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A tool for building community resilience? A case study of the Lewes Pound

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A tool for building community resilience? A case study of the Lewes Pound

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In the last decade, "resilience" has gained increasing recognition as a theoretical framework for understanding and managing change in complex social–ecological systems. Resilience assessments are increasingly used to inform sustainability initiatives, strategies, and policies. The Lewes Pound represents a new complementary currency model in the UK, aiming to build community resilience. However, there have been no empirical studies to date assessing the socio-economic impacts of this model. This article addresses the need to understand how such currencies function by measuring whether the Lewes Pound is capable of building resilience. This is done by developing a novel framework for estimating economic, social, and environmental outcomes, which uses a mixed-methods approach. Findings suggest that complementary currencies can enhance social-ecological resilience through awareness-raising and changes in consumption. Although economic localisation – a key indicator – is lacking, there is evidence that the Lewes Pound has developed social interactions and changed consumption patterns of its users.

Keywords: complementary currencies; Transition towns; sustainable development; resilience; ecological economics; triple bottom line

1. Introduction

Sustainable development has been a core organising concept for environmental policy at least since the Brundtland Commission report (United Nations World Commission on Environment and Development 1987). Defining sustainable development as "meet[ing] the needs of the present without compromising the ability of future generations to meet their own needs", the report authored a concept which is open to both multiple, diverse operationalisations, and political contestation. Since its coining, the actualisation – or performance – of sustainable development has varied according to how it has been framed by different social actors (Jasanoff 2005). At the same time, the object of sustainable development is necessarily "a moving target", as social and ecological systems are complex and dynamic to the extent that they can never be fully known or understood (Gallopín *et al.* 2001). They are characterised by non-linear, emergent behaviour and uncertainties that are usually irreducible (Berkes 2007), posing major challenges for sustainability management and governance. Furthermore, the recognition that sustainability as a concept does not in itself "supply the motivation to act" (Jamieson 1998) presents policy-makers, academics, and environmental activists alike with the challenge of finding ways to conceptualise and proactively seed systemic change in production and consumption patterns.

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In summary, sustainable development is a multi-dimensional concept requiring holistic, system-based approaches to policy (e.g. Mayumi and Giampietro 2006). The literature on social–ecological systems (SES) provides one such theoretical approach by conceptualising interactions and connections at multiple systemic levels simultaneously. As a systems approach, SES analyses both open and closed systems by examining the system components and their interaction, which allows for analysis of both individual component and "emergent" system attributes. In this framework, resilience is a key characteristic of an SES, providing a parameter for the susceptibility of a system to change. Within the context of management strategies and design science, the concept of resilience has been increasingly applied as a conceptual tool for environmental adaptation. It has also been employed in ecological economics in recent years (e.g. Douthwaite 1999, Goerner *et al.* 2009, Lietaer *et al.* 2009) where it is seen as an important feature of a healthy economic system promoted through the creation and use of multiple currencies. Community-based currency initiatives use complementary currencies as a way of minimising the environmental impact of the economy, localising trade, encouraging sustainability values and community-building.

Although civil society groups are increasingly conceptualised as loci for sustainability innovations with a potential to propagate wider systemic change (e.g. Smith 2007, 2012, Seyfang and Smith 2007, Haxeltine and Seyfang 2009, Seyfang 2009), and community-based groups are beginning to be enrolled in sustainability policies (e.g. DECC 2010), community resilience is still under-researched. There has not been any in-depth studies of Transition currencies to date, and currency research has not yet developed a framework for empirically evaluating the ability of complementary currencies to create or strengthen resilience in local economies. Two questions, which are currently under-researched, are addressed here: how can community resilience be conceptualised and measured?; and, do complementary currencies contribute to community resilience?

This article draws on insights both from the literature on SES and complementary currencies to examine the impact of a new currency on community resilience. The Lewes Pound, the second Transition town currency to appear in the UK, represents a new type of complementary currency which aims specifically at building resilience in local economies. Using the Lewes Pound as a case study, this article proposes a multi-criteria framework for assessing the social, economic, and environmental impact of this type of currency. Section 2 sets the theoretical context of this mixed-method case study outlining the basic principles of resilience and examining how resilience is conceptualised in the currency literature. Section 3 goes on to set criteria for evaluating community resilience, and explains how the concept of resilience is operationalised in the study. The main findings are outlined in Section 4 and then discussed in Section 5. Conclusions on the study are drawn in Section 6.

2. Theoretical context

This section presents an outline of resilience theory and explains how the concept is employed in Transition Initiatives. This provides the context for understanding how these principles are put into practice by civil society groups and what resilience might look like at the community level. What does resilience mean in social, economic, and environmental terms? Viewing the literature on currencies from a resilience perspective, the question is then asked if complementary currencies, and Transition currencies in particular, can be viewed as tools for building resilience in local communities.

2.1. Resilience in theory and practice

Resilience is broadly conceived as an expression of a system's capacity to maintain its essential characteristics while experiencing change (Gunderson and Holling 2001). The term was introduced into ecology by Holling to denote "a measure of the persistence of systems and of their ability to absorb change and disturbance and still maintain the same relationships between populations or state variables" (1973, p. 14). *Diversity of species and functions* within ecosystems are crucial for maintaining resilience (Walker 1992), whilst functions that operate *across spatial and temporal scales* have also been found to significantly affect the resilience of ecosystems (Peterson *et al*. 1998).

Resilience is increasingly applied in resource management as a conceptual tool for adaptation in SES to environmental change (see, e.g. the Resilience Assessment Projects Database: The Resilience Alliance 2012). In this context, Walker *et al*. (2004) identified four fundamental aspects of resilience in SES:

(1) Latitude; relates to the amount of change a system can undergo before crossing a threshold after which recovery becomes impossible.
(2) Resistance; describes how susceptible a system is to change.
(3) Precariousness; denotes the distance of a system from a threshold.
(4) Panarchy; cross-scale interactions influencing the system from above or below, e.g. political and socio-economic structures or environmental changes.

The description of these variables for any particular SES is naturally approximate, given the background of unpredictable social developments and the uncertainty surrounding dynamic, teleconnected ecosystems. With such uncertainties in mind, building capacity to respond to change within institutions, and improving networks and communication infrastructure, is central to enhancing the resilience of a population (Longstaff and Yang 2008).

In a summary of a symposium on sustainability and vulnerability, Berkes (2007) identifies four strategies that have a high probability of enhancing resilience to future changes in SES: (1) fostering ecological, economic and cultural diversity; (2) planning for likely changes; (3) fostering learning; and, (4) improving communication. Further, Nelson *et al*. find that "the strong normative message from resilience research is that shared rights and responsibility for resource management [...] and decentralization are best suited to promoting resilience" (2007, p. 409). Social-ecological resilience in this way "involves enhancing the capacity for self-organization" (Folke *et al*. 2003, p. 354) in order to reduce vulnerability to environmental change.

One practice that has taken up the idea of resilience is permaculture. As a discipline, permaculture emerged out of ecology, systems theory and design science, but has developed to become a subject area of its own as well as a counter-culture and a global network of practitioners. Taking a holistic view of human societies and their environment, permaculture examines interactions and connections at all levels of SES to foster the creation of ecological support systems (Holmgren 2002). Understanding the various components of a system and their connections is key to the design process (Whitefield 1993). Modelling permaculture design on living systems, self-reliance, and self-regulation are important aspects. Just as self-regulation in organisms adjusts growth rates and behaviour at the global level, self-regulation in human systems implies striking a balance between immediate needs and long-term objectives.

The Transition movement emerged in 2005–2006 as a response to negative future effects of peak oil and climate change, and seeks to facilitate "energy descent" in communities through a wide range of activities. The movement is inspired by permaculture and its approach to design science integrating a variety of subject areas spanning ecology, agriculture, the built environment, technological innovation, ethics, and systems theory. Hopkins (2008) states that permaculture principles are implicit in the Transition approach, and the idea of resilience guides both the theoretical outlook and practical projects of the Transition movement. The concept of resilience is thus central to understanding the objectives and methods of Transition Initiatives. Hopkins (2008) employs the concept directly in the *Transition Handbook* and outlines three important dimensions for building resilient communities, which cut across social norms, the economy, and the environment: (1) diversity of elements and functions within settlements; (2) a modular structure with more internal connections and increased self-reliance; and, (3) tightening feedback loops bringing the consequences of resource consumption closer to home.

Transition Initiatives attempt to strengthen resilience in local communities through activities, including visioning exercises, awareness raising, connecting existing local groups, and a wide range of practical projects (e.g. community agriculture, car clubs, reskilling classes, neighbourhood carbon reduction groups, and local currencies). These activities are aimed at increasing social resilience (e.g. by building new networks and strengthening local identity), economic resilience (e.g. by stimulating trade and increasing self-reliance), and environmental resilience (e.g. by cutting carbon emissions and encouraging environmentally friendly agriculture). Such community action accords with Berkes' strategies for resilience by having the potential to foster ecological, economic, and cultural diversity, enhancing planning for changes, supporting learning, and improving communication. The use of complementary currencies to strengthen community resilience is an example of how Transition Initiatives attempt to find ways to counter fragility and resource-intensity in production and consumption systems. To appreciate the ways in which Transition currencies could build resilience in local communities, it is necessary briefly to examine the links between behind complementary currencies and resilience theory.

2.2. Complementary currencies: a tool for building resilience?

In terms of Walker's, four aspects of resilience, Transition Initiatives mainly address the dimensions of latitude and resistance, but on an aggregate level they might also increase panarchy by virtue of being a global experiment, allowing cross-scale adaptive evolution. The "small is inevitable" ethos of Transition Initiatives reflects a deeper critique of the dominant socio-economic structure, here summarised by Davidson-Hunt and Berkes:

> [s]table commodity production systems and centralized resource management may be efficient and desirable, but it [sic] also necessary to recognize that they may increase society's long-term vulnerability to uncertainty and surprise. (2003, p. 68)

In terms of the resilience discourse, the resistance to shocks in the global economic system is low, due to a high level of connectedness at the global level, which comes at the cost of diversity and weakened feedback loops at the lower (local) level.

Economists working in the field of ecological economics, associated with the work of Georgescu-Roegen and Schumacher, have used the systems perspective employed in natural sciences, ecology and permaculture to build economic models that internalise the environment and conceive of an economy "that develops without growing, just as the planet Earth" (Daly 1991, p. 27). At the heart of this theory lies a critique of the growth imperative and the failure of neoclassical economic analysis to distinguish between renewable and non-renewable resources (Schumacher 1974). The Other

Economic Summit in 1984 saw the creation of a "new economics" framework for exploring alternative solutions to economic problems. In this tradition, the role of money has received renewed attention and become popularised (Boyle 2002). In recent years, resilience has entered the literature as a conceptual framework for decreasing dependence on erratic global markets.

The high level of inter-linkage in the world economy, combined with the volatile nature of finance, makes local economies vulnerable to movements in financial markets (Douthwaite 1996). If a community produces non-essential goods for export while relying on imports for fulfilling primary needs, a breakdown in the supply chain could be devastating. According to Douthwaite (1996), the best option is to increase self-reliance by establishing an independent currency system. In this way, a community will have a degree of leeway, should the money supply tighten in the wider economy. In the language of SES, it is a way of building a more modular structure, increasing capacities within local communities, and engaging citizens in community goals. This accords with Dauncey's "rainbow economy" (1988) that employs a community's resourcefulness to "[allow] the members of a community a more direct and participative involvement in creating their own future" (p. 89). As such, a local currency is not an expression of isolationism; rather, it is a process that is complementary to participation in the wider economy. Indeed, a local currency could operate in a global multi-level system with "a world currency for use in international trading, national currencies for use in national trading, together with regional and continental currencies" (Robertson 1990, p. 125).

Douthwaite (1999) has likened such a monetary system to an "ecology of money" where consideration of the complex parts of the economy guides the conscious design of human societies. Diversity of money, in this view, is a key feature of a healthy economy. Such thinking has recently been developed by Lietaer *et al.* (2009) into a theory of money that draws explicitly on ecology and systems theory (see also Goerner *et al.* 2009). In this perspective, the condition of the economy is regulated by two key attributes: efficiency and resilience, defined, respectively, as "capacity to perform in a sufficiently organized and efficient manner" and "reserve of flexible fall-back positions" (Lietaer *et al.* 2009, na). Efficiency and resilience pull in opposite directions and creating a healthy economy means balancing the two.

Thus, building resilience in the economy is directly related to increasing the diversity of money, countering conventional wisdom that efficiency, mobility, and universal acceptance of money are indicative of good performance. Efficiency as a sole standard for well-functioning monetary systems is challenged in the new economics approach on different grounds: the various functions of money can come into conflict (e.g. by removing money from circulation when it is needed for transactions); the mobility of money can be detrimental to local economies; the pricing mechanism prioritises financial wealth, while externalising social and environmental costs; and, conventional money actively discourages behaviour that has social value (e.g. by rewarding employment in the formal economy and devaluing voluntary community labour) (Seyfang 2009).

Taking a broad conception of money as "an information system we use to deploy human effort" (Linton in Greco 2001, p. 28) and acknowledging that "money systems affect the world in different ways" (Douthwaite 1999, p. 10) by embodying different social relationships, this approach sees money systems as "social infrastructure with in-built incentives, behaviour framings and value", which "can be structured to deliver sustainable consumption outcomes" (Seyfang 2009, p. 144). Different types of money should thus be used according to the function and objectives of exchange. They should be designed to complement each other to integrate different aspects of the social economy.

"Complementary currencies" is a generic term comprising various exchange systems that exist in parallel with mainstream money (Seyfang 2006a). It covers a range of exchange mechanisms from commercially sustained schemes, like loyalty cards and air miles, to government-sponsored behaviour change programmes and grassroots initiatives. Complementary currencies facilitate exchanges using an alternative format to the legal tender. They exist in addition to, not as replacements of, national currencies. Grassroots currencies are typically created to engage underutilised social resources in a community. They have direct social benefits in terms of building new social networks and institutions (Seyfang 2006b). Matching needs and untapped resources through the use of complementary currencies circumvent the tendency in the formal economy to value only those skills and assets that can be marketed (Lietaer and Hallsmith 2006).

Experience from community currencies such as the Chiemgauer, a regional currency in Germany, suggests that complementary currencies can build a strong monetary infrastructure, supporting the local economy, as "[r]egional business cycles are stimulated and a regional network evolves" (Gelleri 2009, p. 71). Localising production and stimulating consumption of local goods also have direct benefits for the environment. Communities that produce most of the goods and services they require will rely less on imports and hence may have a smaller ecological footprint (Hails 2008). In the long-term, local systems of provision alter the socio-technical framework in which consumption is embedded removing some of the environmentally harmful effects of inconspicuous consumption (Røpke 1999, Burgess *et al.* 2003).

In the context of the Transition movement, complementary currencies emerged as a way to facilitate energy descent by localising the provision of essential goods and services. Within the movement, they are envisioned as being part of a wider process of "intentional localisation", which means "managing the connections between places in such a way as human freedom and connection are maximised, along with local distinctiveness and resilience" (North 2010a, p. 592). A complementary currency that can be used only within a limited locality might increase the benefit of investments in regeneration, as "pouring money into an area has minimum long-term impact if the wealth flows straight out again because there is nothing to hold it in the area" (Ward and Lewis 2002, p. 2). By enhancing the circulation of the existing money within a community, a local currency can facilitate an increase in the local multiplier because money "re-spent in a local area is the same as attracting new money into that area" (Sacks 2002, p. 6).

Since the Totnes Pound launched in 2007 communities in Lewes, Stroud, Brixton, and Bristol have developed their own currencies. These currencies share ambitions of strengthening community resilience by supporting local business and production. Transition currencies are fledgling, but fast maturing, experiments in economic localisation. As such it would be unfair to prematurely judge their ability to create resilience based on research conducted during the start-up phase which is bound to be experimental, small-scale, and characterised by trial and error. Early findings suggest that the schemes share challenges related to developing infrastructure, securing resources, building incentives for users and businesses as well as finding ways of scaling up the initiatives (Ryan-Collins 2011).

Participants in Transition currency groups who have shared insights into starting local currencies (see, e.g. Lonhurst 2010, North and Scott Cato 2010) highlight the exploratory nature of the process and associated learning (e.g. printing notes that are too big for wallets and tills or the strategic location of exchange points), and point to many opportunities and challenges which remain uncharted. In this light, the Lewes Pound should be seen as "a small acorn in need of watering, care and attention" (North 2010b, p. 172), and the research described in this article should be viewed accordingly. The intention is to shed light on the nature of the challenges local currencies face in the start-up phase, and provide a framework for evaluating the ways in which such currencies can strengthen and make their efforts to build resilience more effective.

The Lewes Pound launched in September 2008 as the second Transition currency in the UK with the aim of enhancing the resilience of Lewes. The scheme was planned to run as a pilot for the first year with the first notes expiring at the end of August 2009. In phase one, Lewes Pounds were printed in denominations of one and exchanged on a 1:1 basis with sterling. The currency functions as a voucher that can be used alongside the sterling in participating businesses and can be traded back into sterling at any time. Ideas of creating long-term resilience and intentional localisation are clearly embedded in the Lewes Pound scheme, with subsets of economic, social, and environmental objectives underpinning these goals. The Lewes Pound website states that "[t]he Lewes Pound is driven by three main considerations:

- *Economic:* According to the New Economics Foundation, money spent locally stays within the community and is re-used many times, multiplying wealth and building resilience in the local economy.
- *Environmental*: Supporting local businesses and goods reduces the need for transport and minimises our carbon footprint.
- *Social*: By spending money in local outlets, we can strengthen the relationships between local shopkeepers and the community. It also supports people finding new ways to make a living initiatives". (The Lewes Pound CIC 2010)

The Lewes Pound is thus designed as a tool for building community resilience. However, there is yet no framework within the currency literature to evaluate the ability of complementary currencies to deliver resilience objectives. The next section proposes a framework for assessing community resilience and sets out a suitable methodology for measuring resilience in practice.

3. Resilience criteria and methodology

Although a wide range of studies on adaptation and vulnerability employ the concept of resilience, there have been few empirical studies of community resilience to date. Here, the main aspects of resilience in existing studies are summarised and these theoretical dimensions are used to establish a framework for measuring community resilience. Subsequently, the methodology behind the research design is explained, as are the methods used in the study.

3.1. Choosing resilience criteria

Perhaps because resilience research emerged from ecology with a focus on vulnerability and adaptation to environmental change, studies on community resilience tend to define resilience in terms of disaster readiness/recovery and health (typically in developing economies or disaster-prone areas). However, in recent years, research agendas have begun to focus on new aspects of community resilience and to define generic dimensions that can be used for measuring the resilience of local communities. For instance, Norris *et al.* (2008) see resilience as a function of *economic development*, *social capital*, *information and communication*, and *community competence*; Magis (2010) analyse resilience in terms of *community resources* (and their development and engagement), *active agents*, *collective action*, *strategic action*, *equity*, and *impact*; and Wilson (2010) evaluates resilience according to the *multifunctionality of social*, *economic*, and *environmental capital*. Civil society (e.g. Canadian Centre of Community Renewal 2000) and academic (e.g. The Resilience Alliance 2010) groups have also published guidance on resilience assessment.

However, empirical evaluations of community resilience are lacking and further research is needed on the ability of civil society initiatives to achieve resilience and sustainability objectives. In a recent analysis of the theory and practice of resilience in the Transition movement, Haxeltine and Seyfang (2009) found that while resilience has been an effective "motivating framing concept", it is less clear "what building resilience might involve in practice (for specific geographical cases, and for different disturbances) and [extent of] the ability to make it happen on the ground (resources, motivated individuals, etc.)" (p. 20). A framework for evaluating such practices and measuring a community's capacities is necessary if projects aimed at building resilience are to be effective because "without an adequate conceptual and operational framework for resilience, the activities of the initiative are at risk of being counterproductive at the community level" (Haxeltine and Seyfang 2009, p. 20). This study suggests one such framework incorporating indicators for social, economic, and environmental outcomes.

Based on the literature reviewed above and the specific objectives of the Lewes Pound, a range of indicators were developed to capture the economic, social, and environmental aspects of community resilience (see Table 1). These indicators provided a framework for systematising questions about the ability of the Lewes Pound to strengthen the connections and functions between different elements of Lewes, viewed as an SES. Although the Lewes Pound is in itself an expression of diversifying money systems, the central questions in terms of resilience-building revolve around the impact and the functioning of the scheme.

Table 1. Resilience criteria broken down into social, economic and environmental indicators.

	Questions
Economic	
Localisation	In what ways does the Lewes Pound facilitate localisation of goods and services?
Infrastructure	Does the Lewes Pound create new infrastructure for the provision of goods and services?
Uses	Does the Lewes Pound encourage new uses of money?
Changing consumption	Is the Lewes Pound affecting the consumption patterns of its users?
Social	
Community building	How does the Lewes Pound strengthen the local community?
Awareness raising	Does use of the Lewes Pound contribute to enhanced awareness?
Values and attitudes	What are the effects of the Lewes Pound on the values and attitudes of its users?
Local identity	Does the Lewes Pound strengthen local identity?
Well-being	Does using the Lewes Pound bring benefits in terms of well-being?
Function	What are the main obstacles for diffusing the use of the Lewes Pound?
Environmental	
Ecological footprint	How does the Lewes Pound affect the ecological footprint of Lewes overall?
Sustainable consumption	Does the Lewes Pound shift consumption patterns in the direction of sustainability?
Environmental side-effects	Are there any unforeseen environmental benefits from using the Lewes Pound?

Integrating economic *and* social *and* environmental criteria ensures that "non-marketable" and bio-physical outcomes of the project are captured, while including an indicator for the functioning of the scheme addresses the question of adequate capacities and resource availability. The criteria can thus be used to measure the different dimensions of resilience described in the literature while they also provide guidance for project organisers and managers as to where potential synergies exist and which aspects of the scheme are most effective or which could be improved. Although these indicators were developed specifically to operationalise resilience with regard to measuring the impacts of the Lewes Pound, the methodology could easily be replicated and the indicators could be adjusted to other civil society projects.

3.2 Methods

Estimating the economic, social, and environmental impacts of the Lewes Pound called for the use of different methods to obtain the relevant information for each of these three areas. An integrated approach to qualitative and quantitative analysis was, therefore, appropriate ensuring that the most suitable technique was used for capturing the distinct aspects of the Lewes Pound (Tashakkori and Teddlie 1998, Bryman 2006, Moran-Ellis *et al.* 2006). Using a combination of surveys and semi-structured interviews made it possible to capture data that are both specific and open-ended as well as allowing for integration of emerging concepts (David and Sutton 2004). In addition to measuring the "intangible" values that are left out by conventional auditing methods (Nicholls 2007), a multi-criteria framework can also help build strategies for improving the functioning of the Lewes Pound (MacGillivray *et al.* 1998).

For each of the questions associated with the indicators in Table 1, the object of measurement was determined and a set of proxies were defined as indicative for each aspect. The proxies delineated where to look for the relevant data and who to include in the data collection. For example, three questions adequately described what was being measured in the question on localisation: (1) how is demand for local goods and services affected?; (2) how is supply of local goods and services affected?; and, (3) is there an increase in local wealth? The proxies used for each of these were: (1) an estimation of whether Lewes Pounds primarily substitute spending in sterling; (2) an assessment of whether the Lewes Pound affects business turnover; and, (3) the local multiplier. From this rationale, six sources of data were identified: (1) surveys of businesses; (2) surveys of users; (3) interviews with users; (4) interviews and information from organisers; (5) Lewes Pound group surveys of businesses and users (the Lewes Pound group were collecting information from businesses and users around the same time); and, (6) observations from fieldwork.

Once the source and methods to obtain the data were clarified, the information required was identified and questions formulated where this was relevant. From this, the surveys and interviews were created. The business survey was constructed as a self-completion survey. Although around 140 businesses appeared on the Lewes Pound website as registered traders, only around 70 of these were located in the town centre and could be immediately accessed. Sixty-five surveys were delivered and 62 responses received. People on the high street were addressed for the user questionnaire-surveys: 51 out of the 150 people approached were users and 41 of these agreed to participate. The Lewes Pound group shared the raw data from their surveys – there were 64 user and 65 business responses. The interviews were designed as semi-structured interviews. To reach regular users, a request for interviewees was sent out via the "100 Club" mailing list (a regular newsletter for the first 100 people to sign up to using the Lewes Pound). One interviewee was also enlisted from conversation on the street. In all, five semi-structured interviews were conducted. Although this is a relatively low rate of participation, the interviews seemed to reach a point of saturation as the last interviews touched on themes similar to the earlier ones. The data from the surveys and interviews were coded and written up in Statistical Package for the Social Sciences (SPSS) for analysis.

It should be kept in mind that this is an ex post assessment and that the intention is not to estimate a definitive difference between the resilience of Lewes "before and after the Lewes Pound" but rather to evaluate the ways in which the Lewes Pound builds potential for increasing resilience in Lewes. The findings are an assessment of the first stage of an incipient economic experiment. The potential of the Lewes Pound to create resilience is, therefore, also prefigurative, and many of the effects, in terms of actual increased resilience, can only be fully assessed once the scheme has matured.

4. Findings

This research was conducted in May 2009, some 8 months after the launch of phase one of the Lewes Pound. In phase one, Lewes Pounds were exchanged for sterling through three main issuing points as well as at the monthly local farmers market; and the currency was accepted by around 140 businesses as well as traders at the farmers market. Phase one of the Lewes Pound ended with the launch of phase two on 3 July 2009, in which new denominations of 5, 10, and 21 pounds were introduced.

4.1. Economic indicators

A reliable quantitative approximation of the local multiplier was unattainable and my estimate relies on data from the issuing points, businesses and users, and a descriptive account of the scale and flow of the circulation system. A total of 33,000 Pounds were issued and the organisers' estimation of the number in circulation at the time of this research varied between 5 and 20,000. The Town Hall was the only one out of the three official issuing points that kept a record of exchanges – access was given to accounts for the period between 10 November 2008 and 19 June 2009. This revealed a modest total flow of Lewes Pounds into the economy (see Table 2). It is interesting to note that the first and second half of this 31-week period differ significantly from this pattern, possibly reflecting the decreasing "novelty value" and increasing lack of willingness to change into Lewes Pounds towards the expiration date of the money. The two other issuing points confirmed this trend.

By design, every Lewes Pound stays within Lewes (although there was a substantial leakage of the Pound when a number of people started selling the notes as collectors' items on the Internet) and the multiplier effect is, therefore potentially large as there was

Table 2. Exchange of Lewes Pound at Town Hall, November 2008–June 2009.

Period	Sterling in/ Lewes Pounds out	Lewes Pounds in/ sterling out	Weekly average[a]	
10 November–24 December	1639	934	234	133
5 January–26 February	832	565	104	71
27 February–24 April	812	1156	102	145
25 April–19 June	548	867	69	108
Whole period	3831	3522	124	114

[a]Rounded to nearest integer.

an overall influx of Pounds into the economy. However, this depends entirely on whether Lewes Pounds are used merely as a substitute for spending that would have gone to local businesses anyway. The online survey conducted by the Lewes Pound group suggests that using the Pound affects spending in local shops positively: 51.6% responded that they have used local shops more since the beginning of the scheme and 43.8% reported that their overall spending in local shops has increased. This supported the survey conducted for this study, which found that 39% reported an increase in their spending on local produce.

Although almost half of the users surveyed the estimate that they pay only 1–2% of their shopping in Lewes Pounds, a large number of people pay for a significantly larger proportion this way; more than one in ten pay for 30% or more of their shopping in Lewes Pounds. This should be seen against the finding that 78% of businesses state that purchases in Lewes Pounds are for items costing less than £10 (55% that purchases are smaller than £5). Nearly every Lewes Pound held by users stay in circulation: only 4.9% of users change Lewes Pounds back into sterling. A further outcome that is not observable directly in the circulation system may contribute to the local multiplier: increased spending in local shops in sterling due to the Lewes Pound. However, the extent to which this indirect change in spending habits took place is not directly measured in this research.

Most businesses cannot pay their suppliers in Lewes Pounds, either because their suppliers are not local or because they do not accept it. Although one in five businesses respond positively to the idea of (part-) paying their suppliers in Lewes Pounds, only two businesses report that they actually do. Likewise, only two businesses were found to pay their staff in Lewes Pounds. Thus, the primary ways for businesses to keep the Pounds in circulation are using them for personal purchases or giving them back in change. Of the businesses surveyed by the Lewes Pound group, 10.7% use Lewes Pounds for personal purchases (6.2% spend all their pounds this way). On the question of how large a percentage of their Lewes Pounds are given back in change, 40.5% answered that half or more than half is given back to customers. While 51.4% of businesses state that they exchange none of the Lewes Pounds they hold back into sterling, 45.9% say that they change half or more and 32.6% that they exchange more than 90% of their holdings. Thus, a relatively large proportion of Lewes Pounds is taken out of circulation by the traders. This happens because businesses feel they have no immediate use for the Pounds they accumulate; the two main reasons being that they cannot use them to pay their suppliers or that customers will not accept them as change. However, the Lewes Pound does seem to have some effect on the attitudes of shop owners as 14.8% say that they have considered substituting some of their imported products with local ones since they started accepting Lewes Pounds.

4.2. Social indicators

The ability of the Lewes Pound to engender a sense of community spirit is most clearly manifest in the attitudes of businesses and users. This section examines how the Lewes Pound affects the values, well-being and identity of participants in the scheme, as well as considering the impacts on local economic infrastructure. As noted above, few businesses use Lewes Pounds to source goods (although there is some evidence that the Pound is used as a form of payment outside the high street shops). However, the scheme has provided some businesses with new opportunities to reach customers and nearly half of participating traders report that the Lewes Pound is a topic of conversation with customers on a weekly basis; 36.6% of users say that they have a conversation about the Lewes Pound once a week or more. Hence there appears to be an effect, if only moderate, in terms of building new relationships between businesses and users and among users themselves.

This effect is likely to be stronger in those areas of retail where the largest amount of Pounds is spent, i.e. local produce in food and speciality shops.

Within Lewes there are two discernible impacts on the local identity. One is that, among some users, the Lewes Pound becomes associated with what they feel is unique about Lewes as a place to live:

> It's given me something that I like, and have a sense of, and when I've got friends that say "I've heard about the Lewes Pound in the paper" ... Whether that affects other people in Lewes in the same way I don't know. It has certainly given me a sense that this is an unusual and special place (personal communication, May 2009).

In this way, the Lewes Pound is conducive to a sense of pride related to place. The other effect is that using the Lewes Pound becomes a way of indicating to other Lewesians that the user values the local community:

> There is a kind of feeling that goes with spending and receiving Lewes Pounds [...] it is like a signal to people, and a signal from them to you, that they are concerned about [the community] (personal communication, May 2009).

Thus, the Lewes Pound embodies specific values and ideals to users who spend the money frequently. These users prise local identity, sustainable living, and active participation in the community, and see the scheme as a "political act" or as part of "a wider consciousness". Whether the Lewes Pound cultivates such attitudes or simply reinforces already-held beliefs is difficult to estimate on the background of this research which only conveys peoples' current values. However, the Lewes Pound is undoubtedly empowering people in expressing these values. One user said that the Lewes Pound "is like a reminder in my purse all the time". In this way, it is felt that the consequences of consumption choices become more apparent and that the user takes "responsibility in a different way than just putting the cost on a credit card".

An unexpected outcome observed during the research was that the Lewes Pound also seemed to expound certain social divisions within Lewes. Some non-users see the scheme as "quaint" and perceive users as having a "head-in-the-air" attitude. One person identified usage of the Pound with a certain type of people referred to as "lentils": "Lewes lentils [...] 'oh, we mustn't have this ... oh, it's so wonderful not to have an incinerat ... no, I walk everywhere ... no, I grow all of my own clothes ... oh no, I ...' lentils. You get the idea". This reflects the finding that many Lewes Pound users typify the ethical consumer and can be charged with assuming a moral high-ground.

4.3. Environmental indicators

The environmental benefits flowing from use of the Lewes Pound are difficult to measure and any estimate will have to be based on inferences from business and user behaviour. Although 14.8% of the traders have considered substituting imported goods with local ones, there has been no direct impact on sourcing. Because most businesses sell products that cannot be sourced locally, such as tobacco, fabrics, toys, cards or books, it is not possible for traders to substitute with local goods – in this way – Lewes is an integrated part of the national and global economy. But the Lewes Pound aims to bolster local trade and will affect businesses that deal with local produce to a larger extent. The businesses that do pay their suppliers in Lewes Pounds are shops that can source food locally: a grocery store, a café, a vegetable box scheme and traders at the monthly farmers' market. Food is also the main good on which users spend their Pounds: 66.7% of users spend 70% or more of their Pounds on food and 38.5% spend all their Pounds this way. Also, 59.5% of users report that the food they buy with Lewes Pounds is different from the food they buy with sterling and 70.3% state that they buy more local food as a result of using the scheme. It is pertinent to conclude that there is a change in spending habits and that users' overall food miles are likely to be reduced as a result. 55.3% assert that they buy more environmentally friendly products after beginning to use the Lewes Pound and 43.2% say that they buy more organic produce. Hence there seems to be a noticeable change in consumption patterns from users' self-reported appraisals, but the extent to which decreasing food miles and changing spending habits affects users' ecological footprint is not quantifiable.

If there is a greening of consumption as a result of changed spending habits, it is not possible to measure the magnitude of this effect. But it is reasonable to expect that there is a real benefit to the environment from a focus on local produce. This ties in with the changes in awareness and attitudes described above. The primary spill-over effect of the Lewes Pound in environmental terms is enhanced awareness and empowerment of green consumption which could lead to behaviour change in other areas of users' lives. But such effects of the Lewes Pound will need time to take root and any indirect environmental benefits are better estimated in the long-term.

5. Discussion

Table 3 gives an overview of the findings with regard to each indicator along with an estimate of any change generated by the Lewes Pound. The evaluation of the strength of a change is given on a three-point scale where √ is a small impact, √√ conveys that a considerable change has taken place, and √√√ indicates that a strong impact is demonstrable (absence of a √; means there has been no measurable change). These ratings are suggestive and should not be taken as absolute; they are merely a means of communicating complex content in an easily accessible format. Explanatory remarks are given for each area justifying the valuation.

On the background of this assessment, there is evidence that the Lewes Pound contributes to the resilience of the wider community in Lewes. This is especially the case with changing consumption patterns, awareness raising, building positive attitudes and values and strengthening local identity. Although there is an increase in local wealth via the multiplier effect, there has been little impact on localisation because most businesses cannot source their goods locally. An increase in demand for locally produced goods could eventually stimulate local production, but phase one of the Lewes Pound scheme was too small in terms of scale to bear on this aspect. Functioning of the scheme is in itself not an indicator for the resilience of the wider community, but it underpins all the other indicators. This indicator relates to the Lewes Pound's circulation system, community support building, and the exchange mechanism. It is not possible to discuss these in detail here.

This research should be interpreted in view of the small scale of phase one of the Lewes Pound. With only 5–20,000 Lewes Pounds in circulation, the overall economic impact is small, even assuming that every Lewes Pound is spent five times on average before it leaves circulation. *However, this was to be expected due to the early stage of the scheme. These findings represent an economic microcosm within Lewes in the start-up phase of the scheme*. Expanding the scale of the scheme holds some interesting prospects. The second phase has provided the Lewes Pound group with new opportunities to secure the funding and resources necessary to run the scheme on a sustainable basis. What appears to be the crucial element in scaling up the Lewes Pound is persistent management of public

Table 3. Impact of Lewes Pound on local community.

Indicator	Change	Remarks
Localisation	√	Although an increase in local wealth can be attributed to the Lewes Pound through the local multiplier and increased spending in local shops is additive, there has been no change in how businesses source their goods
Building infrastructure	√√	Businesses have found new ways to reach customers and there is some evidence that relationships between shops and customers have strengthened. Eight in 10 users would accept Lewes Pounds as part of their salary
New uses of money	√√	Despite the lack of discounts and incentives to exchange into Lewes Pounds they are widely used and 1 in 4 have found ways to spend them outside the shops
Changing consumption	√√√	There is a noticeable impact on consumption patterns with users spending a significantly larger amount on local produce and more environmentally friendly products after using the Lewes Pound
Community building	√√	There is a strong sense of community among users but the presence of strong social groupings requires that the scheme avoids association with any one group
Awareness raising	√√√	There is a clear impact on awareness of the scheme itself, spending habits and community issues
Values and attitudes	√√√	The Lewes Pound embodies distinct values and attitudes of responsible resource consumption, active citizenship and sustainable living to its users
Local identity	√√√	The media attention has given businesses a sense that the Lewes Pound has brought more customers through publicity for the town. Shops and users alike associate the scheme with what is unique about living in Lewes
Well-being	√√	Although these benefits may be limited to those who use the scheme regularly, Lewes Pound users report enhanced well-being and a sense of empowerment
Functioning of the scheme[a]	√√	The Lewes Pound circulates easily between users and businesses but some shops accumulate notes and have no immediate way to re-spend them
Ecological footprint	√	There seems to be a real impact in terms of low food miles for Lewes Pound purchases but exactly how this translates to users' ecological footprint is uncertain
Sustainable consumption	√√√	The Lewes Pound encourages and affects purchases of sustainable products
Environmental side-effects		These effects are long-term and could not be evaluated

Note: *Key*: none, no measurable impact; √, small impact; √√, considerable impact; √√√, large impact.
[a]See discussion section.

perception and careful attention to the circulation of the money. The capacity of the Lewes Pound to build resilience during its first year running suggests that there is potential to build a more diverse and self-reliant community that is better able to resist disturbances through the use of a complementary currency.

This research affirms that complementary currencies can enhance social-ecological resilience by raising awareness, supporting local infrastructure, and changing consumption patterns. The principal way this occurs relates to the second dimension of resilience in SES identified by Walker *et al*. (2004): changing susceptibility to external shocks. By instigating the process of localisation and building new connections within the community, the Lewes Pound can strengthen resistance to disturbances in the wider economy and decrease vulnerability stemming from dependency on external infrastructure which lacks fall-back options. Although immediate localisation is absent, there is evidence that the Lewes Pound has increased local wealth, developed social interactions and changed consumption patterns of its users. This can be seen as a process of reconfiguring the balance between systemic efficiency and resilience in the economy of Lewes by shifting focus away from growth towards development based on diversity and connectivity (Lietaer *et al*. 2009). Because the Lewes Pound is designed for circulation within a limited area and has a strong social aspect, it strengthens the function of money as a means of exchange while discouraging the storage-of-value function and limiting its mobility. Further, by embodying distinct values and encouraging behaviour that has social value, the Lewes Pound can be seen as social infrastructure that drives sustainable consumption (Seyfang 2009).

6. Conclusion

Although the theory of resilience is well established and civil society groups are using the concept as a "motivating framing concept", there is still little knowledge of how effective such civil society initiatives are at building community resilience on the ground. This research suggests that complementary currencies can be used as a tool for building resilience and that Transition currencies in particular can strengthen sustainable consumption values and attitudes of its users.

The methodology of this framework could be replicated to compare the findings with other complementary currencies and community initiatives for building resilience. However, measuring resilience in this way is clearly a resource-intensive undertaking that requires time and dedication; ideally this sort of evaluation should be embedded into the set-up and management of a project. This would also provide greater depth in the analysis of how a project develops over time, something this research was not able to examine in detail. The findings are therefore indicative, and should be seen as a snapshot of the Lewes Pound as it moved into phase two.

It remains to be seen whether this type of currency will work on a larger scale and provide long-term benefits in terms of localisation. This said, scaling up might actually mean the creation of other local currencies elsewhere, a network of localised currencies, because the aspiration of localisation means that scale is bound to be limited. The bundling of local currencies with similar objectives under the umbrella of Transition and access to a peer learning network is a real benefit here. Further, there is a limit to the extent to which a currency group can simply determine the scale at which a currency operates (North 2007) as currencies grow organically with its network of users. More research is needed to examine how Transition currencies function once the initial phase of building support and the circulation system is complete and the scheme is scaled up to become an established complementary currency. It is unclear whether localisation is possible simply by encouraging local demand through a complementary currency without policy support. If the aim is to create an independent currency that is fully resistant to shocks in the national and international economy, options for backing the money by other means than sterling should be explored.

It will also be necessary to compare different exchange mechanisms, investigate the possibilities for enhancing circulation (e.g. by introducing demurrage *so that the value of the money decrease with time* as is the case with the Stroud Pound) and the role of public perception in creating a successful currency in order to understand how complementary currencies of this kind best build resilient communities. There might also be a role for banks or building societies as with the Berkshares currency.

In summary, this research suggests that complementary currencies can be an effective tool for building resilience and aiding the transition towards more sustainable systems of provision and consumption. However, given the diversity of currencies, and the multiple ways they can structure sustainable consumption outcomes, they are not an all-purpose solution and great care should be taken to ensure the sustainability of the scheme itself. It may be that support and resources from local councils and other policy-makers are needed to ensure the long-term viability of local currencies. The main way policy can assist local currency projects is through providing resources and building partnerships with currency groups. The difficulty here might be that it is not always clear to policy-makers which sustainability outcomes a currency delivers. The type of assessment suggested here for evaluating such outcomes could be used to analyse and communicate strengths and weaknesses, and to build bridges between policy and the grassroots.

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