

Smith, A. (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations.* Strahan and Cadell, London.

Smith, M.E.; Schreiber, K.J. (2005) New World states and empires: economic and social organization. *Journal of Archaeological Research,* 13(3), 189-229.

Stott, M.; Hodges, J. (1996) Local exchange and trading schemes: Never knowingly undersold? *Local Economy,* 11(3), 266-268.

Teran, E. (2012) Caricaturas e imaginarios en la Propuesta para el Plan Socialista 2013-2019: ¿vamos en realidad hacia un modelo post-rentista? http://www.aporrea.org/actualidad/a154508.html (accessed 17.05.14)

Torrealba, A. (2012) Sistemas de Trueke del país discutieron Plan de Gobierno 2013-2019 propuesto por Chávez. *Prensa MPCyPS.* 3 September 2012. http://www.mpcomunas.gob.ve/sistemas-de-trueke-del-paaus (accessed 17.05.14)

Vyas, K. (2013) Venezuela weighs plan to raise gas prices. *The Wall Street Journal.* 18 December.

Wilpert, G. (2007) *Changing Venezuela by Taking Power: the history and policies of the Chávez government.* Verso, London.

World Bank (2013) *World Development Indicators 2013.* World Bank, Washington, DC.

Wray, L.R. (ed.) (2004) *Credit and State Theories of Money.* Edward Elgar, Cheltenham.

Wright, E.O. (2010) *Envisioning Real Utopias.* Verso, London.

6. 100 percent reserve banking: A critical review of green perspectives

Abstract

100 percent reserve banking (C-PeRB) is an enduring proposal for monetary reform that has been taken up by some ecological economists. This paper identifies three groups of green arguments in favour of C-PeRB, and offers some criticism. First, the proposal could serve to constrain new investments by the availability of savings, thereby checking economic growth. However, this would strongly increase interest rate volatility. Second, it could potentially elevate environmental considerations in decisions about resource allocation by increasing the role of the democratic state as an economic actor. This line of argument faces problems that require further detailed exploration and historical empiricism. Third, a transition to C-PeRB would allow debt levels to be drastically cut. This is technically possible, but politically a tall order. Whether the existing system of 'debt-based' bank money generates a significant growth imperative remains unclear. In general, the adoption of C-PeRB presupposes a tremendous reconfiguration of power relations between states and finance capital. Whether or not it addresses key driving forces behind perennial economic growth remains a contentious issue.

Keywords: 100 percent reserve banking; Full-reserve banking; Chicago plan; Monetary reform; Steady-state economy; Growth imperative

6.1. Introduction

The financial crisis that began in 2007 has underlined the fact that ecological economics does not have much to say about monetary and financial reform. As recently suggested by Daly (2014: 127), “[m]oney and finance have rather naturally been pushed aside by ecological economists' focus on biophysical dimensions”, the latter being the great blind spot of conventional economics that the field was born to uncover. Insofar as ecological economists have analysed market-based policies, these have tended to be narrowly environmental in character, such as payments for ecosystem services or green taxation. A number of proposals for monetary and financial reform have indeed been advocated on environmental grounds (e.g. Douthwaite 2012; Lawn 2010; Loehr 2012), but critical debate has been largely absent. This paper aims to foster such debate by reviewing and making some criticism of green arguments for the long-standing proposal of 100 percent reserve banking (here abbreviated C-PeRB). We begin by explaining the basics of C-PeRB and giving a brief historical overview of the proposal. Sections 6.2-6.4 discuss three groups of distinctively green arguments for C-PeRB. Section 6.5 describes the ‘near-money’ problem that has accompanied the proposal from its beginnings, and section 6.6 concludes.

6.1.1. Outline and history of proposals for 100 percent reserve banking

The essence of C-PeRB – or synonymously, full-reserve banking – is that the state gains control over the quantity of money in the economy, i.e. the money supply. In today’s capitalist economies, the lion’s share of the money supply is bank money, created by

commercial banks in the act of lending as a new deposit for the borrower and a new liability of the bank.[21] Conversely, bank money is extinguished as loans are repaid. Under C-PeRB, only the state – via the central bank or some other monetary authority – would have the ability to create (and destroy) money. There would be two basic types of private bank; deposit banks and lending banks (or investment trusts). Deposit banks would be obligated to hold cash, or reserves in their accounts with the central bank, to the full amount of their demand deposit liabilities to their customers. Hence, their role would be limited to the payments system, offering transaction and safekeeping services. Typically, deposit banks would finance their activities by charging a fee for managing deposits. Lending banks would be what banks are sometimes naively thought to be today, namely pure intermediaries between savers and borrowers. Crucially, a deposit in a lending bank would not be available to the depositor on demand but actually lent out, i.e. it would not be a liquid monetary asset for the depositor. C-PeRB proposals vary in their specifications about lending banks, e.g. regarding reserve and capital requirements and presumed sources of funding (private debt, public debt, or equity). The central bank would conduct monetary policy through quantity control of the money stock, rather than (as today primarily) by setting the price (i.e. interest rate) at which it lends reserves to banks through the 'discount window'.

[21] The extent to which commercial banks can create money at their discretion remains a matter of debate. Economic orthodoxy holds that banks are constrained by the central bank's provision of reserves via the 'money multiplier'. Post-Keynesian economists, however, argue that any interest-rate targeting central bank must supply banks with whatever reserves they wish to borrow at a given rate of interest. They subscribe to Keynes' view that "there is no limit to the amount of bank money which the banks can safely create provided that they move forward in step" (Keynes 1930: 26), so that each bank can compensate clearing losses of reserves by gains.

Frederick Soddy (1933 [1926]: 197-9), a chemistry Nobel laureate, is usually credited with having first raised the C-PeRB idea in the 20th century (but see Bromberg 1939).[22] Soddy aimed to set out a monetary system based on the physical principles that he believed to underlie wealth; the laws of thermodynamics.[23] By requiring banks to hold "pound for pound" of reserves against demand liabilities, a "disinterested bureau of statisticians" could control the money stock to make money an invariable standard analogous to the scales of measurement of the physical world (Soddy 1934: 211, 169). For Soddy, C-PeRB was a panacea giving rise to an egalitarian age of plenty (1931: 22), characterized by economic *laissez faire* (1934: 3). Soddy's original proposal was favourably reviewed by Frank Knight (1927), who in March 1933, together with colleagues at the University of Chicago economics department, would write a memorandum to the US Secretary of Agriculture, known as the first *Chicago plan* for banking reform (Knight 1933)[24]. The essential feature of the Chicago plan is a system of C-PeRB together with a legislated rule for monetary policy (as opposed to central bank discretionary powers). The plan was presented as a free-market alternative to the danger of bank nationalization (Phillips 1995: 53), in line with Soddy's (1934: 211) advice to "[a]void as the plague schemes for nationalizing banks". (This motive remains in Daly (2013).) Among the few receivers of the memorandum was the eminent economist Irving Fisher, who took up the cause after some hesitation (Allen 1993), and soon became its most

[22] See Mints (1945) on the pre-20th century history of the idea.

[23] It is for Soddy's discussion of the physical principles underlying wealth, and how conventional economics contradicts them, that Martinez-Alier (1987: ch.9) includes him in the pre-history of ecological economics, not for his monetary reform proposal, which is not mentioned.

[24] See Phillips (1995) for an excellent history of Depression-era C-PeRB proposals.

conspicuous advocate.[25] Along similarly *laissez faire* lines, Fisher argued that C-PeRB – by protecting the payments system from the risks involved in bank lending – "would render unnecessary many, if not most, of the present vexatious regulations of banking" (Fisher 1946, sec.11; see also Douglas et al. 1939: 31; Simons cit. in Phillips 1995: 204 n2). The other advantages most commonly claimed by its Depression-era advocates were that it would eliminate runs on deposit banks and eliminate great inflations and deflations, thereby greatly mitigating booms and depressions (Fisher 1945: 11-4).

Harvard economist Lauchlin Currie (1968 [1934a]: ch.XV) had independently argued for C-PeRB in early 1934. By July, he was employed by the US Treasury *explicitly* to elaborate this proposal (Sandilands 1990: 57), submitting it in September 1934 to Treasury Secretary Morgenthau (Currie 1968 [1934b]). As a New Dealer – and unlike the Chicago economists – Currie's intention "was to render activist monetary policy a more useful component of a generally interventionist policy regime" (Laidler 1993: 1070). Currie went on to draft the administration version of the Banking Act of 1935, which included the legal right of the Federal Reserve Board to raise reserve requirements by anything up to 100% if it so wished.[26] However, by the work of Senator Glass, this right was excluded from the enacted version. Phillips (1995: ch.10) argues that the exclusion was due to administration blunders

---

[25] Daly (1980) notes Soddy's apparently magnanimous acknowledgement of Fisher's campaigning in a 1943 pamphlet. However, in the widely forgotten *Economic Forum,* Soddy had previously accused Fisher of having "put forward as his own" the proposal (Soddy cit. in Dimand 1991: 24). It was pointed out in response that Fisher (1945: 204 n2, 221-3) had in fact already cited Soddy and listed three of his works.

[26] It is therefore not entirely correct to say of the 1930s full-reservists that "their ideas on money were simply classed separately from the rest of their economics, treated as a peccadillo, and were ignored" (Daly and Farley 2011: 296).

affecting Glass and resistance from the banking community based on misconceptions about C-PeRB as a plan to end private banking. Nevertheless, campaigning for C-PeRB went on, especially by Fisher – right until his death in 1947 (Allen 1993). Various bills prescribing C-PeRB were introduced in US Congress between 1934 and 1945, but without success. The Banking Act of 1935 would remain the basic banking legislation until the late 20th century. C-PeRB lived on for some time in academia, notably advocated by Milton Friedman (1960: 65-76), but progressively lost attention. It enjoyed a revival in the midst of the US savings and loan crisis as 'narrow banking' (Litan 1987), seen as a solution to the moral hazard problems associated with federal deposit insurance (Phillips 1995: 180). (Narrow banking proposals accept a wider range of assets counting as reserves.) C-PeRB has been given yet another lease of life in the aftermath of the financial crisis of the late 2000s; in the policy debate (Benes and Kumhof 2013; Kotlikoff 2010; Wolf 2014) and by the Positive Money movement originating in the UK (Jackson and Dyson 2013). In September 2011, Dennis Kucinich introduced a bill (HR2990) in US Congress including C-PeRB, but it failed to pass.

Advocacy of C-PeRB by ecological economists – or more broadly, greens – appears to have begun with Daly's (1980) recovery from oblivion of Soddy's economic thought. Rather than attempting to sketch the historical trajectory of this idea within the international green movement, the following three sections will discuss the distinctively environmentalist case for C-PeRB, as advanced in the English-language literature[27].

[27] I am unaware of the existence of other major environmentalist arguments for C-PeRB presented in other languages.

6.2. Controlling scale by limiting private investments to the availability of savings

Herman Daly is commonly associated with the vision of a steady-state (i.e. physically non-growing) economy (SSE) organized around three basic economic goals: sustainable scale of the macroeconomy within the biosphere; just distribution; and efficient allocation (Daly 1992). Daly advocates C-PeRB as a policy that could help achieve a sustainable scale, because, "[a]ssuming initially a fixed relationship between GNP and throughput, a steady-state economy requires a constant real money supply" (Daly and Farley 2011: 335). In Daly's version of C-PeRB, the nominal money supply would also be constant, since the Treasury (not the Fed) would control it so as to maintain a constant price index.[28] This system "would restrict borrowing for new investment to existing savings, greatly reducing speculative growth ventures", so that "the classical balance between abstinence and investment" would be re-established (Daly 2013; see also Daly 1999: 154). Interest rates would be "left to market forces" (2013), i.e., vary freely to clear the credit market. Daly would probably agree that interest rates would be more volatile than under the existing system, since banks would no longer be able to satisfy loan demand by creating bank money. Moreover, the average interest rate level would arguably be higher, given that C-PeRB plans generally address the moral hazard problem, making creditors bear a much larger share of the risk of lending by reducing government insurance of savings deposits and allowing lending banks to fail.

[28] Daly allows for some, presumably very limited, GDP growth in an SSE: "Once we have achieved sustainable throughput, technological advance may still allow growth in the real value of market goods and services" (Daly and Farley 2011: 335).

Indeed, there is reason to believe that the risk of lending will be higher in a climate-changing future, presumably characterized by absolute scarcity.

Daly's thinking about interest rates can be understood in light of his equivalent views on intertemporal discount rates. He qualifies the usual argument that a high discount rate is bad for the environment because "[i]t shifts the allocation of capital and labor towards projects that exploit natural resources more intensively" (Daly 1996: 50). Daly distinguishes this undesirable "allocation effect" of a high discount rate from its benign "scale effect" of restricting the total number of projects undertaken through dissuasive borrowing costs. "Which effect is stronger is hard to say, although one suspects that over the long run the scale effect will dominate" (1996: 50). More confidently: "a higher interest rate (discount rate) slows down aggregate growth in GNP and throughput, thus easing pressure on the environment" (Daly and Farley 2011: 316). Presumably, environmentally adverse credit allocation and other perverse allocation effects of high interest rates such as *adverse selection* (favouring risk-loving borrowers) and the *incentive effect* (riskier decisions by a given borrower) (Stiglitz and Weiss 1981), would be countervailed by means of additional policy instruments. The same applies to the regressive effects of high interest rates on distribution.

Leaving interest rate determination largely to market forces is a corollary of C-PeRB, because of the incompatibility between quantity control of the money stock and price control of credit (but see below on the recent watering down of C-PeRB). It is important to

note that this constitutes a radical break with the history of monetary policy. According to Goodhart:

> "Central Banks have historically been at some pains to assure the banking system that the institutional structure is such that the system as a whole can *always* obtain access to whatever cash the system may require in order to meet its needs, though at a price of the Central Bank's choosing: and there has been a further, implicit corollary that that interest rate will not be varied capriciously." (Goodhart 1987: 6699)

Even under the classical gold standard (ca. 1880-1914), when governments were less concerned than their welfare-state successors about the hardships wrought by interest rate hikes on the lower classes (Eichengreen 2008: 30), central banks were nevertheless "ironing out swings in interest rates induced by seasonal forces and by the business cycle" (Bordo 2008: 3). New Keynesian and post-Keynesian economists alike agree that "the dominance of interest rates over monetary aggregates in the conduct of monetary policy is not a recent phenomenon. In the United States, for example, only in the 1979–1982 period did monetary aggregates play a significant role in policy" (Romer 2000: 155). This refers to the Volcker experiment, which was a *moderate* attempt (because, unlike with C-PeRB, banks still had access to the discount window) by the US Fed to target monetary aggregates by managing banks' holdings of non-borrowed reserves. During this period, the volatility of short-term interest rates rose four-fold as a result (Goodhart 1987).

The interest rate hikes of the Volcker experiment hurt debtors, including foreign governments that had borrowed dollars at low rates in the 1970s, setting off the Latin American debt crisis. Daly and Farley (2011: 396) imply that this crisis could have been avoided with fixed-rate debt contracts. But this merely shifts the cost of interest rate hikes onto lenders, as illustrated by the US savings banks that also suffered in this period. As Admati and Hellwig (2013: 54) explain, these institutions were carrying many mortgage loans with rates fixed at, say, 6 percent and a maturity of thirty years. In the early 1980s, while still receiving these low rates from mortgage borrowers, they now had to pay depositors the prevailing market rates of well above 10 percent. Consequently, about two-thirds of US savings banks had actually become insolvent, although this was mostly hidden. To regain solvency, they began making very risky investments, setting the stage for the savings and loan crisis of the late 1980s, which cost the government some $153 billion. The risk-taking of the savings banks was increased by deposit insurance, an element that C-PeRB proposals would largely dispose of. But the idea of leaving lending institutions to carry the full risk of interest volatility points at a common critique of C-PeRB; that it does not address the impacts on the financial system caused by the failure of institutions other than deposit banks (Admati and Hellwig 2013: 90, 218-9, 271 n38; Kregel 2012; Turner 2010: 22-3). Thus, with reference to more recent times, “we note that both Bear Stearns and Lehman Brothers were non-deposit-taking investment banks, AIG was an insurance company, and LTCM, seen as systemically important in 1998, was a hedge fund. None had depositors, and none was involved with the payment system” (Admati and Hellwig 2013: 90). The argument here is not that interest rate volatility lay behind the failure of these particular institutions, but that the systemic importance of financial institutions outside the payments system questions the

advisability of subjecting them to the risks of volatile interest rates. Tellingly, Phillips (1994: 565) suggested before these debacles that "[o]pponents of narrow banking may be underestimating the stability and self-correcting nature of the private credit markets".

Some present-day full-reservists, who do not aim for an SSE, have proposed versions of C-PeRB where the supply of credit is not constrained by savings. Benes and Kumhof (2013: 16) suggest that "[i]f the government wants to maintain low interest rates in the investment trust sector (...), treasury credit can be used to supply additional funds". As they note (2013: 29), government accommodation of some of banks' demand for loanable funds was considered by some C-PeRB proponents in the 1930s. Thus, Currie's plan stated:

> "In communities where it can be demonstrated to the satisfaction of the Board of the Reconstruction Finance Corporation that the 100 per cent reserve requirement has resulted in a shortage of funds available for local borrowers and has thereby worked a hardship on such borrowers, the Reconstruction Finance Corporation is empowered to subscribe to the capital of local loaning agencies including banks, or to make secured loans to such agencies, and, in the absence of such agencies, to set up loaning agencies itself." (Currie 1968 [1934b]: 219-20)

The attitude towards accommodating credit demand is rather more lax in the Benes-Kumhof plan, although only as far as investment credit for productive purposes is concerned. For such loans, "the government is on call to supply funds whenever [financial institutions] want to lend more" (Kumhof cit. in Huber 2014: 12). In contrast, "unproductive credit would be

discouraged (especially credit for financial and asset transactions, including many real estate transactions)" (Benes and Kumhof 2013: 20). Positive Money makes a similar argument in response to critique that a savings constraint on lending "would mean a shortage of money, high unemployment and low economic activity – while those with savings would charge high rates and flourish" (Pettifor 2014). Positive Money responds that the central bank could create additional money and lend it to banks "on the proviso that this was used for on-lending to businesses" (Jackson 2014). However, this "would be an emergency measure to use when banks are failing to provide sufficient credit themselves, but in most situations, credit to businesses would be provided by savers who are looking for a return". The claim that private money holders' propensity to save in lending banks would normally be sufficient is, however, an assumption that would have to be substantiated. Credit shortfalls may be such that the government must choose between supplying banks with an inflationary amount of newly created funds, or controlling inflation while interest rates go north.[29] To avoid inflation while accommodating banks, Benes and Kumhof (2013: 21 n29) suggest that increases in the government supply of funds be offset by reductions in public spending. The question remains how much public spending would have to be cut to contain the upward pressure on interest rates. Alternatively, Farley et al. (2013: 2815-6) propose that additional taxes be imposed in tandem with the injection of new money. Whether this could be achieved with the requisite political acceptability demands exploration. Why should an increase in the tax pressure be tolerated just because there are eager borrowers who the government finds in its interest to satisfy? The needed agility of tax legislation is

[29] Friedman's (1972: 201) definitions are useful in this context: "the interest rate is not the price of money. The interest rate is the price of credit. The price level or the inverse of the price level is the price of money".

also a matter of doubt. Today, the central bank moves demand deposits of the government from itself to the commercial banks to neutralize the reduction in reserves held by the latter caused by tax payments (Lavoie 2006: 63). In other words, tax payments today are disruptions of the money supply that must be compensated for, not the opposite. Under C-PeRB, government demand deposits, which the central bank can arguably move much faster than the legislature can change the tax rate or pass a new tax, could of course not serve this compensatory function as reserves for bank loans. In sum, full-reservists have yet to make a strong case that, in a private enterprise economy, C-PeRB would not provoke such an increase in the volatility of interest rates that the monetary authority is forced to resume its role of lender of last resort and revert from quantity control to interest rate targeting. The challenges are much greater if C-PeRB is meant to help contain economic growth, rather than merely direct the flow of credit away from unproductive borrowing into real economic activity as proposed by Benes and Kumhof (2013) and Jackson (2014).

6.3. The issuer of money determines what gets done in the economy

Some green advocates of C-PeRB see it as a way to reduce the dominance of profit maximization over other criteria for allocating the productive resources of society (Farley et al. 2013; Mellor 2010a; 2010b; Robertson 2012). In the existing system, the short-term maximization of bank profits can be thought of as the main determinant of who obtains newly created purchasing power, since this power overwhelmingly exists in the form of bank credit. Consequently, "[p]rojects of high long-term value to society as a whole, but of

no short-term profit to banks or other commercial businesses, will naturally not be selected as first users of money created as loans by commercial banks" (Robertson 2012: 106). Environmentally important investments, the benefits of which often arise in the long term, are therefore left unmade. Proposals vary as to how a system with full reserves could be designed to remedy this problem. Perhaps the most common argument is that the prohibition of money creation by banks would allow the government to issue more money without causing inflation; money that would be 'debt-free'[30] since the state would spend it into existence rather than borrow it at interest from the private sector. Although rarely spelled out, this is presumably based on the assumption that a savings-constrained banking sector would lend less than today, freeing up existing productive resources – such as labour-power and natural resources – to be claimed by public spending. Assuming that the government believes this to be its mandate, it would now be in a stronger position "to provide public goods, invest in social and human capital, ensure full employment, rebuild decaying infrastructure, restore the natural systems that sustain us all and otherwise promote the common good" (Farley et al. 2013: 2814; see also Costanza et al. 2013: 43; Robertson 2012: 106). It is well-known that market economies under-supply public goods due to the free-rider problem, and this is part of the rationale for giving government the spending powers to make "public good investments in alternative energy, new forms of

[30] The expression 'debt-free money' has been criticized as an oxymoron by adherents of credit theories of money, maintaining that money cannot be debt-free because it is always issued as a promise by the issuer to take it back in return for something of value (Wray 2014). For example, the king issues a coin along with a promise to accept it as payment of taxes. The disagreement arises from different uses of the term 'debt'. For the critics, whether spent or loaned into circulation, money is always a *liability* ('debt') of the issuer. For the advocates, debt-based money only refers to money loaned into existence at interest, so that as long as it remains in circulation, someone keeps paying interest on the loan by which it was created.

agriculture and other green technologies [which] will likely play a critical role in reducing throughput" (Farley et al. 2013: 2811).

This case for C-PeRB is often couched as the public reclamation of seigniorage revenue; i.e. the difference between the face value of money and its production cost. Ending private seigniorage was a major motive for Soddy, who denounced it as the bankers' getting "something for nothing", or appropriating the "virtual wealth" of the nation (Soddy 1931: 32-4; 1933 [1926]: xii; 1934: 89). Of course, banks do not own the money they issue and only earn a fraction of it in interest, but, in Soddy's words, "[t]o be in permanent enjoyment of the annual revenue is in practice the same as being the owner of the capital sum" (Soddy 1934: 88). The critique extends also to the recipient of bank credit; like Soddy, Maurice Allais – a Sveriges Riksbank economics laureate and C-PeRB advocate – has criticized "the distortion of income distribution by the creation of 'false claims'" (Allais 1987: 524). Seigniorage is also central to the C-PeRB proposal of Huber and Robertson (2000), calling it 'seigniorage reform'. Here, the expectation of large seigniorage revenues is linked to Huber's (2000) techno-optimist hopes for a future of 'ecological modernization'. In contrast, in a steady-state economy with near-zero GDP growth, the paucity of opportunities for non-inflationary additions to the money supply would mean that the scope for seigniorage revenues is negligible (Daly and Farley 2011: 335). Nevertheless, increased scarcity of basic resources characterized by inelastic demand means that "there is no guarantee that physical contraction of the economy will lead to a lower demand for money or a lower level of GDP" (Farley et al. 2013: 2820).

Another proposal, less explored by greens, is that C-PeRB be used to steer commercial bank lending in certain directions. As discussed in section 6.2, it has been proposed that the state should supply funds to banks on condition that they are on-lent to the real economy. While shifting the objective away from economic growth, Farley et al. (2013: 2813) similarly argue that "the central bank could make deposits contingent upon banks serving the public interest by loaning to job-creating businesses that protect and provide jobs and public goods and not renewing deposits in banks that loan to speculators". Given pervasive market failures, there is a strong case for such 'directed credit policies'. However, this involves important practical difficulties, in particular the specification of eligibility criteria for borrowers. Credit allocation should arguably be based on legislated criteria rather than the discretion of a committee of unelected central bankers.[31] Furthermore, combining directed credit policy with C-PeRB introduces additional difficulties. If the money supply is to be controlled to restrain real economic growth as well as inflation, and in the likely event of excess credit demand, banks could not merely approve all creditworthy loan applications in the eligible categories; they would have to choose among them.[32] This activity may require strong supervision to correct perverse decision-making. On the other hand, increased government control over credit allocation gives rise to the danger that the state becomes the arbiter of the fate of firms in financial straits, consequently carrying more of the political costs of business bankruptcies and mass lay-offs. This would create political pressures to

[31] Important historical cases of economic development through directed credit policies have been based on the concentration of enormous powers on central bankers, such as the post-war governor of the Bank of Japan Ichimada, known by his contemporaries as 'the Pope' (Werner 2002).

[32] This problem may be tempered if the central bank fully accommodates credit demand for productive investment purposes, but then C-PeRB would no longer be a green credit policy tool.

return to a policy of easy credit. Broadly, this is the 'soft budget constraint' syndrome, which increases in tandem with the paternalistic role of the state (Kornai 1986). It was an important cause of the allocative inefficiency of socialist economies, including market-socialist Hungary and Yugoslavia. The soft budget constraint reduces incentives to economize on inputs, since "firms feel that when they cannot pay the bills, someone else will step in and bail them out" (1986: 11). The credit allocation argument for C-PeRB may also be criticized because 100 percent reserves is not necessary for the imposition of credit policies on the private banking sector. This is perhaps a reason why greens have rarely made this argument. As shown in section 6.1, C-PeRB has often been justified as a means to achieve the complete opposite.

Resonant with the green credit policy motive is Mellor's (2010a; 2010b) broader vision of a 'public money system' within a steady-state 'sufficiency' economy. In Mellor's proposal, money would be issued through "democratically controlled banks" at national, regional, and local levels, to which firms (for-profit and non-profit) could apply for credit on condition that they meet "democratically identified priorities" (2010b: 86; see also 2010a: 172). Second, money would also be issued by the state and distributed as a citizen's income, which "would shift the money circuit from one dominated by anticipatory production in search of profit, to one dominated by consumer demand" (Mellor 2010b: 85). Third, "[p]ublicly-issued credit could be made available to co-operatives, mutuals or other types of social businesses or to carefully regulated private businesses to deliver public goods" (2010a: 167). The general idea is that all money issuance would give priority to "democratically determined socially relevant expenditure (...) with the capitalist market (to the extent it continued to exist)

offering goods and services to attract that money as it circulated" (Mellor 2010a: 163). In other words, autonomous capitalist firms would have to rely on retained earnings as source of funds.[33] However, "[t]he main source of income for any remaining profit-based companies would be contracts from the public or communal sectors or the provision of goods and services to those sectors" (2010a: 169).

Although Mellor does not discuss what specific institution would control the overall money supply, the proposal raises similar concerns as political credit allocation. It is claimed that "[a]dministration via a public money system would avoid (...) the rigidity of a command and control economy" (2010b: 87), but this is not substantiated. Are 'democratically controlled banks' supposed to extend credit to all eligible firms, or will the steady-state money supply be controlled so that credit must be rationed on some more narrow, as yet unspecified criteria, and by whom? Similarly, by what democratic procedure will publicly issued credit be 'made available' to social businesses? With public contracts becoming the main source of income for profit-based companies, would it not be necessary somehow to coordinate all these procurement contracts into a plan?

The argument that the existing, decentralized system of profit-guided credit creation can be replaced by a workable and more desirable alternative must be presented with rigour and empiricism to stand a chance against deep-rooted market ideology. Proposals for economic

[33] This highlights the prospect that businesses would react to C-PeRB by changing their funding mix. Even today, US corporations finance more than 75% of capital expenditures from retained earnings, not debt nor equity (Berk and DeMarzo 2014: 570). Assuming a higher average level of interest rates, the rising cost of debt would favour existing large corporations that are able to rely more on retained earnings, to the detriment of new business entries.

democracy may be checked against the realities of 20th century socialism, an opportunity yet to be seized upon by market-averse C-PeRB advocates. Mellor writes that "[t]he importance of a steady state money system is that money issue would be determined by popular demand in the same way that private demand creates money now" (2010a: 168), and that "[i]t would not be the search for profit that would drive production, but social need and social priorities" (2010a: 169). Like many other references to 'public', 'social', and 'democratic' aspects of the proposal, such statements are perilously reminiscent of the Marxian suggestions about the simplicity and transparency of economic matters under the self-rule of the associated producers, dismissed by Nove (1991: 29 and passim) as evasive sloganeering. This is fine for early sketches (provided they are not subsequently attributed such infallibility as Marx's intimations about communist society), but progress in the development of compelling green visions involving C-PeRB has been decidedly slow since Daly (1980) re-introduced the idea to the environmental movement.

6.4. Reducing debt levels to counter the growth imperative of interest

Many full-reservists have argued that their plan could help bring about a drastic reduction of total debt. Focus has usually been on the national debt, but some have also referred to private debt. Various motives for reducing debt have been advanced, such as economic equality and growth. However, this section will only discuss the distinctively green argument that debts be reduced to weaken a certain growth imperative attributed to interest payments to the banking sector. But we will first recount some suggestions about how the

national debt could be reduced with C-PeRB. The debt could be gradually cancelled if the government puts new money into circulation "by buying with it National Debt securities and destroying them. Thus an equivalent of interest-bearing National Debt would be destroyed for the non-interest bearing National Debt that is money" (Soddy 1934: 69). This procedure was also suggested in the November 1933 version of the Chicago plan (cf. Phillips 1995: 66). As noted in section 6.3, it is not clear whether there would be significant opportunities for such money supply expansions in a physically non-growing economy. A second argument, made by Fisher in the 1930s, was based on the historical circumstance that the US federal debt was then mainly held by domestic banks. Therefore, the monetary authority would implement the plan by buying this debt from the banks in exchange for the cash reserves that the latter needed in order to operate as deposit banks under the plan (Fisher 1945: 11, 206-7). "In that way most of the Government debt could be paid almost over night" (Fisher 1936: 15). Irrespective of the merits and demerits of such a procedure[34], it has lost relevance (in the US at least) since the share of government securities among banks' assets has shrunk, and these securities have migrated to non-banks. Because of the decline in bank holdings of government bonds (as well as reserves), Milton Friedman had by the mid-1980s – while still an advocate – become "very sceptical indeed that there is any political possibility of achieving one-hundred percent reserves" (Friedman cit. in Phillips 1995: 174). Defying such assessments, recent proposals stipulate that banks would be required to borrow reserves from the monetary authority until they have all their demand deposit

[34] Angell (1935) criticized this proposal for leaving banks with their worst assets to cover their savings and time deposit liabilities, arguing that this would provoke a flight away from such deposits into cash and demand deposits. Angell's alternative proposal was that the monetary authority make an interest-free loan of reserves covering all demand deposits, against a lien on banks' *total* assets.

liabilities completely backed. As Benes and Kumhof (2013: 7) explain for the US case, since the total demand deposit liabilities of US banks today are much larger than the debt of the US government, this transaction would leave the latter with a strong net position. However, the introduction of the plan would not eliminate the government's gross debt held outside US banks.

Even if it were possible eventually to eliminate the national debt, there are reasons why this may not be desirable. In particular, other ways would have to be found to provide safe assets for public purposes such as pension funds and insurance funds. Jackson and Dyson (2013: 309) therefore argue that seigniorage revenues would be better used to encourage people to reduce their private debts. The greater size of total private debt, as in the US and UK at present, and the generally higher interest rates charged on private debts, are also seen as reasons to prioritize the reduction of private over public debt (Jackson and Dyson 2013: 309). Early full-reservists have generally not tended to emphasize the potential for private debt reduction. An exception is Soddy (1934: 97), who was immensely optimistic that his proposal would before long get industry and agriculture out of debt to the banks. In their recent proposal, however, Benes and Kumhof suggest that the government could transfer a part of its credit with the banking sector (resulting from the massive loan of reserves by which their plan is implemented) to the public "by way of a citizens' dividend, whose mandatory first use is the full repayment of any outstanding private debts by the recipient". They therefore foresee "at least some, and potentially a very large, repayment of private debt" (Benes and Kumhof 2013: 8). Moreover, they claim more generally that "because under the Chicago plan money no longer needs to be created through debt, debt

levels throughout the economy would be very much lower" (Benes and Kumhof 2013: 17). Interest payments to the private banking sector are the focus of the green argument for debt-reduction that will now be discussed. For this reason, the reduction of private debts is therefore also the priority of adherents to this theory, to which we now turn.

Green critics of fractional reserve banking often argue that an economy with positive interest rates and a money supply largely consisting of bank money faces a growth imperative. Accordingly, borrowers cannot in the aggregate pay back both loan principal and interest to banks, without causing a deflationary decrease of the money supply, unless others take on ever more debt. This is because the fraction of money that continues to exist after the loan is repaid, namely the interest payment, is not recirculated in full by the bank, but partly withdrawn from circulation as retained profits (Douthwaite 2006, ch.1; see also Costanza et al. 2013: 42). As others take on more debt, the total debt grows, and unless creditors are to receive an ever larger share of GDP, or debts are inflated away, the real economy must also grow. Given the complex dynamics involved, such arguments are hard to make compelling by verbal exposition alone. Binswanger (2009) constructs a model of a pure credit economy to test for this growth imperative in capitalist economies. The model is simple yet constitutes an improvement over mainstream macroeconomic models that generally treat the money supply as exogenously determined. The simulation yields that "[a]n economy with high interest rates (...) is subject to a stronger growth imperative than an economy with low interest rates" (2009: 723). If firms are to make profits in the aggregate, the economy must grow at above 0.45 percent. However, this model has a premise, "crucial for establishing the growth imperative" (2009: 713), that is based on a

common misunderstanding of bank capital. The simulation uses data for the US and Germany (1979-2003) to specify that 20 percent of banks' income is *retained* as bank capital, which "does not flow back to the economy and the money supply in the economy is diminished by the same amount" (2009: 717). But it is incorrect to treat bank capital as a pile of "cash that sits idly in the bank's tills without being put to work in the economy" (Admati and Hellwig 2013: 6). A bank's capital is merely "the part of its balance sheet that represents unborrowed funds" (2013: 98), i.e. "the money that a bank has obtained from its owners if it is a private bank or from its shareholders if it is a corporation, along with any profits it has retained" (2013: 6). Part of the confusion arises from the fact that this type of funding is elsewhere called equity; only in banking is it misleadingly called capital. The notion that bank capital is something that banks must 'set aside' to comply with regulations at a cost to the economy is also a fallacy propagated by the banking lobby to confuse the regulatory debate (2013: 6). Banks may indeed retain a fraction of interest earnings as *reserves*, and what appears as reserves owned by the bank on the left-hand side of the balance sheet will appear as equity on the right. Higher reserve requirements do affect negatively the ability of banks to make profitable loans. In contrast, "[a]t least for banks that are organized as corporations, bank capital requirements have no automatic effect on bank lending" (2013: 7). Consequently, models testing for an interest-based growth imperative should use data on bank reserves rather than bank equity. A further issue requiring clarification is if it matters whether banks 'recirculate' interest payments by making new loans or through spending. Finally, the existence of non-interest-bearing money spent into the economy by the state would have to be taken into account.

6.5. Can money creation be monopolized in a market economy?

Critical assessments of full-reserve proposals have often emphasized the technical difficulties of maintaining a government monopoly over money creation. Quantitative control of the money supply requires a stable definition of monetary aggregates, but defining what serves as money is notoriously difficult. Checking the creation of new forms of 'near-money' (highly liquid non-cash assets) is "the difficulty that all such schemes meet" (Schumpeter 2006 [1954]: 692 n15). For Henry Simons – one of the originators of the Chicago plan – the chief concern soon became "how to keep deposit banking from growing up extensively outside the special banks with the 100% reserves" (Simons cit. in Allen 1993: 708). Allen (1993) lists the near-money problem as one of the reasons why Fisher's energetic campaigning failed to generate sufficient support. Theoretical arguments about the challenges involved eventually found an empirical counterpart in the monetarist experiments, where attempts were made to define certain monetary aggregates so that they could be made the target of monetary policy. The episode popularized the so-called Goodhart's law: "that any observed statistical regularity will tend to collapse once pressure is placed upon it for control purposes" (Goodhart 1984: 96). More specifically, if the authorities impose controls on the money supply by one definition, these will be evaded with the development of unregulated monetary substitutes, making the definition obsolete. Since monetary policy has reverted to interest rate targeting after the monetarist attempt at quantity control, it may be disputed whether near-moneys really are "as much a problem for the existing system as for the alternative we are suggesting" (Daly 1999: 156). If the money supply is to be a policy tool for achieving sustainable scale, pressures to innovate

money-like instruments in the shadow banking sector may certainly be expected to be higher than in today's growth-based economies. Goodhart's law may not necessarily be read as defeatist prophecy, but as an indication that any important advancement of the government's role in determining the nature of money would be conditioned on a fundamental reconfiguration of power relations between states and finance capital (for general discussion of this point, see Ingham 2004).

6.6. Conclusion

C-PeRB has generally been advocated by conventional economists as a corrective of the crisis dynamics of capitalism, usually – but not always – as part of a program for economic *laissez faire*. As such, it influenced the New Deal policy process. However, its enduring appeal for some greens arguably resides in its apparent promise to impose limits on the monetary sphere. Given the physically unbounded character of the pure fiat money system in existence since Nixon closed the gold window, C-PeRB affirms many ecological economists' inclination for quantity-fixing over price-fixing policy. But the case for C-PeRB is fraught with problems. Daly's proposal for a savings-constrained credit system would strongly increase the volatility – and likely also the average level – of interest rates, with perverse allocation effects and financial fragility as a result. The case for allowing (presumably green) governments more room for determining resource allocation is weakened by the unclear scope for seigniorage revenues in an SSE. The existing embryonic arguments for C-PeRB-based green credit policies or a 'public money system' are as yet far

from compelling, lacking in empiricism and detail. Extensive debt reductions in a transition to C-PeRB appear technically possible, but presuppose a massive political weakening of the creditor classes. The debt-money growth imperative that such a transition would serve to undercut has yet to be rigorously shown to exist. The successful establishment of a government monopoly over money creation would require a greatly empowered state capable of suppressing financial innovation. Given the elusive nature of money, it is unclear whether the use of near-moneys could be effectively fought if a permissive stance towards community currencies is considered desirable. Another political precondition for control over the supply of money and credit is strong international capital controls. Ultimately, the notion that the existing capitalist monetary system is in itself a major driver of perennial growth that can be neutralized while maintaining the capitalist institutions of private property in the means of production and competitive markets, has not been sufficiently substantiated (see e.g. Blauwhof 2012). Insofar as C-PeRB addresses the objective of sustainable scale, it should be evaluated in relation to the broader debate about why exponential monetary and physical growth of economic systems has been the main theme of the modern era.

References

Admati, A.; Hellwig, M. (2013) *The Bankers' New Clothes: What's Wrong with Banking and What to Do About It.* Princeton University Press, Princeton, NJ.

Allais, M. (1987) The credit mechanism and its implications. In: Feiwel, G.R. (ed.), *Arrow and the Foundations of the Theory of Economic Policy.* Macmillan, London, pp.491-561.

Allen, W.R. (1993) Irving Fisher and the 100 percent reserve proposal. *Journal of Law and Economics,* 36(2), 703-717.

Angell, J.W. (1935) The 100 per cent reserve plan. *Quarterly Journal of Economics,* 50(1), 1-35.

Benes, J.; Kumhof, M. (2013) *The Chicago Plan Revisited.* Revised version. International Monetary Fund, Washington.

Berk, J.; DeMarzo, P. (2014) *Corporate Finance.* Third ed. Pearson, Boston.

Binswanger, M. (2009) Is there a growth imperative in capitalist economies? a circular flow perspective. *Journal of Post Keynesian Economics,* 31(4), 707-727.

Blauwhof, F.B. (2012) Overcoming accumulation: Is a capitalist steady-state economy possible? *Ecological Economics,* 84, 254-261.

Bordo, M.D. (2008) monetary policy, history of. *The New Palgrave Dictionary of Economics Online.* Palgrave Macmillan. http://www.dictionaryofeconomics.com/article?id=pde2008_H000180

Bromberg, B. (1939) Two neglected twentieth century 100 per cent reserve economists. *American Economic Review,* 29(3), 553.

Costanza, R.; Alperovitz, G.; Daly, H.E.; Farley, J.; Franco, C.; Jackson, T.; Kubiszewski, I.; Schor, J.; Victor, P. (2013) *Building a Sustainable and Desirable Economy-in-Society-in-Nature.* ANU Press, Canberra.

Currie, L. (1968 [1934a]) *The Supply and Control of Money in the United States.* Russell and Russell, New York.

Currie, L. (1968 [1934b]) A proposed revision of the monetary system of the United States. In: Currie, L., *The Supply and Control of Money in the United States.* Russell and Russell, New York.

Daly, H.E. (2014) Paul Craig Roberts' important new book. *Ecological Economics,* 101, 127.

Daly, H.E. (2013) Nationalize money, not banks. http://steadystate.org/nationalize-money-not-banks (accessed 07.07.14.)

Daly, H.E. (1999) *Ecological Economics and the Ecology of Economics: Essays in Criticism.* Edward Elgar, Cheltenham.

Daly, H.E. (1996) *Beyond Growth: The Economics of Sustainable Development.* Beacon Press, Boston.

Daly, H.E. (1992) Allocation, distribution, and scale: towards an economics that is efficient, just, and sustainable. *Ecological Economics,* 6, 185-193.

Daly, H.E. (1980) The economic thought of Frederick Soddy. *History of Political Economy,* 12(4), 469-488.

Daly, H.E.; Farley, J. (2011) *Ecological Economics: Principles and Applications.* Second ed. Island Press, Washington.

Dimand, R.W. (1991) Cranks, heretics and macroeconomics in the 1930s. *History of Economics Review,* 16, 11-30.

Douglas, P.H.; Fisher, I.; Graham, F.D.; Hamilton, E.J.; King, W.I.; Whittlesey, C.R. (1939) *A Program for Monetary Reform.* Unpub. document, 42pp.

Douthwaite, R. (2012) Degrowth and the supply of money in an energy-scarce world. *Ecological Economics,* 84, 187-193.

Douthwaite, R. (2006) *The Ecology of Money.* Revised online ed. http://www.feasta.org/documents/moneyecology/contents.htm (accessed 07.05.14.)

Eichengreen, B. (2008) Globalizing Capital: A History of the International Monetary System. Second ed. Princeton University Press, Princeton, NJ.

Farley, J.; Burke, M.; Flomenhoft, G.; Kelly, B.; Murray, D.F.; Posner, S.; Putnam, M.; Scanlan, A.; Witham, A. (2013) Monetary and fiscal policies for a finite planet. *Sustainability,* 5, 2802-2826.

Fisher, I. (1946) Answers to Objections to the 100% Plan. Privately printed. Reprinted in Barber, W.J. (ed.) (1997), *The Works of Irving Fisher. Volume 11. 100% Money.* Pickering & Chatto, London, pp.308-311.

Fisher, I. (1945) *100% Money.* Third ed. The City Printing Company, New Haven. Reprinted in Barber, W.J. (ed.) (1997), *The Works of Irving Fisher. Volume 11. 100% Money.* Pickering & Chatto, London, pp.11-297.

Fisher, I. (1936) 100% money and the public debt. *Economic Forum,* Spring, 406-420.

Friedman, M. (1972) Factors affecting the level of interest rates. In: Boorman, J.T.; Havrilesky, T.M. (eds.), *Money Supply, Money Demand, and Macroeconomic Models.* Allyn and Bacon, Boston, pp. 200-218.

Friedman, M. (1960) *A Program for Monetary Stability.* Fordham University Press, New York.

Goodhart, C.A.E. (1987) monetary base. In: Eatwell, J.; Milgate, M.; Newman, P. (eds.), *The New Palgrave: A Dictionary of Economics.* Macmillan, London, pp. 6697-6702.

Goodhart, C.A.E. (1984) *Monetary Theory and Practice: The UK Experience*. Macmillan, London.

Huber, J. (2014) Many roads lead to Rome – not all by the shortest path: Reflections on *The Chicago Plan Revisited* in comparison to plain sovereign money. Unpub. document, 32 pp. http://sovereignmoney.eu/ (accessed 16.02.14.)

Huber, J. (2000) Towards industrial ecology: Sustainable development as a concept of ecological modernization. *Journal of Environmental Policy and Planning,* 2, 269-285.

Huber, J.; Robertson, J. (2000) *Creating New Money: A Monetary Reform For The Information Age.* New Economics Foundation, London.

Ingham, G. (2004) *The Nature of Money.* Polity, Cambridge.

Jackson, A. (2014) A reply to Ann Pettifor: Why there will be no “shortage of money”. http://www.positivemoney.org/2014/04/ann-pettifor-there-will-be-no-shortage-of-money/ (accessed 01.08.14)

Jackson, A.; Dyson, B. (2013) *Modernising Money: Why Our Monetary System Is Broken And How It Can Be Fixed.* Positive Money, London.

Keynes, J.M. (1930) *A Treatise on Money.* Vol.I. Macmillan, London.

Knight, F. (1933) Memorandum on banking reform. Reprinted in Phillips (1995), pp.191-199.

Knight, F. (1927) Review of Wealth, Virtual Wealth and Debt. *Saturday Review of Literature,* April 16, 732.

Kornai, J. (1986) The soft budget constraint. *Kyklos,* 39(1), 3-30.

Kotlikoff, L.J. (2010) *Jimmy Stewart Is Dead: Ending the World's Ongoing Financial Plague with Limited Purpose Banking.* Wiley, Hoboken.

Kregel, J. (2012) *Minsky and the narrow banking proposal: No solution for financial reform.* Public Policy Brief No.125. Levy Economics Institute of Bard College, Annandale-on-Hudson.

Laidler, D. (1993) Hawtrey, Harvard, and the origins of the Chicago tradition. *Journal of Political Economy,* 101(6), 1068-1103.

Lavoie, M. (2006) *Introduction to Post-Keynesian Economics.* Palgrave Macmillan, New York.

Lawn, P. (2010) Facilitating the transition to a steady-state economy: Some macroeconomic fundamentals. *Ecological Economics,* 69(5), 931-936.

Litan, R.E. (1987) *What Should Banks Do?* Brookings Institution, Washington, DC.

Loehr, D. (2012) The euthanasia of the rentier — A way toward a steady-state economy? Ecological Economics, 84, 232–239.

Martinez-Alier, J. (1987) *Ecological Economics: Energy, Environment and Society.* Basil Blackwell, Oxford.

Mellor, M. (2010a) *The Future of Money.* Pluto, London.

Mellor, M. (2010b) Could the money system be the basis of a sufficiency economy? *Real-World Economics Review,* 54, 79-88.

Mints, L.W. (1945) *A History of Banking Theory.* University of Chicago Press, Chicago.

Pettifor, A. (2014) Why I disagree with Martin Wolf and Positive Money. http://www.primeeconomics.org/?p=2629 (accessed 01.08.14)

Phillips, R.J. (1995) *The Chicago Plan and New Deal Banking Reform.* M.E. Sharpe, Armonk, NY.

Phillips, R.J. (1994) An end to private banking: Early New Deal proposals to alter the role of the Federal Government in credit allocation. *Journal of Money, Credit and Banking,* 26(3), 552-568.

Robertson, J. (2012) *Future Money: Breakdown or Breakthrough?* Green Books, Totnes.

Romer, D. (2000) Keynesian macroeconomics without the LM curve. *Journal of Economic Perspectives,* 14(2), 149–169.

Sandilands, R.J. (1990) *The Life and Political Economy of Lauchlin Currie: New Dealer, Presidential Adviser, and Development Economist.* Duke University Press, Durham, NC.

Schumpeter, J.A. (2006 [1954]) *History of Economic Analysis.* eBook. Taylor & Francis, Abingdon.

Soddy, F. (1934) *The Role of Money.* Routledge, London.

Soddy, F. (1933 [1926]) *Wealth, Virtual Wealth and Debt.* Second ed. E.P. Dutton & Co, New York.

Soddy, F. (1931) *Money Versus Man.* Elkin Mathews & Marrot, London.

Stiglitz, J.; Weiss, A. (1981) Credit rationing in markets with imperfect information. *American Economic Review,* 71(3), 393-410.

Turner, A. (2010) What do banks do? Why do credit booms and busts occur and what can public policy do about it? In: Turner, A. et al., *The Future of Finance.* London School of Economics, London, pp.5-86.

Werner, R.A. (2002) A reconsideration of the rationale for bank-centered economic systems and the effectiveness of directed credit policies in the light of Japanese evidence. *The Japanese Economy*, 30(3), 3-45.

Wolf, M. (2014) Strip private banks of their power to create money. Financial Times, 24 April.

Wray, L.R. (2014) Debt-free money: A non-sequitur in search of a policy. http://neweconomicperspectives.org/2014/07/debt-free-money-non-sequitur-search-policy.html (accessed 04.07.14.)

7. Conclusions

7.1. Contributions to local currency research, and some extensions of the argument

This dissertation has explored the relevance of local currencies and 100 percent reserve banking (C-PeRB) to potentially large-scale transitions to more socially equitable and ecologically sustainable forms of social organization than existing capitalist economies. A comparatively large share of the research effort has been devoted to synthetic work, rather than the collection of 'raw data' of a more limited scope. It is my judgement that there is a large need for more big-picture, interdisciplinary academic work today. For instance, before chapter 2 was published, there was no similarly comprehensive article-length review of the academic literature on local currencies. Preceding its publication by a few months was the community currency survey in *Ecological Economics* by Seyfang and Longhurst (2013), meant "to inform researchers, practitioners and policymakers of the scale and potential of these initiatives to promote sustainable development" (p.66).[35] The core of that article is a useful international survey of the evolution of community currencies through time and space over the last three decades. However, beyond recounting the hopes and beliefs of community currency popularizers, and pointing out the interesting present tendency towards deradicalization manifested by some currency types, the article is not very

[35] Although the authors use the problematic "sustainable development" label, they are critical of "ecological modernisation solutions based around market transformation and green growth", adopting instead a "new economics perspective" (p.65).

compelling about the actual potential of community currencies to promote sustainable development. This is largely because it does not engage much with the existing academic literature or consider more critical perspectives. There appears to be a certain complacency among some local currency researchers that their objects of study “evidently support various aspects of sustainable development” (p.75). If my review manages to unsettle such attitudes by showing how critical, ambiguous, or incomplete much of the existing academic literature really is, then it may hopefully serve to raise the level of the debate.

Chapter 2 does not completely reject the view that local currencies carry relevance to the ‘new economics of sustainable development’ (or whatever may be one’s preferred concept of a desirable socio-ecological transition), but instead argues that they should not presently be given much priority by the degrowth movement. That my critical assessment concerns the extent to which local currencies meet the far-reaching, radically ecologist objectives of the degrowth movement appears to have been missed by some readers. Thus David Boyle, a former community currency practitioner and British liberal,[36] blogs that “the currency world has been thrown into some disorder by an important article in an academic journal (...), which reviews all the evidence and says they don’t work” (Boyle 2013). Although he is “not sure the argument is so clear cut”, the conclusions of the article are nevertheless generalized out of context, with no mentioning of its ecologist framework. This illustrates a difficulty with communicating critical research outside academia, although “outrage in the local currency world” is probably an exaggerated characterization of the response.

---

[36] Boyle’s blog was the ’Lib Dem Blog of the Year 2013’.

Chapter 2 made the distinction between *behind-society's-back* and *appeal-to-elites* utopian socialist approaches, associating them with one or other of the local currency types studied. The choice to conduct a field study on the Venezuelan communal currencies was motivated by the fact that this experiment did not appear to fit comfortably into any of the two categories of utopian socialism, having been initiated by the central government. As indicated by the Red Nacional de Sistemas de Trueke's (RNST) rejection of the government proposal to integrate the barter systems with the public grocery chains (section 5.6), the barter activists did not – to my knowledge – try to increase their traction with political elites by deradicalizing their objectives. The government support of the barter systems also means that they cannot be easily categorized as behind-society's-back activism. In terms of funding and technical expertise, the assistance has, however, been very modest. Furthermore, like behind-society's-back currencies in general, the barter systems have not benefitted from the state's power to impose tax liabilities and decide by which means they can be discharged, which, as argued in section 2.7.2, is a historically important mechanism for triggering general acceptance of a new currency.

A few words will be said here to highlight the challenges of the taxation line of action, complementing the account in chapter 2. Tax payments are usually unevenly distributed over the fiscal year, and may significantly alter the amount of money circulating in the economy. As noted in section 6.2, in conventional monetary systems, these disruptions require compensatory manipulation by a central institution capable of effecting important changes to the money supply, i.e. a central bank. A question for future research, therefore, is to what extent local currencies that are accepted in payment of taxes but do not have any

equivalent to a central bank –the Bristol Pound for instance – are subject to such disruptions, and how they cope with them. The barter currency system of the city of Venado Tuerto in Argentina is a precedent in this regard. Until 2008, the city council accepted the local currency in payment of up to 30 percent of the council tax. Because of this,

> "at times, nearly two-thirds of the money stock ended up outside the circuit of exchange and inside the municipal coffers, considerably slowing exchange activity both in the market fairs and in the grocery stores. The city council had the power to paralyse the functioning of the Venado Tuerto Barter, not only without having to ban it, but even without the intention of doing so." (Plasencia 2012: 268, my translation)

In broad terms, the question here is whether local currency networks can effectively benefit from the taxes-drive-money mechanism without becoming ever more state-like and less horizontally organized.

In Venezuela, where the central government supports communal currencies, there is nevertheless no apparent prospect that the government would consider it politically worthwhile to take full advantage of its taxation powers by imposing, on some part of the citizenry, a fixed tax liability payable exclusively in communal currency. To repeat the observation made in section 2.7.2; if the communal currency is not the exclusive means of discharging a tax liability, the additional transaction costs it represents vis-à-vis conventional currency would still minimize its acceptability unless the tax liability is sufficiently difficult to

meet to make earning communal currency worthwhile. Given Venezuela's current monetary disorder, it may be argued that the government's priority should be to increase the acceptability of the main 'local currency' – the bolivar, among other things by strengthening the underdeveloped tax system typical of oil states (Karl 1997), before contemplating any serious increase in its support of decentralized efforts to expand the supply of exchange media in the economy.

7.2. Local currencies for involuntary rather than purposive degrowth

Different concepts or labels have been used in the preceding chapters to refer to the general socio-ecological visions: purposive degrowth in chapter 2, ecosocialism in chapter 5, and steady-state economy in chapter 6. Although they are all disputed concepts, I am not primarily concerned here with their different connotations or geographic specificity, but rather with their common focus on advancing social equity and ecological sustainability. Nevertheless, it appears pertinent to say a few words here about a notion of transition that has not been previously discussed in this thesis. Chapter 2 draws a distinction between purposive and voluntary versus chaotic and involuntary degrowth, and focusses only on the first case.[37] Purposive degrowth "can be thought of as an intentional departure from growth-based society, meant to pre-empt further environmental destruction and human

[37] The distinction is taken from Schneider et al. (2010: 511), who "distinguish between depression, i.e. unplanned degrowth within a growth regime, and sustainable degrowth, a voluntary, smooth and equitable transition to a regime of lower production and consumption".

suffering" (Dittmer 2015: 149-50). In contrast, we may think of involuntary degrowth as a forced adaptation to a society without growth in the context of a long-term crisis of global capitalism manifested as chronically deficient growth levels (a scenario that many degrowth advocates consider likely for the not-too-distant future). The existing track record of local currencies, evaluated in chapter 2, is arguably more relevant to the former scenario than the latter, given that contemporary currency experimentation has taken place within the ordinary ups and downs of capitalism.

The relevance of local currencies to long-term involuntary degrowth is more speculative, as there is arguably no close precedent for a long-term systemic crisis of capitalism (lasting more than a quarter century or so). The track record of local currencies under acute crisis conditions, where increased restrictions on popular access to conventional money generate widespread unmet needs together with idle productive capacities, may be particularly relevant to such a scenario. Section 2.3 cited research showing that LETS were unable to function satisfactorily as mechanisms for coping with economic hardships in the political economy of 1990s New Zealand. However, the outstanding precedent is the usefulness of barter currency networks to millions of Argentines during the crisis of 2001-2002 (see e.g. Gómez 2009; North 2007). Still,

> "these networks were largely based on the second-hand exchange of domestic possessions of the middle class, accumulated in previous years of relative wealth, and the networks were overwhelmed and collapsed partly because this spare capacity had become exhausted. Fortunately, important welfare policies were

> introduced by the government at this stage of the crisis. The mitigation of a more long-term crisis, in which weaker welfare policies may be expected, would require a much larger positive impact on broader productive sectors than achieved by the Argentinean barter currencies." (Dittmer 2015: 150)

As chapter 2 shows, raising acceptability of local currencies by formal productive sectors has mainly been possible by backing the money supply with conventional money. In this way, the contradiction between the increased access to resources that comes with large-scale circulation, and the difficulties of maintaining confidence and adequate management at such scales, may be partly overcome. However, such currency backing is an unworkable solution in a situation of national monetary drought. As I have argued elsewhere:

> "In Argentina, the large-scale currencies that had served the overwhelming majority of participants collapsed in hyperinflation from bad monetary management combined with widespread forgery. As this illustrates, large-scale monetary systems require vast amounts of financial and organizational resources, and it may be generalized that stable ones have historically been the work of states (...). This leaves little scope for the maintenance of materially significant currency systems in a position of resistance against the state. However, in Argentina, some smaller networks were able to continue despite the collapse of the larger ones. But by then the worst phase of the crisis was over, so these networks were useful only to a few people, often for social rather than economic reasons. Perhaps in a long-term crisis, such smaller networks could play a more lasting role. Their potential for democratic

> management, in contrast to unaccountable large-scale networks, will sustain their attraction to many degrowth advocates." (Dittmer 2015: 150-1)

Here we arrive back to the point made in section 2.7.1 about the essential uncertainty of the political economy of the future. The question remains: would a long-term crisis of capitalism mean that large populations are left to fend for themselves, superfluous to the interests of governments and capitalists, and therefore free to build economic institutions of their own, such as local currency networks? Or will substitutes to labour power, such as fossil energy, become increasingly scarce in the future, and will governments therefore intensify their disciplining of people into formal employment, leaving time-poor workers with less opportunities for such autonomous activity? These are, of course, only two among many plausible outcomes. For example, the growth of economically superfluous populations – e.g. through technological unemployment – may not primarily lead to the construction of autonomous alternative economies outside the remaining capitalist system, but instead to the overthrow of that system and the eventual (forced or voluntary) integration of these populations into new large-scale social formations (see Collins 2013 for a recent version of this argument). The future role of local currencies depends on such uncertainties, which will not be further pursued here.

7.3. C-PeRB and politics

Section 2.2 ended with the clarification that the local currency literature review preferred to point towards C-PeRB as a more promising alternative, "rather than towards general gloom". Now, chapter 6 raised many doubts about the desirability of this proposal, in particular that it represents a departure from the history of monetary policy which, judging e.g. by the monetarist experiments, is likely associated with strongly increased interest rate volatility. C-PeRB is also unlikely to be effectively implemented, given the ease with which the financial sector innovates rule-bending near-moneys, and also because it requires strong international capital controls. Perhaps it nevertheless stands a chance of attracting increased consideration in the policy debate in the context of financial crises to come. Given that very little has been done to address the inherent instabilities of the financial system that contributed to the 2008 collapse, a new financial meltdown may arrive soon enough. Even some mainstream economists now argue that 'secular stagnation' is the new normal in the US and Europe, an outlook that Streeck (2014: 58) sums up as "stagnation with a chance of bubbles". Streeck (2014: 49) also notes that "the euphoric 'BRIC' discourse has been succeeded by anxious questioning of the economic prospects of the 'Fragile Five'" (Turkey, Brazil, India, South Africa and Indonesia). But to argue that a financially unstable future means that proposals for C-PeRB will probably continue to be made, is of course not the same as to say that it will be seen as a green policy for establishing a socially equitable steady-state economy.

It was argued in chapter 2 that C-PeRB is presently a more realistic, less utopian alternative than radically ecologist local currency networks. The Marxian critique of the utopian socialists was shown to remain relevant to the study of such networks. However, nothing was said about what specific traits, according to Marx and Engels, makes their own approach less utopian, or to what extent C-PeRB fits with this specification. To clarify; they contrasted what they labelled 'utopian' socialism with their own 'scientific' socialism. In the former, "socialism is the expression of absolute truth, reason and justice and has only to be discovered to conquer all the world by virtue of its own power" (Engels 1987a: 20, cit. in Levitas 2011: 62). However, with Marx's 'scientific' discovery of the materialist conception of history and the process of expropriation of surplus value under capitalism,

> "socialism was no longer an accidental discovery of this or that ingenious brain, but the necessary outcome of the struggle between two historically developed classes – the proletariat and the bourgeoisie. Its task was no longer to manufacture a system of society as perfect as possible, but to ... discover in the economic conditions ... the means of ending the conflict ..." (Engels 1987b: 634, cit. in Levitas 2011: 62-3)

It is not necessary to subscribe to historical materialism nor historical determinism to interrogate C-PeRB along similar lines: Does the road to its adoption appear to have been shortened by present economic conditions? Chapter 2 advocated C-PeRB with reference to its contemporary potential for mass popular backing, given the "widespread popular outrage against the banking system, paving the way for an undoing of its money-creation

privilege". However, it would require considerable straining to theorize this, in Marxist fashion, as outrage of the proletariat against the bourgeoisie.

We are here dealing with issues that often appear to be neglected in ecological economics, namely political theory of social change, and the asking of questions about the potential constituency for particular visions of socio-ecological transition. In particular, such issues have not been much considered by green full-reservists, or more generally, by proponents of a steady-state economy.[38] To some extent, this is symptomatic of the difficulties of identifying plausible agents of change in green political theory (Dobson 2007: 134-46). Can a constituency for C-PeRB be identified? In the context of the mentioned contemporary outrage against the banks, the class notion that has acquired most currency is that of the '99 percent'. This amorphous notion is, however, not very useful for theorizing about who might especially favour this policy, short of most everyone. Given the debt-cutting benefits claimed for C-PeRB, it lies more close at hand to suggest that it would be favoured by debtors. In terms of social theory, this evokes Weber's (e.g. 1978: 931) analysis of class struggle in ancient society as dominated by antagonism, not between slaves and slave owners as in Marx, but between creditors and debtors. However, a successful call for the debtors of the world to unite for C-PeRB appears unlikely given its expected effects on interest rates, including, particularly in the case of a steady-state economy, possibly higher rates on average. Moreover, we may think of one common type of debtor in a capitalist

---

[38] Degrowth advocates appear more focussed on these questions: "From an ecological economics perspective, for sustainable degrowth to be successful one important step would be to provide a platform on which social movements from the North and the South, including conservationists, trade unions, small farmers movements and those movements from the South that defend a low environmental impact economy, can converge." (Martinez-Alier et al. 2010: 1746)

economy – the entrepreneur – not as an individual desiring to get out of debt, but as "a debtor by the nature of his economic function" (Schumpeter 1934: 103, cit. in Ingham 2003: 300).

The apparent lack of political analyses – like the one just sketched – among proponents of C-PeRB suggests that, in a sense, they are closer to the utopian socialists than to the Marxists, given their core strategy of persuasion of all classes, including the power elite.[39] For instance, Huber and Robertson take pains to assure the reader of the policy's respectable nature:

> "Ending the creation of money by the banks will also be surprisingly simple. The monetary and financial institutions will stay the same. Almost all the everyday routines of the banking and financial markets will continue as if nothing had happened. No one's monetary possessions, including the banks', will be touched. Nothing will be expropriated." (Huber and Robertson 2000: 20)

Similarly, Positive Money UK's key publication – *Modernising Money: Why Our Monetary System Is Broken And How It Can Be Fixed* – (with a foreword by Herman Daly), presents C-PeRB as about as political as repairing a car engine. It is perhaps not surprising, then, that C-PeRB – like *Social Credit* monetary reform before it (Wall 2003) – should be favoured by

[39] In another sense, they are closer to the classical Marxists: The top-down character of C-PeRB as a central government measure, necessarily associated with an empowerment of the state, is more reminiscent of the dictatorship of the proletariat than of the gradualist cultural renewal of society associated with utopian socialism (Levitas 2011: 53-4).

both greens and the far right. It is advocated by members of the British National Party (e.g. Bridge and Hemmings 2013), and was in 2013 included in the economic programme of the Green Party of England and Wales (Key 2013). To the extent that C-PeRB presently enjoys a constituency, it appears to be a thoroughly disparate one.

7.4. Future research

This PhD project was initiated with enthusiasm about both local currencies and C-PeRB as alternatives to the capitalist monetary systems of today. However, the conclusions of the subsequent research are largely critical: that existing research provides a very weak basis for advocating local currencies as tools for purposive degrowth; that Venezuela's communal currency experiment had not been well thought through, and that gasoline prices must be raised before ecologically sensible alternative economies can be constructed in Venezuela; that the green case for C-PeRB is not very compelling as it stands. All this suggests that more efforts need to be made to raise the level of debate about what alternatives to existing capitalist monetary systems are theoretically and practically possible. This debate is necessarily conditioned by participants' beliefs about the present and future development of capitalism. Further academic work on this subject – although inescapably speculative – would therefore be valuable (for recent contributions, see e.g. Wallerstein et al. 2013; Streeck 2011; 2014). Such work hinges, of course, on understanding the past and the present. As Streeck states:

> "Social science can do little, if anything, to help resolve the structural tensions and contradictions underlying the economic and social disorders of the day. What it can do, however, is bring them to light and identify the historical continuities in which present crises can be fully understood." (Streeck 2011: 28)

In connection with capitalism and money, one historical process that receives much attention in ecological economics is the commodification – or monetization – of nature. As mentioned in section 1.2, the merits and demerits of this process generate much controversy in the field. Critical ecological economists have become very good at arguing that the values in play in deliberations and conflicts over environmental issues are often incommensurable, and at questioning who has the right to impose a particular language of valuation (Martinez-Alier et al. 1998; Martinez-Alier 2002). However, given the tendency to focus research efforts on criticizing and resisting the monetary sphere from 'without', rather than changing its operations from 'within', the perceived need to develop a comprehensive understanding of the nature of capitalist money and its alternatives in ecological economics has been limited. It is not being proposed here that ecological economics should shift its research priorities from the former to the latter concern. Simply, it is to be noted that the intellectual achievements of ecological economics have, to date, been more considerable with respect to the one rather than the other.

References

Boyle, D. (2013) Outrage in the local currency world. *The Real Blog,* 24 May. http://davidboyle.blogspot.com.es/2013/05/outrage-in-local-currency-world.html (accessed 04.09.14)

Bridge, M.; Hemmings, C. (2013) Monetary reform. http://bnp.org.uk/news/national/monetary-reform (accessed 18.09.14)

Collins, R. (2013) The end of middle-class work: No more escapes. In: Wallerstein, I.; Collins, R.; Mann, M.; Derluguian, G.; Calhoun, C. (eds.), *Does Capitalism Have A Future?* Oxford University Press, Oxford, pp. 37-69.

Dittmer, K. (2015) Community currencies. In: D'Alisa, G.; Demaria, F.; Kallis, G. (eds.), *Degrowth: A Vocabulary for a New Era.* Routledge, Oxon, pp. 149-151.

Dobson, A. (2007) *Green Political Thought.* Fourth ed. Routledge, London.

Engels, F. (1987a) Anti-Dühring. In: *Collected Works of Marx and Engels.* Vol.25. Lawrence & Wishart, London.

Engels, F. (1987b) Addition to 'Socialism: Utopian and Scientific'. In: *Collected Works of Marx and Engels.* Vol.25. Lawrence & Wishart, London.

Gómez, G.M. (2009) *Argentina's Parallel Currency: The Economy of the Poor.* Pickering & Chatto, London.

Huber, J.; Robertson, J. (2000) *Creating New Money: A Monetary Reform For The Information Age.* New Economics Foundation, London.

Ingham, G. (2003) Schumpeter and Weber on the institutions of capitalism: solving Swedberg's 'puzzle'. *Journal of Classical Sociology,* 3(3), 297-309.

Karl, T.L. (1997) *The Paradox of Plenty: Oil Booms and Petro-States.* University of California Press, Berkeley.

Key, D. (2013) Green Party passed a motion to place money creation into public hands and end fractional reserve banking. *Positive Money,* 17 September. http://www.positivemoney.org/2013/09/green-party-passed-a-motion-to-place-money-creation-into-public-hands-and-end-fractional-reserve-banking/ (accessed 18.09.14)

Levitas, R. (2011) *The Concept of Utopia.* Peter Lang, Oxford.

Martinez-Alier, J. (2002) *The Environmentalism of the Poor.* Edward Elgar, Cheltenham.

Martinez-Alier, J.; Munda, G.; O'Neill, J. (1998) Weak comparability of values as a foundation for ecological economics. *Ecological Economics,* 26, 277-286.

Martinez-Alier, J.; Pascual, U.; Vivien, F.; Zaccai, E. (2010) Sustainable de-growth: mapping the context, criticisms and future prospects of an emergent paradigm. *Ecological Economics,* 69(9), 1741-1747.

North, P. (2007) *Money and Liberation: The Micropolitics of Alternative Currency Movements.* University of Minnesota Press, Minneapolis.

Plasencia, A. (2012) La experiencia de la Economía Naturalista de Venado Tuerto. In: Orzi, R. (ed.), *Moneda social y mercados solidarios II: La moneda social como lazo social.* CICCUS, Buenos Aires, pp. 259-271.

Schneider, F.; Kallis, G.; Martinez-Alier, J. (2010) Crisis or opportunity? Economic degrowth for social equity and ecological sustainability. Introduction to this special issue. *Journal of Cleaner Production,* 18(6), 511-518.

Schumpeter, J. (1934) *The Theory of Economic Development*. Harvard University Press, Cambridge, MA.

Seyfang, G.; Longhurst, N. (2013) Growing green money? Mapping community currencies for sustainable development. *Ecological Economics,* 86, 65-77.

Streeck, W. (2014) How will capitalism end? *New Left Review,* 87, 35-64.

Streeck, W. (2011) The crises of democratic capitalism. *New Left Review,* 71, 5-29.

Wall, D. (2003) Social Credit: The ecosocialism of fools. *Capitalism Nature Socialism,* 14(3), 99-122.

Wallerstein, I.; Collins, R.; Mann, M.; Derluguian, G.; Calhoun, C. (2013) *Does Capitalism Have A Future?* Oxford University Press, Oxford.

Weber, M. (1978) *Economy and Society*. University of California Press, Berkeley.