An Economic Anthropology of Computer-Mediated Non-Monetary Exchange in England

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For my parents

Abstract

This thesis presents two studies of computer-mediated non-monetary exchange. The Internet has improved the potential for previously unconnected people to organise into interest groups with the intent of meeting offline. This has resulted in a range of organisations emerging with the explicit aim of helping people to give and share resources. These organisations typically reject money and markets, insisting that social interaction should occur through generosity alone.

The first study presents a netnography and depth interviews which reveal how technology is used to enact and influence the management of identity, partner selection, ritual normalisation, and negotiation of property rights. The findings have significant implications for the design and management of systems that encourage non-monetary forms of collaborative consumption.

In the second study a longitudinal social network analysis reveals how the social structures involved in these systems have no obvious historical precedent. This has implications for the way in which the social sciences should conceptualise reciprocal economic arrangements. It also raises some sociological implications for the possibility of designing economic systems in the absence of money.

Finally, a new approach is proposed which advocates diachronic analysis of property rights as a means to explain how markets and institutions that try to subvert markets exist alongside each other.

List of Publications

Each of the chapters included for consideration in this thesis contain material published in various academic journal and conference proceedings. A list of these publications can be seen below. Original material was occasionally the result of collaboration with the thesis supervisors, wherever this occurs appropriate references can be seen in the body of the text.

Harvey, J. (2015) 'Morphogenetic institutions', 18th annual conference of the International Association of Critical Realism, University of Notre Dame, Indiana

Harvey, J. (2015) 'The emergence of economic institutions', Ephemera Journal Conference, Moscow

Harvey, J, Smith, A., Golightly, D. (2014) 'Giving and sharing in the computer-mediated economy', *Journal of Consumer Behaviour*

Harvey, J, Golightly, D., Smith, A. (2014) 'Autotelic economics and reflexivity: the case of Streetbank.com', 17th annual conference of the International Association of Critical Realism, London

Harvey, J, Golightly, D., Smith, A. (2014) 'HCI as a means to prosociality in the economy', In: CHI '14: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Toronto, Canada.

Harvey, J.; Golightly, D.; Smith, A., (2013), 'Sharing and Human-Computer Interaction', at 27th International British Computer Society Human Computer Interaction Conference: The Internet of things, 11th-13th September, Brunel University, UK.

Harvey, J.; Smith, A.; Golightly, D., (2013) ' Researching gift economies online, offline, and in-between', at 4th Digital Economy Conference: Open Digital, 4th-6th September, MediaCityUK, Salford.

Acknowledgments

'I have always believed that scientific research is another domain where a form of optimism is essential to success: I have yet to meet a successful scientist who lacks the ability to exaggerate the importance of what he or she is doing, and I believe that someone who lacks a delusional sense of significance will wilt in the face of repeated experiences of multiple small failures and rare successes, the fate of most researchers.'

— Daniel Kahneman,

The past four years have been enjoyable but challenging. I am grateful to a lot of people that supported me during the ups and downs. I wish I possessed the relentless optimism mentioned above. I can't remember all of the times that I was told to get a *real* job, as if intellectual pursuits are of no practical consequence to the world. In the early stages of research, whenever the purpose of my work was questioned, I would often agree, raise my hands in deference and feel slightly embarrassed. It was only through the support of other people that I gained a sense of optimism worth keeping.

Firstly, I must thank EPSRC and Horizon for giving me the opportunity to spend time thinking about the world without clocking in and out. My supervisors have been an unrivalled source of intellectual inspiration and - perhaps more importantly - friends. David Golightly is one of the most considerate people I have ever met. His familiar accent and self-deprecating humour belie a fierce intelligence, but the Geordie twang is a comforting reassurance in the often characterless void of academia. Andrew Smith is a rare breed: he has a breadth and depth of knowledge to which few people can compete. This would be intimidating if he wasn't capable of an equal level of humility. To both gents I am eternally grateful.

I'm not sure what my parents thought when I said I was going back to university, but they have been a constant foundation whenever I wavered. My Mam's faith in the common good and Dad's scepticism of received knowledge are two virtues I admire most. When I left the North East five years ago I persuaded my brother to join me on a bizarre educational pilgrimage. At times he has been an emotional crutch for me, but his accomplishments during this jaunt have also been a source of inspiration. As a child I spent a lot of time with my Grandparents and I'm

thankful for them always being there for me. Over the past two years it has been a pleasure to spend more time with them, particularly through the shared pleasure of growing vegetables in a communal allotment. My Granddad would probably call it something else but he unwittingly taught me a great deal about non-monetary economics!

There are a number of friends (Liam, Stu, Healey, Si and many other unfortunates) that have patiently listened to my late-night gobbledygook and offered suggestions, often through a haze of booze. To them I say thanks for the therapy.

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Chapter 1: What does it mean to give a gift in contemporary society?

'In the beginning, there were markets.'

(Oliver Williamson, 1975, p.20)

The notion of the *gift* in contemporary society is a slippery idea to pin down. It seems to occupy different antipodes in different minds. Orthodox economics teaching condemns gifts as the runt in the litter of exchange-types. Textbooks almost universally recite the same simple folklore. Primitive society, so the story goes, existed in much the same way as capitalist societies exist today. Competitive trade is therefore an essential feature of all societies and originally took the form of bartering, for example, 'I'll swap one of my cows for ten of your chickens' and vice-versa. Once the size of a society grows sufficiently and division of labour increases in complexity an essential new feature emerges: money. Quantitative currency is the solution to the inconvenience of barter, sometimes called the double coincidence of wants. The value of any human action, the story assumes, can be understood as *expressed preferences*. But because of the potential for conflict between these individual and subjective responses there is also a need for an objective measurement system. These measurements come to represent how all people calculate just how preferable any scarce resource is to them as an individual. Means-to-end calculation naturally comes to be the basis of all social experience.

The description above is a simplification, to a certain extent, but the general thrust of the argument is surprisingly consistent. The main problem is that there is no historical evidence on which the folklore is actually based – it is a convenient fiction. The idea that human action can be understood in such mechanical terms is peculiar to many social scientists, indeed there are no anthropological records available today that describe a society in which pure barter has ever existed. The economic historian Fernand Braudel (1982) recognised the significance of this fact decades ago, just as others before him did (e.g. Tarde, 1902;

Bataille, 1949/1991; Schumacher, 1973) and others continue to do today (e.g. Gibson-Graham, 2006; Graeber, 2011). And yet, the myth persists.

The anthropological rebuttal of the origin of markets is an affront to academics on the political right, but it also undermines arguments traditionally made by the left, particularly following Marx (1876/2009). The philosopher DeLanda notes that this occurs through a critique of 'the market' as the core of all economic thought, or what is referred to elsewhere as 'capitalocentrism'[1]. Braudel, for instance, presents a broad range of empirical data covering the past few hundred years and refers to two important economic arrangements that recur throughout history: *non-capitalist markets* and *capitalist anti-markets*. These examples, he contends, highlight the constant heterogeneity of economic arrangements present in societies at any given time. The constant tension between market and anti-market creates a problem for so-called 'free market' politicians that advocate an extreme reading of Adam Smith's 'invisible hand' argument (1776/2007) i.e. the idea that economies work best through spontaneous coordination in a market. But Marxists too must also confront the issue that capitalism is not simply a homogenous social monolith.

> *'We should not be too quick to assume that capitalism embraces the whole of western society, that it accounts for every stitch in the social fabric ... that our societies are organized from top to bottom in a 'capitalist system'. On the contrary ... there is a dialectic still very much alive between capitalism on one hand, and its antithesis, the 'non-capitalism' of the lower level on the other.'*
>
> Braudel (1982, p.630) cited by De Landa (1999)

Economic anthropologists and historians commonly refer to the market ideal through a dualistic opposition or what Braudel referred to as the other 'level'. This opposition is premised upon the possibility of mutuality between groups of people and is characterised by cooperative as opposed to competitive behaviour. It has been called 'base', 'baseline communism' and in secularised market economies much of the behaviour also often falls into the 'informal' economy

[1] The phrase coined by Gibson-Graham (1996)

(Gudeman, 2008; Graeber, 2011; Hart & Hann, 2011). The purpose of this thesis is to investigate non-monetary economics in contemporary English society. This is an age in which the Internet has enabled people from a broad range of socio-economic backgrounds to organise into groups. Many of these groups (four of which are examined in this thesis) are organised with the explicit intent of giving and sharing resources whilst also rejecting money as taboo. This thesis will not offer a combative account of applied ethics, nor will it argue for or against specific economic institutions. Instead, this is an inquiry into the nature of the 'other' side of the economy and how networked technologies, such as the Internet, are influencing it. Throughout history a wide range of economists have analysed the mutualistic aspect of economies and called for it be given greater public recognition; indeed, some of their followers are perhaps even dogmatic in their determination. There is a rich history of thought, particularly of a socialist and anarchist flavour that has championed mutuality[2], but it is by no means the preserve of history. Some academics see non-monetary economics as a potentially transformative force for good in the world (e.g. Elder-Vass, 2014), or as a means of direct political action, as can be seen in certain strands of the global 'Occupy Movement' (Graeber, 2013).

Internet-enabled collaborative consumption

The price of computational devices has fallen dramatically over the past two decades. As Internet penetration rates have increased there is now an almost ubiquitous opportunity for people to utilise the internet through laptops, tablet computers and mobile phones. This huge quantitative leap in the number of devices which can access the Internet has brought with it opportunities to reconfigure how economic resources are produced, owned and consumed. The idea of collaboration during consumption is an idea that has been studied academically for over thirty years[3]. But it is only in the past few years that many commercial opportunities have become viable, regardless of whether organisations operate as a traditional limited company or follow a not-for-profit

[2] For instance Marcel Mauss (1925/1967) and Peter Kropotkin (1902/2006) both examined the basis of mutual aid in depth

[3] The term *'collaborative consumption'* was coined in 1978 by Felson and Spaeth

model. Popular media channels in England from across the political spectrum[4] have discussed this new wave of organisations as if they were inseparable, referring to them as a totality called the 'sharing economy'. The message from most outlets is consistently positive. Some have even gone so far as to suggest that these organisations will help to reduce income inequality and potentially even threaten traditional capitalism. The nomenclature of the 'sharing economy' advocates is highly contradictory. Indeed, the term is a misnomer that conflates people that are actually sharing resources with those that make money through commercialised forms of collaborative consumption.

This is not just a debate about wordplay. To conflate the two sides of the economy is to merge two forms of economic morality which should be recognised as distinct. They exist alongside each other but they are not the same. Depending on one's preferred definition of the word 'economy', the phrase 'sharing economy' is either a tautology or an oxymoron. The etymology of the word economy has two root words: oiko (house) and nomos (rule or law). The original definition is said to have meant the art of household management, or in other words, how resources are shared among kin (Aristotle, 2009, p.110). Various 20th century economists (Hayek, 1982; von Mises, 1949) opposed this definition because, for them, the central aim of economics was to gain a scientific understanding of the interplay between all decision makers in society not just to analyse individual households. Hayek (1982, p.108) proposed the word 'Catallaxy' as an alternative which derives from the Greek verb 'katallatein'. His definition meant not only to change or exchange but also to receive a person into favour or debt. It therefore refers to the order brought about by the mutual adjustment of many individual economies in a market. This higher level definition is the meaning that most economists already give to the word 'economy'. If these two opposed definitions are analysed in relation to the phrase 'sharing economy' the most basic terms indicate either *sharing sharing* or *sharing exchange*, neither of which make any real sense.

The important distinction between the definitions is the concept of exchange. Exchange is presupposed by the possibility of debt. Debt is a moral position that

[4] A huge number of column inches have been devoted to the 'sharing economy' concept in publications such as BBC, Financial Times, Economist, Guardian, Daily Mail, and Daily Telegraph.

stands in clear opposition to sharing. The tension between debt and sharing is at play in all economies. If the two are conflated, the significance of both is diminished. Much of the activity that goes on in the informal economy occurs through generosity, it is prosocial and appears as services in kind. The informal economy is therefore not always characterised as an exchange or a transaction. It is done without receipt, without quantification of value, without audit trails or records. Indeed, in England much like other market-driven economies 'to give' and 'share' are regularly discussed as a form of kindness or benevolence which promotes prosocial relations in society. The research presented in this thesis incorporates some of the organisations often cited as part of the 'sharing economy' by the media, but each example considered explicitly rejects the use of money. It is from this position that the research moves forth. There are two main research questions posed in this thesis:

1) How is computer-mediated interaction affecting non-monetary economics in England?
2) To what extent are social relationships in new computer-mediated resource sharing initiatives dependent upon systems of reciprocity or balance?

The following few paragraphs outline each of the chapters included for consideration within this thesis and their respective contributions to existing theory within economic anthropology. The first two chapters frame the central research questions by examining the literature from an interdisciplinary perspective. This is followed by a chapter on research methodology, which advocates a realist approach to social science. An exposition of two different types of study is revealed in the following two chapters. Finally the core findings of the research are discussed and concluded in chapters 7 and 8. Some of the chapters derive from existing material published throughout the PhD process. Whenever material is reused a reference is included to the respective outlet where the original document can be found in full.

Thesis Structure

Chapter 2 – Designing for economic prosociality through human-computer interaction

HCI designers are showing an increasing desire to influence how people act in the economy. This chapter presents an empirical literature review conducted to examine how HCI designers and practitioners currently think about designing for prosocial economic behaviour. Attention is directed to the specific epistemological, ontological and ethical underpinnings of contemporary approaches. These approaches are then compared and contrasted to examine any points of practical overlap or intractable difference.

Chapter 3 – The problem of the gift: Interdisciplinary rifts in economic anthropology

This chapter begins with some simple questions: what is a gift? Is giving the same as gifting? How does sharing differ from gifting? To what extent can a gift be considered prosocial or altruistic? And how have these questions been approached by social scientists from different disciplinary backgrounds? Particular consideration is given to the interdisciplinary dispute over method which is commonly referred to as the 'formalism versus substantivism' debate. This is then followed by a consideration of the various attempts to overcome the methodological rift in the past half century.

Chapter 4 – Research Philosophy and Methodology

A realist approach to social science is advocated which is premised upon a specific philosophical account of *relational emergence*. A variety of research philosophies in the natural sciences and humanities are critiqued by drawing specifically from authors that self-identify as 'critical realists'. Attention is then directed toward the potential resolution of the 'formalism versus substantivism' dispute through the application of ideas drawn from the sociologist Margaret Archer. Consideration is given to the 'morphogenetic approach' as advocated by Archer. This approach is postulated as a means of researching the dynamic interplay between individuals and social structures. A defence of this approach is advanced by contrasting specific features of Archer's ideas with other

sociological attempts that fail to incorporate a 'stratified ontology'. A range of case studies have been selected for presentation within the thesis. The rationale for the selection of case studies is described in depth before a discussion of the appropriate methods of inquiry for each. As the studies involved in the thesis involve mixed methods (ethnography, interviews and social network analysis) the respective merits of each are considered before a final discussion of practical research ethics.

Chapter 5 – Ethnographic field studies

The research presented in this chapter examines how digital technology mediates the behaviour of consumers in three online systems that facilitate offline gift giving and sharing (Freecycle, Couchsurfing, and Landshare). Findings derived from a netnography and depth interviews reveal how technology is used to enact and influence the management of identity, partner selection, ritual normalisation, and negotiation of property rights. The findings have significant implications for the design and management of systems that encourage non-monetary forms of collaborative consumption.

Chapter 6 – Longitudinal social network analysis

This chapter presents a longitudinal analysis of giving and sharing between local neighbours. The dataset was provided by streetbank.com and was generated over a period of four years. Using social network analysis the dataset is examined for the presence of direct reciprocity, indirect reciprocity and transitivity. A secondary dataset of questionnaire results is provided by Streetbank.com and is used to contextualise the network analysis. Specific analysis is directed towards existing anthropological theories of reciprocity, particularly Marshall Sahlins. Results demonstrate that a form of giving has emerged which is not premised upon direct or indirect reciprocity but is in fact 'autotelic' i.e. having an end or purpose in itself, *contra* substantivist economic theory.

Chapter 7 – Discussion

The discussion chapter brings together the findings of the studies to analyse the empirical basis of autotelic economic behaviour. In contrast to other research in this area reflexivity is made central to the analysis. A new approach is proposed for categorising economic forms of action, which emphasises the importance of studying recurrent features within social structures (using network theory). Property rights are asserted as central to any analysis of institutional change. Finally, the implications of this new approach are discussed.

Chapter 8 – Conclusion

In the final chapter the findings of the research are summarised and brought to a conclusion. An impact statement is offered which considers the theoretical and practical significance of the thesis findings. Finally, attention is directed towards future potential research into economic decision-making that should follow the results of this thesis.

Chapter 2 - Designing for economic prosociality through human-computer interaction

Human-computer interaction (henceforth HCI) research often involves intervening in the economic lives of people, but researchers only rarely give explicit consideration to what actually constitutes prosociality in the economy. Much has been said previously regarding sustainability but this has largely focused on environmental rather than interpersonal relations. This thesis is interdisciplinary in nature and the purpose of this chapter is to provides an analysis of how HCI has been discussed in relation to non-monetary economics and prosociality. The findings of the review are subsequently used to inform the direction of chapter 3, which provides a more in-depth analysis of the emergent issues. Based on a corpus of published works, various genres of work relating to prosocial economic behaviour and HCI are discussed. Key intellectual differences are explored, including the epistemological and ethical positions involved in designing for prosocial outcomes as well as how HCI researchers posit economic decision-making. Finally, emerging issues and opportunities for further debate are discussed in turn.

Introduction

Since the financial crash of 2008 there has been a spate of attempts to reassess what really matters in our economic lives. People, organisations, money, and technology have all been scrutinised in the hope that a fair, healthy, and universally democratic economy could be described, prophesised or even enacted. In the wake of capitalist profligacy politicians and decision-makers alike spoke of the need for change to create a new, humane and needs-oriented economy. For many academics (E.g. Bardzell *et al.,* 2012) HCI is seen as an interventionary discipline and that its purpose is not to describe or interpret the world, but to actually change it. With this in mind it is worth asking how the HCI community perceives the economy and what is considered to be prosocial when it comes to economic relations. Numerous reviews (E.g. DiSalvo, 2010; Blevis, 2007; Aoki *et al*, 2009) have examined the role that HCI plays in the sustainability of our economic lives but they have tended to focus on environmental aspects rather than prosociality. Dourish (2010) and Brynjarsdóttir *et al* (2012) both

present a critique of the sustainability debate and call for a step-back to better understand the social processes that allow for the emergence of such discourse. This is an opportune moment to take stock of current research agendas and understand the whole gamut of perspectives on prosocial economic relations within the HCI community. How do researchers see economic transactions as good, fair, or moral, and what role should interaction design play in facilitating such behaviour?

The good, the bad, and the economy

Whether as investment in meaningful causes or as charitable donation money is often the impetus for social change, but the vast majority of monetary exchange in the economy is dominated by *quid pro quo* transactions. Some anthropologists and economists contend that these transactions are based on the possibility of 'alienability', or in other words, money helps to remove the sense of moral obligation between people involved in transactions by quantifying value and creating equivalence, which can then subsequently be bartered (See Hann & Hart, 2011). When people mention the word 'economy' what frequently comes to mind are notions of national finance, debt, gross domestic product, interest rates, inflation, wage labour and other calculative dimensions of the choices we make individually and collectively. But this represents only part of our economic lives. The media may present a dominant discourse of the formal *market* economy, but the *informal* economy represents just as significant an amount of time, effort and interpersonal meaning. When we give, share, lend, borrow, take, or even steal, we often do so in the absence of calculative reason that characterises *quid pro quo* exchange. Together, these activities constitute a part of the *informal economy*. The informal economy has received a wealth of academic attention over the past few decades largely due to the influence of anthropologists such as Geertz (1963) and Hart (1973). As various forms of consumption have become dematerialised and digitised the Internet has created new opportunities for both the formal and informal economy to be mediated by human-computer interaction. With much of our economic lives now becoming increasingly digitally-mediated there are also opportunities to address questions about what a moral economy is and should be. An analysis of prosociality in the economy inevitably involves questions of property, access, ownership, distribution,

redistribution, and welfare. In this literature review prosociality is defined as a 'voluntary intentional behaviour that results in benefits for another' (Eisenberg & Miller, 1987, p.92). The word 'benefits' is left open for interpretation by the designer or practitioner to help illustrate the varied and often conflicting perspectives held. The purpose of this literature review is to explore the field of human-computer interaction and specifically what has been recognised as constituting pro-social behaviour in the economy. Unlike other research that attempts to map out a vision of what HCI should look like, this chapter attempts to empirically identify how HCI-led intervention in the economy is already conceived and enacted. It is hoped that by examining the epistemological and ethical basis of previous research it will be possible to expose the underlying intellectual commitments of HCI researchers and stir further debate. The following section begins with a consideration of methodology. Emerging genres in the field are then discussed in turn before further analysis is given to some of the key intellectual differences which separate researchers. Consideration is then given to emerging issues, before finally gaps in the field and potential for further research is discussed.

Constructing a corpus for the literature review

The literature review described henceforth was influenced by the review into Sustainable HCI conducted by DiSalvo *et al* (2010) and the previous research (Disalvo *et al.,* 2009; Goodman, 2009) which inspired their approach to reviewing and framing research questions. However, the focus in this review is shifted towards interpersonal rather than environmental relations. Of crucial importance is how the HCI community conceptualises the scope of human agency within the economy. The review process began by constructing a relevant corpus of papers from which specific examples could then be selected. Any papers that were cited in each corpus paper were then also examined to see if they fit within the original scope and were added where suitable. The criteria for determining suitability were twofold. Firstly, it was asked whether each work had an explicit goal which was related to prosocial economic relations. Various papers were related to prosociality through environmental sustainability or health interventions, but studies were only included wherever prosociality itself was explicitly targeted as an outcome of the design mechanisms mentioned. This was necessary to

differentiate the review from previous work examining sustainable HCI which was not explicitly prosocial. Secondly, it was asked whether the works were intended for a HCI community audience. The corpus was then split into two subsets: (1) 28 Programmatic statements (including panel discussion and workshop abstracts) and previous analyses of prosocial HCI; and (2) 63 Peer-reviewed journal and conference papers, notes or works in progress. These form the basis of the analysis. Individual summaries were written for each paper and then coded into a spreadsheet. These results provided the basis for examining the corpus across three forms of analysis:

(1) *Genres* were identified which demonstrated clustered formulations of problems and/or challenges that could be addressed through interaction design.
(2) Key intellectual differences apparent in the same and contrasting genres were identified.
(3) Issues that emerged from the analysis which indicate worthiness of further inquiry as well as opportunities for future interdisciplinary research and collaboration.

Genres

The genres identified within the review are formed from clusters of research which posit problems of unsociability or undesirable economic behaviour in similar ways. They share many similar original sources and citations and consequently have a large overlap in scope. Given the recent emergence of much of the work some of the genres might best be thought of as movements otherwise the sections may give a sense of misplaced concreteness. Much of the work in this area is at an early stage; the aim is therefore not to provide a comprehensive 'map' of prosocial HCI, but rather to offer a lens through which some of the key epistemological debates can be seen. To that end, while we borrow from DiSalvo *et al's* methodology, our approach has a slightly different aim. There is some discussion given to newer and less commonly described emerging genres, but there is nonetheless a familiar core to most. As much of the work discussed is interdisciplinary in nature there are instances where papers could be argued to coincide with multiple genres; this serves to illustrate the remarkable

heterogeneity of approaches and philosophies brought to bear on the riddle of prosociality in the economy. These genres are now discussed in turn:

Persuasive Technology

Following Fogg's (2003) seminal early work on persuasive technology there has been an explosion of subsequent studies seeking to investigate the prosocial value that HCI can help create. As previously described much of this work focuses on encouraging environmental sustainability or persuading people to make decisions towards better health, however there is increasing recognition also being given to the role that HCI can play in generating prosociality. IJsselsteijn *et al* (2006) note that *'Persuasive technologies apply principles of social psychology in influencing people; principles of credibility, trust, reciprocity, authority and the like.'* Factors such as reciprocity and trust play a huge part in the formation and maintenance of all economies. HCI is seen by many of as way of influencing the antecedents of such prosocial relations. In a recent CHI panel Revelle *et al* (2010) bemoaned the fact that children are increasingly engaging with social media but few are designed with the intent to actually promote prosociality. They contended that technology should be designed with the intent of explicitly increasing children's awareness of the lives and needs of others to promote caring about the welfare of others. This pedagogical theme is prevalent in much of the other work in this genre, particularly in the context of deterring or dissuading unsociable behaviour from the 'users' of the HCI. Examples of work in this genre include experimental priming to elicit and therefore understand the causes of unsociable behaviour (Chiou & Wan, 2012); experimentation into framing effects to help nudge people away from privacy invasive mobile apps (Choe *et al.*, 2013); and approaches drawing from behavioural economics in order to persuade. Lee *et al* (2011), for instance, base their approach on designing the presentation and timing of choices to encourage people to make socially beneficial decisions. Other work in this area examines the emotional basis of persuasion, studies have focused on creating trust between strangers (Vasalou *et al.*, 2009); rebuilding trust after breakdown in interpersonal relations (Vasalou *et al.*, 2008); and the role that guilt and shame can play in eliminating unsociable online interactions (Vasalou *et al.*, 2006). Using technology to expose power imbalances and inequality can also be a

practical way of deterring unsociable behaviour from other designers. Unsociable aspects of interaction can be implicit in the structure of HCI. Consider for example, the work conducted by Irani and Silberman (2013) which examined, and through design helped to reveal, invisible labour in Amazon Mechanical Turk. In the absence of unionization workers are paid below minimum wage in many cases, lack solidarity and can remain socially isolated. The lack of research discourse also meant little pressure was exerted on employers, so technology probes provide a much needed fresh perspective. This method of experience prototyping clearly resonates with calls (Buchenau & Suri, 2000; Wright & McCarthy, 2008) for empathetic approaches to HCI which give designers insight into what it feels like to be a user and represents an opportunity for HCI research to wade further into the welfare debate.

Domestic Computing

Following Bell *et al.* (2005; 2003) numerous HCI researchers have examined domestic life and the role that HCI plays in it. A key debate has emerged from research into feminism and HCI which draws upon a body of work in feminist economics, anthropology, and critical theory (e.g. Bardzell, 2010); Rode, 2011); Obrist & Fuchs, 2010). Here the central critique of the domestic environment illustrates how economic life is reliant upon the home. These authors have been critical of simplistic interpretations of the relationship of interaction design to the economy based on a critique of gender, ideology, and instrumental reason. Assigned roles associated with unpaid domestic labour are called into question, as are the supporting assemblages of technologies which uphold unpaid production and consumption (Taylor & Swann, 2005). Forlizzi and Disalvo (2006) provide an interesting case study for the disruptive influence of HCI by examining the use of service robots in the domestic environment. They note that a social consequence of their intervention was that engagement did not correlate with gender. This may of course have to do with simple novelty but it nonetheless offers a valuable insight into the possible role of redistributive labour that HCI may offer. Alternatively, Erete (2013) examines responses to interfaces that are designed to protect the home from potential burglars and suggests that

intervention may actually result in the requirement of new human-human relationships to support the efficacy of the technology.

There is clearly a delicate balance to be managed when introducing HCI into spheres of economic life which previously existed without computers. Existing social roles may be created, eliminated, or indeed supported as has been demonstrated by a number of studies examining ways to help improve familial relationships of people working in different locations. In these cases interaction design is used to facilitate a greater sense of place and familiarity of the participants, many of whom are international economic migrants (e.g. Wyche & Chetty, 2013; Vertesi *et al.,* 2011) or work long hours away from home (e.g. Yarosh *et al.,* 2009; Judge *et al.,* 2010). Underpinning most of these cases is a focus on 'transnational practices', or in other words, the benefits that can come from imagining technology use beyond a single country or culture (Vertesi *et al.,* 2011).

Prosocial interaction design

The goal of prosocial interaction design is to imagine and enact alternative socio-political futures. Exemplary work in this field attempts to understand and then economically enable the disenfranchised of society through informed design. Giving and sharing as a means of political and economic transformation or subversion has long been recognised in the anthropological literature (see for instance Marcoux, 2009) and is prevalent in prosocial interaction design in a variety of forms. Ledantec (2012) has argued that despite the rich and numerous studies of technology deployment in developing countries, research aimed at marginalized populations within Western society has only recently begun to gain momentum. There is a growing core of research (e.g. LeDantec *et al.,* 2011; LeDantec & Edwards, 2008; Robertson & Nardi, 2010) which examines the economic lives of homeless people and provides interventionist support through access to technology. The research argues that despite the pervasiveness of new mobile technology there remain many vulnerable people who do not have access but would benefit from the increased socialisation that it can bring. It is argued that the intervention at a social level can bring subsequent improvements to the economic lives of the homeless by creating a greater opportunity to find

provisions (Woelfer & Hendry, 2010; Woelfer *et al.,* 2011). Similarly, location-based information systems have also been examined as a means of enabling food assistance schemes and food banks (Dombrowski *et al.*, 2013).

There is a wealth of research into welfare provisioning within the prosocial interaction design genre but there are also researchers working towards proactive means of intervention. This spans from activism, by trying to increase charitable donations online (Goecks *et al.*, 2008) through to post-hoc analysis of charitable giving online after natural disasters as a means of preparing for the future (Torrey *et al.,* 2007). There has also been recent consideration given to the emerging form of unpaid labour called digital volunteerism in response to natural disasters Starbird, 2013; Starbird, 2011). A central theme in this genre is compassion in times of austerity and hardship.

Cooperative Work & Collaborative Consumption

There is a long history of research (e.g. Rodden, 1991) into computer-supported cooperative *work* (CSCW) but increasingly there is a now also a focus on *consumption*. Botsman & Rogers (2010) described this field as 'collaborative consumption' and it has come to mean almost any form of consumption in which more than one person uses the internet to gain negotiated access to a physical or digital resource. This includes paid access to a resource, but many papers in this genre examine subcultures which entirely eschew monetary transactions. The process privileges access over ownership, celebrating the shared experiential benefits of consumption and consequently results in resources being reused. Various works (e.g. Huh *et al.,* 2010; Buechley *et al.*, 2009; Hanks *et al.,* 2008) have highlighted that in many cases resources are appropriated and reappropriated not merely for the potential sustainability benefits that reuse may bring, but rather for the opportunity to have positive and meaningful social interactions. In the context of digital resources, various studies have examined cooperative work for prosocial aims which rely on 'open data' (e.g. Antin *et al.,* 2011; Ma & Agarwal, 2007; Ling *et al.,* 2005). Here the focus has been improving and measuring knowledge contributions for the greater good to shared resources online such as Wikipedia. Ramchurn *et al* (2013) have also examined cooperative work in relation to public resource contribution with a focus on

crowdsourced geographic information for the emergency services. They note in their paper that purely social motives are not good enough to attract a large number of contributors so recommend a combination of incentives to ensure maximum participation. This conclusion is shared by other designers in the field who have turned to introducing elements of game design into non-game environments (Deterding *et al.,* 2011). Examples of this type of approach include: Motivating in order to improve contribution to online community resources (Rashid *et al.,* 2006); Gamifying as a means of enriching the quality of work for elderly or impaired persons in production (Korn, 2012); and as a means of making mundane production tasks more enjoyable (Flatla *et al.,* 2011).

Cooperative production and consumption of physical items has also garnered attention from the HCI community too. Here the economic prosocial aims vary widely. Examples of studies include: reusing old 8-bit computers as a means of creating exciting family entertainment and social bonding (Lomas *et al.,* 2013); buying second hand PDAs for the sense of shared nostalgia and the social hobby of collecting (Huh *et al.,* 2010); sharing available mobile phone signal connectivity as a means of negotiating tension and resolving value conflicts in India (Sambasivan & Cutrell, 2012); and implementing crank-based mobile phone charging systems in Kenya that allow communities to work and consume together without the need for financial trade (Wyche & Murphy, 2013). The scope for digitally-mediated consumption has grown enormously as internet usage rates have increased. Harvey *et al.*[5] (2013) have called for a re-examination of how interaction designers consider shared consumption as it occurs both online and offline through HCI rather than through the oversimplified constraint definitions of time and place in CSCW.

HCI4D (HCI for Development)

'The term HCI4D, indicates a subfield of ICT4D that focuses on understanding how people and computers interact in developing regions, and on designing systems and products specifically for these contexts' (Ho, 2010). Various authors (e.g. Kleine & Unwin, 2009; Sen, 1999; UN, 2007) note that the growing field of

[5] Harvey, Golightly & Smith (2013) *'Sharing and Human-Computer Interaction'* has been incorporated into chapter 3.

developmental studies is concerned with a variety of issues of which economic development is merely one. Others focus on people's livelihoods, personal freedoms, or improving health and learning. However, there remains a large portion of the HCI4D literature which is dedicated to economic development. A central theme in these papers aligns well with the economist Schumacher's (1973) call for creating appropriate technology to suit local conditions. A variety of prosocial economic motivations feature in this genre such as the desire to enable subsistence, increase worker mobility, develop access to markets, and empower marginalised or victimised groups to participate in more varied forms of economic exchange. Examples of HCI intervention in this genre often focus on women, examples include: Designing technologies to empower women economically in developing countries (Shroff & Kam, 2011); Helping to protect female sex workers through broadcasting (Sambasivan *et al.,* 2011); Developing inexpensive devices for women to contribute commentary to community radio programs (Sterling *et al.,* 2007). Other examples focus on using HCI projects to create greater economic mobility for local people either through improved transportation (Anderson *et al.,* 2010), infrastructure (Cervantes *et al.,* 2011; Paruthi & Thies, 2011), ICTs (Escobedo & Best, 2003) or creating novel interfaces for illiterate people that want to participate in the formal economy (Mahelaqua *et al.,* 2013; Gomez *et al.,* 2013).

Limitations to genre analysis

The genres described above provide a clustered basis for subsequent researchers to continue the debate about directions in the field of prosocial design within the economy. The review should not be seen as entirely fixed nor will it remain final. Some papers that were reviewed did not fit clearly within the established genres but lacked similar examples such that they could be compared to give a lengthy analysis. Attention is now directed to the philosophical differences held by researchers tackling similar problems.

Key Intellectual differences

The following section presents an outline of some of the fundamentally different epistemological and ethical perspectives taken by researchers within the HCI

community. Many of the perspectives identified remain unarticulated or tacit within the original papers, but draw from research lineages with clearly identified theoretical positions in regards of human action. Some of the differences identified occur in the same genres as well as between genres. The purpose of the subsequent discussion is not to doggedly side with either of the many positions elaborated hereafter. The aim is to tease out the most significant conflicts present within the corpus and direct further attention to the disagreements as a subject of further meaningful inquiry.

Formalism VS Substantivism

There is a fundamental conflict which persists in much of the published HCI research that echoes previous thought in the social sciences. This is a rerun of the formalism versus substantivism debate between economics and anthropology, which itself emerged from the debates in 19th century Germany often referred to as the 'methodenstreit'[6]. The economy is conceived in at least two markedly different ways. One is systemic, comprising of the production, distribution and consumption of both material and non-material goods in society. This is the Substantivist view and can be tracked backwards to Karl Polanyi (1944) in particular. The other perspective is individual-centred and privileges human agency above all else as the way that people use their available means to maximize value. This view of economic behaviour is defined here as Formalism and is normally associated with neo-classical economists. The question to ask of interaction designers is whether they are trying to intervene at an individual or a collective level: are they designing for the rational homo-economicus, designing for homo-sociologicus which views society through the organism metaphor, or somewhere in-between.

Boehner *et al.* (2005) offer perhaps the most valuable critique in terms of relating these perspectives on the economy to interaction designers. They argue that HCI's intellectual roots derive from a philosophy of cognitivism, which posits that the mind can not only be understood it can also be modeled in computational terms. Over time various other approaches have emerged which challenge the model of human cognition as a singularly individual phenomenon and argue in

[6] Hann (2010) provides a further history of the debate. This topic is also discussed extensively in Chapter 3.

favour instead for cognition as something social, cultural and embedded in our everyday practices. Arguably though, this turn towards more affective forms of cognition has been reliant on the same informational-processing model that cognitivism relies upon. Boehner *et al.* draw on substantivist anthropological theory (e.g. Geertz, 1957) to advocate an extended version of affective computing and posit emotion as a social and cultural product experienced through interactions. This is in opposition to the stance (E.g. Norman, 2004) that views emotion, like cognition, as being an internal, thoroughly individual, phenomenon. Here affect is viewed as dynamic, culturally mediated, and socially constructed. It is different to the informational model of cognition insofar as it supports a different quality of communication: '*complex, ambiguous, malleable, and non-formalizable'*. Starbird (2013) analyses distributed cognition in order to demonstrate how digital volunteers, through activities such as relaying, amplifying, verifying, and structuring information, function as a collectively intelligent cognitive system in the wake of disaster events.

These presuppositions of cognition can also form the base for views of economic morality. At one end of the political side is the call for economic equity (e.g. Fuchs & Obrist, 2010) where the view is that wealth is for all, living standards should be guaranteed, nobody should live in poverty, and the income gap should be reduced. At the opposite end is one of staunch individualism which views society, and indeed macro-economics, as a mere aggregation of individual actions.

Enabling the individual VS Nudging the individual

HCI researchers are becoming increasingly engaged with behavioural change theories from across the social sciences. Hekler *et al* (2013) report that in their review of the last 10 years of CHI proceedings in the ACM Digital Library they found 136 papers that mentioned 'behavior change' with 76% of these from the last four years. After considering the nature of human agency and change the philosopher Alan Watts once posed the question 'Do you do it or does it do you?' In the context of HCI it is clear that design as a prosocial intervention is seen differently depending on *what* or *who* is perceived as the doer. Behavioural economists (e.g. Thaler & Sunstein, 2008; Kahneman, 2003) regularly speak of bounded rationality and ways in which people can be 'nudged' to make prosocial

choices. Given the wide varieties of interfaces now available designers are in an opportune position to present timely information and experiment with cues to try and influence and willfully change behaviour (Consolvo *et al.,* 2009). By framing information in a particular way designers can use heuristics to lead users through a sequence of interactions (e.g. Lee *et al.,* 2011; Consolvo *et al.*, 2009; Choe *et al.,* 2013) . Here then prosociality is determined by the designer and not necessarily the user. This 'we know what is best for you' approach has been referred to as libertarian paternalism[7]. As a top-down approach it raises the potential for ethical conundrums when the behaviour it tries to encourage is decidedly prosocial and therefore interpersonal rather than focusing strictly on preventing individuals from harm. Advocates of socially persuasive interfaces have previously stressed the *voluntary* nature of the persuasion techniques (e.g. Tscheligi & Reitberger, 2007); however this ethic is not evidenced by all HCI researchers in the area. Purpura *et al* (2011) have gone further by drawing attention to whether it is even possible to avoid coercion within persuasion as the interventionist's aim is always seen as enforcing sublimated social goals. This debate carries the same hallmarks as the debate over the psychological possibility of altruism which has persisted for decades, perhaps most notably between Cialdini (1987) and Batson (1991). Here the argument is between seeing altruism as an egoistic motivational state with an ultimate goal of increasing one's own welfare, or alternatively as an empathic motivational state concerned with increasing another's welfare. Whether designers clearly articulate their position or not this fundamental epistemic question often divides, and is likely to influence whether HCI as an interventionist means is thought as cooperative or coercive. In direct opposition to the ideology of manipulating users through interaction participatory design studies have introduced technologies on a supporting or pedagogical basis. Various works (Chambers, 2006; Harvey *et al.* 2011)[8] have highlighted that participatory approaches can be described across a graduated hierarchy from dictatorial in their approach through to more egalitarian 'bottom-up' design. The reality of any intervention is that it is likely to involve cooperation *and* coercion, but what is

[7] Thaler & Sunstein (2008) Argue against the idea that libertarian paternalism is a contradiction in terms

[8] Harvey, Golightly & Rahemtulla (2011) – this research paper is not explicitly presented for consideration within this thesis

important to any serious assessment is who is defined as the outsider and who is defined as the 'local'. This emic and etic tension, as anthropologists refer to it, represents the main ethical challenge for designers who specifically intervene to 'develop'. Cruikshank (1999) reminds us that citizens are not simply participants in politics; they are also an effect and an instrument of political power. Thus the participatory ideal - that of empowerment – must be reflexive enough to avoid mimicking the very forms of governance that it may seek to resist.

Globalised computing VS Postcolonial computing

As mentioned earlier many academics (e.g. Bardzell *et al.,* 2012) see HCI as an interventionary measure and that its purpose is not to describe or interpret the world, but to actually change it. This drive toward change inevitably raises questions of legitimacy and power. Irani *et al* (2010) coined the phrase 'Postcolonial computing' in opposition to certain elements of 'HCI4D' (HCI for Development). Gitau *et al* (2010) have also sought to address the problem of stories of HCI4D research being told solely from the perspective of Western academics. Their findings have suggested emerging areas of concern to African researchers and illustrate their almost negligible representation in formal academic publications. The majority of publications which describe the democratization process are of course from mainly western sources, indeed as others (Wilson, 2004; Raiti, 2006) have noted 'To develop' seems congruent with fostering capitalism and democracy. Despite the altruistic and interpersonal benefits brought about by introducing technology such as mobile telephony there will also be ancillary benefits for corporations and stakeholders that place devices in the hands of as many potential consumers as possible. It would be foolish, however, to suppose that the exploitative consequences of interaction design will be limited to developing countries. Irani and Silberman's previously mentioned work [54] demonstrates how the shadow of economic benefits that technology can bring often obscures the alienating social conditions which support it. While the post-colonialists raise important issues and equally suggest innovative new methods of inquiry it is worthwhile to be wary of work that steers too close to extreme cultural relativism. As Phillip et al (2012) note Postcolonial Computing is not concerned with a theory of ends based on oversimplified structuralist binaries; it is a means of examining how cultural contexts shape the design and

use of technology, as well as how technology and design function as a site of cultural encounter. Anokwa *et al.* (2009) recognise many of the potential challenges and ethical conflicts involved in HCI4D and suggest ways in which researchers can attempt to avoid the potential pitfalls. They suggest that researchers should try to manage the expectations of the beneficiaries of the technology rather than over-promising the project stakeholders. They also suggest that developing content is crucial to success; technology should be seen as a conduit or a means to an end rather than an end in itself. Finally they advocate planning for adoption, ownership, and long-term use of the proposed solution to ensure that the technology addresses the development goals for which it is designed. What is needed is an expansion of CSCW & HCI's focus on socio-technical systems by taking seriously socio-political and socio-economic processes respectively.

Emerging Issues and Opportunities for further research

What are surprising about the results of the review are not the fundamentally different epistemic perspectives exhibited which often derive from positivist or phenomenological traditions, but the dearth of middle-ground approaches that have actively pursued the study of prosociality in the economy. For instance, there were no papers found from an avowedly critical realist perspective i.e. one which analytically separates social structure from individual agency so that the interplay can be investigated. Further examination of the ontological basis of agency and structure could help HCI researchers to deviate from the entirely deductivist methodologies which merely demonstrate an uncritical enthusiasm for formalism. There is not much explicit work representing significant high level alternative political ideas such as Communism, Marxism, or Anarchism as a means to prosociality although it is encouraging to see recent work addressing the potential role of HCI in economic activism (Busse *et al.,* 2013; Rotman *et al.,* 2011). The central contribution of this research chapter is to draw attention to the way in which HCI research is shaped – often invisibly and unconsciously – by very specific ideas about economic life. There is substantial disagreement regarding these ideas within the HCI community and despite often remaining unarticulated they have significant practical implications for interaction designers, policymakers and users alike. In this postcolonial age of computing the most

pressing issue is how HCI researchers will now conceive human agency and social structure.

This tension between social structure and agency will be examined at length in the following two chapters. The HCI community at large could benefit from the introduction of a critical realist approach, indeed there is already some formative work to suggest this approach could be fruitful for the HCI community. Drawing from Graeber's (2001) historically grounded anthropological theory of value Lindtner *et al.* (2012) advocate a study of values as expressed and evolving through interaction rather than seeing them inscribed into technology. Here they see value *'as the way that actions become meaningful to the actor through incorporation into some larger, social whole, real or imagined.'* This position accords with Fuchs and Obrist's (2010) call for a universal design principle of HCI to be aimed at creating freedom: As an emancipatory force focused on human flourishing rather than a dogmatic means of pursuing unreflexive economic policies.

Conclusion

The aim of this chapter has been to expand the agenda for critique from a single narrow focus on particular interaction designs to the state of the field overall. HCI research draws from a rich plethora of disciplinary influences in the pursuit of prosocial design, so it is essential that the emerging epistemic debates and ethical quandaries that precede economic intervention are given due consideration. There has been a preoccupation within the HCI community to examine the environmental sustainability of economic provisioning without necessarily critiquing the social conditions under which such an analysis could take place. This chapter has categorised emerging genres that relate to prosocial design within the economy as well as provide analysis on some of the key intellectual differences which separate work within the discipline. Emerging issues have also been identified which raise interesting possibilities for further interdisciplinary research.

HCI researchers are in a novel position to help create a stronger, fairer economy in which humanity can flourish. However, an examination of the way in which HCI intervention is possible requires that the fundamental intellectual disagreements identified earlier, such as 'formalist vs substantivist' and 'enabling

vs nudging' tensions are considered in greater depth. To answer the question posed at the beginning of this thesis, 'How is computer-mediated interaction affecting non-monetary economics in England?' it is first necessary to consider the extent to which human agency has been discussed by economists and anthropologists alike. The divisive issues identified in this chapter are the subject to which attention now turns. These issues are fundamental to way that giving, sharing and non-monetary economics are conceptualised in theory and practice.

Chapter 3 – The problem of the gift: Interdisciplinary rifts in economic anthropology

What is a gift?

George Bernard Shaw is said to have quipped that if all the economists in the world were laid end to end they still wouldn't reach a conclusion. Regardless of what he actually said the quote has historically been used to characterise the fundamental differences held by economists. But these differences are now arguably between the social sciences rather than internally within orthodox economics or what is commonly derived from 'neoclassical' perspectives[9]. Before comparing perspectives held across the social sciences it is worth first analysing the etymological roots of the words commonly used in English language: '*give*' and '*gift*'. Despite sharing a phonetic similarity and often being used interchangeably the verb 'to give' nonetheless has a different meaning from the noun 'gift'. Germanic languages share this trait with Romance languages insofar as the words *'donner'* and *'donare'* appear to share the same root word '*don-*'; however, these words also differ in meaning similarly[10]. The verb 'to give' is readily used to describe any kind of transfer from one person to another. These forms of transfer include relinquishing (or 'giving up'), redistributing (or 'giving out'), exchanging, taxing, bequeathing, and donating. When the word 'gift' is used as a noun, contrary to the verb 'to give', this denotes a distinct mode of transfer with an associated moral quality. According to Testart (2013, p.260) a gift is a transfer of a good that:

1. *'implies the renunciation of any right over this good as well as of any right that might arise from this transfer, in particular that of requiring anything by way of counterpart; and*
2. *that is not itself required.'*

This definition provides a basic understanding of what a gift is but the points made by Testart raise some important further questions: What is a good? If a gift isn't *required* how is it different from sharing? And how can we account for motivation

[9] For further analysis of the debate relating to the term 'neoclassical' see Lawson (2013) *'What is this 'school' called neoclassical economics?'*

[10] Testart (2013) provides further etymological discussion in the paper 'What is a gift?'

of the people involved? The following chapter examines two central concepts that are essential to any examination of non-monetary economics: 1) *property* i.e. the possible physical relations between goods and people; and 2) *motivation* i.e. to what extent are goods transferred or shared voluntarily, or alternatively, as a result of social influence?

Giving and sharing as property relations

In common parlance the terms 'giving' and 'sharing' are sometimes used interchangeably, but to what extent can a specific moral basis be attributed to each term? Two authors within the fields of consumer research and human-computer interaction respectively have attempted to provide separate definitions of what sharing entails:

> *'The act and process of distributing what is ours to others for their use and / or the act and process of receiving or taking something from others for our use.'*
>
> (Belk, 2007, p.127)

> *'Nonreciprocal pro-social behaviour'*
>
> (Benkler, 2004, p.275)

Following Wittgenstein's notion of *family resemblances*[11] Belk suggests that there are three prototypical forms of consumer behaviour: commodity exchange, giving and sharing. Dobscha & Arsel (2011) go even further by suggesting these prototypical forms may become 'hybridised' through new forms of interaction, such as those evidenced by computer-mediated resource sharing initiatives. Hybridization occurs when behaviour appears to show features of more than one prototypical form at the same time. Wittgenstein originally drew attention to the way that many categorisations of things in the world are thought to be connected by a single common or essential feature when in fact they are connected by multiple overlapping features. Often these features overlap to the extent where no single feature is common to all. As a classification method family resemblances is polythetic and opposed to traditional monothetic approaches such as essentialist taxonomies in the natural sciences. Despite the challenges of

[11] See Wittgenstein (1953/2009) 'Philosophical Investigations' for the extended discussion on family resemblances as they relate to the study of games.

categorisation there are some restrictive physical attributes of goods which can help to refine the possible configurations of giving and sharing arrangements between people. The second definition of sharing introduces the concept of non-reciprocal behaviour. Reciprocity can be understood as a circular transmission between two people. It therefore requires some divisible *thing* that can be transmitted. To understand sharing in relation to gift giving and commodity exchange it is first necessary to recognise the varying types of goods that can be appropriated i.e. how a person makes a good their own. Rather than analyse the simple dualism of public versus private goods, it is possible to acknowledge that some goods can be consumed a finite number of times and some goods can be appropriated by a person and then excluded from others. These attributes are recognised in the political-economy literature as *subtractability* and *excludability.* When the attributes are contrasted against one another four distinct types of goods can be distinguished.

		SUBTRACTABILITY	
		LOW	HIGH
EXCLUSION	Difficult	Public Goods	Common-Pool Resources
	Easy	Club Goods	Private Goods

Figure 1: Types of Goods (Hess & Ostrom, 2003, p.120)

The possibility of excluding a good is a critical factor involved in whether or not a person can successfully appropriate and exchange it. Sometimes goods are public, like the air that humans breathe, and are shared by default because they cannot be appropriated by a single individual. Others, like fishing stocks are shared because there is a cultural resistance to ownership by a single person, they are referred to as common-pool resources. The variety of interpersonal appropriation possibilities is what is known simply as property rights. A property right is an enforceable authority to undertake particular actions in a specific domain (see Commons, 1968). According to Ostrom (2003) *'Property rights*

define actions that individuals can take in relation to other individuals regarding some 'thing'. If one individual has a right, someone else has a commensurate duty to observe that right'. Research into sharing and giving often focuses on the most extreme form of property right, referred to as 'alienability' in political economy literature, as the predominant means of understanding consumer behaviour. However, property rights are much more nuanced than simple changes of absolute ownership. Many actors (either individual or grouped) can simultaneously lay claim to aspects of a resource. This partitioned manipulation of a resource has been called 'tenure niche' and can be construed in different ways depending on the type of resource being appropriated (Bruce, 1995). Ostrom and Hess (2007, updating Ostrom & Schlager, 1996) recognize a hierarchy of seven positions (shown overleaf) that can be associated with bundles of property rights: *Access, Contribution, Extraction, Removal, Management, Exclusion, and Alienation*. The most basic right '*Access'* is defined as the right to enter a defined physical area and enjoy non-subtractive benefits. The highest property right that a person can attain over a resource is that of alienation i.e. the right to sell, lease or give away extraction, management, and exclusion rights.

'Property right	Definition
Access	The right to enter a defined physical area and enjoy nonsubtractive benefits.
Contribution	The right to contribute to the content.
Extraction	The right to obtain resource units or products of a resource system.
Removal	The right to remove one's artifacts from the resource.
Management / Participation	The right to regulate internal use patterns and transform the resource by making improvements.
Exclusion	The right to determine who will have access, contribution, extraction, and removal rights and how those rights may be transferred.
Alienation	The right to sell or lease management and exclusion rights.'

Table 1: Types of Property Rights (Ostrom & Hess, 2007, p.16)

Within the hierarchy of possible relations between people certain property rights can only be exercised in relation to particular goods i.e. depending on the physical capacity of the good to undergo exclusion and/or subtraction. What the hierarchy also reveals is that many of the property rights an individual may lay claim to ultimately depend on the cooperation and acquiescence of other people. Property rights are *social* configurations. This is an important point that has historically not been recognised to the extent it should, perhaps most notably by Garrett Hardin in his essay entitled *The Tragedy of the Commons* (1968). Hardin put forth an argument consistent with rational choice models of microeconomics. It suggested that open access systems would inevitably lead to environmental degradation, because individuals would not have to deal with the externalities of their actions i.e. the indirect and often unwanted consequences of social and environmental interaction. Hardin's argument was deductive, but there were other thinkers who reached similar conclusions using historical and ethnographic data (e.g. Demsetz, 1967). What Hardin assumed was that a limited number of variables influence an individual's pursuit of 'utility', which that

individual will inevitably try to maximise. The dilemma, and thus inevitable tragedy, would follow from the individual's unwillingness to act to the detriment of their own stock while allowing others to maintain utility maximising strategies. In a series of case studies with historical and ethnographic insight Ostrom (1990) demonstrated repeatedly that communities are actually capable of effectively managing common-pool resources without government intervention, sometimes even with just *de facto* property rights. The results of these studies provided an insight into the prerequisite conditions necessary for the stability of common pool resources. Ostrom's work highlights some of the limitations of methodological individualism i.e. the basis of most 'neoclassical' microeconomic decision making theory. Hardin's tragedy of the commons is an elegant argument, but also a clear illustration of the failure of the deductive method to account for simple, even primitive, forms of political economy. Humans have the ability to exercise reflexivity, that is to say, they can assess their own lives in relation to others as well as their environment. This statement is trivial to the point of being banal, but it is of critical importance when assessing how goods are managed. Prohibition, legislation, punishment or even rewards are not always the best ways to encourage collective responsibility for a good. Neoclassical microeconomic theory argues for individual ownership as a means of creating accountability for externalities. Ostrom, unlike most microeconomic theorists, championed the design of local solutions to resource dilemmas. Her work maintained that to effectively understand complex social interactions means accounting for local cultural motivations - there are no panaceas. This is not just the case for understanding economic arrangements in relation to common pool resources, anthropological records also demonstrate the profound ramifications culture has on 'private' goods and the possibility of their social circulation.

Anthropological accounts of non-monetary economic motivation

'If we cannot give evil, how can we give good?' (Caille, 2010, p. 182)

Anthropological records are replete with colourful accounts of non-monetary exchange and the motivations of people taking part. This is particularly so in historical records of cultures without explicit forms of quantitative currency. The names of these economic arrangements are no less diverse, including such titles as 'Kula ring', 'Potlatch' 'Big man', 'Koha', and 'Moka'. To help distinguish the motivations of people involved in computer-mediated non-monetary initiatives it is worth first examining the motivations previously identified in the anthropological records. Some of these historical examples include, but are not limited to:

- Indirect trade between communities e.g. '*Kula Ring'* (Malinowski, 1922/1992)
- Political sacrifice e.g. *'Big Man'* (Sahlins, 1963)
- Seasonal / event ceremony e.g. *'Potlatch'* (Boas, 1896; Kan, 1986)
- Intracommunity gifting e.g. '*Mardi Gras'* (Weinberger, & Wallendorf, 2011)
- Matrimonial rituals e.g. *'Huaulu Alliance'* (Valeri, 1994)
- Cosmological sacrifice e.g. *'Vedic'* (Van der Leeuw, 1938; Hubert & Mauss, 1964)
- Bribery (Torsello, 2011)
- Purely digital goods e.g. *'Napster'* (Giesler, 2003, 2006)
- Cash donations and sponsorships (Bornstein, 2012)
- Physical body donations e.g. organs, blood etc. (Lock, 2002)

There are hundreds, if not thousands, of other examples of giving and sharing in the literature, but the examples shown above serve as demonstration of the enormous scope of gift giving and sharing (as understood in English terminology) across cultures. Anthropologists often describe sharing as a one-way economic transfer rather than an exchange (Hunt, 2005), but within the consumer behaviour literature sharing has largely been subsumed by research that perceives

gift giving as a form of reciprocal behaviour (e.g. Sherry, 1983). These ostensibly one-way economic transfers have also been conceived as a form of 'generalised' reciprocity between kin (Sahlins, 1972). Altruistic sharing and its theoretical opposite 'negative reciprocity' (e.g. theft) are described as special types of reciprocity, distinct from the balanced reciprocity of bartering.

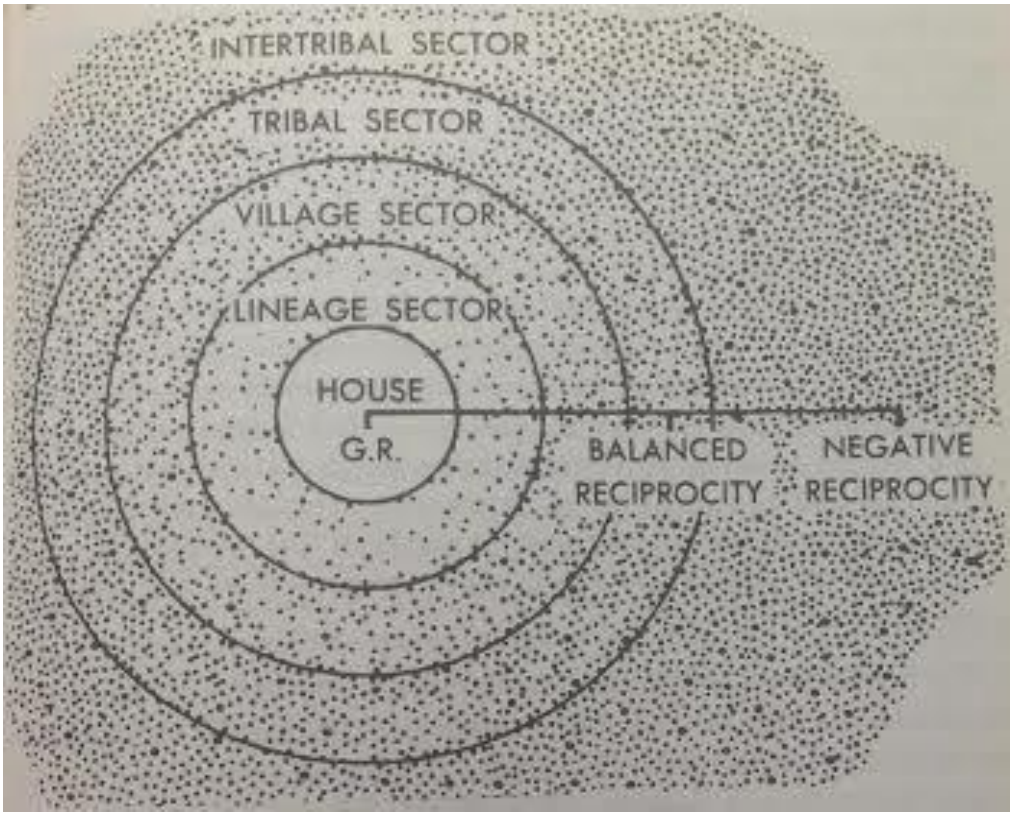


Figure 2: Reciprocity and Kinship Residential Sectors (Sahlins, 1979, p.199)

Graeber (2011) has written at length on the historical role sharing played in ancient populations, and argues that before exchange-based economies became the norm sharing was the predominate form of resource distribution. Exchange is predicated on debt. Without a sense of otherness between two parties reciprocal obligation would cease to exist. So to conceive of sharing as a form of reciprocity emphasises a consequentialist mode of thought and removes the potential to critically interpret it as a type of non-committal behaviour. Similarly, the concept of generalized reciprocity does not adequately account for the 'free

rider' problem (known as 'phenotypic defectors'[12] in evolutionary biology) in which actors with access to a shared resource may consume more than they contribute. There may even be instances in which sharing occurs freely with people that simply cannot contribute due to inability e.g. children or elders that are physically incapable or ill. Within every heterogeneous population asymmetrical relations exist which are likely to never yield reciprocity. Woodburn (1998) argues that sharing and exchange are two entirely separate modes of property transfer, each entailing a specific moral basis. Despite this distinction, it is clear that acts of sharing often possess the potential to become reciprocal obligations. The eventual outcome of two-way transfer thus appears to be a form of exchange and raises significant theoretical and practical issues. People involved in sharing may revise their needs and decide that a previous act of sharing may now be best maintained as a form of exchange. A giver may revoke access to a resource in favour of exchange, or a receiver may opt out of sharing due to the moral imperative associated with consumption. As ethnographic research is often limited by time, there may be instances in which it is impossible to note how personal motivations regarding resource consumption change over time. It is therefore potentially difficult to properly observe whether balanced reciprocity, akin to exchange, will emerge. If within a communal sharing context it is possible to observe an offer made that is not premised on or causally connected to a balancing transfer, it is still near impossible to establish clear demarcation of whether a transfer is one-way or reciprocal.

The diversity of available records raise some important questions: are gifts cooperative or competitive, benevolent or malevolent, altruistic and egoistic, persons or things? The answer to these questions, as in most anthropological research, is complex and highly nuanced. Benkler's interpretation of sharing shown earlier assumes pro-sociality and therefore *a priori* altruistic motivation. This is contentious because a definition of sharing that fails to recognise the potential for egoistic participation in sharing is incomplete. The altruism/egoism debate persists within economics and psychology, but a long history of anthropological research into giving has also shown it to be an antagonistic

[12] See Sherratt & Roberts (2001) for discussion on the potential evolutionary role of phenotypic defectors in stabilising reciprocal altruism

behaviour in some circumstances. Rather than focus on the possibility of altruism in exchange Hunt (2000) suggests that an emic stance is needed to determine how both the giver and receiver view the transfer and if they recognise the need to provide an appropriate form of reciprocity. Widlock (2004) suggests that instead of emphasising the longitudinal potential for balance, it is more pragmatic to evaluate whether sharing is an 'act for its own sake'. This is similar to so called 'autotelic' giving interpreted by Giesler (2003) when describing 'gifting as participation' in the digital music file-sharing service Napster. Sharing thus occurs as an expressive behaviour, done for the experience of belonging. It is not the 'sharing out' which is typically associated with reciprocal arrangements between dyads, it is a form of 'sharing in' –a means of extending the potential benefits of a resource to other people unconditionally. Widlock (2004, p.62) notes that

'*Sharing can be initiated both by the giver and by the receiver; demand sharing is a common and accepted practice. Even more frequent among hunters and gatherers is sharing that does not involve any transfer from A to B but in which A and B help themselves to x or y.'*

Sharing can also involve indirect transfer through an intermediary where every attempt is made to emphasize that sharing happens for the sake of sharing, of sustenance and of shared participation in life. In contrast, accumulation and exchange are always done for the sake of something else, an instrumental purpose, in order to achieve something in the future or to even out (or surpass) something from the past. By pairing a basic understanding of motivation (being either autotelic or instrumental) with an understanding of how people interact with property (either through interpersonal negotiation or directly through the good itself) it is possible to think of how an individual can be involved in sharing as an occurrence in different forms. The typology below presents some of these potential interactions and was inspired by Holt's (1995) analysis of consumption. Four metaphors are described in the typology, these include: *Integration* – a means of extending the self through a good; *Consolidation* – interpersonal sharing focused on creating instrumental and reciprocal social arrangements; *Participation* – an unconditional and autotelic contribution to a common good;

and finally, sharing as *Play* - an autotelic act of interpersonal sharing, done for the simple pleasure of belonging.

		Purpose	
		Instrumental	**Autotelic**
Locus of interaction	**Good**	Sharing as Integration	Sharing as Participation
	Interpersonal	Sharing as Consolidation	Sharing as Play

Figure 3: A typology of sharing from the perspective of the individual (Harvey, Golightly & Smith, 2013)

This typology provides a basic characterisation of resource sharing from the perspective of the individual, but anthropologists regularly stress the importance of examining the broader social context in which behaviour occurs rather than simply in isolation. Sharing, of course, always involves more than one person. The anthropologist Marcel Mauss created a stirring debate in social theory by presenting an analysis of ethnographic accounts of gifts in so-called 'archaic' societies. Following Durkheim (1895/1982), Mauss argued that gift giving, like all economic behaviour, should be examined in the context of broader social practices such that they could be understood as *'total social facts'*. To understand economic behaviour it is essential to first gain an understanding of how a culture conceptualises religion, kin, gender, politics and the whole gamut of social experience. When discussing non-monetary economic institutions Mauss noted:

'... the so to speak voluntary character of these total services, apparently free and disinterested but nevertheless constrained and self-interested. Almost always such services have taken the form of the gift, the present generously given even when, in the gesture accompanying the transaction, there is only a polite fiction, formalism, and social deceit, and when really there is obligation and economic self-interest.'

(1925/1967, p.4).

Mauss's epistemological position stresses that any analysis of economic behaviour at face value will invariably be reductive and may therefore actually mask the real motivation for acting. Despite often arguing specifically against the dominance of utilitarian thought, Mauss's position ironically led to his work spawning further utilitarian interpretations of the gift,[13]. Indeed, ever since the publication of *The Gift* the use and abuse of Maussian thought has come to characterise the split between perspectives in economic anthropology. Whether or not a polite fiction of formalism is present in all social life is central to the dispute that has dogged economics for the past 150 years.

Formalism versus Substantivism

During the middle of the twentieth century the field of economic anthropology suffered an epistemological rift between the so called 'formalists' and 'substantivists'. The debate was essentially a rerun of the 'methodenstreit' (in English - 'battle of methods') that occurred between social scientists in late nineteenth century Germany[14]. Central to the dispute was whether any form of science, as opposed to only history, could explain the dynamics of human action. The two schools of economic thought involved were the Austrian School and the Historical School, although these are perhaps best characterised as broader social movements than rigid and impermeable entities[15]. The argument advanced by the Historical School was a reaction against materialist determinism. The main contention was that human action could not be understood simply through physicalist approaches. The Austrian School attempted to understand human behaviour as it conformed (hence the term *form*alism rather than substance*)* with ideas or rules. Hayek (1976) noted that the historical school showed a deep mistrust of theory which attempted to predict human behaviour. Carl Menger[16] founded the Austrian School with the aim of understanding economics as a deductive, teleological science with a focus on methodological individualism. It would be incorrect to characterise the debate simply as a dispute over abstract-

[13] For further commentary on the utilitarian interpretation of Mauss see the preface to *The Gift* written by Douglas (1990) 'No Free Gifts'

[14] Hann, C. (2010, p.191) provides an introduction to the history of the methodenstreit and the 20th century re-emergence of the debate.

[15] Pearson (1999) tackles the question explicitly in *'Was there really a German Historical School of Economics?'*

[16] Menger's work entitled 'Grundsätze der Volkswirtschaftslehre' (Principles of economics) was seminal (1871/1976)

deductive or empiric-inductive favouritism. It also related to the appropriateness of making the decisions of single individuals central to social science rather than acknowledging collective forms of agency[17]. In 1884 Menger wrote a pamphlet entitled *The errors of historicism in German Economics* which proved to be highly controversial. Menger put forth a subjective theory of value. This was to influence Von Mises who when writing of the market over half a century later noted that *'It is demand, a subjective element whose intensity is entirely determined by value judgments, and not any objective fact, any power to bring about a certain effect, that plays a role in the formation of the market's exchange ratios'* (Von Mises, 1949, p. 149). Economics under this guise is an attempt to study the science of decision making at an individual level.

Twentieth century formalism is perhaps best characterised by the work of the economist Gary Becker, who considered his work as part of the neoclassical tradition. For Becker economics referred to *'the combined assumptions of maximizing behavior, market equilibrium, and stable preferences, used relentlessly and unflinchingly.' (1976, p. 5).* There are a variety of axioms that are presumed by Becker's neoclassical economics which can be summarised as follows:

(1) Assumes rational, maximizing behaviour by agents with given and stable preference functions
(2) Focuses on attained, or movements towards, equilibrium states
(3) Is marked by an absence of chronic information problems

(Hodgson, 1999, p. 29)

It is also worth adding a fourth point to Hodgson's characterisation to give insight into the formalism-substantivism tension:

4) Neoclassical approaches eliminate the possibility that social structures or culture have objective causal effects upon the individual's decision making.

[17] Louzek, M. (2011) provides a comprehensive overview of the nuances involved in individual-collective agency the debate.

Becker, just like Bentham, Comte and Marx before him wanted to create a unified framework to analyse human behaviour. This framework as Becker conceived it should include all behaviour, whether it relates to bartering, kissing or fighting, whether young or old, rich or poor, all of it should be understood in accordance with microeconomics[18]. The first axiom presumed by Becker is that all people possess a maximising form of rationality in which their preferences are not subject to much fluctuation. This provides a basis from which decisions to act can be valued and compared against one another mentally as ratios of expected utility i.e. how likely a possible action is to provide a 'payoff' and thus satisfy a preference. The second axiom introduces the word 'equilibrium' to suggest that because value judgements are entirely subjective the resultant activity of economic interaction between people will come to mirror the respective supply and demand preferences held by individuals. The third axiom introduces the idea that decisions made by individuals are done so on the basis of available information. This information is used as a basis for probabilistic interpretation of alternative payoffs of different available actions. When agents have access to incomplete information their decision making process therefore becomes fallible. Expected utility and rational choice theory has been hugely influential in the economic literature, but it has also been widely popularised and continues to exert an influence in contemporary thought (e.g. Harford, 2005, 2008; Levitt & Dubner, 2005). The substantivists were not the only group to criticise the axioms held by neoclassical economists, but they broadened the debate about what fundamentals can be said to exist for every human decision maker. *Homo economicus* has subsequently taken a theoretical battering.

The anthropologist Marshall Sahlins (1976, p.83) argued that formalist utilitarian explanations constitute: *'an epistemology for elimination of culture itself as the proper anthropological object'.*[19] This argument is central to substantivist approaches to economics as advocated in the work of Karl Polanyi (1944, 1957) Sahlins (1979), and Dalton (1961) among others. Polanyi's work was crucial to the re-emergence of the debate. In an article entitled '*The economy as instituted*

[18] For a full introduction to the scope of Becker's thought see *The Economic Approach to Human Behaviour* (1976, p.8)

[19] Similar critiques can be found in the work of Douglas & Wildavsky (1982) and Lupton (1999)

process' he suggested that the economy can be conceived in two markedly different ways and that these tend to get conflated. The first has to do with means-end calculation, or in other words, the way that people undergo the mental process of economising. The second has to do with the generalised provisioning of material wants in society. The formalists attempted to draw attention to the regular operation of ideas held by all people. The substantivists gave priority to the diversity of empirical content of material circumstances and disputes. The variety of ideational conflicts between individuals and cultures suggested that the axioms for decision making assumed by formalists were simply not universal. Expected utility and rational choice theory, for instance, assume that people are consciously attempting to relativise and achieve commensurable payoffs. Furthermore the *utils*, or in other words, the variables that an agent is attempting to maximise are often hazily described as happiness, leisure, or risk avoidance. When compared with tangible outcomes such as financial payoffs it is nearly impossible to equate utilities of different kinds. Estimates of expected outcomes as understood by decision makers are also contingent upon a complete understanding of temporality i.e. any attempt to mentally evaluate options is thus dependent on known timescales. All of these criticisms can be found in susbstantivist commentaries on formalist approaches, but the most fundamental conflict stems from the neoclassical predilection for methodological individualism. Social structure and culture are not granted any real causal power in decision making and are thus effectively described as epiphenomena at best and eliminated entirely at worst.

Polanyi identified market exchange, reciprocity and redistribution as three different patterns of economic behaviour or distributions of material goods within societies (Eriksen, 1995, p.169). In his highly influential *Stone Age Economics* Sahlins went further than Polanyi by arguing that all economic life can be placed within a scheme of reciprocity. Sahlins and Polanyi both stressed that collective forms of agency are often central to social integration; it is the way social structures create moral ties between individuals. The substantivists were trying to identify the archetypal patterns of economic life that, to varying degrees, are present in all cultures and are essential for social integration. They argued that the variance of these economic archetypes is the basis of culture itself, such that the action of an individual must be understood in a broader social context, rather than simply as

a maximisation of a subjectively constituted utility. Despite chastising the methodological individualism present in neoclassical economics, their methodological collectivism arguably gave undue privilege to social structures and as a consequence did a disservice to the agency of individuals, reducing it to a function of specific societies.

Patterns of giving and sharing

Substantivist anthropologists sought to distance explanation of human action from utilitarian arguments of 'rational' man. However, by invoking archetypal forms of behaviour such as reciprocity, when describing the economic lives of 'primitive' societies, this has helped to reinforce many of the instrumentalist arguments offered by formalists. The concept of reciprocity in the substantivist mould rightly challenges individualistic perspectives of human agency within economic life, but perhaps ironically restricts behaviour to a form of consequentialist ethics. Following Sherry (1983,) dyadic reciprocity has also been the primary focus for studies in consumer research. The stance taken within this thesis is in agreement that culture and economic acts are ontologically related, but recognition of this fact should not result in a sacrifice of human agency and reflexive deliberation. Most of the work that specifically analyses the reciprocity of computer-mediated relations between people is restricted to interaction that occurs solely online. This research typically attempts to models social relations as 'trust' i.e. the way in which design may enable unfamiliar people to interact and share information without meeting in person and spending time together (e.g. Constant *et al.*, 1996; Wasko and Faraj, 2005; Kankanhalli *et al.,* 2005; Chiu *et al.,* 2006). Although, much of the work points out that people enact autotelic behaviour, in other words, an act for the sake of acting rather than for a subsequent instrumental purpose, the conclusion is normally one of generalised reciprocity. This form of studying trust has subsequently been extended into research of prosocial exchange systems, where offline meetings actually occur. An example of this can be seen in a longitudinal study of social relations on Couchsurfing (Lauterbach *et al.*, 2009), where an emphasis is again given to generalised reciprocity when explaining the way people act.

The problem with the hypothesis that economic life is always premised upon reciprocity, albeit much of it 'generalised' reciprocity (i.e. as opposed to some economic acts being entirely autotelic) is that it is difficult to falsify without a longitudinal dataset which encompasses *all* of the relations between people that could be termed 'economic'. Given that the economy is never simply localised, this means it is impossible to obtain the necessary dataset, thus the hypothesis remains impervious to analysis. Furthermore, any social scientific approach to human action which presupposes such an epistemic claim, reduces all social interaction to exchange, either through individual 'transactions' or as an all-encompassing feature of culture at large. This epistemic position is evident across the social sciences, not just economics and anthropology, perhaps most notably in research which explicitly advocates 'social exchange theory'. Cook and Rice (2003, p.53) suggest that these approaches tend to stem from *'earlier philosophical and psychological orientations deriving from utilitarianism on the one hand and behaviorism on the other. The vestiges of both of these theoretical foundations remain evident in the versions of exchange theory that are current today'.* Homans (1961) for instance, privileged interaction between individuals, with the aim that exchange between two people might explain hierarchy, duty, justice and conformity. This departed from other theorists such as Blau (1964) that at least attempted to incorporate social structure into the study of exchange. For Homans, human interaction could be seen as a function of environmental or interpersonal payoffs. These payoffs serve to reinforce behaviour (as described previously by B.F. Skinner and others) and encourage a stable set of interactions to emerge between people over time. Indeed, this psychological account of exchange was extended by other researchers (e.g. Emerson, 1972). This essentialist emphasis on exchange almost always proposes an empirical claim, regardless of what the objects being 'exchanged' actually are, whether they include actions, emotions, status or prestige, tangibles or intangibles, and yet despite the supposed measurability of these claims they offer little scope for critique.

The epistemic position adopted here presupposes neither reciprocity or exchange across all areas of social interaction. This is a small detail, but the methodological significance is that individual acts may be observed as part of broader social structures without having to reduce explanation to either. What

can be analysed instead are the rituals or 'regimes of value' that are interrelated but nonetheless separate in observable form, for instance, quid pro quo exchange, monetary lending, gift giving, donations, gambling etc. Indeed, this is what Appadurai previously proposed by tracing the lifecycle of objects throughout an economy in order to reveal the way in which social structure is transformed:

'...we have to follow the things themselves, for their meanings are inscribed in their forms, their uses, their trajectories. It is only through the analysis of these trajectories that we can interpret the human transactions and calculations that enliven things. Thus, even though from a theoretical *point of view human actors encode things with significance, from a methodological point of view it is the things-in-motion that illuminate their human and social context.'*

Appadurai (1988, p.5)

The debate between the two positions can be seen as a debate over a view of human agency: one view examines the 'path' an agent may choose depending on preference and the other examines the 'path dependence' i.e. the succession of historical forces leading to the moment of action - the metaphorical fork in the road. A prominent critic of substantivism was Scott Cook who suggested that there was a failure to properly engage between the two schools of thought. As a consequence he summarised that *'the field is presently characterized by a split-level dialogue in which the proponents on the two dominant views of economics-in-anthropology are talking past one another and are operating within separate spheres of discourse'* (1966, p.323). Most economic anthropologists now regard the formalist-substantivist debate as being over, but accept that the same epistemological issues persist in contemporary research[20]. The influential postmodern movement in anthropology also led many researchers (e.g. Strathern, 1998) to reject attempts to make the discipline a social science based upon lawful, universalised accounts of human behaviour[21]. Since the formalism-

[20] Chibnik, M. (2011) provides an interesting discussion on the unsatisfactory end of the debate and the often unarticulated issues that persist in contemporary economic thought

[21] Spiro, M. (1996) reviews and critiques themes within postmodern anthropology before laudably offering a realist rebuke.

substantivism dispute there has been a spate of attempts to cover middle ground between the two positions. Some researchers have refuted the value of both approaches while other traditionalists have fiercely defended each respective lineage. It is to this variety of approaches that attention is now directed.

After the debate: finding a place for rationality

'Many economists would separate economics from sociology upon the basis of rational or irrational behaviour'

(Samuelson , 1947, p.90)

The unresolved debate between the formalists and substantivists led a wide range of social scientists to question the role that economics plays in social life. A range of strategies have been employed by academics over the past fifty years which vary in their treatment of the individual's capacity for rationality. The following section reveals some of these research agendas and identifies seminal work associated with each respective movement[22]:

Formalist imperialism (e.g. Becker, 1976; Hirschleifer, 1985)
This is the view that all social life can be understood in utilitarian microeconomic terms. Formalism is seen as an approach which can wield explanatory power for all action whether religious, political, cultural, familial, or even criminal.

Transactionalism (e.g. Barth, 1966; Kapferer, 1976; following Firth e.g. 1959)
Transactionalism was perhaps the most ambitious offshoot of earlier formalist approaches to economic anthropology. Frederik Barth was critical of functionalist accounts of human behaviour that portrayed overly cohesive social roles and relationships. His alternative was to suggest that kinship, institutions, and political alliances could be deduced from an understanding of the values held by individuals and the transactions that they engage in. The critique often levelled at transactionalism (e.g. Graeber, 2001) is that even if it were possible to model localised cultural utilities and deductively simulate transactions between people

[22] The list shown above is an expanded version of Swedberg & Granovetter (2001, p.2) introduction to *The sociology of economic life*.

to generate elementary kinship structures or economies, the results would fail to provide a historical account of motivation much like formalism. There are almost certainly similar parallels to be drawn from this argument in relation to contemporary agent-based modelling approaches to economics, which attempt to model behaviour through brute calculation rather than incorporate agential self-awareness as an explanatory mechanism. The experiments might yield interesting results, but the aim is nonetheless one of instrumentalism rather than explication[23].

Behavioural economics (e.g. Kahneman & Tversky, 1979; Thaler, 1991; Shiller, 2000)

The main hallmark of research that self-identifies as behavioural economics is a portrayal of human rationality as being in some way sub-optimal. The psychological faculties that enable decision making are said to be prey to biases of intuition. This is not meant as a denigration of human intelligence, rather a research project which seeks to uncover the systematic ways that people act irrationally. Discovering fallibility is the main research agenda. People are said to possess 'bounded' rationality such that in the presence of incomplete information they act in accordance with decision 'heuristics', or in other words, rules of thumb. These heuristics relate to the way in which people conceptualise problems and consequently act in ways which consistently violate the theory of rational choice.

Research in this area frequently makes reference to a dual theory of cognition. The terms 'system 1' and 'system 2' are now commonly used[24] as if there were two processual cognitive elements at play at any given time.

System 1 refers to the way in which people often seem to have an intuitive or instinctive understanding of how to respond to a problem. System 2 by contrast makes reference to the way that in many situations intuition is insufficient as a form of reasoning, thus people invest effort in a form of reflective deliberation. Both of these systems are argued to be susceptible to different forms of bias, such that institutional arrangements should attempt to practically intervene and 'nudge'

[23] See Popper (1972) *'Conjectures and refutations'* for a discussion on the limitations of instrumentalist thought

[24] Kahneman (2011) provides an accessible introduction to the distinction

people in the optimal direction. With the introduction of popular books in the area and increasing governmental recognition[25] the field is now more concerned with manipulation of decision makers than uncovering the sociological basis of decision making. However, much of this research is now starting to influence the related sub-discipline of new institutional economics.

New Institutional Economics (e.g. Williamson 1985; North 1990)

Institutional approaches to economics are typified by Veblen (1904) and Commons (1931). Veblen (1900) was a critic of 'neoclassical' approaches and actually coined the term. He noted that institutions (i.e. human collectives) exist as a cumulative result of social interactions. For Veblen, institutions don't just constrain the actions of the individual they also embody widely accepted ways of thinking and behaving. Institutions are seen as a formative influence in how individuals gain the preferences and values that are the basis for their actions in the world[26]. During the early 1990s institutional economics witnessed a resurgence of interest as new methodological approaches (e.g. game theory) were applied to try and understand how institutions come into being. Crawford & Ostrom (1995, p.582) gave the following definition:

'Institutions are enduring regularities of human action in situations structured by rules, norms, and shared strategies as well as the physical world. The rules, norms and shared strategies constituted and reconstituted by human interaction in frequently occurring or repetitive situations'

Much like behavioural economists the institutional approaches commonly assume people have bounded rationality, access to incomplete information and that they use heuristics in their decision making. However, the interaction between institutions and the individual is seldom, if ever, explicitly modelled such that the 'rules of the game'[27] undergo any dynamic interplay with the agents that adhere to them. Despite much of the work in this area being critical of

[25] The UK government now employs a dedicated behavioural insights team

[26] For further discussion on the intellectual lineage of institutional economics see Rutherford (2001)

[27] This phrase is now commonly used by new institutional economists e.g. North (1990/2011, p.3)

methodological individualism the causal powers of social structures are rarely identified. In some new institutional economics approaches (e.g. Ostrom, 2005, p.189), the concept of an 'action situation' is described, whereby people within institutions choose how to interact but are constrained by social rules. This concept was formulated to try and account for the way in which actors (note the use of the word *actors* rather than *agents*) are directly affected by institutional rules i.e. exogenous variables. These actors are ascribed a position in a model from which certain decisions (choice rules) are made available to them. Despite being influenced by broader environmental feedback loops (see Ostrom's extended paper, 2011) the action situation itself fails to incorporate any reflexive component on behalf of the actor who is making the decision. Cultural and social rules are taken to be exogenous rather than endogenous variables. Consequently the economic model produced fails to account for how the 'rules' themselves might change as a direct consequence of social interaction.

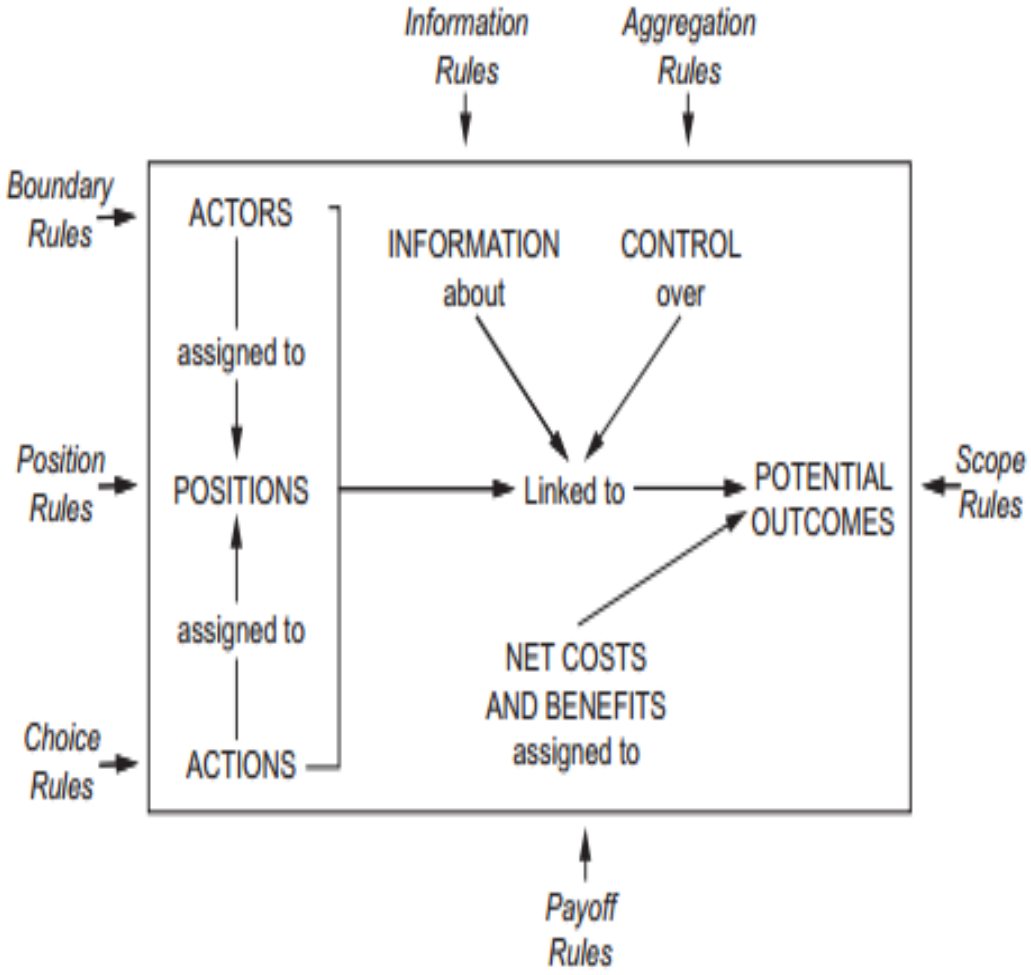


Figure 4: Rules as exogenous variables directly affecting the elements of an action situation (Ostrom, 2011, p.20)

Neosubstantivism and Economic Sociology (Granovetter, 1985; Callon, 1998)

'Actors do not behave or decide as atoms outside a social context, nor do they adhere slavishly to a script written for them by the particular intersection of social categories that they happen to occupy. Their attempts at purposive action are instead embedded in concrete, ongoing systems of social relations.' (Granovetter, 1985, p.487)

Economic sociologists have swung between the formalist and substantivist pendulum, often tending towards one side without embracing either entirely. The most notable development in the past thirty years has arguably been the widespread acceptance given to the concept of *embeddedness.* New economic sociologists much like the old substantivists, draw attention to the idea that economies cannot be analysed as separate entities distinct from socio-cultural contexts. People are embedded in networks of social relations and the economic decisions they make as individuals are thus necessarily influenced by those same social relations. People within social networks are not all directly connected, consequently this leads to 'structural holes' which influence potential interaction. Improved access to computational processing power has led to an increase in the number of researchers using social network analysis as a tool for sociological inquiry. Much of this work focuses on ideas such as *propinquity* and *homophily* in groups. Propinquity refers to the idea that all other factors being equal people tend to be connected to people that are geographically close to them. Friendships are more likely when geographic distances are shorter[28]. The term homophily has a Greek etymology and means 'love of the same', it was introduced into social theory by Lazarsfeld & Merton (1955/1978). The concept suggests that if two people in a network have characteristics that match to a greater proportion than would be expected by chance then they will also have an increased likelihood to be connected to one another. This principle introduces a challenging methodological issue into economic analysis because the converse is also likely to be true: if two people are connected in a social network they are also likely to

[28] Feld & Carter (1998) provide an extended discussion of this phenomenon in *'Foci of activities as changing contexts for friendship'*

share similar characteristics. There is thus an implied feedback in social relations such that over time social networks will tend towards a greater degree of homophily. The computational scouring of online social networks for propinquity and homophily is a contemporary attempt to revitalise substantivist thought. In other words, research of this nature tries to explain economic action as a social phenomenon without resorting to the methodological individualism present in most of economics. The sociologist Charles Kadushin suggests that if people flock together ('like birds of a feather', as the saying goes) then there are four processes potentially involved, all of which are relevant to the study of economic behaviour:

'(1) the same kinds of people come together; (2) people influence one another and in the process become alike; (3) people can end up in the same place; and (4) once they are in the same place, the very place influences them to become alike.'

(Kadushin, 2012, p.20)

Empirical evidence can be found for all four of these assertions which erode the legitimacy of methodological individualism as an approach to understanding microeconomics. The growing literature which could be categorised as 'Neosubstantivist' is not just an Anglophone corpus. Following Alain Caille, French researchers in particular have sought to criticise the dominance of utilitarian thought. Indeed the *Journal du Mauss*[29] was created as an attempt to counter inappropriate utilitarian interpretations of Maussian thought. The origin of the journal is said to have come from a discussion between Caille and other academics after a conference on the subject of gifts. Various works were shown at the conference but none of the authors suggested that a gift could be the consequence of a person feeling motivated by genuine concern for another person's welfare. The gift was always assumed to be premised on a selfish calculus. It was as if to take a scientific approach to the study of gift giving the researcher must remain detached and cynical of the motivations actually

[29] For an introduction to the philosophy of Revue du MAUSS see Caille (2005) '*Anti-utilitarianism, economics and the gift-paradigm*'.

articulated by people[30]. This curious stance has come to dominate research into altruism. Despite the growing body of economic research that examines social 'rules' there is scant regard given to the role that sociological factors might play in influencing rationality itself. To understand why gifts have been explained through recourse to arguments of selfishness it is essential to consider how economists have approached altruism and the philosophy of action in the past fifty years. The tricky subject of rationality beleaguers economics just as it does the science of kindness.

The psychology of altruism

The disciplines of economics and psychology have both borrowed heavily from mathematical approaches to biology in an attempt to understand altruism. Since Darwin[31] researchers of biology have tried to describe a basis for the evolution of altruistic behavioural traits over time. This has resulted in models which simulate the interaction of organisms and try to account for *inclusive fitness*[32] i.e. how many successful offspring an organism has, how it supports them, and how their offspring support others. Theories abound within the biological literature, but the approach that has had the greatest influence is *game theory*[33]. Game theory models the 'decisions' two organisms make and uses a matrix of results to calculate the outcome. The decisions modelled are normally dualistic. In simple terms the decisions are conceived as being either kind or cruel, but no motivation is presumed for the action, merely that one act is altruistic and the other is not. Simulations of these interactions over time can demonstrate inclusive fitness and also demonstrate how evolutionary stable strategies[34] come to exist. This approach is useful because the results can demonstrate unequivocally that altruistic acts can and do form an essential part of biological evolution. However, because the organisms being modelled have no reflexive consciousness, or in

[30] To read more about this possibly apocryphal tale see Graeber (2000) *'Give it away'*
[31] Darwin discussed the possibility of altruism evolving through group selection in his book *The descent of man, and selection in relation to sex* (1871)
[32] Hamilton, W. D. (1964) described how genes can influence socio-biology and thus specific combinations could result in behavioural proclivities towards altruism
[33] These approaches were heavily influenced by the mathematics of John Von Neumann e.g. '*Zur Theorie der Gesellschaftsspiele* (1928)
[34] See Maynard-Smith & Price (1973) for introduction and discussion of evolutionary stable strategies

other words self-awareness, there is no need to presume motivation because it doesn't exist in any non-arbitrary sense.

This approach within biology is remarkably similar to the position adopted within most formalist economics. Both Von Mises and Becker, for instance, stressed the importance of analysing the outcomes of interaction between economic actors without attempting to understand the underlying subjective motivations of agency. This approach naturally lends itself to game-theoretic approaches in which an aggregate account of human action can be understood through deductive modelling of interactions between individual people. The human mind is thus modelled simply as a utilitarian automaton, blindly maximising pleasure and minimising pain[35]. This theoretical foundation is applied widely in economics and psychology in a variety of theories with essentially the same premise. The concept of 'pure' altruism or selflessness is criticised in accordance with the minimax theorem. Examples of this utilitarian model can be seen in the influential theories of 'negative state relief' (e.g. Cialdini *et al,* 1987), 'warm glow', and 'cold prickle' (Andreoni, 1990, 1995; Crumpler & Grossman, 2008). The utilitarian approach to altruistic behaviour ultimately can be described through reference to one of two egoistical arguments: either (1) *Warm glow theory* i.e. a person that acts kindly toward another feels better and is thus 'rewarded' internally; or (2) *Negative state relief* i.e. a person that sees another in trouble or anguish feels a sense of guilt and therefore acts to help the other person such that they lose their sense of guilt and are relieved of 'punishment' internally. Some unorthodox researchers recognise the limited real-world applicability of this approach but then attempt to describe the basis of altruism by positing rationality as two distinct utility functions instead: Margolis (1982) argues that these relate to self-interest and group-interest, Etzioni (1988) suggests these are related to material self-interest and moral satisfaction. Regardless of which utilitarian approach is chosen to model the human mind, they all result in the creation of a human subject with a sole aim to maximise *utils*. The main criticism of utilitarian models of the human mind is that they fail to account for the generative mechanisms involved in individual agency. To say that any given decision maximises a subjectively constituted utility is tautological. It provides no insight

[35] See Leonard, R.J (1995) for further discussion on the mathematician John Von Neumann and the 'minimax' theorem.

into how a decision to act was formulated, but presents an *effect* of action (e.g. a warm glow or removal of guilt) as if it were the sole *cause*.

The most influential critique of negative state relief as a basis of altruism has been from the psychologist Daniel Batson. Batson suggests that altruism is driven by empathic concern felt between people[36]. It is a motivational state with the aim of increasing the welfare of another person. This is at odds with the definition of altruism in evolutionary science because that focuses exclusively on the outcome of behaviour itself. Here the definition follows the psychological concept of altruism as evidenced in other influential works (e.g. Sober & Sloan Wilson, 1998; Eisenberg & Miller, 1987)[37]. Attempts to understand the evolutionary basis of altruism refer specifically to inclusive fitness via kin selection. In contrast, Batson does not deny the possibility of egoistic helping of others, but argues for a pluralist understanding of the generative mechanisms that underpin action.

A distinction can potentially be drawn between two forms of empathic concern: one that is affective and another that is reflexive. Various influential authors[38] have suggested that much of our psychology is affective, and thus occurs without the same type of cognition normally expected during forms of reasoned behaviour or perspective taking. There is some evidence to suggest that this is also the case for empathy (e.g. Gallese, 2003; Goldman, 2006; Preston & De Waal, 2002). These studies suggest that empathy can be either affective or reflexive and that there is a clear neuronal distinction to be drawn between the two. It is suggested that affective empathy occurs as a consequence of shared neuronal networks, as opposed to cognitive perspective taking, which in contrast does not necessarily involve an automatic emotional involvement. This can be seen in functional magnetic resonance imaging (fMRI) studies that observe whether a person who is examining another's *'emotional state activates parts of the neuronal network involved in processing that same state in oneself, whether it is disgust, touch or pain'* (de Vignemont & Singer, 2006, p.435). This understanding of morality as somehow being a 'dual-process' can also be seen in

[36] The scope of Batson's argument for empathic concern can be seen in Batson & Shaw (1991) *'Encouraging words concerning the evidence for altruism'*

[37] For further discussion of the empathy-altruism distinction see Hubbeling's (2012) review of Batson (2011)

[38] For further discussion of the role of affect in psychology see Zajonc (1980, 1982) and for critique see Lazarus (1982)

neuroscience experiments[39] into philosophical 'trolley problems'. People in these thought experiments are often willing to imagine condoning an intervention (such as pressing a button) that results in fewer deaths when a runaway train dilemma is framed in utilitarian terms. But when participants are asked to imagine physically killing a person (literally pushing a person onto the tracks) to prevent the death of other people their judgements tend towards automatic emotional responses and resistance.

The terms '*system 1*' and '*system 2*' used in the previous section were originally introduced by the psychologists Keith Stanovich and Richard West, but in subsequent work they refer instead to Type 1 and Type 2 *processes*. In recent work Stanovich (2011) has gone further by drawing a distinction between two parts of System 2. He goes so far as to suggest that the distinction refers to separate 'minds'. This idea results in a tripartite conceptualisation of mental systems, which he describes as the *autonomous*, the *algorithmic* and the *reflective*. Central to the argument is that intelligence should be distinguished from rationality. Intelligence (or what Stanovich calls the 'algorithmic mind') refers to cognitively demanding tasks, but intelligence does not protect a person from bias in their decisions. Rationality, by contrast, refers to the ability of an individual to reflect upon their own deliberations. This is a worthwhile distinction, but the names of the minds are potentially confusing because rationality involves the word 'ratio', which would perhaps have been a better name for cognitive processes focusing on optimal efficiency (algorithmic) rather than social effectiveness (reflective). The reflective mind is taken to be the means through which people come to understand their own being in relation to other people and the world. It is the way in which people prioritise their concerns and projects such that they can formulate plans of action. Stanovich's influence in the literature provides evidence that the term 'reflection' is now seen by many as being an essential part of decision making. However, what is assumed by most is that the capacity for reflexivity is a singular and consistent phenomenon for all people. As far back as the psycholinguistic work of Vygotsky there has been a call for a greater

[39] Greene, J. (2009) presents a substantial body of research to support a dual-process theory of moral judgment.

understanding of reflexivity[40], but this seems to have had little effect on microeconomic theorists.

The sociologist Margaret Archer has attempted to advance the role that reflexivity plays within decision making theory by highlighting the varying forms of reflexivity exhibited by people at different decision points. Archer argues that each person has a rich and private inner mental life that is in a *'continual running commentary with the events going on around us'* (2000, p.193). This running commentary can be understood as a form of *internal conversation* which forms the basis of deliberate thought and thus purposive action. Indeed, the term internal conversation is used interchangeably with reflexivity. For Archer even emotions can be seen as commentaries on human concerns: '*As commentaries, emotions tell us how much we care and how we are doing in relation to concerns which are not reducible to our feelings about them'* (2004, p.327). Reflexivity is argued to be a means through which people come to know themselves, their concerns and their projects through an inner dialogue. This dialogue is never fully resolved as one might think of a Hegelian dialectic resolving as thesis-antithesis-synthesis, but is instead a constant process of dialogical 'listening' for intentionality and emotional commentary. In this sense it is a vehement rejection of rational choice theory's *expressed preferences*. The aim of social science is thus to understand the ongoing *concerns* of the agent that is always aware of and involved in *qua* agent. The rejection of rational choice theory is a reluctance to accept that action emerges merely as the result of a battle between relative strengths of commensurable preferences. Archer (2003, p.26) quotes Sydney Shoemaker who says of rational choice theory:

'if this were right, it would seem unnecessary that the deliberator should have knowledge of the contending beliefs and desires; he would merely be the subject of them, and the battleground on which the struggle between them takes place. But this model seems hopelessly unrealistic, in part because it entirely leaves out the role of the person as an agent in deliberation.'

(Shoemaker, 1996, p.28)

[40] Or as Vygotsky called it a *'history of inner speech'* (1934/1964, p.153)

Deliberation must be understood as a self-critical exercise and is therefore only made possible because people are self-reflexive. Archer's account of reflexivity is discussed in the following section, but first it is necessary to consider the ways in which contemporary economic sociology accounts for the causal role social structure plays in deliberation. The gift is recognised henceforth as a form of purposive action which necessarily requires reflexive reasoning and is thus distinct from a simple form of embodied cognition. Reflexivity and agency are controversial topics within social science, so it is worth first considering the extent to which reflexivity has been examined by social scientists in relation to the conditionings of social structures.

Social conditioning and reflexivity

Postmodern social theorists have attempted to transcend the dualism evidenced in the formalist-substantivist debate by pointing to ways in which agency and social structures are clearly working in tandem. This type of approach can be seen clearly in the work of Pierre Bourdieu (1977, 1984) and Antony Giddens (1979, 1984), both of whom have had an enormous impact on the direction of contemporary sociology by drawing attention to the concept of 'practice'. Rather than suggesting individuals are free to choose economic relations or that behaviour is simply a function of society as a whole their work argues that there is an inseparable ontological relationship between agency and structure. In other words, one cannot exist without the other. They advance a type of sociology that could be called the 'science of unfreedom'[41]. Bourdieu for instance, attempted to demonstrate empirically that 'taste' i.e. the preference we each have as individuals toward certain objects in the world, is itself a product of social conditioning. Taste comes to mean an inherently social concept as opposed to a thoroughly individual and unique phenomenon. The way people buy commodities, such as art Bourdieu contends, actually serves a practical social purpose in that the commodity communicates a socio-economic position to other people. In an interview Bourdieu once noted the way that social life seems to essentially remain the same and carries 'inertia'. Like Mauss before him, arguing against the dominance of utilitarian thought, or Marx arguing against the injustices of capitalism, this perhaps reflects a highly-politicised approach to sociology. In

[41] See Bauman (1988, p.5) 'Freedom' – as a commentary on the intellectual development of social theory

that same interview Bourdieu describes sociology as a martial art, or in other words a means of self-defence. By attempting to scientifically address the ways in which society reproduces systems of economic inequality there is thus a basis to create political opposition. However, it could be argued that such a sociological method effectively eliminates the possibility of individual opposition. In Bourdieu's words (1984, p.95) the method attempts to examine:

'the objective class, the set of agents who are placed in homogenous conditions of existence imposing homogenous conditionings and producing homogenous systems of dispositions capable of generating similar practices; and who possess a common set of properties, objectified properties, sometimes legally guaranteed (as possession of goods and power) or properties embodied as class habitus (and, in particular, systems of classificatory schemes).'

The term 'habitus' introduced at the end of the description refers to the internalised or 'embodied' form of class condition and of the conditionings it entails. This embodiment of social structure is the basis from which Bourdieu argues that *'Art and cultural consumption are predisposed, consciously and deliberately or not, to fulfill a social function of legitimating social differences.'* The extent of practice theory is not just applied to consumption it has also been applied in the study of gift giving. Indeed, Bourdieu (1979) himself conducted ethnographic work into the Kabyle society of Algeria and suggested that gifts occur as a means through which class and wealth inequality are reproduced by imposing hierarchy and debt upon recipients.

Disposition then comes to mean *pre-disposition* in the form of a singular, consistent and homogenous phenomenon borne through socialisation. This is clearly unlike the individual bundle of subjective preferences as Menger and Von Mises would have it. This conception is similar to the 'structuration theory' advanced by Antony Giddens in which individual agency and social structures are not taken as a distinct opposition[42]. Giddens was attempting to demonstrate how principles of order could both produce and be reproduced at the level of practice itself' rather than as a consequence of some 'ordering' society that impinges upon

[42] See for example '*Central Problems in Social Theory'* (1979) and *'The Constitution of Society'* (1984)

individuals from above (see Couldry, 2010, p.45.). Giddens like Bourdieu rightly drew attention to the necessary ontological relationship between structure and agency - the two cannot emerge without one another. Their work criticises methodological individualism as *micro-reductionism*. They also highlight limitations of top-down sociology - normally premised on some form of functionalism - which suggest that individual actions are mere emanations of social structures. Top-down approaches can be seen as a form of *macro-reductionism*. However, by describing agency and structure as being mutually constitutive of each other this results in a type of *meso-reductionism.* Opponents (e.g. Vandenberghe, 2008; Archer, 2003) argue that they conflate the two terms and thus instead of linking agency to structure, they sink the differences between both, with the result that their interplay can no longer be investigated. This begs the question, if Bourdieu and Giddens provide an incomplete account of the interplay between structure and agency what is the alternative? Despite the importance of recognising the interdependence between the two it is suggested by Archer that researchers should pursue an approach of analytical dualism. This dualism rejects the assumption that agency and structure are mutually constitutive and operating simultaneously, thus the interplay between the two can be examined diachronically. It is therefore possible to analyse the agency-structure relationship to understand how causal power is mediated through agency.

Practice theory and new institutional economics alike has sought to address the 'rules of the game', but what is lacking in both is a theory of social integration. The obvious question is why do people play the game in the first place? Put another way, what feature of economic institutions or individual people is responsible for social integration? If people are mindlessly following social rules then how do the rules come to exist in the first place and how do they change? It could be contended that the central problem of social theory, from the methodenstreit through the formalist-substantivist debate up to postmodernism and neosubstantivism today has been one of social integration i.e. accounting for the objective basis of social and cultural factors without eliminating the role of the subject; that is, the causal power of the individual which is mediated through their own agency. Attempts to resolve this quandary have resulted in suggestions that reflexivity can only be collectively developed by members of the academic

community[43]. Another suggestion is the '*extended-reflexivity'* hypothesis (Adams, 2006), but this is inadequate because it fails to account for the potentially different ways that different people might exercise reflexivity in different social settings. It describes reflexivity as something that a person may simply have more or less of, with some uneducated types languishing while high-brow sociologists gain privileged access to complete reflexivity. The problem with framing reflexive cognition in this way is not just intellectual arrogance. The assumption that reflexivity is a singularly consistent phenomenon is premised upon little more than conjecture.

The idea that people have the capacity to exercise different forms of rationality is not new. It can be seen in the seminal works of sociology completed by Max Weber[44]. But Archer goes further than Weber by presenting empirical evidence for different forms of reflexivity as the mediatory mechanism between agency and structure. The possibility of rationality itself is dependent upon the ability to reason with oneself i.e. exercise the power of reflexivity. However, reflexivity is said to exist in four distinct modes which a person may exert: communicative, autonomous, meta-reflexive and fractured (See table overleaf for descriptions). These modes of reflexivity are not restricted to particular people, but certain people may express a proclivity towards a particular mode. Archer argues that reflexivity is the generative mechanism that mediates structure and agency, such that purposive action either reproduces or transforms social structures. This is referred to as the morphogenetic approach and is outlined in greater detail in chapter 4 (Methodology).

[43] As Bourdieu suggested through an insistence that socialised habitus provides the guide to purposive action

[44] See Weber (1968) 'Economy and Society'. Weber distinguished between four types of social action – instrumental-rationality, value-rationality, affectual, and traditional i.e. social habituation

Reflexive Mode	Description
Communicative Reflexivity	Internal conversations need to be confirmed and completed by other people before they lead to action
Autonomous Reflexivity	Internal conversations are self-contained, leading directly to action
Meta-Reflexivity	Internal conversation critically evaluate previous inner dialogues and are critical about effective action in society
Fractured Reflexivity	Internal conversations cannot lead to purposeful courses of action, but intensify personal distress and disorientation resulting in expressive action

Table 2: 'Modes of reflexivity' - Adapted from Archer (2012, p.13)

Archer contends that the significance of different modes of reflexivity is not just limited to the mediation of social structure; they also each potentially suggest a 'stance' towards other people on the part of the agent involved in purposive action. These stances may be *evasive*, *strategic*, or even *subversive* and consequently may be an attempt to explicitly reproduce or transform the social order[45]. This suggestion provides a convenient route back to research questions posed at the beginning of the thesis, in particular: To what extent are the relationships between people in new computer-mediated resource sharing initiatives dependent upon systems of reciprocity or balance? Non-monetary initiatives are of interest in England because it is largely secular and the majority of political decisions that relate to the economy are directed toward market exchange. Given this is the case it is an interesting question to ask why so much non-monetary economic action continues to occur? Do these institutions subvert the market or do they reproduce it as a polite fiction? If the stories people recount deny the score keeping of *quid pro quo* exchange is this actually reflected in their broader patterns of behaviour? Before these questions can be tackled, it is first necessary to consider methods which might provide some suitable explanation.

[45] For further discussion see Archer (2003, p.343) 'Stances are the basic orientations of subjects to society ... In short, they constitute the micro-macro link.'

Chapter 4 - Methodology

'When you are criticising the philosophy of an epoch, do not chiefly direct your attention to those intellectual positions which its exponents feel it necessary explicitly to defend. There will be some fundamental assumptions which adherents of all the variant systems within the epoch unconsciously presuppose. Such assumptions appear so obvious that people do not know what they are assuming because no other way of putting things has ever occurred to them. With these assumptions a certain limited number of philosophic systems are possible, and this group of systems constitutes the philosophy of the epoch.'

(Whitehead, 1926, p. 61)

Research methods in economics and anthropology draw from such diverse philosophical presuppositions it is difficult to know when and where inquiry should venture forth. The goal of economics for the past two hundred years has arguably been to find a 'natural axiology', or in other words, a theory of value(s) which could be used to understand the human condition. As far back as 1939 John Dewey had already articulated the almost intractable difficulty of this pursuit. It is challenging to find a starting point which is not compromised in advance, because that same starting point may in fact be the conclusion of an *a priori* epistemological or ontological position. The discourse is mired by epistemological quandaries over idealism and realism. It sinks further into the metaphysical bog when questions are asked of the subjective and objective understanding of the 'self'. It is therefore necessary to begin with some preliminary questions about fundamentals.

An 'economy' is generally accepted as involving multiple people and a token or *tokens* which are transferred between them. To philosophically ground the research design there is thus a basic requirement to consider the role of subjects, objects, and their respective interplay. It could be contended, as Bryant (2011) has, that since Kant the site of the subject-object divide has been the principle concern of philosophy. Philosophy has obsessed over the relationship between mind and world and how humans access objects. Following this acknowledgement, perhaps the most important question to ask is 'how can we think about the world outside of human thought?' or more precisely 'to what

extent can we *access* knowledge of objects?' The position adopted throughout this research is one of *realism*. The prevailing research philosophies in social science over the past century have often resulted in forms of positivism and phenomenology. The position taken here is critical of both. This chapter provides a critique of both stances and advances a realist mode of inquiry for social science premised upon a concept of 'relational emergence'. Ontology is considered in relation to epistemology before the practical implications for research methods are addressed. Relational emergence is offered as a justification for a sociological research method called the 'morphogenetic approach'. Selected research methods and case studies are then discussed in turn with an analysis of the ethical dimensions for each.

The case for a realism that isn't 'naive'

The position adopted throughout this thesis draws heavily from Roy Bhaskar's early account of 'Critical Realism', which was influenced by the work of Rom Harré (e.g. Harré and Madden, 1975). Despite the allegiance between the philosophy of critical realism and the work presented here, there are elements associated with the critical realist movement which are rejected outright. Various authors in this field recognise a need for a 'dialectical turn' and Bhaskar has also recently written about the relation of spirituality to this research philosophy. Neither of these digressions are acknowledged henceforth as being necessary for social science research. Despite these reservations there nevertheless remains a great deal which can be appropriated from critical realism to inform methodology.

The realist tradition of thought is critical of positivism and methodological individualism. The central critique of positivist researchers is that they commit an *'epistemic fallacy'* by failing to recognise the ontological basis from which social science can take place i.e. through the interplay between structures and agency. The question of ontology was central to Bhaskar's formulation of critical realism and has also been influential to the loosely-grouped philosophers often referred to as 'speculative realists' (E.g. Harman, 2010 ; Meillassoux, 2008). The speculative realist approach, like that taken by other ontological realists, also argues against much of the phenomenological tradition, which by definition is the science of phenomena distinct from ontology. Seminal work in the study of phenomenology drew attention to 'naïve realism' which results from a failure to

recognise the 'problem' of human access to objects. This is not just a position advanced by phenomenologists, though. Empiricists following Hume (1896) maintained that objects are merely bundles of sensations linked by associations and habits in the mind. This position is used to justify the claim that there are no deeper facts relating to objects existing beyond these impressions and habits. In contradistinction to these epistemological positions Meillassoux (2008, p.5) describes both viewpoints as being caught up in 'correlationism'. '*By 'correlation' we mean the idea according to which we only ever have access to the correlation between thinking and being, and never either term considered apart from the other'.* For correlationists, beings are never claimed to exist as beings in-themselves or apart from us, only as being manifest to us. For the realist then – despite recognising the domain of the empirical - there is a difference between saying that there is no world without thought and saying that there is no thinking about a world without thought. Whenever the objects of science - that is causal mechanisms - are observed as constant conjuctions (following Hume), then ontological inquiry is transposed into epistemological questions. What can be said to exist i.e. *what* can be known, comes to be defined as *how* it may be known through the experience of events. Bhaskar (1997, p.64) refers to this ontological perspective as 'actualist' and suggests that actualist ontology is the ontology of closed systems. What Bhaskar calls the domain of the actual is constituted by the experience of empirical events (i.e. contingent effects of causal laws), but this domain gives no account of the real *mechanisms* which underpin events and allow for observable experience. In opposition to the actualist position Bhaskar suggests there are three important ontological domains: the *empirical*, the *real*, and the *actual*.

	Domain of Real	*Domain of Actual*	*Domain of Empirical*
Mechanisms	*X*		
Events	*X*	*X*	
Experiences	*X*	*X*	*X*

Figure 5: Three ontological domains - (Bhaskar, 1975, p.56)

Bhaskar maintains that knowledge is conceptually-mediated and that knowledge is of an external reality which cannot be known with any epistemic immediacy. For critical realists there is no relationship of identity between being and knowing. This distinction is what Bhaskar refers to as transitive and intransitive dimensions. Knowledge claims are said to:

'... constitute the transitive realm because given the lack of a direct epistemic access to an external reality – the intransitive realm – our knowledge claims will be fallible. Therefore what constitutes scientific knowledge will necessarily change over time, as theories with better approximation of truth are developed.' (Cruickshank, 2003, p. 98).

This leads to a position of epistemic relativism because without direct access to a manifest truth all knowledge claims are thus fallible to new theoretical insight. Now that the epistemological basis of this thesis has been articulated it is necessary to ground the chosen research approach through some further discussion. Ontology plays an essential part in the approach advocated here, specifically to account for the concept of *emergence.* The philosophy of emergence is central to the approach, but the position deviates somewhat from the origins of its intellectual lineage.

Philosophising emergence: a history of parts and wholes

The philosophy of emergence can be traced back to debates about the nature of causality and how cause and effect could be described in chemistry when compared to physics. During the mid-nineteenth century philosophers considered whether there was any distinction to be drawn between the two modes of inquiry, and if so, to what extent any difference could be understood scientifically. The argument for emergentism is a simple one, put forth in various guises, but almost all specify that whole entities must be understood as being distinct from their individual constituent parts. The advocacy of emergentist philosophy has grown and waned at several points over the past 150 years, occasionally due to cynicism that the concept involves mysticism. Much of this cynicism stems from the use of terms whose meanings have been interpreted to be vague (e.g. Bergson's '*Élan vital*' (2003)). The theorists of *strong emergence*

(many of whom were part of the British school of emergentists e.g. C.D. Broad, C. Lloyd Morgan and Samuel Alexander) tried to articulate a central position between the doctrines of *vitalism* and *mechanism* as a means of explaining life. Vitalism is the doctrine which states that life is constituted through a dualism of physical and non-physical components. It contends that the non-physical component (occasionally called entelechy or vital spirit) can account for spontaneous morphogenesis and thus the evolution and development of organisms. In contrast *mechanism* advocates disregard the need to incorporate non-physical components into an explanation of life, insisting instead that the body can be explained through an entirely physical account. This physical account suggests that life can ultimately be explained merely as a consequence of lower level laws i.e. through reductionism, indeed it could quite easily be referred to as *physics*-alism instead. Broad attempted to negotiate a solution between the two. He was an advocate of *strong* emergence and his work continues to have an influence on contemporary thought. Broad (1925, p.61) described his position as follows:

'The emergent theory asserts that there are certain wholes, composed (say) of constituents A, B, and C in a relation R to each other; that all wholes composed of constituents of the same kind as A, B, and C in relations of the same kind as R have certain characteristic properties; that A, B, and C are capable of occurring in other kinds of complex where the relation is not the same kind as R; and that the characteristic properties of the whole R(A,B,C) cannot, even in theory, be deduced from the most complete knowledge of the properties of A, B, and C in isolation or in other wholes which are not of the form R(A,B,C). The mechanistic theory rejects the last clause of this assertion.'

The position taken in this thesis defends a concept of *relational emergence* somewhat distinct from Broad's concept of strong emergence and is articulated at length in the work of Elder-Vass (2010). For strong emergentists there is an inherent impossibility to articulating emergent phenomena, it is illogical to even try, so they must be accepted as brute fact instead. In contrast to this position relational emergentists do not deny that inquiry may yield such explanatory power. The reason for this distinction is a specific epistemological position

regarding the ontological relationship between whole entities and constituent parts. The relational emergentist argues that the autonomous powers of wholes relative to their parts is ensured because they may affect those parts in a limiting or enabling manner; but *also* insofar as they may interact in a way that isn't reducible to their parts i.e. a simple explanation of interaction detailing component parts would be reductive and thus redundant (DeLanda, 2006). This position is summarised in later work by Delanda (2011, p.3) as,

'what is different today from the early twentieth century views is the epistemological status of emergence: it does not have to be accepted as a brute fact but can be explained without fearing that it will be explained away. What has remained the same is the ontological status of emergence: it still refers to something that is objectively irreducible.'

One of the criticisms aimed at emergentist approaches is that it arguably relies on the concept of *downward causation*, indeed it has been suggested by Kim (1992) that the concept can only be sustained if downwards causation is accepted as legitimate. The main form of criticism aimed at downward causation is that there is an inconsistency in saying that a higher-level whole may have a causal effect upon its own constituent part. Stephan (1992, p.44) for instance, notes that *'emergent phenomena ... have a causal impact qua emergent phenomena on the very microstructure that determines the emergent phenomena'*. The problem comes from seeing this relationship between a whole and its respective parts as possessing a kind of illogical circularity. Elder-Vass (2011, p. 61) provides a rebuke of this critique by suggesting that to understand relational emergence a more nuanced understanding of time as it relates to cause is required:

'... this apparent problem comes from the neglect of the role of time, and in particular from the neglect of the different time status of cause and composition. In downward causation, a higher-level entity causes a change in one of its parts over a period of time – cause is a diachronic relationship. But the composition relationship is a synchronic relationship – it is a logical statement of the relationships that must exist between a group of parts at a given moment in time for them to constitute a whole of a given type. Composition is not in itself a

relationship with any determinative force; it is only binding to the extent that the (diachronic) morphostatic causes that maintain it continue to do so.'

This understanding of time is important to include in the argument for downward causation, which is taken here as necessary when considering the relationship between agency and social structure. In chapter 3 the formalist and substantivist approaches to economics were said to be 'talking past one another'. This failure to engage properly occurs primarily because of a lack of ontological rigour on both sides. However, the so-called 'Third way' approaches such as those advocated by structuration theorists (e.g. Giddens) are guilty of a form of central conflation between agency and structure. More often than not they provide evidence for morphostasis without ever theorising the possibility of change within the social order. It is this failure to properly account for change within social structures that has led to the adoption of a 'morphogenetic approach' within this thesis.

The morphogenetic approach

Do social structures or human agency determine the behaviour of an individual? This is the central question of social theory. It regularly divides the theorists of economics and anthropology, but it also separates economic anthropologists too. The dearth of agreement may go some way to explaining why two disciplines, which have similarly attempted to expose the human condition, became divorced in the first place. 'Agency' in this context refers to the degree of independence that is afforded to the individual through choice and purposive action. 'Structure' refers to social factors which enable or constrain the capacity of the individual to act. These have historically been listed as factors such as structures, institutions, rules, conventions, norms, values, customs, powers (Fleetwood, 2013, p.125). The support (or lack thereof) given to these factors comes to define what researchers postulate as a form of *being* that exists in the world, that is to say, how a researcher comes to describe a 'social ontology'. This is a critical concept because it also defines how the researcher can subsequently argue a basis for causal relations between entities that may or may not exist. Epistemological questions derive from a specific ontological understanding of the world and the

respective place of the researcher within it. Research traditions in social science have swung between attributing causal power solely to the individual on one side and entirely through social structures on the other. Much of postmodern social theory has been an attempt to critique the structure-agency dichotomy by aiming instead for transcendence between the two. However, this attempt to transcend invariably introduces an analytical problem for the sociologist: if agency and structure are inseparably linked, to what extent can we understand their causal relations to one another?

Archer (1982, 1995, 2007) reinvigorated the debate with her morphogenetic approach (morphogenesis referring to a change in form). Archer's approach emphasises the necessity of form, but it would be a mistake to characterise it as *formalism* in the sense of 20th Century economics, because it is concerned with dynamic, processual aspects of social interaction rather than methodological reductionism. Formalists have historically sought an *a priori* understanding of human decision making and emphasised the value of methodological individualism (For instance, see Menger, 1871/1976). Consequently, social structure and culture are not granted any real causal power in decision making and are effectively consigned to the epiphenomena category. Archer's approach emphasises the importance of maintaining an *analytical dualism*; a phrase coined to emphasise the need to maintain a distinction in analysis between structure and agency (Contra Giddens and Bourdieu - who are accused of conflating structure and agency). Despite recognising that the two are causally related they should be analysed separately because structure is activity-dependent. For Archer, social structure describes the relations between human agents in different social positions. These relations are characterised by specific dependencies and obligations between people. Social relations are therefore conceptualised as having both a subjective and objective basis, insofar as they are *inter-subjective*.

To account for social structure Archer (1982) draws in particular from two previous theorists: Buckley (1967) and Lockwood (1964). Elder-Vass (2007) provides an analysis of the intellectual lineage that led to the formulation of the morphogenetic approach. Buckley was a systems theorist and referred to morphostasis as,

'those processes in complex system-environment exchanges that tend to preserve or maintain a system's given form, organization or state. Morphogenesis will refer to those processes which tend to elaborate or change a system's given form, structure or state' (1967, p.58).

For Archer all life is in a continual state of process that results in preservation or elaboration of existing entities through reproduction or transformation. Archer's influence from Lockwood comes from recognising that because of the time dependent relationship inherent in the process she is describing between agency and structure, they can thus be factually distinguished and are analytically separable (Lockwood, 1964: 250). Archer notes that:

'Fundamentally the morphogenetic argument that structure and agency operate over different time periods is based on two simple propositions: that structure necessarily pre-dates the action(s) which transform it; and that structural elaboration necessarily postdates those actions' (1995: 76).

The morphogenetic approach provides a philosophical justification for the separation of agency and structure. The methodological significance of this justification is that there is a legitimate basis to analyse the continuous interplay between the two respective entities without conflating the relationship or eliminating the possibility of downwards causality. Interaction between these two entities is premised upon the pre-existence of structure. Therefore agency is not a process which produces structures and mechanisms from a structure-free beginning; instead, it *reproduces or transforms* structures and mechanisms which pre-date the action itself. Every action depends upon structures and mechanisms which agents draw upon, and by drawing upon them, agents reproduce or transform them (For further discussion see Fleetwood, 2013). This position does not result in a determinist account of behaviour from either direction. Instead, '*it is precisely because such elaboration is co-determined by the conditional influence exerted by antecedent structures together with the autonomous causal powers of current agents, that society can develop in unpredictable ways'* (Archer, 1995, p.75).

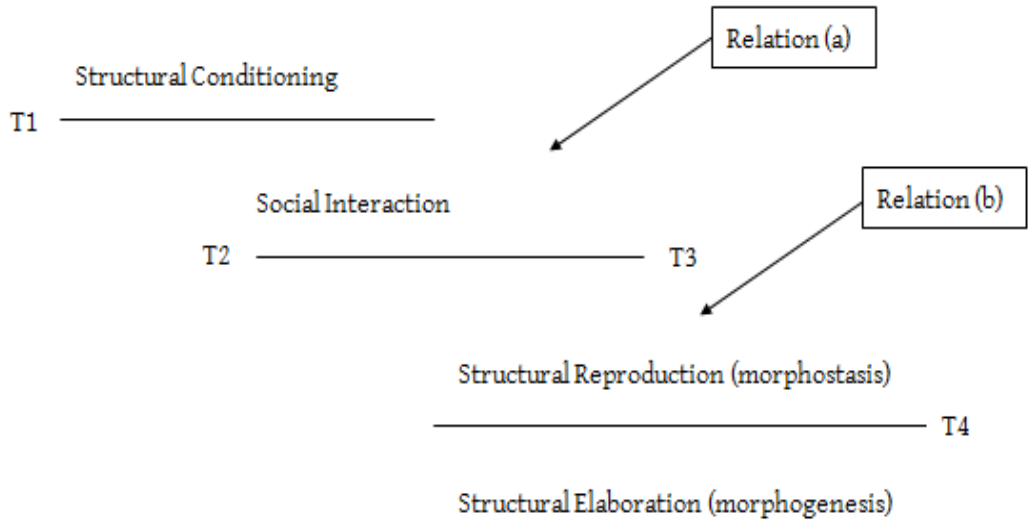


Figure 6: The Basic Morphogenetic Sequence (Archer, 2012, p.52)

Archer suggests that agency and culture co-determine structural change, noting that 'where any form of social elaboration is concerned, then structure, culture and agency are always involved' (1995, p.324). Culture is taken to be '*all intelligibilia, that is, any item that has the dispositional capacity of being understood by someone'* (2014, p97). Intelligibilia are not dependent on a current knowing subject because of their primarily ideational constitution. Archer is therefore committed to a *stratified ontology* which recognises the objective existence of reflexive agents, social structure and culture. These preconditions to social action are seen as universally invariant. As Porpora (2013) notes, the morphogenetic approach is meta-theoretical and contends that ontological commitments must be preserved, regardless of context. Substantivist anthropologists (Sahlins, 1976; Polanyi, 1944, 1957; Dalton, 1979) argued that formalist epistemology eliminates culture as the proper anthropological object. Unlike the Substantivists however, Archer argues against approaches which reify culture to the extent that individual agency is subsumed within culture. Instead, cultural systems and social structure are said to mediate one another indirectly, by constraining or enabling agents through action situations (See Figure 7). The extent of these influences depends on the objective social position of the agent and their own respective subjective projects (Vandenberghe, 2005).

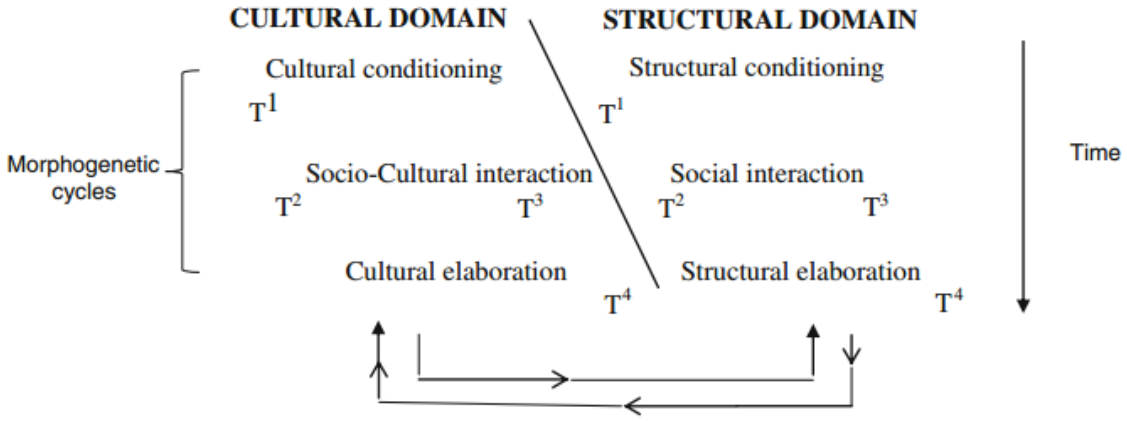


Figure 7: Morphogenesis with structure and culture together (Archer, 1995, p.323)

In the morphogenetic approach human action is not determined by social structures, culture, or even in combination. Human agency is understood as having a creativity which resists nomothetic law (See Porpora, 1983). Within any given action situation people are said to be defending their vested interests and attempting to accomplish their projects. In doing so, they reproduce or transform the structural conditions of the action situation, but in the process they are themselves transformed from involuntary actors to active individual agents. This process is referred to as *double morphogenesis*, and if accepted, invalidates the idea that action situations can be understood by modelling social rules as exogenous variables because the 'rules' are simultaneously reproduced or transformed through social action.

The challenge for the emergentist is to account for how the influences that social order has upon agency should be recognised as being to some extent within agents *and* outside of them, without giving undue primacy to one or the other. For Archer, emergent properties must therefore be understood as being *'relational: they are not contained in the elements themselves, but could not exist apart from them'* (Archer, 1982, p.475). Emergence is embedded in interaction. It is only through an ongoing developmental process that the interrelated components of a system may generate emergent phenomena, and this includes institutional structure. The approach advanced here is critical of approaches which define structures merely as empirical regularities or structures as *'rules and resources'* (Porpora, 2002, p.44). This last description is the position advanced by Giddens for whom structure does not exist, except as a concept which refers to the way

that individuals perceive the resources available to them and form subjective conceptions of rules (1984, p. 17). Whereas, to explain away structure through recourse of empirical regularities is to reduce social institutions to an epiphenomenon.

For Archer and Elder-Vass relational emergence justifies the ontological claim that although structures are the product of individuals they have causal powers of their own, which cannot be understood simply through a reductive explanation of individual interaction. Relational emergentists make a specific argument about the nature of human individuals, that although they are composed of biological constituent parts they also have unique causal powers, which cannot simply be explained through the interaction of those constituents. Both social structures *and* human agents are granted varying degrees of causal power. The morphogenetic process results in the *double morphogenesis* of both individual and social structure (Seen at T4 in Figure 6). Individual reflexivity is taken by Archer to be the generative mechanism for morphogenesis of the self and thus of social structures. Reflexivity is recognised as the way that humans consciously consider their own position within the world and use that consideration as a basis for formulating a plan of action. For some philosophers (e.g. Strawson, 2006) considering consciousness as an emergent phenomenon has been seen as a conundrum, because human consciousness can seem to be a kind of *radical* emergence, but no such position is adopted here. By emphasising emergence as radical i.e. a break or a simple dichotomy this fails to take into account a possible spectrum of different forms of reflexivity which could have evolved within the human species over time. The position taken in this thesis is critical of social theorists that posit reflexivity as either a) a singular, consistent and homogenous phenomenon across a given population, or b) as immutable to historical evolution. Now that the morphogenetic approach has been covered it is worth considering the case studies and respective research methods chosen for the purpose of inquiry.

Selected research methods

Economies involve polytely, or in other words, they are complex problem-solving situations in which people pursue multiple goals. The relationship between an economy and the people within it is complex and non-linear. Formalism within economics, particularly of a 'neoclassical' inclination, generally relies on

deductivist methods. A variety of heterodox economics researchers that draw from critical realist thought reject the over-emphasis on deductivism in orthodox economics (e.g. Lawson, 1998; Fleetwood, 1999). According to Fleetwood (2002, p.45),

'deductivism seeks to 'explain' something by deducing or predicting a statement about that something from a set of initial conditions, assumptions, axioms and a covering law and/or some other form of constant conjunction of events which drives the inferential machinery. These conjunctions, where for every event y there exists a set of events $x_1, x_2...x_n$ *such that y and* $x_1, x_2...x_n$ *are regularly conjoined, only occur in, and are constitutive of, closed systems.'*

Economies, in contrast are open systems, indeed it is difficult to point to any single, non-trivial closed system in the social world. Where neoclassical economists rely upon deductivism they introduce known falsehoods by constructing the artifice of closed systems. Known falsehoods render studies as reductive and thus eliminate any explanatory power from inquiry. It is this conclusion that prompts Hodgson (1999, p.11) to derisively refer to such approaches as *'the economics of nowhere'*. The case studies presented within this thesis incorporate mixed methods. The following section provides a detailed account of selected methods and the rationale for their inclusion. Central to the selection process was the idea that the research should attempt to produce an output that isn't beleaguered by instrumentalism. The term 'instrumentalism' is applied here to any research which has as its sole aim the creation of an instrument for prediction without attempt to explain the underlying mechanism. Instruments cannot be falsified. As Popper noted:

'what may appear to us at first as its falsification turns out to be no more than a rider cautioning us about its limited applicability... If theories are mere instruments of prediction we need not discard any particular theory even though we believe that no consistent physical interpretation of its formalism exists.'

Formalist and Substantivist economists can both arguably be described as using instrumentalism as the basis for theories of economic life. Formalist economists

engineer known falsehoods into deductive models whereas substantivist theories of archetypal behaviours – for instance, universal forms of reciprocity - are so broad that they eliminate the possibility of data collection which would provide a basis for falsification. This does not mean that realist theories of social science are in any way incompatible with quantitative techniques, indeed they are, but statistical correlations are not causes, they merely point to potentially generative mechanisms. These mechanisms must subsequently be subjected to further hypotheses (Manicas, 2006).

Selection of case studies

Study 1 - Freecycle, Couchsurfing, and Landshare

The research process began by identifying groups of people that were explicitly organised with the intent of utilising the internet to help people give or share belongings between one another. A corpus was compiled and each of the potential case studies were examined and discussed between the research team (author and supervisors). Examples that obviously included the use of money, even indirectly, such as renting goods as opposed to sharing, were removed outright. The remaining case studies were then refined further by comparing the user interfaces for obvious distinctions. This process consisted of asking broad questions such as 'does this process involve a transfer of ownership between people or just shared access to a resource?', 'what type of resource is being given or shared during this process?' and 'is the resource tangible, excludable, subtractable?' From these questions three websites showed sufficient distinction from others and had a large number of active users within the Nottingham locale to warrant further investigation. Preliminary observations of these websites are displayed in Table 3 shown overleaf. Further historical details about the origin of the services is contained within chapter 5.

The purpose and orientation of pro-social exchange systems varies enormously. In the research reported here three online systems were studied (Freecycle, Couchsurfing, and Landshare), each encouraging different consumption patterns and human-computer interaction. Each of the systems were selected on the basis that they all reject the use of money and furthermore are individually unique in the way they encourage a particular form economic behaviour i.e. Freecycle

encourages giving of physical tangible goods, Couchsurfing encourages giving of space, and Landshare encourages sharing of physical resources. Freecycle describes itself as being on a mission '*to build a worldwide gifting movement that reduces waste, saves precious resources & eases the burden on our landfills while enabling our members to benefit from the strength of a larger community*' (2013). Members typically advertise things they no longer need and recipients collect the item for free. It is an interesting case study as it demonstrates a form of gift giving which has received less attention than most others: *disposal*. Parsons and Maclaran (2009) note that much of the research in this area has tended to focus on how consumers acquire goods, rather than how they dispose of them. Consequently gifting as disposition remains a neglected and under-theorised area in consumer research.

Couchsurfing (2013) is a volunteer-based worldwide network connecting travelers with members of local communities, who offer free accommodation and/or advice. Couch surfers advertise available space for travelers to use and exchange private messages before meeting offline. The gift in this case comes generally in the form of an experience of cohabited space. Clarke (2006) notes that gift giving theory has evolved around the giving and receiving of physical goods, yet experiences as gifts are increasingly important in modern Western economies.

Landshare (2013) is a UK based website that describes its purpose as bringing *together people who have a passion for home-grown food, connecting those who have land to share with those who need land for cultivating food.* Typically consumers find one another online through localized search results on the homepage. The 'Grower' meets the 'provider' through responses to adverts and subsequent dialogue. The system provides an informal mechanism to arrange meetings offline. Often the resulting exchange of the grower's labour and provider's garden leads to a mutually beneficial outcome i.e. shared produce – although this is not necessarily an obligation on the behalf of the recipient.

The first website selected is called Freecycle. It is designed to help people give away their old belongings instead of disposing of them as rubbish. The second case is a website called Couchsurfing, which is an accommodation service, primarily used for the purpose of tourism. Couchsurfing enables people with spare accommodation space to find travellers look for somewhere to stay

temporarily. The final website is called Landshare and is used by people that have spare garden or allotment space that they want to share with other people or prevent from becoming fallow. The resources in question across the three website which are given or shared are ostensibly: consumer goods, accommodation space, and agricultural land. The first research aim was to address the way in which web technology is being used to facilitate giving and sharing between people. Before beginning the study some preliminary observations were recorded to help make cultural entrée. These observations focused on a range of questions, and included: What is the mission statement of the organisation? To what extent do users reveal personal details? Are transactions between people recorded and/or shown online for others to see? Is there any clear existing evidence that reciprocal relations are forming between people? Have the websites introduced any metrics to try and quantify 'trust' in any form? What type of property rights transferral (according to Ostrom definition discussed in chapter 3) do the websites encourage? Is the human-computer interface used to manage those respective property rights? And finally, how does the organisation manage behaviour from users that transgresses moral standards i.e. is action punishable in any way? The recorded observations were subsequently discussed by the research team in order to inform the research strategy and data collection plan. The primary challenge identified was that in each case study people interact both online and offline. Although, each service is designed to promote particular forms of communication between users, there is some consistency. In the initial stages of using the websites people in possession of property typically advertise online, before a dialogue is initiated with other people that are interested in meeting offline. Once a sufficient level of trust is established between the two people an offline meeting is arranged so that the resources can be given, shared, or borrowed accordingly. The interaction between people using the services is highly varied, with some people choosing to interact asynchronously, some preferring to speak at length online and others that prefer to meet in person before agreeing to a particular transaction. It was therefore of critical importance that the selected research methods were sensitive to the broader context in which each form of social interaction took place, rather than focusing solely on online interaction.

	Freecycle	Couchsurfing	Landshare
Mission Statement / Goal	*'Our mission is to build a worldwide gifting movement that reduces waste, saves precious resources & eases the burden on our landfills while enabling our members to benefit from the strength of a larger community.'*	*'A world where everyone can explore and create meaningful connections with the people and places they encounter.'*	*'Landshare brings together people who have a passion for home-grown food, connecting those who have land to share with those who need land for cultivating food.'*
Level of disclosure	Anonymous other than givers email addresses	Full name, location, sharing preferences and in-depth personal description	Name, location, contact, sharing preferences / circumstance, garden details
Public display of previous transactions	No	Yes	No
Likelihood of direct reciprocity	Highly unlikely	Very possible but unlikely	Possible if agreed before transaction *
Trust metrics	No	Yes	No
Type of property rights transferal	Full Owner to new Full Owner	Full Owner to Authorised claimant (or below)	Full Owner to Authorised claimant (or below)
Ability to manage scalable levels of property rights	No	Yes	Yes
Transaction supervision / punishable consequences	Provides localised 3rd party intermediation through volunteers	Largely self regulating through reputation scoring but has 3rd party support features	Provides contractual support before transaction

Table 3: Preliminary Observations of Case Studies

* Landshare goes as far as suggesting a contractual agreement between both parties that has the potential to remove any reciprocal obligation for produce made on the grower unless previously stipulated by the land owner (in which case the parties enter into a form of delayed reciprocity)

Study 1: Research Methods

Ethnography

Ethnography is the classic approach adopted by anthropologists. In an article reviewing influential anthropological publications Geertz (1998) referred to it as *'deep hanging out'*. Despite this playful description it is nonetheless serious. Grimshaw and Hart (1993, p.53) similarly suggest that at its core ethnography simply means to *'go and experience for oneself'.* The history of anthropology is coloured with monographs detailing far-flung, exotic tribes isolated from the history of western civilisation. But this diversity of record is no reason to suggest that ethnography should be reserved for geographically distant fieldwork. Anthropology's uniqueness as a discipline stems not from an ability to extrapolate academic abstractions, but as a means to provide insight into direct experience of what people actually do with their lives. In the early years of the discipline anthropologists (particularly following Malinowski's functionalism) were negotiating a tension between what could be understood as universally human features while at the same emphasising specific cultural particulars. This created a methodological problem for social science, because despite *'advocating the derivation of ideas from life, they were emphasising a university-based intellectual tradition (known as 'theory'); and while insisting that the normal condition of 'primitive society' was people's integration of social life on their own terms, they reified the separate functional categories which underwrite professional specialisation – politics, economy, religion and the like'* (Grimshaw and Hart, 1993, p.39). Ethnography, it was hoped, could serve as a means of understanding the basic cultural categories understood by different groups of people, rather than imposing an imperialistic account of culture onto the subjects of inquiry.

Why is ethnography a necessary research method as part of the morphogenetic approach? The answer comes from the need to gain insight into the culture and social structures that are part of the case studies selected for investigation. Ethnography has been advocated by a variety of critical realists (e.g. Porter, 1993; Barron, 2012; Rees and Gatenby, 2014), for whom there is typically a focus on generating outputs that go beyond mere description. Historically, ethnographies have resulted in written work which draw predominately from fieldwork experience and thus result in rich descriptive detail (Davies, 2008). Whereas, critical realist ethnographies *'set out from the premise that subjects' own accounts*

are the starting point but not the end of the research process' (Sharpe, 2004, p.2). Ethnography then, is not just a method for data collection and description, but serves as a sociological practice for situating observed accounts within a broader social and historical context and explaining the inter-relationship between the two. This suggests that the historical *'core principle of ethnography – to get inside the heads of individuals and their subjective understandings – is insufficient ... Rather, ethnography must reveal the links between these subjective understandings and their structural social origins.'* (Rees and Gatenby, 2014, p.132).

Each of the case studies chosen within this thesis promotes a service using traditional English terminology, often using terms such as 'giving' and 'sharing', but they nonetheless promote a form of social interaction through the Internet that has no obvious historical precedent. The study of new rituals is essential to understanding how people use these systems technically as well as in a broader social context. The Internet has provided a means for people to interact that differs from simple face-to-face interaction. To gain an understanding of potential methodological opportunities and pitfalls it is therefore necessary to consider the significance of the Internet in relation to the ethnographic method.

Netnography

Netnography is a term that was coined to describe the process of conducting ethnography online, that is, on the Internet or through the World Wide Web. It emerged as a research method in the field of consumer research where social scientists were trying to understand cultures and practices emerging online. Some of these were linked specifically to the study of particular web technologies such as blogs or message boards, whereas others focused on specific interest groups where people meet in virtual spaces to interact. Interestingly there is no clear 'catch all' term for an ethnographic method that examines how people interact online with the specific intent of meeting offline and thus examining the whole experience of online-offline participation. Despite the lack of terminology within this nascent field of inquiry, there is a distinction to be drawn between ethnography and Netnography. The approach advocated within this thesis requires that both methods are given due consideration. Kozinets (2006) describes Netnographic research as having four central characteristics:

'(1) making cultural entrée,
(2) gathering and analyzing data,
(3) conducting ethical research
(4) providing opportunities for culture member feedback'

The idea of making cultural entrée is the suggestion that researchers should make an attempt to familiarise themselves with existing work that describes the communities which are going to be studied. Before beginning a study there should be an attempt to think about access to and disclosure of information for the respective community. If a particular behaviour is to be observed then the observer must be sensitive to their role or presence and the way that it might affect the behaviour of those people being observed. The research strategy adopted herein is one of *participant observation* which draws on emic and etic sources of data, rather than direct participation within the pro-social exchange system itself. This is important because the data reported is not autoethnography nor is it covert ethnography, but is generated within an specific overt context on which the researcher has direct effects. This calls for an explicit consideration of reflexivity in relation to both the observer and the observed before and during the conduct of data collection. Factors, not immediately obvious to the focus of inquiry, such as gender may influence the likelihood of establishing a reliable dialogue with respondents. For instance, despite Couchsurfing promoting itself as a means for travellers to meet one another, there have been queries raised about the sexual encounters sometimes hidden from view that remain implicit considerations for some people using the service (Tan, 2010; Molz, 2011). Further considerations relating to reflexivity can be found throughout the research design and discussion in chapter 5. Due to the nature of the observations required it was decided by the research team that overt observation in which the research participants were informed in advance was the best option for collecting data. This would be supplemented by face-to-face interviews in the location where resources were given or shared.

The research followed a form of participant-observational Netnography as advocated by Kozinets (2002, 2006). Initially, each system was closely examined

for over a year, this included analysing the structural form of each system and how consumers created, captured, broadcast and disseminated data using the internet. The purpose of this preliminary step was to make cultural entrée, to learn about the community and help refine the core research questions. It also provided an opportunity to examine the differences in how the supporting assemblages of web technology were implemented in each case. Specifically the sites were examined to identify whether they were available on the Internet browsers of mobile phones, tablet computers and desktop computers; whether messaging happened through site-specific instant messaging clients or through external email dialogue; and whether the websites used extra functionality such as blogs and message board forums to support each respective community. According to Langer and Beckman (2005) wherever access to websites is not restricted online this can be defined as a public communication and for Freecycle, Landshare, and Couchsurfing this is precisely the case. With this in mind and considering the ethical guidance also suggested by Kozinets (2006) the identity of the researchers was revealed to each community from the start in the interest of promoting openness and cooperation. This was followed by direct observation of the community members. Through note taking and copying examples of computer-mediated communication this provided an initial corpus for data analysis.

Interviews

Interviews were chosen as a core part of the research design because personal reflexivity is taken to be the causal factor mediating the relationship between social structures and agency. The research design places an emphasis on encouraging flexibility during interviews to ensure multiple opportunities for data collection. The formal interviews are designed to begin with 'grand-tour style' questions (Spradley, 1979) where informants are asked to recall an occasion during which they used a service. This preliminary discussion is used as a means to guide the subsequent semi-structure of the interview, which is also supplemented by discussion of specific transactions recorded online as prompt. All participants were recruited through the respective system they use online, but interviews were arranged offline in the place that meetings would typically take place between donors / recipients. This meant that participant observation took

place in a diverse range of locations including homes, gardens, offices, and coffee shops (depending on the resource in question). The purpose of this offline interview, is that it reveals the actual social context in which people meet and provides an opportunity to ask questions specifically related to the location. This online-offline 'multi-site' observation introduces specific ethical challenges for the researcher to ensure appropriate data collection and analysis.

Kozinets (2002) suggests that if the researcher seeks to generalise the study to groups beyond the population studied then other data collection methods should be used to help triangulate the research e.g. depth interviews. 15 users of Freecycle, Couchsurfing and Landshare (5 each) were initially selected through purposive sampling for depth interviews. Eight women and seven men, with ages varying from 22 to 64 years, participated in the formal interviews. All of the participants were current users of at least one of the respective systems, with two of the participants having also participated as site moderators in the past for Freecycle and Couchsurfing. The aim of the interviews was to examine commonality across the way users of each respective system experienced the use of HCI online and offline. Thus the interview process continued until data saturation started to occur. The research questions used in interviews were loosely informed by Sherry's three stage model: *prestation* (decision making), *gestation* (exchange), and *reformulation* (consumption and post-consumption). However, due to the dyadic nature of Sherry's (1983) model the questions were extended to accommodate responses that related to potentially polyadic interactions. It has also been suggested that Sherry's model has strong theoretical undertones of exchange, even suggesting at the potential of balanced reciprocity. This view has been questioned in subsequent studies (see Cheal, 1988; Belk and Coon, 1993; Strathern 1992) because it relies on the abstraction of all resources as being commensurately divisible and therefore capable of being balanced. Previous studies of Freecycle (Nelson & Rademacher, 2009; Nelson *et al.* 2007) have also contended that the notion of balanced reciprocity (as described by Sahlins, 1972) is absent in these systems.

Ethics

Kozinets (2006) discusses three ethical considerations that researchers interested in Netnography should try to adhere to:

'(1) Researcher should disclose his/her presence, affiliations and intentions.
(2) Guarantee confidentiality.
(3) Seek and incorporate feedback from members of the community.'

Within the scope of the planned research agenda these considerations are all appropriate. Research activity will be declared to each of the website owners as well as to the broader user community where possible. Confidentiality is offered to each of the research participants where possible (a detailed outline of the information given to interview participants can be seen in the *'Participant Information Sheet'* and *'Participant Consent Form'* in Appendix A and B respectively). Where interview participants give reference to other members of the community by name, these have been anonymised during transcription. Consideration was also given to whether statements given in interviews revealed any contextual information which might implicate other members of the community specifically and removed where necessary. Finally, the results of the study are made available to the communities examined and feedback is sought through the same websites, where possible, for example in publicly available blogs. This also accords with the principle outlined at the beginning of chapter 2, that HCI should be an interventionary discipline with a purpose not merely to describe or interpret the world, but to actually change it.

Study 2 – Streetbank

The aim of the second study is to observe non-monetary economic behaviour at scale and gain an insight into the way in which reciprocal relations emerge. It is easy to explain benevolent acts through an egoistic motivation for reciprocity, but longitudinal studies of reciprocity are seldom demonstrated empirically. Datasets from the informal economy are notoriously difficult to obtain for the purpose of longitudinal study due to the lack of money, quantification, record and receipt normally involved. This is problematic because it means that most of the theorising in this area is done without the possibility of any falsification. For example, as discussed in chapter 3 Sahlins invokes various concepts of reciprocity to describe economic life, yet this is almost impossible to demonstrate empirically because of the number and variety of actions or transactions between people which could be deemed economic in nature. However, with new database and graphing technologies the interactions between people online can, at least in part, be monitored and measured, so can they can be examined quantitatively. The challenge for this type of research is negotiating sufficient access to a dataset which reveals the behaviour of a particular group. Many of the organisations that facilitate non-monetary economics over the internet are of a not-for-profit status, so unlike their commercial counterparts, they are not as reliant upon exploiting the interactions between people for financial reason. However, they are created with an motivation to encourage a particular behaviour so any study must be mindful not to release data publically which may jeopardise such behaviour. As well as practical considerations they must also adhere to a legal and moral duty of care not to reveal the data 'footprint' of their users inadvertently. These challenges make it difficult for researchers to gain access to datasets which could be used for analysis and public dissemination. However, through early work in the thesis a dataset was obtained through a generous organisation called Streetbank based in London, England. This dataset forms the basis of the second study. Streetbank is a popular service in the UK which facilitates giving *and* sharing of a range of items, tools, and skills. It essentially helps people to turn their house and belongings into free public libraries. In this respect it is an ideal case study to examine because the data set can reveal information relating to a wide range of non-monetary social interaction. Specifically, it provides an initial

insight into whether or not people using the internet to subvert the market, actually follow a similar reciprocal logic.

Study 2: Research Methods

Social network analysis

A social graph is a two-dimensional representation that illustrates particular relations existing between people. Social networks contain nodes (generally representing individual people, although sometimes nested into groups) connected or unconnected by directed or undirected edges (depending on the nature of the relationships being modelled e.g.. a friendship is in theory a two-directional relationship, whereas other social relationships may be one-directional, such as 'following' on certain types of social media). Social life adds extra complexity for network analysis because the 'edges' of social reality come in numerous different kinds: parental, sibling, kinship, employment, friendship and so on. This phenomenon is called multiplexity by social network analysts but the term could easily be replaced by 'multiple social relations'. It is multiplexity which means the abstract links modelled between people must be understood as structural (i.e. include relations of obligation and duty) and not simply networked. Multiplex relations imply that one person may constrain or enable another person (or persons) to act in particular ways, this is the basis of hierarchy and how social networks gain further dimensions to become social structures. It is why a prerequisite condition of sociology must be a stratified ontology, which recognises both agency and social structure. The relations between people are the manifestation of ideas about what is good, right or at worst permissible. Two-dimensional networks belie the complex topological structure of society as a whole unless they are understood as part of a broader social ontology. Network analysis can reveal specific tendencies among a population to form particular relationships over time. This can serve as a means of situating subjective explanations of personal agency within the broader socio-historical structures that allow such agency to emerge. It is particularly useful to move past analysis of dyadic interaction, which has dominated research into non-monetary exchange in much of social science. The significance of relationships between two individual people, should always be considered in relation to the broader social groups of

which those same people are a part. Dyadic interaction in relation to society as a whole was considered at length by Simmel, who compared dyads with triads (groups of three) to help illustrate some of the broader methodological issues introduced when two people interact:

'In respect to its sociological destiny ... the dyadic element is much more frequently confronted with All or Nothing than is the member of the larger group. This peculiar closeness between the two is most clearly revealed if the dyad is contrasted with the triad [in Simmels German, 'associations of three'] ... Where three elements, A, B, C, constitute a group, there is, in addition to the direct relationship between A and B, for instance, their indirect one, which is derived from their common relation to C ... Discords between two parties which they themselves cannot remedy, are accommodated by the third or by absorption in a comprehensive whole ... Yet, no matter how close a triad may be, there is always the occasion on which two of the three members regard the third as an intruder'

(Simmel 1950, 135) – Quoted in Kadushin (2012)

Group-level reciprocity is invoked by numerous theorists, particularly following Sahlins, but seldom shown to have any empirical basis. This is not to say that there could not be some underlying generative mechanism within the human disposition that inclines behaviour toward systems of generalised reciprocity. But by making reciprocity a universal principle the concept becomes so broad that it is effectively meaningless and therefore lacking in any explanatory power. Since the work of the substantivists began the potential for computational social network analysis has dramatically grown. Computational technology can now easily provide specific types of calculation regarding social interactions between people which can be more clearly defined than in the past. These measures include but are not limited to 'direct reciprocity', 'indirect reciprocity', and 'transitivity'. Social scientists regularly introduce concepts without even a cursory attempt to establish what their real referents are. Concepts such as agents, discourse, institutions, value, values and money are taken as given, while ignoring the ontological status of such concepts. It would be unthinkable to do something similar in the natural sciences without attempting to understand what range of entities a concept refers to, so the each of these are now defined. Direct

reciprocity is taken here to be a two-way dyadic relation premised on balance (albeit qualified balance, rather than quantified, in the case studies examined), in which an object is reappropriated between two people. In directed network graphs, reciprocal relations can be identified by examining the directional ties between nodes. Indirect reciprocity exists when object(s) are reappropriated between three or more people and each person can be described as being in qualified balance with the others despite an absence of dyadic reciprocity. Transitivity, is a specific term used in network science which is distinct from the previous definition in this chapter (Bhaskar's theory of knowledge), where a set of relations are said to be transitive when *'A is related to B and B is related to C then there would be a relationship from A to C'* (Borgatti Everett and Johnson, 2013, p.155). In the context of a directed graph, this definition is actually an account of the most simplistic form of indirect reciprocity, but transitivity may also be partial. Indeed, it may even be expected if the people who take part in Streetbank adopt a 'pay it forward' mentality. In the context of the social networks being examined in this thesis a partially transitive relation is a situation in which a person both donates and receives an object within the context of the social network, but the original donator and the final recipient do not have a direct relation. A network with complete transitivity would demonstrate a high degree of inter-relatedness and potentially dependence between the participants. However, for most social networks there are structural holes between nodes. The most direct measure of transitivity in a network is to count the actual triads that exist as a proportion of all possible triads. This method is defined as a triad census and is outlined in greater detail overleaf.

Basic network measures

The first research aim is to examine the number of 'accepts' that are directly reciprocated (i.e. a recipient actually returning the favour)? 'Accept' message senders and recipients were extracted from the dataset and transposed from columns into a binary adjacency matrix. The presence of directional relationships are modelled using Boolean values, a 1 (present) or 0 (absent) and this provides a basis for discrete incidence of action which can be used to examine the structural properties of the network. Three isomorphism classes exist for directed dyads. These include:

- Null (dyads share no edge)
- Asymmetric (dyads share an edge in one direction, but not the other)
- Symmetric (dyads share two edges, one going in one direction and the other going in the opposite direction)

In this study, null relationships between dyads are not of interest. Specifically the focus is on whether dyadic relationships are primarily asymmetrical or symmetrical i.e. whether or not Streetbank members give back and forth to each other. The research focus is how property transfer relates to broader social relations within the network. Streetbank was primarily designed to encourage sharing (i.e. temporary borrowing/lending). However, the design also accommodates gift giving (in the style of Freecycle) and skillsharing (i.e. members teaching each other a skill without the transference of any tangible product). Interpersonal messages have been categorised to reveal which of the three interactions has occurred. This means that the previous questions can be refined to examine specific property relations. For instance, the messages can be examined to see whether particular forms of transfer have achieved increased direct or indirect interaction – is sharing *or* giving more influential for creating subsequent interaction in the network?

Triad census

Examining direct and indirect reciprocity provides an insight into whether the network is premised on some form of balance or through autotelic acts. A triad census provides the most immediate empirical measure. For every possible triad of nodes in a directed network there is a potential for 16 different types of configuration (as is shown in Figure 10). The triad census was completed using a computational algorithm designed by Batagelj & Mrvar (2001). It does not merely describe the relations that share through direct relationships, it also counts the nodes which are not active participants. It is this characteristic of the census which means that it can give an 'overview' of the structure of the network and the relationships that consistently emerge. According to Moody (1998, p.291) the triad census provides the most empirically direct way of measuring the way that '*individuals negotiate local relations and how those local relations cumulate into*

structures. Researchers can test structural network hypotheses by comparing linear combinations of the triad census to that expected under a random or conditionally random.' A variety of formulae have been put forward by authors over the past forty years to test network hypotheses (e.g.Holland and Leinhardt 1970, 1976; Fershtman,1985; Snijders and Stokman, 1987), but the purpose of this data collection exercise is to not to deductively test hypotheses, instead it is a means to inform abductive reasoning.

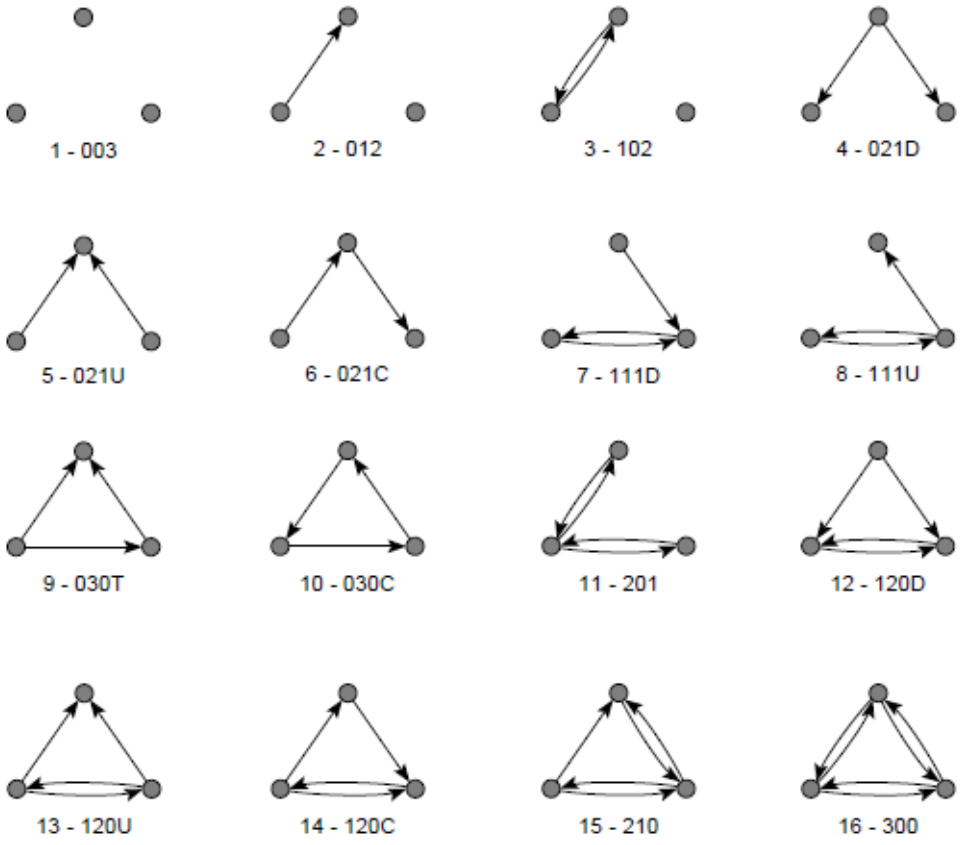


Figure 8: Types of Triads (Batagelj & Mrvar, 2001)

Considered by itself, the triad census does not provide much insight. The census is used merely as a means of identifying the presence (or indeed absence) of particular triadic relations within the network and this subsequently can provide an empirical measure of transitivity. According to Kadushin (2012, p.25) statistical tests *'are very supportive of the proposition that interpersonal choices tend to be transitive. Intransitive triads are very rare ... Nonetheless, balance is only one theory about choice in a network and does have its limitations by postulating rigorous rules for relations that in messy social life do not always hold.'* Economic

relations, in which a transfer of property takes place, are unlikely to be of a similar nature to other human relations such as friendship or trust because excludability and subtractability are both constraining factors for the emergence of a relationship. Transitivity, is nonetheless interesting to examine because it gives an insight into the relative proportion of the network that can be said to be balanced. There are some triads with exactly the same number of edges between nodes, but with edges that go in different directions. In a triad census these are defined through the introduction of a letter, either U (directed upwards), D (directed downwards) or C (cyclical formation). In the context of non-monetary economics there are a number of configurations which could illustrate particular forms of moral judgement being enacted. For instance, 4 (021D) could depict a generous user, whereas 5 (021U) depicts a particularly active form of free-riding. 10 (030C) illustrates the simplest form of indirect reciprocity possible within the network. However, rather than identify specific members and their behaviour the aim herein is to identify measures which can provide insight into social structure.

Triplets and Cliques

A key aim of Streetbank is to help build local community. Thus far the Streetbank volunteers only have anecdotal evidence about the ways that community groups actually form. UCINET provides various algorithmic functionality to detect 'communities', for instance it is possible to examine cliques, triplets (to see if they are vacuous or non-vacuous), and adjacency transitivity. A clique according to Borgatti *et al.* (2013, p.183) is a subset,

'*in which every actor is adjacent to every other actor in the subset and it is impossible to add any more actors to the clique without violating this condition. Formally, a clique is defined as a maximal complete subgraph. Complete means that every node in the clique is adjacent to every other. Maximal means that we cannot increase its size and still have it be complete.*'

For the purpose of research here it is worth examining the emergence of cliques from 3 people (the minimum possible) upwards. The upper limit will give an indication of the density of interconnectedness across the network. A well-

connected graph would indicate that interdependent social structures are beginning to emerge. It is also worth examining 3 person cliques alongside the number of non-vacuous triples because the latter does not give a good insight into the dispersion of interpersonal relations alone. Triplets are similar to triads, but refer specifically to the presence of edges, and do not require the absence of edges. For the practical analysis of action triplets are arguably more insightful. Specifically, the question is asked whether if person a chooses person b and b chooses c, does a choose c? If a->b and b->c, this is a non-vacuous triplet. If a -> c, this is a transitive triplet. If a does not choose c, then it is intransitive. Prell (2011, p.143) suggests that *'vacuous triads are neither transitive nor intransitive, as there are not enough edges in the triad to meet the conditions of transitivity'.* However, a graph can contain vacuous triads and still hold the structural property of transitivity. This can be measured by examining 'triangles', or in other words where 3 triplets coexist alongside each other.

Vacuous triples are interesting in this context, because of the 'pay it forward' mentality advocated in promotional material which seems to suggest a moral imperative associated with the service. All of the measures identified are calculated using a dataset in which the list of nodes (donor and recipient) have been transposed into an adjacency matrix with Boolean values. They provide an insight into the structure of the network and the preference of members to interact with each other, but this data does not relate specifically to geography. A second dataset is used to provide an insight into the distances Streetbank members travel in order to interact offline.

Geography

Postcodes of sender and recipient were included in the dataset. This was combined with a separate dataset of UK latitude and longitude for each postcode. Using a lookup function in Microsoft Excel and the 'Haversine formula' it is possible to calculate an approximate distance between the location of the donor and the recipient. This can subsequently be used to estimate the distance likely travelled for each offline interaction and be considered as part of the network average and deviation. For the purpose of HCI design this distribution is interesting because it may provide insight into how location-specific information should be presented to people using the service.

Ethics

Social network data includes the interpersonal connections that people share, it therefore follows that even anonymised data can potentially be interpreted by triangulating multiple data sources. This creates potential ethical issues in collection, analysis, and publication which may result in additional protection being necessary to ensure the confidentiality of respondents. Furthermore, people occupy distinct roles within social networks which may be qualitatively different in terms of responsibility and vulnerability. The Streetbank dataset contains only adults (aged 18 years and over), but includes a wide range of people from different demographic backgrounds. The nature of the relationships that form between the participants are thus potentially different too, spanning gender, age, employment status, financial income, and residence. In both informal discussion and in the formal terms and conditions provided to members online, Streetbank volunteers emphasise trust as being central to the service they provide. The first ethical standard for research is therefore to ensure that the work falls within the remit of the terms and conditions outlined by Streetbank with their members. Streetbank stipulated that a condition for receiving the social network dataset was that specific personal information should not be included within publication of the analysis, and that where interaction details were aggregated for the purpose of analysis, this should not provide a source for triangulation with other data sources. All social network data included for consideration within the thesis was therefore anonymised at an individual level, and only aggregate statistics were included for analysis. As with the first case studies the results are made available to the community studied with the intention to seek feedback and potentially inform future design.

Chapter 5 – Giving and sharing in the computer-mediated economy

The chapter examines how digital technology mediates the behaviour of consumers in three online systems that facilitate offline gift giving and sharing (Freecycle, Couchsurfing, and Landshare). Findings derived from a netnography and depth interviews reveal how technology is used to enact and influence the management of identity, partner selection, ritual normalisation, and negotiation of property rights. The findings have significant implications for the design and management of systems that encourage non-monetary forms of collaborative consumption.

Prosocial exchange systems and 'hybridity'

A variety of informal offline exchange systems have been facilitated by the internet. Consumers with common interests come together online before meeting offline for the purpose of exchanging, giving or sharing goods. Many of the services are designed and positioned as being explicitly prosocial i.e. the participants who offer their possessions to others do so at a personal cost and without immediate gain (Penner *et al,* 2005). As mobile technology has become ubiquitous the number of these systems appears to be increasing in number due to the improved potential to match people across space and time. Recently there has been a surge of commercial activity in the field of 'collaborative consumption'. These systems help consumers to exploit a spare pool of resources; they can reduce the cost of acquisition and the environmental impact of consumption in comparison to the more typical product lifecycle. Crucially, many of these systems eschew or even prohibit monetary-based transactions, favoring deliberate redistribution of resources without formalised quid-pro-quo exchange (Albinnson & Perera, 2012). Unlike comparable transactions (that rely on money to create equivalence through a shared understanding of quantified value) technology helps to mediate the transfer, aiding both donor and recipient alike. Despite the wealth of research into gift giving and sharing as well as the abundance of computer-mediated prosocial exchange systems, the role that technology plays in these economic transfers has received little attention in the consumer research literature. Dobscha and Arsel (2011) have described the emergence of these systems as a form of hybridized exchange which do not correspond to a singular prototypical behaviour such as giving, sharing, or commodity exchange (see Belk,

2010), but instead demonstrate characteristics of each. The core research objective of this chapter is to understand how technology mediates the ambiguities that arise from this hybridization in order to create and perpetuate structured, ritualised behaviour. The following section revisits some of the principal dimensions of giving and sharing that can be used to inform research methods. The research design is then discussed, prior to an exposition of the results of the netnographies and depth interviews.

Reconsidering the fundamental concepts of giving and sharing

The phenomenon of gift giving has received an enormous amount of cross-disciplinary attention over the past century. Since seminal work by Mauss (1925) and Malinowski (1922) scholars in anthropology, sociology, economics, philosophy, and consumer research have examined the antecedents of giving. Sharing in contrast has received less explicit attention than gift giving, but has been the focus of studies in numerous different disciplines (e.g. Belk, 2010; Benkler, 2004; Widlock, 2004). Despite this wealth of research the scope of gift giving and sharing is so diverse and complex that application of universal rules or typologies is difficult, if not impossible. However there are a number of dimensions that can be used to classify these types of economic exchanges, including *agency*, *structure*, *ritual* and *property.* These are now briefly reconsidered in turn as the basis for the analysis.

Agency & Structure

Yan (2005) suggests a core classification variable of gift giving behaviour is the agency of social actors i.e. do people exchange gifts on behalf of the respective groups that they belong to, such as family, lineage or community? Or, alternatively, is the gift exchanged between two autonomous individuals? Much of the anthropological research into gift giving examines intercommunity gifting and describes how giving as a means of economic distribution within archaic societies created social bonds that form important macro-level structures. Contemporary research into gifting has primarily focused on dyadic perspectives since giving as a means of economic distribution has largely been replaced with immediate reciprocity i.e. secularized market economies. Within the field of consumer research Sherry (1983) developed a processual model of giving which provided a conceptual springboard for others in the field. Here the gift is viewed

as a continuous act of reciprocity, whereby the act of giving provides a dialectical chain between dyads. The process can be studied across three phases through which the relationship between giver and receiver progresses: gestation, prestation, and reformulation. Much of the research in this area emphasises the importance of giving and receiving as a means of fostering and maintaining interpersonal connections with family and friends (Bradford, 2009; Joy, 2001; Wooten, 2000; Wooten & Wood, 2004).

Recently, attention has been paid to the concept of *intracommunity gifting* i.e. non-reciprocal or asymmetric relationships of economic transfer between an individual and a community. These types of gifts are perhaps best described as a form of sharing. According to Weinberger and Wallendorf (2011) previous research has primarily focused on gifting in which the central goal is interpersonal relationship maintenance. Intracommunity gifting occurs when community members in one social position give to community members in another position in which the central goal is intracommunity, rather than interpersonal. Most of the research into giving online has been explored in relation to crowd sourcing projects and peer-to-peer networks, where gifts manifest virtually. In his study of *Napster* Giesler (2003, 2006) acknowledges that the traditional models of dyadic gift giving offer only a limited insight into the digital sphere due to the one-to-many forms of giving made possible by networked technologies such as the Internet. In the cases studied here the principal form of interaction is often polyadic rather than simply dyadic: there is a degree of agential freedom on behalf of the donor which does not restrict their actions to rigid dyadic reciprocity.

Property

A gift always involves a transference or exchange of property rights. Sharing may not rely on a change of ownership like gift giving but it always involves dual access to a property right of some sort and this can affect how a resource is appropriated. When considering property there are a number of characteristics which are useful to examine. In chapter 3 it was argued that rather than analysing the simple dualism of 'public' versus 'private' property, it is useful to acknowledge that some resources can only be consumed a finite number of times and some resources can be appropriated by an individual and then excluded from others. These attributes are recognised in the political-economy literature as *excludability* and *subtractability* (Hess & Ostrom, 2003). Research into sharing and giving often

focuses on alienability as the predominant means of understanding consumer behaviour, or as Barthes (1972, p.73) once criticized the bourgeoisie, property is seen as nothing '*but a dialectical moment in the general enslavement of Nature.*' It makes little sense to speak of alienability (or inalienability) as a simple dualism, property rights are much more nuanced than simple changes of ownership. Many actors (either individual or grouped) can simultaneously lay claim to aspects of a resource. This has been called 'tenure niche' and can be construed in different ways depending on the type of resource being appropriated (Bruce, 1995). Ostrom and Hess (2007, updating Ostrom & Schlager, 1996) recognize a hierarchy of seven positions that can be associated with bundles of property rights: *Access, Contribution, Extraction, Removal, Management, Exclusion, and Alienation*. The most basic right '*Access'* is defined as the right to enter a defined physical area and enjoy non-subtractive benefits. The highest property right that a person can attain over a resource is that of alienation i.e. the right to sell, lease or give away extraction, management, and exclusion rights. Crucially, the right of alienation is socially constituted i.e. the right of the individual always depends on the recognition and acquiescence of other people. Note that the use of the word 'alienation' here departs from other definitions of alienability within the sociological tradition to strictly focus on an absolute and transferable property right.

Ritual

A number of anthropologists have argued that gifts and commodities co-exist in certain circumstances (Carrier 1991; Godelier, 1999; Parry & Bloch 1989, Appadurai, 1988). Money for instance, has often been described as occupying a dual role of gift and commodity (Gregory 1980; Strathern 1979). Similarly, many others have described commodities becoming gifts through the transformative process of appropriation. An illustrative example of ritualized appropriation is gift wrapping which serves a transformative function, turning impersonal commodities into personalized gifts (Carrier, 1995). Rituals provide a social mechanism for the reappropriation of resources through a stereotyped sequence of activities. In chapter 3 Belk's work (2010) was discussed as a means of delineating consumer interactions into three categories: commodity exchange, gift giving, and sharing. The delineation between each category is often blurred, and as such they should be defined in prototypical form rather than by rigid

Aristotelian definition i.e. categories are fuzzy sets and their characteristics overlap and conflate. In the context of non-monetary based acts of exchange, as in digitally-mediated gift systems, this delineation is not immediately obvious. Particularly, when non-monetary exchange online can occur in entirely digital form, for example as file sharing, or alternatively as a forum to facilitate offline giving or sharing. Previous research has suggested that ambiguity often plays a part in creating the 'liminal' (Turner, 1969) moments necessary to mediate economic transfers where the ownership of property is in a state of transition. Turner's concept of liminality was inspired by Arnold van Gennep (1960), but the notion of a 'liminoid' state was an adaptation of the concept so that the ritual moment could be seen to be ever more optional in less bounded and more secularised societies (Abrahams, 1969). Thus far little attention has been paid to how consumers use technology to negotiate the liminoid moments that arise during non-monetary transactions such as gift giving and sharing. Dobscha and Arsel (2011) argue that hybridized exchange systems give rise to a variety of tensions due to the systems being marketed as simply 'giving' or 'sharing' while at the same time giving counterindications of both (as described by Belk, 2010). They suggest for instance, that a system may encourage people to request and offer goods for free but discourage people to provide personal information (a counterindication of sharing) or expect reciprocity (a counterindication of gifting). These tensions suggest an ambiguous state of the resources involved, so examining the rituals involved during transference or exchange could help to shed light on how ambiguity is resolved socially.

Research Design

The formal interviews began with grand-tour style questions (Spradley, 1979) where informants were asked to recall an occasion during which they used a pro-social exchange system successfully. Using online records of previous transactions as prompt informants were then asked to recall specific interactions and the types of resources that were exchanged. The depth interviews yielded rich information on 49 types of resources that were exchanged (see Table 4). Informants were also asked to recall instances where they had been unable to use the system successfully and elaborate on the factors which they believed contributed to failure.

Throughout the interviews research participants were asked specifically about the long-term relationships formed between donor and recipient. Where there was evidence that participants had only ever interacted once with a donor / recipient they were asked to reflect on any sense of owing or indebtedness that they may have felt. This was important in the context of how it motivated their subsequent behaviour toward their exchange partners and the wider community. Participants were specifically asked to refer to how the technology they used influenced each of the dimensions discussed earlier: *agency*, *structure*, *property*, and *ritual*. Rather than asking the questions with explicit reference to each of these dimensions the participants were asked concise questions, such as why they used the system, who they used the system for, how they used the system online and offline, and whether they acted in a particular way when using the system that was specifically unique or based on a particular etiquette. By examining the way consumers interact with each respective digital service the technology is used as a lens to examine how people negotiate ambiguity. Unlike offline gift giving and sharing where motivations may remain tacit and implicit in action, digitally-mediated systems require consumers to explicitly articulate and communicate their desires to negotiate the circumstance of gestation. Participants were all introduced to the research online but interviewed offline in the environment in which they would normally meet other donors / recipients, including homes, gardens, offices, and coffee shops (depending on the resource involved in the respective system). Digital communication trails such as emails and private messaging systems were used for reference in order to help elicit specific reference to case histories. Interviews were audio recorded and transcribed before being coded independently. The interviews, computer-mediated communication trails, and field notes were transcribed and analysed using the software package NVivo, which facilitated a thematic coding process. The thematic analysis drew from a realist epistemology premised on the possibility of ontological stratification (see Archer, 1995) and was further sensitised by the theoretical dimensions identified in the literature review. Nvivo was thus used as a means to develop a structure of associations and links within the corpus (as advocated by Bazeley & Richards, 2000 and Maclaran & Catterall, 2000). The analysis was iterative in nature and followed a qualitative and hermeneutic process. Once the first phase of coding was finished it was then used as a basis

for discussion between the researcher and supervisors on the emergent global themes. The consensus from these discussions was then used as a basis for reviewing and refining the existing codes.

Table 4: Digitally-mediated gifts data set

Gifting-system	No. of research Participants (n = 15)	Types of resources given by informants (n = 27)	Types of resources received by informants (n = 21)
Freecycle	5	Washing machine Steamer Arch files Three sofas Scrap metal Dining Table Ceramic tiles Men's bicycle Piano Laundry Basket Television and stand Spice rack Selection of videos Baby monitors Toaster	Left-handed guitar Leather sofas Television Children's scooter Set of bedside drawers Filing cabinet Laundry Basket CDs for children Travel Pram Mobile phone charger
Landshare	5	Gardening space Shed space Access to tools Access to running water Fruit & Vegetables	Gardening Space Horse Manure Glass panels Mulch Fruit & Vegetables
Couchsurfing	5	Accommodation (bedrooms or living rooms) Access to kitchen / bathroom facilities Home cooked meal Cup of Coffee Tour guides Bottle of wine & bottle opener	Accommodation (bedrooms or living rooms) Access to kitchen / bathroom facilities Home cooked meal Cup of Coffee Tour guides A meal cooked by a guest

Analysis

This research addresses the clarifying role of technology in digitally-mediated pro-social exchange systems and raises its importance as a subject for further study. Interestingly, many of the participants defined their participation in these systems not as one of gift giving or sharing as defined and marketed by each respective organisation, but rather as one of redistribution or exchange, thus confirming the hybridised nature of these economic transfers as discussed by Dobscha and Arsel (2011). The position adopted throughout the research is etic insofar as it is an attempt to examine the core concepts of agency, structure, property and ritual across cultures rather than through the informants' own construal of their participation within each respective system. Four key themes were identified in the research which related to the clarifying role that technology plays in these economic transfers, including: self-curation, partner selection, tenure niche negotiation, and ritual normalisation.

Self-curation

Participants in the systems gave away and shared a wide variety of resources ranging from horse manure to the door key of a mansion, and the amount of supporting personal information was no less diverse. In each respective system there are different requirements for revealing personal information to the wider community, and different subsequent strategies that people employ for impression management. These vary from revealing only a simple unique personal identifier such as a username up to a comprehensive self-examination of personality made publicly available. Following work by Goffman (1959) the presentation of self has been studied extensively over the past few decades and more recently as it relates to explicitly 'social' networking websites (e.g. Hogan, 2010). However, very little research has examined presentation of the self online in relation to gift giving. In these systems consumers curate the information online that relates to them in order to exhibit an alignment with the type of relationship that is expected between donor and recipient. Freecycle transactions result in complete transferral of ownership and the level of personal information shared is very limited (generally email address and hometown). A variety of masks and algorithms are deployed to selectively present personal information at opportune moments. User anonymity does not necessarily preclude a change of ownership. Indeed, it may even help to remove any sense of reciprocal obligation

on the part of the recipient. As anonymity is often seen as common to gift giving in this context this behaviour provides both an indication and counter indication of Belk's (2010) tripartite structure and therefore demonstrates ambiguity. Susan, a 32-year old mother of two and frequent Freecycle user commented:

I don't care who takes it as long as somebody takes it. I post the ad, reply to the people that have responded with my address, and then I leave whatever it is I'm getting rid of outside for them... I know some Freecyclers want to know who's taking what and whatever they're going to be doing with it, but I'm not bothered about chatting.

This can be contrasted with Couchsurfing where each user creates and maintains a personal profile that is made publicly available. This profile includes a history of previous transactions which demonstrates whether that user has a proven history of trustworthiness. Paul, a 24-year old sports journalist commented:

Couchsurfing profiles and histories are important. I think it's important to outline your core values in life so you can find people with similar values. I wouldn't put some information online, like relationship details or contact details immediately, but the community has to get a feel for who you are and what Couchsurfing is to you before you meet people. There's a real stigma attached to negative references, so it isn't worth the hassle of touting yourself to people that aren't of a similar ilk.

This emphasis on the creation of transparent consumption histories ensures that negative transactions carry significant negative value for an unreliable host i.e. they will, in theory at least, struggle to yield as many further successful partners within the network. The effect of this is the creation of a state in which the profiles of users are exposed to a feeling of constant observation, which therefore leads to a motivation for vigilance when exchanging with others (Bertucci, 2009). In effect this can be seen as a positive reinterpretation of the surveillance Panopticon metaphor as described by Foucault (1995) - reputation is used as a coordination mechanism – the façade becomes the function.

Partner Selection

In each system examined the resource in question is always offered in the first instance digitally to the community, encouraging communal responses to an offer online, before individuals are selected to meet offline. All of the research participants using Freecycle or Couchsurfing suggested it was rare to ever meet partners more than once or indeed thought it necessary; however this was not the case with Landshare. As Landshare encourages long term sharing there is more of a requirement to maintain a relationship between donor and recipient. Here the donor retains the right of alienability but the recipient has excludability i.e. the recipient is granted the right to manage the resource, change it, use it for production and stop others using it – except for the legal owner. Where donors and recipients from Freecycle and Couchsurfing were found to have met more than once each participant was keen to stress their opposition toward the concept of reciprocal balance. This suggests that to conceive the behaviour simply as an aggregate result of dyadic gift transactions, as other studies have shown (e.g. Sherry, 1983), would be flawed. The systems have developed by helping to reinforce social solidarity in much the same way as intracommunity gifting (as recognised by Weinberger & Wallendorf, 2011) despite the technology here mediating dyadic gestation. No participants expressed any sense of post-transaction obligation or owing to partners, but allegiance was frequently expressed in relation to the brand or cause of the pro-social exchange systems. One Couchsurfing participant had hosted over 150 individual couchsurfers in his home without ever being a surfer himself. When asked why he took part in Couchsurfing, Phil, 54 said:

Well if I'm not going out to see the world at least the world is coming here, and it means I get more use out of this huge house. It's silly having this house for one person. I don't do it to get anything in return but it often leads to interesting experiences with people that I couldn't possibly meet otherwise. Couchsurfing allows me to understand whether or not a person is likely to be trustworthy, if they are going to be interesting, and if they will be right for me.

Price *et al.*(2000) and have suggested that receiver congruity is a key aspect when people voluntarily dispose of items which have particularly personal meanings

attached to them - it is first necessary to identify appropriate recipients for such objects. Cheetham (2009, p.316) notes that previous studies that have analysed receiver congruity have tended to examine familial transfers where consumers select recipients *'who will look after the cherished possession but ensuring that they will also appreciate its meanings'.* For couchsurfers congruity in selection emerges from participant histories, public profiles and e-mail dialogue. For Freecycle users many of the items being given away are of little value to the owners, but the selection process can still be rigorous and often comes down to a moral assessment of the recipient. One Freecycle user, Julie (38), uses the system extensively for giving and receiving children's clothing, toys and furniture. When asked about the process she follows for selecting a recipient she replied:

I expect people to be flexible and polite. I don't like to be a grammar snob but I expect the request to be well written. If the person begs they've got no chance, but I do like to know the story of why the person wants the item. It's nice to know that your item is going be doing something worthwhile, something meaningful, you know? That's the whole point of Freecycling.

Freecycle is marketed in opposition to balanced reciprocity yet this counterindication of gift giving is called into question when people use the service with such thoroughly personal disinvestment strategies for their belongings. Despite this perennial hybridity borne of different motivations within the system, the issue of ambiguity can be resolved by allowing the participants to message one another first online before selecting an appropriate partner.

Negotiation of property rights

Systems that encourage giving and sharing can be used in relation to different types of property and consumption respectively. A significant distinction was found in relation to whether or not the resource is consumed discretely i.e. as a divisible, individuated experience. Indiscrete consumption occurs when a resource consumed by an individual has a non-subtractive influence on the consumption behaviour of others i.e. two or more people can simultaneously consume the resource without inhibiting one another, for example accommodation. For indiscrete forms of consumption these systems use

graduated hierarchies of property rights, granting the right of exclusion while the donor retains the right of alienability. By explicitly defining the available rights of resources during gestation (i.e., asking the owners of shared resources to articulate the precise property rights they are comfortable with others accessing) this helps to mediate the liminoid moments which punctuate consumption and reformulation. Where participants deviate from the suggested guidelines given in each system there are potential conflicts of interest. Landshare goes further than Freecycle and Couchsurfing by providing a template for a contractual basis to the shared tenure of growing space. However some participants were guarded when asked about this formalising process, preferring instead to just identify partners they believed would be trustworthy rather than sour the relationship with strict rules. Consider Suze, 64 who uses the service extensively to find partners but has not used the system to formalise relations:

I've had 6 Land sharers over the past few years and for whatever reason, I've not found somebody that can actually share the land in the truest sense of the word. I don't know whether it's just me or whether, I've been unlucky. Everyone I've had on the land always seemed like nice reasonable people when we first meet, but after a while I find it hard to ask them to change their ways because it perhaps wasn't clear enough at the start. In hindsight I should have used a contract; otherwise access comes to mean ownership, and then conflict, which isn't the way it should be.

Insofar as Freecycle, Couchsurfing and Landshare are concerned there is a state in which the first potential property right (i.e. digital access *or* knowledge of the resource) can be attained by the collective without the donor ceding ownership of the resource in question. This donation from the one to the many is the means through which the systems are sustained without the need for deep personal connections formed between dyads.

Ritual normalisation

Where pro-social exchange systems record interactions between people they serve as a form of collective memory. This helps to normalise and reinforce behaviour among those that repeatedly use the system. Perhaps the strongest

example of this can be seen in Couchsurfing where all previous transactions are recorded on a public message board for each person involved; wherever consumers transgress the moral expectations of the community the digital record is used to ostracise and, where possible, reconcile. Couchsurfer participants almost universally rejected the idea that their partners 'owed' anything to them or vice-versa but they all expressed an expectation of etiquette. Punctuality, cleanliness, gratitude, and willingness to spend time with the host and exchange experiences were all suggested as part of the normal process of Couchsurfing. Greta, a 22 year old student, is a seasoned Couchsurfer who has stayed in 8 different countries and hosted over 20 guests, she comments:

I expect them to be interested in me as a person and not only interested in spending the night in my house for free. It's essential that the people that ask to stay with me are willing to bring something to the party, so to speak. There's a specific way to behave when you surf. It's doesn't need to be a gift that a surfer brings, particularly as travellers often don't have much money, but I expect them to maybe make dinner. It is customary in my experience for the surfer to make dinner if they are staying for more than one night. It's probably my favourite part as it is a chance to experience other cultures in your own home. I've given negative reviews to people that aren't willing to exchange their experiences with me; I'm not running a hotel.

This suggests that despite the rejection of the system being premised on immediate reciprocity (a counterindication of gift giving) it is not entirely sharing either, as the example demonstrates personal information may be expected but is not always provided (a counter indication of sharing). An example of a strict symbolic disinvestment ritual was found in Freecycle too where participants expressed a desire to ensure the system was used properly. Consider, Nicola (36) who commented:

The point of the Freecycle community, if I can call it that, is that these things are meant to be gifts, they aren't meant to be sold. I know the moderators try to crack down on people trying to resell items on Ebay or car boot sales. I don't think it's fair that they should be allowed to use the service.

Some participants expressed strong ideological motivation and eagerness to participate in prosocial exchange systems as a means of subverting the dominance of consumer capitalist hegemony. This tension between the logic of the market and the preservation of a shared sense of community has been recognised elsewhere in previous consumer research (e.g. Holt, 2002; Kozinets, 2002), but little attention has been given to the role technology can play in sustaining the perceived opposition of market and morality. Sharing taken in this sense is seen as a form of anti-consumption (see Ozanne & Ballantine, 2010). In spite of the inevitable ambiguity that arises during giving and sharing, technology is used in pro-social exchange systems to help perpetuate structured consumption patterns. By recording interactions and guidelines, the human-computer interface is used to ingratiate consumers into normalised rituals. Indeed, many of the respondents admitted to adhering to a particular etiquette when offline which they had previously inferred from discussions conducted online.

Conclusion

The online systems that facilitate new hybridized forms of pro-social exchange are complex and challenging to theorise. However, the four themes identified nonetheless reveal important insights into how technology mediates the ambiguities that arise from hybridization in order to create and perpetuate structured, ritualised behaviour. As mobile computing becomes increasingly pervasive new commercial opportunities for collaborative consumption are likely to emerge. By examining the HCI in computer-mediated systems it is possible to capture and analyse the explicit articulation of circumstance under which giving and sharing systems can emerge. For consumer researchers these systems can help to provide an insight into the ways resources are appropriated by consumers at individual and collective levels. For practitioners the four emergent themes of self-curation, partner selection, property right negotiation, and ritual normalisation present opportunities to create innovative new forms of collaborative consumption in sectors traditionally reliant on monetary exchange. These four dimensions could be managed and manipulated in light of the findings presented here in order to optimise the efficacy of other pro-social exchange systems. An example of a prosocial behaviour worthy of further analysis is

'ridesharing' i.e. the sharing of car journeys so that more than one person travels in a car. While the social mechanisms behind non-monetised exchange in ride sharing are acknowledged to be critical (Wash et al, 2005), they have not been well addressed by many rideshare schemes and hence uptake of technology remains limited at best (Buliung et al., 2010). Consumer researchers (Bardi and Eckhardt, 2010, 2012; Jonsson, 2007) have identified the increasing demand for access-based consumption in preference to ownership, especially in relation to transportation, but they have also recognised that sustainability marketing campaigns regularly fail.

The findings also provide insights that are useful for policy makers. As environmental and economic pressures continue to mount on organisations and governments alike, newer forms of collaborative consumption are likely to be given increasing recognition in policy. A UK governmental white paper has already acknowledged that these systems provide a vitally important contribution to the economy which is not understood by traditional metrics. *'Collaborative consumption will improve economic efficiency in a way that is not necessarily captured by gross domestic product figures'* (Department for Business, Innovation and Skills, 2011, p.27). Unlike the popular 'libertarian paternalism' approach of nudging the individual's decision-making towards sustainable alternatives, a focus on group-level collaborative consumption solutions may help to decouple the relentless political pursuit of economic growth from the environmental impact that inevitably accompanies it.

The research design relied on evidence collected from a single locale in the United Kingdom, however as these systems are international in nature it would be interesting to examine cross-cultural significance of prosocial exchange systems. This research has examined the role that technology plays in computer-mediated systems, but an alternative avenue for future research would be an extension of Ruth *et al's.* (1999) study examining the reformulation of intracommunity relationships after gift giving or sharing has occurred. Previous research has examined this phenomenon at an interpersonal level but in the case of the systems presented here the singular nature of many of the transactions suggests that of much more importance is the sustained social change brought

about by the chosen economic transfers rather than interpersonal relationship maintenance. Depending on the nature of the resource and property rights transferred during exchange, this may create different relational experiences, strengthening or affirming intracommunity bonds in the case of shared property rights or even potentially weakening or severing relationships where alienability is a prerequisite condition of consumption by a single individual. It is to these broader intracommunal social relations that the focus of the research now turns.

Chapter 6 - A social network analysis of non-monetary exchange in local neighbourhoods

This chapter presents a social network analysis of giving and sharing in local neighbourhoods and was conducted in partnership with streetbank.com. The analysis uses a longitudinal real-world dataset to examine the emergence of interpersonal economic relationships through time. A secondary questionnaire dataset provided by Streetbank is used to provide a context to the research and insight into the demographics of Streetbank members. This is then followed by measures of reciprocity, which are used to examine the structural relationships that have formed between members since the beginning of the service. Finally, the findings are presented and future directions for research are discussed.

Introduction – What is Streetbank?

Streetbank is a London-based charity established in 2010 by Sam Stephens. Streetbank hosts an online service called streetbank.com. It was created with the intention to improve social relations in local neighbourhoods by encouraging altruistic acts of non-monetary exchange. Anybody can sign up and make requests or offer help to local people. Users can offer their belongings to others who can choose to lend the items for a short period of time, or if they prefer users can give away their belongings entirely. The service also provides a means to match users for the purpose of skill-sharing e.g. language lessons, music tuition, help with technology etc. At the moment of writing the service has proven to be incredibly successful with over 38,000 users signed up in a variety of countries including the UK, USA, and Australia. The purpose of this study was to specifically examine the question posed in chapter 1:

'To what extent are social relationships in new computer-mediated resource sharing initiatives dependent upon systems of reciprocity or balance?'

Streetbank is designed in such a way that reciprocity between members is not a necessary prerequisite for people to get involved. Any person that requests and receives an item is in not explicitly expected to take part in two-way quid pro quo, balanced, or quantified exchange. The items and knowledge passed between members incur no formal interpersonal debt, they are ostensibly one-way gifts. An example of local items (either for borrowing or available for free) and skillshare opportunities visible to members in Nottingham can be seen below.

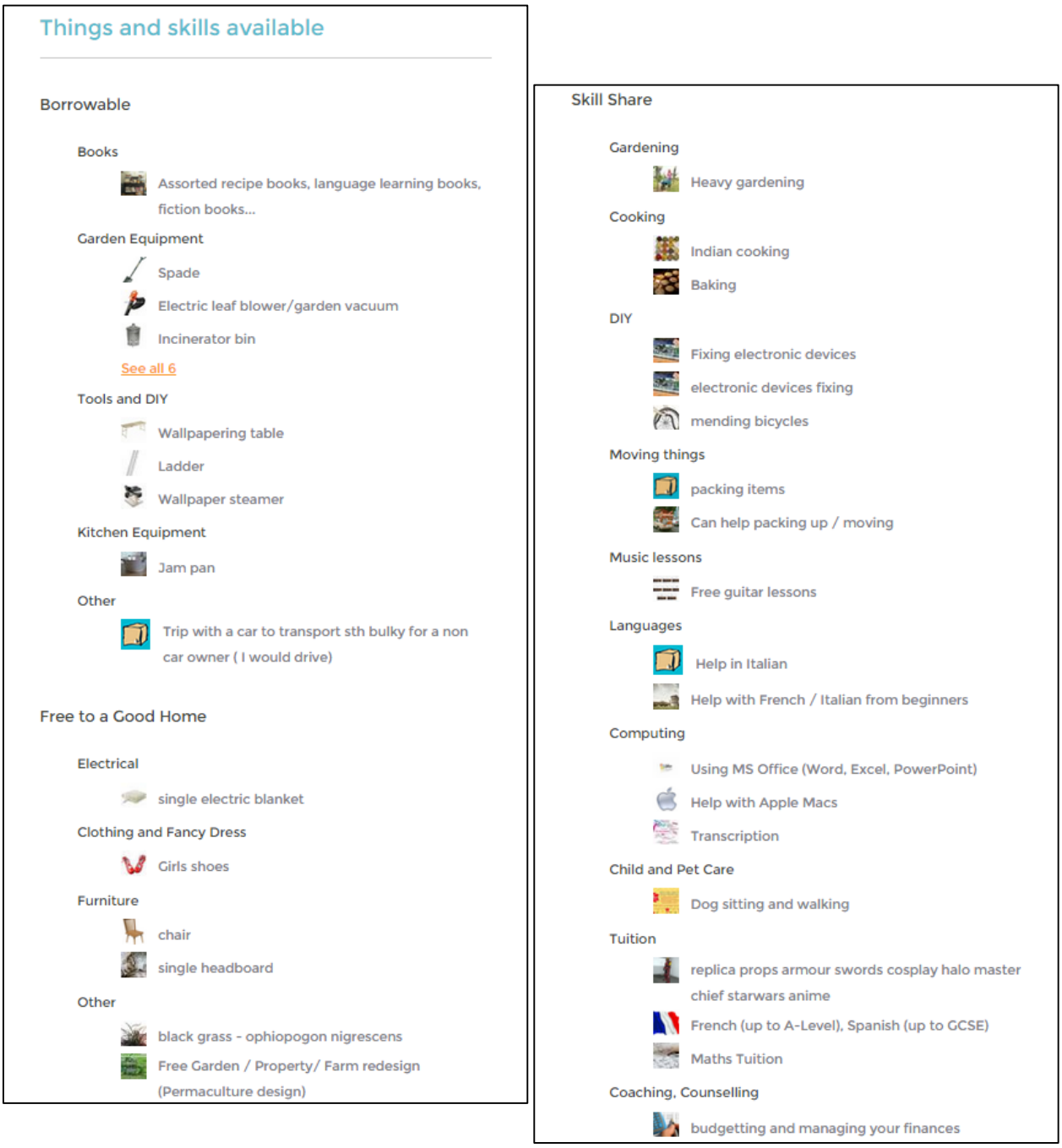


Figure 9: : A localised example of the items and skills available on Streetbank

Mauss described gift economies that demonstrate a 'polite fiction', in which gifts are given freely and expressed as such despite an expectation – indeed, a moral obligation – to return the favour. If much of the research already conducted into gift giving is to be believed, this would also be the case for new prosocial exchange systems. Streetbank records certain information about users as a means of supporting initial interpersonal dialogue online, with the hope that this dialogue will result in an offline interaction and potentially long-term relationships. The nature of the interaction depends on the type of relationship that both participants desire, as it is possible to borrow items or give them away entirely. The user interface will typically present available items within the immediate local area (with the aim of creating a 'bank' of items at street level, hence the website name), but there is also the option to broaden searches for items outside the local vicinity as shown in the figure below:

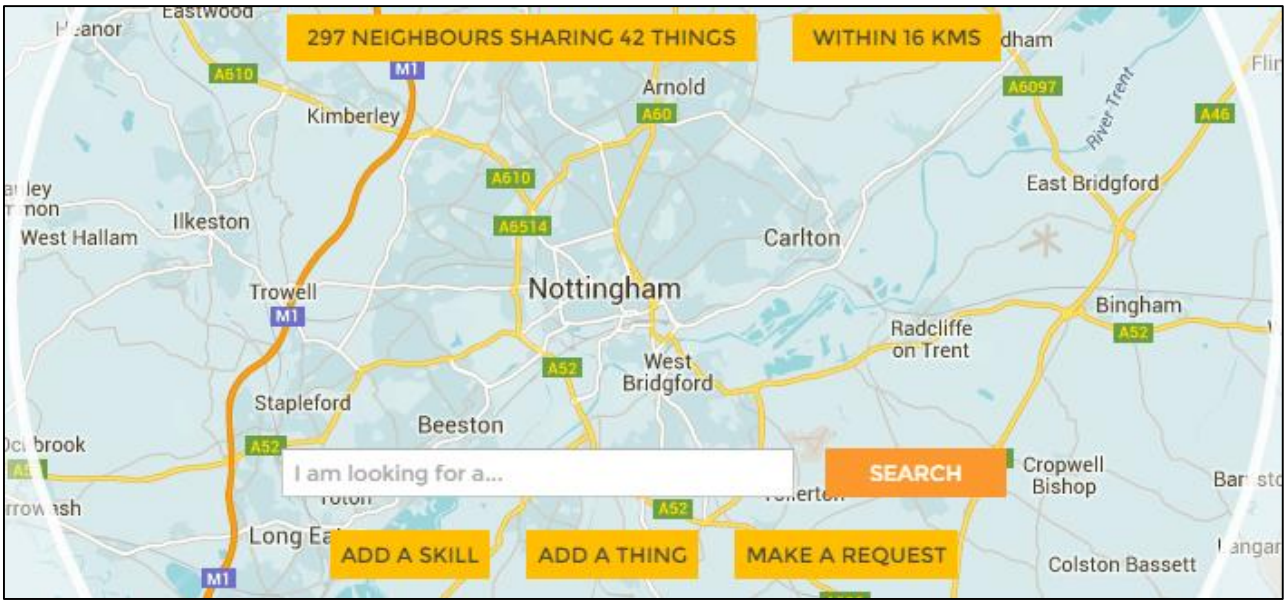


Figure 10: : Streetbank user interface - search functionality

The design therefore facilitates interactions between people who a) do not necessarily know each other, and b) do not necessarily live close to each other. This is particularly interesting if Sahlin's account of reciprocity is recalled, in which 'balanced reciprocity' is described where social interactions occur outside of the 'generalised reciprocity' of local kin.

Once a request is made online the message is made available to the respondent through the website messaging system and is also relayed via email. If both parties agree upon the terms of the offline interaction a meeting is then arranged. Anecdotal evidence suggests that offline meetings generally occur at the place the item or person with the skill is located, although this is by no means a formalised rule. Intermediary persons and intermediary locations such as public locations and workplaces may be involved in the interaction, in much the same way that the case studies considered in chapter 5 suggest. Once an offline interaction has taken place the two Streetbank members are not obligated to leave a formal record, as is the case with Freecycle meetings described previously.

At the time of data collection, unlike websites such as Couchsurfing, there is currently no reputation mechanism on Streetbank which can serve as a means of analysing failures to meet offline (although this design functionality is planned for the future). The dataset presented in the following sections is based on the online messages (specifically formal 'accept' and 'reject' messages) rather than physically observing offline meetings because of the scale of the analysis necessary, for this reason there will inevitably be a small degree of accepted meetings which did not take place. However, this is likely to be a very small percentage, particularly as the Streetbank website itself stresses the importance of etiquette when accepting and arranging offline meetings. As the messages are explicitly categorised (request / accept / reject) this provides an opportune moment to examine the broad patterns of social interaction that take place, but are typically explained without recourse to empirical data.

The informal economy has historically presented various methodological issues for quantitative analysis due to the lack of formal record or receipt during exchange, the absence of numerical balance in trade (i.e. currency), and the often deliberately subversive or illicit nature of informal exchange i.e. the behaviour is performed surreptitiously in relation to monetised or regulated market economies. Thankfully, the technical development of web technologies and the Internet have not only helped to facilitate new forms of informal economy but also provide the means to easily record, and thus quantify at scale, the previously obscured economic relations between people. Using a longitudinal data set it is therefore of interest to examine where and when reciprocity occurs between donors and recipients (direct reciprocity) and between networks of people

motivated to 'pass it on' (i.e. indirect reciprocity). This type of approach can begin to ask questions that anthropologists have arguably failed to answer, such as what specifically is 'base', 'gifts' or non-monetary economics when compared to markets, and should the two be separated for the purpose of analysis? Only through such an approach is it possible to critique the veracity of claims that argue economic aspects of human life are always enacted within the gamut of reciprocity. But before examining Streetbank for these relations it is first worth considering the background and demographic information of the participants actually involved with this case study. The opportunity presented here to analyse Streetbank data is novel, but the available data is not without limitations. The data is primarily drawn from England and is not necessarily representative of international prosocial exchange systems, nor is it necessarily comparative to other 'competitors' such as Freecycle discussed in the previous chapter.

Who is using Streetbank and why are they using it?

As part of a market research campaign launched in late 2013 by Streetbank volunteers, a questionnaire was emailed to members and promoted through social media. The purpose of the questionnaire was to capture and analyse the demographic information of people using the system. Unlike other organisations that mine specific personal information and use it as the basis for targeted advertisements, Streetbank do not presently collect in-depth socio-economic information, nor do they host 3rd party advertisements. This has meant that the people using Streetbank are not known with exact precision. Users may preserve a degree of anonymity not afforded by similar services online, indeed this may even contribute to its appeal for some users. The questionnaires were completed online, using a 3rd party service called 'Survey Monkey'. Respondents received no remuneration for participation in the research, in keeping with the overall ethos of the service. Approximately 38,000 users were registered at the time the questionnaire was promoted and 753 self-completed questionnaires were returned for analysis. Most of the questions asked were closed questions relating to demographic information, motivation, technology preference, and membership. A short discussion of the questionnaire results is now presented and a complete breakdown of questionnaire results can be seen in Appendix C.

Each question asked of the respondents is included in the title of the table. The respective answers are shown alongside the percentage of respondents that answered affirmatively.

Questionnaire Summary

The results of the questionnaire demonstrate the breadth of people using the service and the ways in which they interact. A vast majority of users (96.28%) are over the age of 25. This is an interesting point which suggests that diffusion of this type of service may depend on older users, unlike some other popular social networks that specifically target adolescents and young adults. As younger users are not using the service extensively, it raises the question as to whether there may be certain socio-economic factors that influence participation, for instance whether members feel they need to a) have property that can actually be reappropriated b) have access to a suitable place where reappropriated property can be received, before they can take part.

There is also a gender imbalance among members, although it is impossible to tell from the dataset whether there is also a gender-specific behavioural distinction in the way the site is used. 6.56% of survey respondents self-identified as being unemployed, and at the time of data collection the UK unemployment rate was approximately 7.2% (according to the Office of National Statistics, 2014).
The results suggest that not only do people access Streetbank from a range of devices (including mobile phones, laptops and desktop computers), they also typically have access to multiple devices. Members have access to multiple forms of computing hardware and also express an interest in other online services which have a similar purpose (such as Freecycle - 57.62%). This is a fascinating insight because it suggests that people are using multiple services that effectively 'compete' to enable similar behaviour. Further research is needed to examine why and how people have overlapping memberships with multiple prosocial exchange systems. 58.74% of people suggested their main motivation for joining the service was ideological. This seems to be echoed by the insight that distance rather than specific personal information is described as the primary factor that influences the likelihood of an offline meeting taking place. More people

describe their rationale of joining the service through an interest in giving things away rather than receiving items. Although this in principle is a positive factor for the broader communities of members, it also potentially raises a significant design problem of ensuring constant demand for items. Anecdotally, this has been confirmed by Streetbank volunteers, who suggest that there may potentially be cultural barriers that need to be overcome if long-term interpersonal relations (particularly through borrowing items) are to emerge at scale between strangers. A majority of members (63.79%) suggested they would stop using the service if forced to pay for it. Although, members were more amenable to the idea of donating to the service if they used it successfully. Similarly, members were more open to the idea of revenue generating adverts, particularly if the adverts were sourced from local sources. Both of these survey insights align closely with the way that Streetbank promote their own ethos, as one that promotes interpersonal generosity and localism. This provides an opportune moment to look at the extent to which these values are actually enacted.

Research Design

The source dataset was collected by mining Streetbank's web administration interface. A script was written in Microsoft Visual Basic to scrape data from the website and the resultant data was transferred into a Microsoft Excel spreadsheet. Personal data (names, email addresses etc.) was not collected. The data set was cleansed so as not to store or inadvertently reveal the details of any single user of the service. For example, there was no data recorded about the content of messages, only what type of category the message was i.e. request, accept, or reject. A broad overview of the dataset revealed 38,199 members. The most active member communities are in the UK – but increasingly the service is becoming more popular in Australia and America. Many of the members are active online but have not used the service to meet offline. Persuading members to move from online interaction to offline interaction undoubtedly represents the most significant design challenge for Streetbank, or indeed any prosocial exchange system. All of the messages collected are time stamped and have associated postcode data for sender and recipient. The number of messages in the dataset are categorised as follows:

10250 Request Messages

5053 Accept Messages

1097 Reject Messages

What is particularly novel about this dataset is that it does not intervene arbitrarily in the history of the website but begins with the first recorded request message. This provides an opportunity to analyse the entire history of computer-mediated social interaction rather than an isolated segment of time. The first message was sent on May 14, 2009 and the last message included for consideration was sent on November 28, 2013, in total this is 4 years 6 months and 15 days (1660 days total). Categorising the type of interaction relies on the members identifying what type of relationship they are agreeing to when accepting (either skillshare, free item, or lending). For the purpose of HCI design Streetbank do not validate this procedure i.e. some interactions are not categorised by members. This meant that not all messages can be explicitly analysed for property rights distinctions. The dataset includes:

Skillshare – 1036 accept messages

Free item – 1646 accept messages

Lend item – 881 accept messages

Uncategorised – 1481 accept messages

The research design followed 3 key stages (basic network measures, triad census, and geography) as outlined in chapter 4. Further software was used for network analysis and visualisation. The open source software named 'Gephi' was used visualization of the Streetbank network graph (See Bastian et al, 2009). UCINET was used for network analysis and the triad census (See Borgatti *et al.,* 2002; Borgatti *et al.,* 2013).

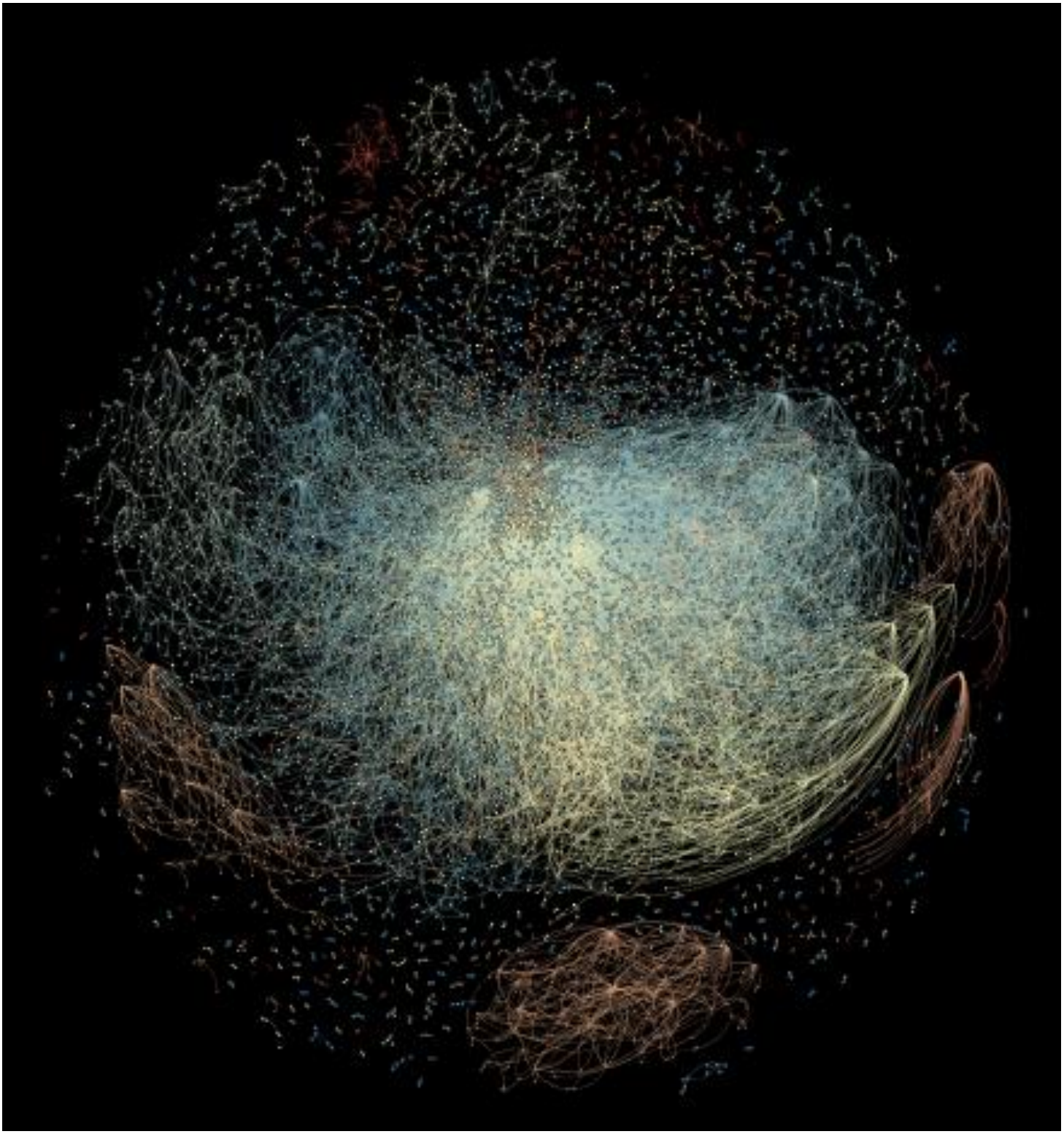


Figure 11: Streetbank messages (reject, accept, reject) network graph modulated into 'communities' and visualized in Gephi

Table 5: Active offline members - overall statistics

Number of unique offline active members i.e. donated or received an accept message	3961
Number of unique donors	2483
Number of unique recipients	2268
Members that have BOTH given and donated using Streetbank	790 (equal to 19.94% of total members active offline)

Number of offline donor-recipient dyadic relationships formed = 4230

(N.B. For this analysis duplicate dyads are removed from the accept message dataset)

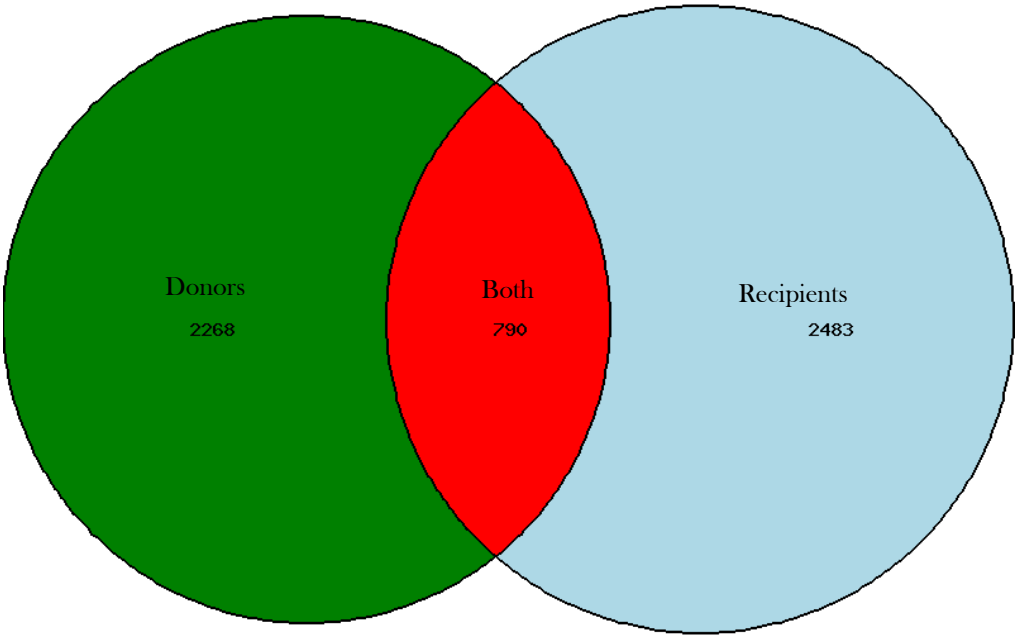


Figure 12: Donor-recipient set membership

Table 6: Dyad Symmetry statistics

	Combined	Free items	Lend items	Skill share
Symmetrical Dyads	52	13	6	0
Asymmetrical Dyads	4178	1363	766	929
All Dyads	4230	1376	772	929
Dyad-based Reciprocity %	1.24%	0.95%	0.78%	0%

Table 7: Triad Census

Triad Configuration	Combined	Free items	Lend items	Skill Share
1	311543072	119583640	211457984	331981152
2	16492868	2323357	828034	1224971
3	204577	22043	6467	0
4	4729	928	305	294
5	11062	3045	220	539
6	7233	940	228	280
7	768	139	10	0
8	432	59	14	0
9	167	24	3	4
10	12	0	1	0
11	31	6	3	0
12	6	0	0	0
13	10	0	0	0
14	7	1	1	0
15	3	1	0	0
16	0	0	0	0
% of Transitive Triads	0.021	0.021	0.012	0.014

Table 8: Clique analysis

Clique Size	Combined	Free items	Lend items	Skill share
3 person	194	26	5	4
4 person	4	0	0	0
5 person	0	0	0	0

Table 9: Triples and Transitivity analysis

	Combined	Free Items	Lend Items	Skill Share
Number of non-vacuous transitive ordered triples	215	28	4	4
Number of triples in which a-->b and b-->c	8763	1181	267	284
Number of triangles with at least 2 legs	43255	9599	1385	1958
Transitivity: % of ordered triples in which a->b and b-->c that are transitive	2.45%	2.37%	1.50%	1.41%
Transitivity: % of triangles with at least 2 legs that have 3 legs	0.50%	0.29%	0.29%	0.20%

Table 10: Estimated distance travelled for offline dyad interaction

	Combined – including no category dyads (n =4276*)	Free Items (n = 1401)	Lend Items (n = 772)	Skill Share (n = 845)
Mean average (miles)	3.47	2.02	4.91	2.84
Standard Deviation	21.40355	11.9731	29.00698	17.90109

*Distance was only calculated for UK members due to the availability of postcode data for triangulation

Discussion and conclusion

The Streetbank data reveals a network of choices made by individuals that demonstrate no obvious reliance on balance, direct or even indirect reciprocity. Ethnographic evidence of other prosocial exchange systems presented in the previous chapter pointed to this conclusion, as did some of the previous studies mentioned. However, this dataset provides the first large scale analysis of structural relations in a prosocial exchange system. The Streetbank network is largely intransitive which suggests the interpersonal choices described earlier by Wasserman and Faust are of a different nature to the data presented here. This may be due to the nature of the directional relationship between the individuals all relying on abstract concepts - friendship, support, alliance etc. These are all capable of being reproduced without necessarily subtracting from the quality of the relationship – one person may engage in relationships with several people without diminishing their own personal standing. However, when the concept associated with a directional relationship is a transfer (i.e. transmission of a physical entity) that entity has the potential to be *excludable and subtractable*. This means that scarcity and personal agency are both constraining factors for the potential emergence of transitivity in the network. In a market economy interpersonal balance can be achieved through reliance on money, which serves the practical function of a signal of value i.e. there is no requirement for money to be subtractable because it is not physically consumed. This is not the case with Streetbank, indeed not only is the promoted ethos against formal balance, there is no evidence of a 'polite fiction' involved at a broader social level.

790 (19.94%) of the 3961 members that have successfully used Streetbank offline have both donated to and received from another member. This is the simplest measure of balance in the network. It suggests that there are potentially qualitatively distinct roles in the network that further analysis might help to reveal. As the membership sets for donors and recipients are so imbalanced, one possible reason is that these are 'positional' forms of prosocial interaction, or in other words, they occur between people who occupy distinct objective places within broader social structures. At a dyadic level the presence of balance is a rare occurrence, with just over one act of interpersonal reciprocity per hundred dyadic interactions. Skill sharing provides the most dramatic illustration of the

absence of balance at the individual level. Not a single dyad has demonstrated a skill-sharing reciprocal arrangement. This has important implications for the way that Streetbank and other prosocial exchange systems should characterise the service they are promoting. The sharing they describe is actually sharing in practice not just description, so to frame it in terms of generalised reciprocity would be a mistake.

All dyadic interaction should be considered within broader social structures. The network measures reveal that group-enabled indirect reciprocity is not a common feature of the network. The triad census reveals empirically that the network is overwhelmingly intransitive, regardless of the category of interaction. The triplet measure provides a more practical basis to examine the structural relations that have emerged as a consequence of the choices made by Streetbank members. The majority of non-vacuous triplet combinations were only evident when the categories were considered as one combined network (n= 215, in contrast to 28, 4 and 4 respectively). This suggests that reciprocal practices have not emerged based specifically on the category of the interaction. Indeed, it is only through multiple different forms of interaction at scale that indirect reciprocity has come to exist. 2.45% of ordered triples in which a->b and b-->c are transitive. This demonstrates that it is much more common for Streetbank members to act in chains of dyads rather than channels of indirect reciprocity. This is illustrated further by the global measure of transitivity for triangles with at least 2 legs that have 3 legs (0.50%). The network is highly fragmented at an offline level. The network graph in Figure 9 shows an image of the many disparate 'communities' at an online message level and this fragmentation is intensified further at an offline level. The network analysis revealed 194 3-person cliques, 4 4-person cliques, and 0 5-person cliques. This suggests that despite the design emphasis of Streetbank toward creating highly-interconnected local communities, there is a general proclivity of members toward disparate dyadic relations. The clique analysis also demonstrates that members are not acting as if each category of interaction requires different social interaction i.e. an associated long-term relationship should be associated with any interaction in particular.

The statistics for estimated distance travelled for offline meetups reveal broadly similar patterns regardless of category, with a mean average of 3.47 miles travelled for each interaction (SD = 21.40). Free items had a notably smaller mean average and standard deviation than for lending items (2.02 and SD 11.97 compared to 4.91 and SD 29.00). This is potentially an interesting area for further study, particularly so if the financial value of the items being given away or borrowed could also be accounted for. There were some instances of members travelling over 300 miles to interact with each other. This seems antithetical to the reason Streetbank came into existence, but it demonstrates the extraordinary nature of the service because such behaviour would be almost unthinkable prior to the existence of the Internet. A limitation to the distance estimation is that it relies specifically upon postcodes and not specific address, and that household meetings are assumed to be the common place of transfer / skillshare. This is assumed on account of anecdotal evidence, but the insight should ideally be corroborated with further ethnographic observation.

Recommendations and future research

The results raise some questions for further research. One aspect of the service not analysed in depth was the online messages sent prior to offline behaviour. The transitivity of all messages (requests and rejects as well as acceptance) is likely to be higher than offline actions. Understanding whether message response rates influence the likelihood that people subsequently respond to other people would give further insight into the extent of 'community' that exists online. The extent to which interpersonal responses are necessary for the broader network would provide an important insight for HCI designers hoping to create or improve new prosocial exchange systems, particularly in the absence of reputation systems. As reputation systems were not included in the design of Steetbank at the time of analysis it would also be interesting to compare the results with other services that have implemented such a system, or in future if Streetbank modify the design a similar comparative longitudinal study could reveal whether public measures of trust influence the reciprocal potential of prosocial action. A limitation of the study is that there is also no way of accounting for dyadic relationships that may have formed that are now maintained solely offline. This is an opportunity for

Streetbank to assess whether 'success' of enabling donors and recipients to interact with each repeatedly may in fact represent a threat to the existence of the overall system, as people might choose to circumvent the website when contacting each other.

In chapter 1 the concept of 'base' as opposed to the market was introduced. This is a difficult notion to reconcile with the activity demonstrated by members of Streetbank. The service is providing a means for people to act in an autotelic manner that aligns with their own personal projects, it also doesn't depend on balance between individuals, and many of the interactions do not take place in an immediate local setting. These are indications and counter indications of what anthropologists and economists typically use in order to make the distinction between market and base, but in this instance the Streetbank members possess a degree of individual agency that makes the market-base distinction seem meaningless. Further work should examine the way in which these acts are explained in relation to other forms of economic activity. If Streetbank, like other prosocial exchange systems, is not a gift, sharing or exchange there should be an emphasis in social science on creating broader ontological categories to describe economic interaction, without a reliance on culturally-specific naming conventions.

Chapter 7 – Discussion

'... the Substantivist-Formalist debate is considered definitively passé. But there is a point. It seems to me that these basic issues have never been resolved. Those who start by looking at society as a whole are left, like the Substantivists, trying to explain how people are motivated to reproduce society; those who start by looking at individual desires end up, like the Formalists, unable to explain why people chose to maximize some things and not others (or otherwise to account for questions of meaning). In fact, though scholars have drifted off to other concerns, the same problems keep re-emerging ... a lot of what passes for the newest and most refreshing poststructural theory nowadays is largely warmed-over Transactionalism, minus the fancy economic formulae, with some even fancier linguistic formulae pasted on instead.'

Graeber, 2001, p.11

The quote above is inserted in full because the findings of this thesis echo the same concern. Chapter 1 began by asking two research questions:

1) How is computer-mediated interaction affecting non-monetary economics in England?
2) To what extent are social relationships in new computer-mediated resource sharing initiatives dependent upon systems of reciprocity or balance?

In order to answer both of these questions, it is necessary to account for human action without reducing social structure to free-floating individuals or alternatively subsuming human agency into culture entirely. This chapter brings together the findings of chapter 5 and 6 to consider the questions posed above. In doing so, a series of propositions are advanced that form the basis of a new approach to non-monetary economics. Central to the approach is a diachronic analysis of property rights that can be used to begin abductive reasoning. Many economists propose that *actions*, or more precisely *transactions,* are the basis of institutions and markets. Economic forms of action have historically been categorised via the essentialist terminology of individual acts, or in contrast, as an expression of archetypal institutions which impose on people. This chapter critiques both positions and contends that any analysis of action requires a *stratified* social

ontology. The following sections provide an immediate response to the central research questions, before broadening the discussion to focus on methodological issues underpinning both. The two 'action situations' discussed in chapter 3 and 4 (Ostrom and Archer respectively) are reconsidered in order to derive a definition of action that can be used to study the institutions of non-monetary economics. The result is an approach for categorising economic forms of interaction that emphasises the importance of studying recurrent features within social structures (using network theory). Finally, the future research implications of the approach are discussed.

The impact of the computer-mediated interaction on non-monetary economics in England

Four organisations currently popular in England have been considered in this thesis, but hundreds of similar examples are emerging across the world. These case studies may in future be seen as nothing more than passing ephemera caused by societies struggling to grapple with new technology. However, it seems more likely that they will continue to influence the way that people think about resource distribution, exchange, the conditions of work, and the economy as a whole. The research yielded the insight that many people simultaneously participate as members of multiple prosocial exchange systems. As isolated examples prosocial exchange systems might be romanticised by detractors as simply charity, but when considered in conjunction these systems could easily become a sizeable proportion of productive labour in the economy. The disruption to existing economic practices is likely to be intensified even further where resource 'sharing' services become focused on finance.

The most interesting aspect of non-monetary economic life being mediated by computers is that previously this type of informal behaviour was largely hidden to everyone but ethnographers. Computer-mediated interaction may not necessarily be affecting the amount of resources being given and shared between people, but it does at least make the interaction easier to observe. Measuring how people interact, without some kind of receipts of interaction, is an extremely difficult task. This is arguably the reason why the description and definition of the informal economy was first taken seriously by anthropologists rather than

economists. The financial value of non-financial interaction has been estimated by various heterodox economists in order to illuminate the productive value of such interaction. Often the aggregate value of the informal economy is estimated to be equivalent to or greater than the formal economy. But even if these estimates could accurately calculate such a questionable figure, it would still leave the intractable problem that the ethos of such behaviour is antithetical to the market. What is surely of greater interest are questions of how these different ethics interrelate in practical terms. The greatest challenge for anthropologists and economists alike, is to move beyond ethnographic accounts of practice and demonstrate how multiple practices overlap. All people encounter multiplexity in their social relations, but the crucial question is how do distinct social practices emerge, transform or reproduce themselves and others? Historically, anthropologists have emphasised the distinction between market and base, similarly Marxists criticise financial philanthropy because it reproduces the social structures of capitalism[46], but there is no reason to assume that economic life can be so clearly defined and packaged into neat parcels. Further research is necessary to explore how multiplex social relations result in individual accumulation or interpersonal balance.

Balance: When, Why and for Whom?

The case studies reveal that while interpersonal balance is a possible consequence of new initiatives, the overwhelming majority of people do not participate for the purpose of entering into reciprocal partnerships. This is an important consideration, because social scientists must recognise that human reasoning has a causal efficacy unbounded by culture. People use these services for many reasons. Some seek them out during financial hardship, some are concerned about the environmental consequences of consumption, others simply feel a desire to meet other people. What links most users, however, is the desire to consume and find social meaning without relying on money. To invoke balance or generalised reciprocity as a cause rather than an effect is to trivialise the many

[46] For instance – *'Charity which degrades him who gives more than he who takes; charity which treads the downtrodden still deeper in the dust, which demands that the degraded, the pariah cast out of society, shall first surrender the last that remains to him'* Engels (1950, p.278)

individual reasons people hold that ultimately coalesce around particular forms of interaction. Balance itself is a fascinating feature of economic life, that likely plays a part in all cultures to some extent, but this must be supported with evidence if it is to be properly explicated as a mechanism for social integration. Heterogeneous communities inevitably involve multiple co-existing practices of economic interaction that reinforce or diminish one another. The intersection of these practices that manifest in property rights transformation should form the basis of a new diachronic kind of study.

Ambiguous definitions of economic activity

The following sections attempt to resolve some long standing ambiguities which stem from the epistemological, ontological and methodological underpinnings of contemporary economics. These debates are crucial to the practice and application of the discipline and its ability to solve real world problems. Suspect foundations lead to unwieldy and unstable superstructures. The aim henceforth is to redefine categories previously applied to economic life (e.g. giving, sharing and exchange) so that any description of action provides an explicit ontological and epistemological acknowledgement. Economic institutions, such as firms and markets, are often said to emerge as a result of 'transactions' between people:

'... the smallest unit of the institutional economists is a unit of activity — a transaction, with its participants. Transactions intervene between the labor of the classic economists and the pleasures of the hedonic economists, simply because it is society that controls access to the forces of nature, and transactions are, not the 'exchange of commodities,' but the alienation and acquisition, between individuals, of the rights of property and liberty created by society, which must therefore be negotiated between the parties concerned before labor can produce, or consumers can consume, or commodities be physically exchanged...' — (Commons 1931 pp. 648–657).

But how does a transaction occur? '*A unit of activity'* is a very ambiguous phrase. How can these single foundational acts - upon which so much is built - be identified and compared? Most social scientists use a common terminology for describing elementary economic acts. For instance, people are said to exchange,

give, share, lend, borrow, or steal, as if each respective word denotes a specific moral or teleological purpose. Such specificity in description provides a basis for a taxonomic understanding of action. This idea is seldom articulated, but is implicit in much of the research into microeconomics and even in research of a more anthropological flavour. Indeed, chapter 1 of this thesis posed the question 'what does it mean to give a gift in contemporary society?' as if the gift itself has always been an essential form of human action.

Categorising social action has long been the preserve of philosophers and sociologists (e.g. Weber, 1922/1991; Parsons 1937/1968; Habermas, 1981/1984), some of whom have attempted to describe essential forms of social action universal to all people and cultures. In contrast to essentialist approaches, there are a growing number of researchers that draw from the philosophical notion of '*family resemblances*' to interpret economic interactions between people (Wittgenstein 1953; 1964). As described earlier, family resemblance is a *polythetic* means of categorisation (as opposed to monothetic), which has much in common with the concept of fuzzy logic. Instead of identifying one essential feature shared by a group of things, the method recognises a group of properties that overlap but are not necessarily all present in each case. Wittgenstein discussed the method in relation to the challenge of defining what it is that makes something a *game*. There is no one unifying feature which can be described synonymously as *gameness*. Consequently, games are said to share similar features such as team play, recreation, or goals, without necessarily possessing any one unifying feature in particular (i.e. family resemblance). It has been argued that Wittgenstein's original argument wasn't anti-essentialist as such, but was an attempt to articulate the difficulty of describing action through linguistic essentialism (e.g. Bangu, 2005).

A comparable mind-set is evident in the study of consumer culture and behaviour, notably in the work of Russell Belk (2010). Belk concludes, that identifying exchange, giving, or sharing is difficult because an act can demonstrate characteristics of more than one prototypical form (other anthropological approaches have come to the same conclusion). A gift for instance, or the characteristic which could be termed *gift*ness, is typically defined through describing generosity on the part of the giver and an absence of ongoing reciprocal relations. However, anthropological records are replete with ethnographic

accounts which undermine such a definition. There are numerous longitudinal accounts of gift giving which demonstrate the emergence of reciprocity (e.g. Malinowski, 1922/1992) and others that demonstrate hostile or antagonistic gifts, which serve as a means to bribe or to appear as the 'Big Man' (e.g. Sahlins, 1963). Anthropologists have constantly drawn attention to the idea that any given social action must be examined in relation to other acts rather than in isolation[47]. The blending of prototypical characteristics that can be observed in singular acts was described in chapter 5 of this thesis as *hybridisation.* Hybrid acts are an epistemological issue that creates a methodological challenge for economists, particularly those that identify transactions between individuals as the basis of institutions. Indeed, the question must surely follow: 'if action is best understood through family resemblances, how should transactions be modelled and compared?'

The relationship between economics and social action is one that has been separated and stuck back together repeatedly throughout the past century. There are economists, sociologists and anthropologists alike that claim all social actions should be understood as economics and that the two are in fact the same thing. This is actually one of the notable points of overlap between some of the most influential neoclassical *and* modern heterodox thinkers e.g. Gary Becker (1976) and Tony Lawson (For instance, Lawson argues that in principle shouting at a football game and making love are both economic acts, 2003, p.162). Although arguing from a different perspective than Becker it is Lawson (2003, p.162) that notes that *'there is no obvious basis for distinguishing economics according to the nature of its object, i.e. as a separate science.'*

This position defended henceforth is in opposition to the idea that social and economic action can be viewed as one. This rebuttal is based on a specific account of the subject-object divide. The work of Archer is reconsidered to explain the emergence of institutional form through *social morphogenesis.* The following section considers the morphogenetic approach in relation to economic 'goods' and how they influence social interaction. A standpoint that sees property rights as the key discriminant is defended. Property rights, whether articulated or tacitly assumed, are a feature of economic life that structurally precedes

[47] Notably following Mauss (1950/2002) and 'Total Social Facts'

production, consumption, or exchange. Both of the central research questions described in chapter 1 require a) that an account of non-monetary action can be adequately described, and b) that empirical accounts of 'balance' are explained in relation to the agency of individuals and broader social structures. It is to these issues that attention is now directed.

Theory and meta-theory of social interaction

For many economists institutions are seen as a formative influence in how individuals gain the preferences and values that are the basis for their actions in the world. In chapter 3 the shorthand definition for institutions of 'the rules of the game' was critiqued. Central to the critique was the idea that the interaction between institutions and the individual is seldom, if ever, explicitly modelled such that the 'rules of the game' undergo any dynamic interplay with the agents that adhere to them. For instance, in Ostrom's action situation (shown again in figure 13), cultural and social rules are taken to be exogenous rather than endogenous variables. Consequently the model fails to account for how the 'rules' themselves might change as a direct consequence of social interaction.

In contrast to Ostrom's action situation, Archer's morphogenetic approach proposes that action is not determined by social structures, culture, or even in combination. Within the morphogenetic approach, action situations consist of people defending their vested interests that are attempting to accomplish their projects. In doing so, they reproduce or transform the structural conditions of the action situation, but in the process they are themselves transformed from involuntary actors to active individual agents. This process is referred to as the *double morphogenesis* and is central to Archer's approach. If accepted, it invalidates the idea that action situations can be understood by modelling social rules as exogenous variables because the 'rules' are simultaneously reproduced or transformed through social action. The 'hybridity' of acts seen in Freecycle, Couchsurfing, Landshare, and Streetbank are all a result of agency, or in other words, of innovative individuals and groups of people creating new forms of interaction. These new forms of interaction would be impossible if rules were purely exogenous to action.

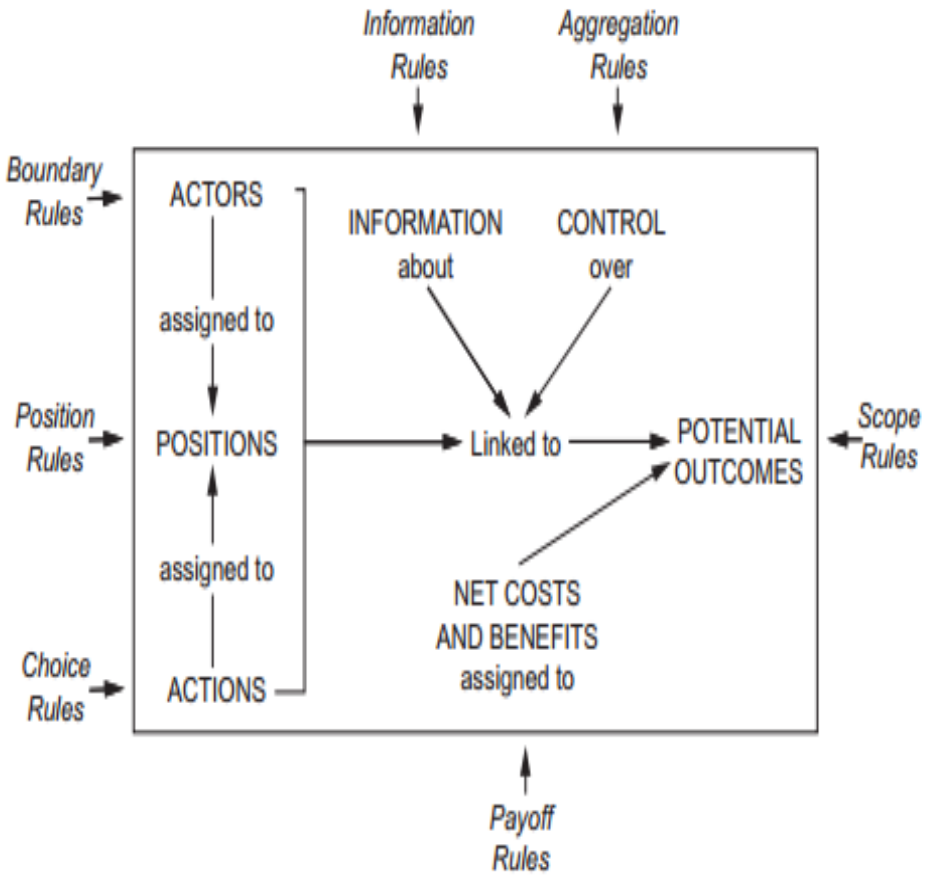


Figure 13: Revisited - Rules as exogenous variables directly affecting the elements of an action situation (Ostrom, 2011, p.20)

Archer discusses 'internal conversations' as the mechanism through which individual agents transform themselves and their objective social conditions. Central to this construal of human experience is the idea that conscious action is presupposed by reflexivity because consciousness is always *self*-consciousness[48]. This position is worth examining further because it is central to the morphogenetic approach and thus the way novel forms of non-monetary interaction come into existence. This requires that the epistemological position

[48] Following Frankfurt's (1988, p.161) suggestion consciousness is reflexive. *'For what would it be like to be conscious of something without being aware of this consciousness? It would mean having an experience with no awareness whatsoever of its occurrence.'*

underpinning the morphogenetic approach is articulated clearly, so that it can provide the basis for further elaboration. Archer sees human emotions as ongoing internal commentaries (2000, p.199). These emotions cluster around specific subject-object contexts called 'orders'. The first order is termed the *natural order* and is a relation between the body and the environment (an object-object relationship). It can be considered pre-reflexive (or even post-reflexive i.e. habituated) and is therefore primarily an affective relationship. The second order is referred to as the *practical order* and is the relation between a person and an object that exists externally in the world *and* as a content of the person's mind, albeit fallibly (a subject-object relationship). The final of these orders is the *social order* and is the relation between reflexive subjects (a subject-subject relationship). This tripartite schema provides a philosophical underpinning, but arguably only reveals part of human experience because it leaves out what is referred to here as the *economic order* i.e. subject-object-subject relations, otherwise known as property rights. Unlike much postmodern thought, which tries to transcend the subject-object divide, it is suggested here that for the purpose of analysis the interplay between subjects and objects should be maintained. Economic interactions involve the transfer of at least one intermediary object between people. This is true even when the object in question constitutes a part of one of the respective subjects e.g. selling the self through wage labour. How does this differ from simple subject-subject relations? The answer is *self-objectification*, which is made possible because people experience their selves as both continuous and contiguous, or in other words as subject and object i.e. they are reflexive.

The discussion of *orders* is also presupposed by the idea that people have causal power *in potentia* i.e. agency may remain unexercised unless the subject forms an intention relevant to its objective conditionings. This idea is to some extent a resurrection of ideas discussed by philosophers in the late 19th Century (e.g. Brentano, 1874/1995; Twardowski, 1894/1977). Brentano argued that intentional human action is always presupposed by an *object* of consciousness and that every psychological act has an intentional object within itself. Twardowski critiqued the idea that if objects exist merely as mental constructs, this requires an answer to the question, what does the object relate to? He

suggested there is a distinction to be made between the 'object', the 'presentation' and the 'content'. In this account content is described as a presentation of the mind, whereas object refers to what content points toward. Twardowski argued that content and object are not the same thing, nor are they equal in fidelity. Thus every act of perception is to some degree an act of imagination. This argument is similar to the idea of '*intransitivity*' advocated by *critical realist* philosophers such as Archer and Bhaskar (e.g. 1998), who maintain that we only ever have exact knowledge of the objects we create through imagination rather than external things in-themselves. This is rejected outright by phenomenologists (e.g. Husserl, 1970, p.55), for whom the dualism is seen as naive. Phenomenologists argue against a stratified ontology and suggest we gain knowledge from direct experience of objects *within* consciousness. For critical realists science is about something which exists independently of scientific pursuit. Theories are described as *transitive* objects whose aim is knowledge of *intransitive* objects, or in other words, the world that exists regardless of those same theories. This does not mean that knowledge requires ontological relativism because the competing transitive objects of science nonetheless relate to the same world. Heidegger arguably challenged the phenomenological position with his tool-analysis[49] (see Harman, 2010, p.6), which contended that things have presence in consciousness when they break. For instance, we are not aware of our own internal bodily functions until we suffer health problems, we do not consciously pay attention to the floor until it isn't there. For this to be true there must always be a hidden aspect of objects beyond the qualities that are revealed to conscious experience.

Objects as economic goods

What is an object insofar as economics is concerned? A comparative method or anthropological account of non-monetary economics requires some firm basis on which to compare. Objects in an economic sense were described in chapter 3 as 'goods'. In the institutional governance literature there has historically been an emphasis on well-defined property rights in relation to goods. However, attempts to envelop all human relations within a simple set of property rights are

[49] The relation of Heidegger to phenomenology (particularly Husserl's account of being) is a point of serious contention.

problematic, especially those that recommend a harsh public/private dichotomy. What is needed instead is a broad vocabulary of terms which describe the multi-faceted relationships that actually exist between people and goods. Ostrom (2003) introduced some distinctions to clarify the fundamental characteristics of goods, but also to critique previous research which conflated the nature of goods and the concept of property regimes. If Ostrom's Action Situation is anti-realist, the same criticism cannot be aimed at her theory of goods, which demonstrates a commitment to a relational form of realism. Ostrom's account of goods is important because goods can be appropriated differently depending on their respective characteristics. In chapter 2 the work by Ostrom and Hess was introduced that described seven qualitatively distinct positions associated with bundles of property rights: *Access, Contribution, Extraction, Removal, Management, Exclusion,* and *Alienation*. Central to this conception of property rights is the idea that property rights emerge from one another. The right of alienation is only made possible because of broader institutional support. The ways in which people interact with goods through property rights overlap, so for instance one person can access a resource, while another manages it and another 'owns' it *de jure*. This overlapping of property rights is called tenure niche and is a necessary acknowledgement if a theory of goods is to be incorporated into social interaction theory. Goods in-themselves have characteristics which fundamentally alter the possibility of appropriation and expropriation.

The approach advocated within this thesis contends that property rights (and therefore the possibility of balance) emerge through social relations. This is specifically an ontological position rather than simply epistemological because emergent properties *'may exist unexercised and be exercised unrealised'* (Archer, 2012, p.51). It is important to distinguish between the nature of goods and the property regimes which are *actually* assigned to those goods rather than conflate the two. Property rights constrain or enable people, but because people exercise reflexivity property rights are always contested even when they are reproduced. This is important because property rights do not exist as entities in themselves. They are emergent social features that have potential causal power, but they always need something to constrain or enable. Although Archer's work does not specifically discuss property rights there is nonetheless considerable overlap with her conceptualisation of social interaction:

'... for anything to exert the contingent power of a constraint or an enablement, it has to stand in a relationship such that it obstructs or aids the achievement of some specific agential enterprise as subjectively defined. The generic name for such enterprises is 'projects' - i.e. any end, however inchoate, that can be intentionally entertained by human beings. In short, the activation of objective constraints and enablements depends upon their subjective reception by individuals or groups.' (Archer, 2012, p.55-56)

This idea is central to the approach advocated henceforth. Indeed, it forms the basis of a first proposition relating to economic objects.

Proposition 1: The economic object exists at minimum to the degree it affords an affective capacity which can be appropriated.

Utilisation depends on appropriation, or in other words, how a person can make an object their own to some extent. Objects have a contingent relationship to subjects that necessarily precedes any socially contestable property rights. Objects can therefore constrain or enable subjects in two senses, the first is to some extent pre-social and is a relation of possible interactions, and the second is a social constraint/enablement in which objects become inscribed with culture as part of a broader system. Following this logic leads to a variety of possible emergent relationships that form through specific configurations of subject-object-subject interaction. These configurations are worth considering - particularly in the context Freecycle, Couchsurfing, Landshare and Streetbank - because they are the fundamental basis of property regimes. The following table sketches a brief outline of how subject-object-subject relations can be configured and provides illustrative examples:

Table 11: Configurations of Subject-Object-Subject Relationships

Emergent Subject-Object-Subject Relationship	Examples
Third party subjects are seen *entirely as objects* and thus offered as non-human goods	Slave trading, child auctioning
Subject objectifies own physical being and offers it as a good to other people	Body as product e.g. Organ donors, prostitutes
Subject objectifies their own intellectual being and offers it as a good to other people	Knowledge as product e.g. Accountant, teacher, lawyer or Streetbank 'skillshare'
Subjects objectify physical non-human goods	'Club' goods – e.g. allotment space on Landshare, or accommodation on Couchsurfing 'Private' goods – e.g. furniture and consumables on Streetbank and Freecycle
Subjects objectify intelligibilia	Money Digital knowledge as commons – e.g. wikis Digital knowledge as private – copyright, intellectual property

The subject-object configurations described above all describe objective relationships that come into existence despite being constituted through subjective attitudes. However, the ontological basis of these relationships (rather than just the epistemological aspect) is an extremely important feature. The objective existence of these relationships does not depend simply on brute facts (a fruit tree is still a tree whether we apprehend it or not), instead they rely on

institutional facts i.e. representational knowledge collectively created by groups of people. There must be a shared inter-subjective acknowledgement of what the object is and how it can be socially appropriated (who owns the tree, who can pick the fruit, who can eat the fruit etc.). Approaches that recognise the epistemological significance of ontology are often critiqued by invoking age-old questions of *fictional objects*, what Brentano called '*intentional inexistence'*, or is elsewhere disparagingly referred to as objects in *Meinong's Jungle.* This requires careful deliberation. Unicorns may not exist, but it is possible to sell the promise of a unicorn, indeed fictional objects are of the utmost economic importance because they form the basis of Ponzi schemes. Economics must be able to accommodate myth if it is to provide any explanatory basis of human action. The primary criticism of intentional inexistence follows an intellectual heritage running from Russell's article 'On Denoting', in which he was concerned with propositional structure. Russell showed in his theory of singular descriptions, how *'we might meaningfully use seeming names without supposing that there be entities allegedly named'* (Quine, 1963, p.5). This was a deliberate ontological reduction to minimise the primitive concepts involved in logic, but consequently it leaves intentionality bereft of social influence. Meinong's theory of objects (1904), by contrast, attempted to form a phenomenological theory of intentionality based on the insight that a *'thought can point towards an object other than itself'* (Landini, 2009, p.282). The distinction between the object theories of Meinong and Russell is not to be found in the objects themselves, but in their respective motivations, one pursuing intensionality while the other pursued intentionality. This is best characterised as a conflict between the logical form of thoughts and the nature of human experience with objects. Even if transcendent objects are rejected, the Russellian theory of intentionality nonetheless fails to account for the fact that human experience always seems to point to objects other than the subject.

Economics, even in the absence of money, deals with material, immaterial or virtual objects and our relations to them. This distils to the study of how property rights are created and transformed. The goal of economics should thus be to understand how subject-object-subject relations are reproduced or transformed. If simple subject-object relations are the concern of economists then this is

'Robinson Crusoe' economics or what Archer calls the 'Practical Order', it has no transformative impact on property rights or society at large. But similarly subject-subject relations are not always economic, they may structure society and culture in a way which restricts or enables transactions but this is the domain of politics. All economic transactions are political but not all of politics involves economic transactions. All economic relations have intermediary economic objects and are thus subject-object-subject relations. However, this is not the case for basic subject-subject interaction. This leads to the following proposition.

Proposition 2: Social life is only economic life when an object is given a social reconfiguration i.e. property rights are transformed through reappropriation.

Academic study in marketing, in contrast to economics, refers to the social negotiation, persuasion and indeed coercion of specific property rights arrangements i.e. economic institutions. It is arguably because the aim of marketing is the promotion of a specific social arrangement i.e. the market, that *'relationship marketing'* and '*service-dominant logic*' (as opposed to goods-dominant logic - See Vargo & Lusch, 2004) have become such influential recent trends. Marketing is perhaps better described as marketeering, because it exists primarily as a means to reproduce the current social order. The raison d'être of economics, at least in an anthropological sense, must be the study of property rights transformation and its subsequent effect on social morphogenesis or morphostasis. It should be able to explain through abductive reasoning why people decide to give or share their belongings in preference to buying and selling or vice-versa.

The approach described in the following sections is an attempt to reconcile morphogenetic social theory with a theory of goods so that non-monetary economics can be better understood. The aim is not to deny that language or politics are related to economics, but instead to suggest that they are not the only determining factors in the transformation of property rights. Basic communication does not necessarily transform property rights or even reproduce them. Take for instance 'I love you', 'my favourite colour is green', or 'I believe in universal suffrage', these utterances occur between people, but they are not

concerned with the reproduction or transformation of economic objects, only with the reproduction of people and society proper. It is because people are capable of subject-subject relations without intermediary economic objects that economic transactions are so difficult to deductively model. This leads to the following proposition:

Proposition 3: People may deliberately subvert the existing economic order for political reasons. This is the primary reason why economics is not entirely amenable to deduction and why economic relations cannot be understood as a closed system.

Emerging Streetbanks: How do non-reciprocal economic institutions form?

Studying the formation of new non-monetary forms of economic institutional requires a move from meta-theoretical accounts of society to explicit social theorising. Some economists (e.g. Hodgson, 2006) have suggested that examples of institutions include not only social groups or organisations such as limited companies, but also things such as language, money, law, table manners and systems for measuring weights. According to Hodgson (2006, pp. 3–4)

'institutions enable ordered thought, expectation, and action by imposing form and consistency on human activities.' They are systems of rules i.e. *'A socially transmitted and customary normative injunction or immanently normative disposition, that in circumstances X do Y'.*

Institutions defined as 'social rules' are equivalent to social structure and culture in the morphogenetic approach. They impinge on decision makers in an enabling or constraining way. They have a synchronic influence on social interactions (because they are a constituent of the emergent relationship), but they are also reproduced or transformed by it. However, this feedback loop is often ignored and is the crucial feature missing from new institutional economic models such as Ostrom's action situation. Any transformation of property rights either constrains or enables future social interaction. Thus whenever property rights change they also reproduce or transform social structure simultaneously through

double morphogenesis. The morphogenetic approach describes three prerequisites such that culture and social structure can exert a constraining or enabling influence on agents (Archer, 2012, p.56). The first is recognition that individual human projects exist which can be constrained or enabled. The second is that there must be a possible relationship of congruence or incongruence between the constraints/enablements and personal projects. Finally, people must reflexively deliberate in response to these influences because they are necessarily conditional rather than deterministic. Any discussion of social action must incorporate an understanding of reflexive subjects and their causal capacity to evade, reproduce or transform social relations. To give further consideration to the role of property rights in this process it is worth re-examining the basic morphogenetic sequence and the way social relations change. In the figure shown below at T2 the process of 'Social Interaction' is introduced. T2 to T3 is the process that Ostrom attempts to model as an *action situation* i.e. the decision-making point at which property rights are reproduced or transformed by people enacting social rules.

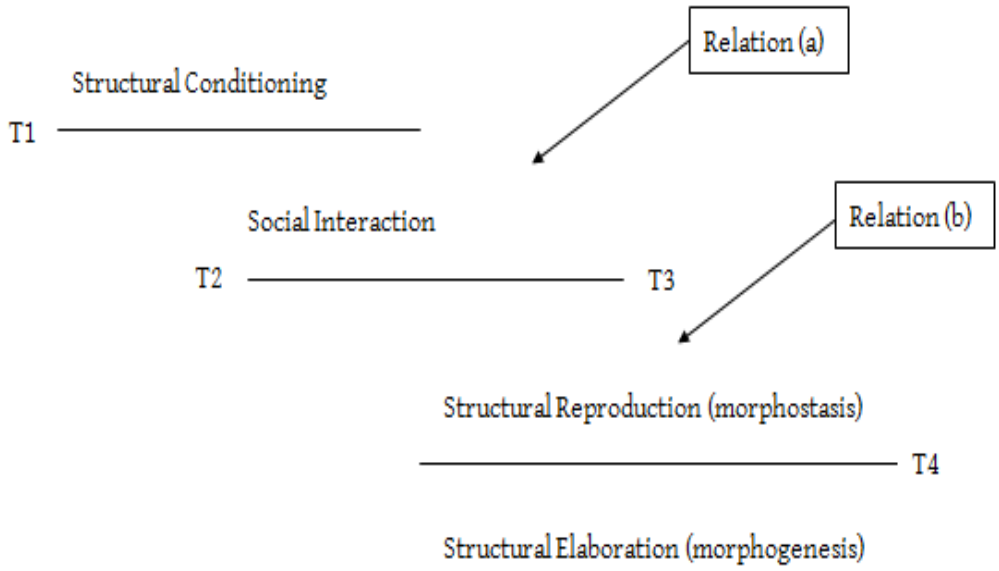


Figure 14: Social relations in the basic morphogenetic sequence (adapted from Archer)

The morphogenetic sequence includes three forms of social interaction: e*vasion* (people avoiding interaction), *reproduction* (people recreating the same social structure) and *transformation* (changing the social structure). Each of these forms of interaction require agency. In other words, they are knowledge claims

possessed and exercised during interaction. They are therefore fallible and potentially lack the causal impact imagined by the agent. For example, a person might mistakenly enact a behaviour they believe is congruent with a particular type of social relation. They might for instance, wish to transform social relations through benevolent one-way sharing, but this might also transgress the expectation of the person they are interacting with. This could happen if the shared good is seen as a gift and therefore the basis of an ongoing reciprocal arrangement. Furthermore, recognition must be given to the respective agency (either individual or institutional) that the person is enacting i.e. are they acting autonomously or on behalf of other people such as kin or colleagues? (in legal terminology this is referred to as the 'agent-principal' relationship). This notion of nested relations was recognised by the substantivist anthropologist Dalton in his discussion of 'primitive' economies with centralised polity (1969, p.74). An adapted version of Dalton's account is shown in the figure below. This account illustrates varied economic transactions (at least four distinct action situations) between people with only one level of institutional hierarchy. Reflexivity allows people to project into the future and simultaneously transform multiple object and subject relations. This is how wage labour and commensurable exchange is made possible. Keynes highlighted the significance of instrumental reasoning for economics when he noted '*the importance of money essentially flows from its being a link between the present and the future*' (1936, p.293). But it is also important to recognise *institutional* forms of agency because people may enact *supraindividual* effects which would otherwise be impossible, such as politically administered trade, tax and redistribution.

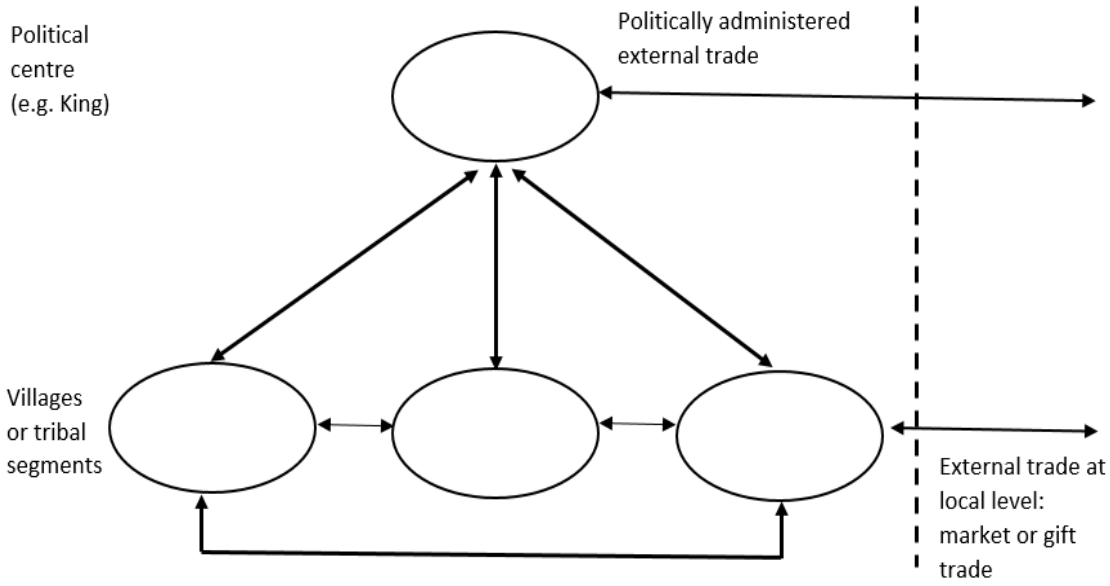


Figure 15: 'Primitive' economic transactions within a centralised polity (adapted from Dalton)

Property rights overlap (through tenure niche), but they also emerge as a consequence of institutional hierarchies. Some property rights exist simply in virtue of the way that people perceive and apprehend the world. Public goods provide the most immediate example of this insofar as it is impossible for an individual to appropriate an ocean entirely. But in contrast, most property rights exist because of institutional relations. The specific role a person may enact in relation to an object is in these cases often articulated linguistically in either oral or written form. Where roles overlap between persons and objects there comes into being a context-specific and subjectively-constituted, but nonetheless ontologically objective relationship between the distinct entities. These relationships delineate the roles people can occupy in an action situation i.e. Person A has the right to appropriate object X in context C whereas Person B has a commensurate duty to maintain the right of Person A over object X in context C. This overlapping of subject and object relations might be defined as *intersectionality.* However, the term has already achieved currency in the sociology of oppression, so an alternative offered here is the phrase 'deontic boundaries'. In this context the phrase refers to how the expression of duty or obligation simultaneously depends upon a subjective and objective understanding of the self. This neologism is introduced here because relationships emerge between people through an ontological dependence on one another, which

simultaneously delineates its constituents into distinct roles. By reinterpreting action situations so 'rules' are endogenous, and giving recognition to deontic boundaries, economic interaction (whether it relies on money or not) can be incorporated into the morphogenetic approach. This reasoning leads to the following two propositions:

Proposition 4: Goods should not be conflated with property regimes. Property rights are made possible to the extent that goods are excludable and/or subtractable.

Proposition 5: People in action situations are reflexive agents with emergent causal powers either enabled or constrained by culture and social structure.

Action situations illustrate how subjects and objects form deontic boundaries. Property rights must be understood in emergent terms because the reproduction or transformation of economic relations is contingent upon the reproduction of objects which provide structural properties. An example of this can be seen in each of the case studies previously considered, without the online services provided by each organisation, the offline interactions would be impossible. In this way objects, like subjects, become nested in structures. Economic culture is therefore not restricted to politics, or participation in the consensus forming process, it is also predicated on goods. Certain economic actions catalyse opinion and in doing so they challenge and transform consensus rather than reproduce it. There are no 'social rules' that exist as entities *in themselves* or as exogenous variables to human agency, only what the existentialist philosophers called *bad faith*[50]. The individual is free to evade social relations, but is always enabled or constrained by other people because transactions are relational and contested. This leads to the following proposition:

Proposition 6: The goal of economic theory is to understand how reflexive subjects become bound by objects in institutional structures.

[50] In Sartre's original French '*Mauvaise foi*' (See 1946/1973, p. 16)

Defining the Elementary Structure of Institutions

Levi-Strauss (1949) attempted to uncover[51] the elementary 'structure' of kinship. He suggested that cultural practices are homologous in meaning despite appearing in different ritual forms, and that these manifest because people think in binary oppositions which are resolved through myths. Interest in 'structuralist' anthropology has waned due to difficulties with falsification and the failure to incorporate a reflexive subject into the dualisms. Godelier (2004/2011, p.17) notes that a prominent critic of structuralism was Rodney Needham. For Needham (1971, p.cvii) the general definitions used when defining kinship such as incest or marriage were, in attempting to be 'all purpose words', actually abusive generalisations. This is strikingly similar to the debate over whether to call prosocial exchange systems giving, sharing or exchange. Needham went on to argue that:

'it is not that we cannot make sociological inferences, about institutions, groups, and persons, from the structure of a terminology, but we cannot even infer that the statuses denoted by any one term will have anything significant in common ... Kinship is certainly a thoroughly misleading term and a false criterion in the comparison of social facts. It does not denote a discriminate class of phenomena or a distinct type of theory'

Despite shortcomings, structuralism pursued a worthwhile goal of revealing the essential basis of society. It is clear that contemporary institutional economists are attempting to uncover the transactional basis of institutions just as structuralist anthropologists tried to do with kinship. A problem is the acceptance of specific terms such as 'transactions' (normally synonymous with exchange), from which no meaningful sociological inferences can be made.

Lévi-Strauss' binary structures latterly came to be replaced by reflections on transformations and spatial connections (Da Col & Graeber, 2011). This shift towards 'perspectival' thinking is a characteristic of much of the thought described as poststructuralist. Deleuze (1973/2004) for instance, in an article entitled '*How*

[51] Like Marx and Freud beforehand, Levi-Strauss described the social scientist's role as one that *uncovers* knowledge (see Tristes Tropiques, p.57) *'understanding consists of reducing one type of reality to another; that the true reality is never the most obvious'.*

do we recognize structuralism', suggested that the scientific ambition of structuralism is not quantitative, but topological and relational. Da Col & Graeber comment that post-structural arguments often posit subjects and objects not as *'bounded entities occupying a place, nor sites of imaginary extensions, but 'effects' determined in a topological and relational way'* (2011, p.xxiv). Sahlins (2010) has suggested that Levi-Strauss drew attention to economic base (otherwise referred to as infrastructure) in opposition to Marxist 'Superstructures' and that what requires further study could be referred to as 'infrastructuralism'. This marks a departure from earlier work completed by substantivist economists (e.g. Polanyi and Sahlins) who attempted to define broad archetypes of economic behaviour. The substantivists were trying to identify the patterns of economic life that, to varying degrees, are present in all cultures. They argued that the variance of these archetypes is the basis of culture itself, such that the acts of individuals must be understood in a broader social context, rather than as a maximisation of subjectively constituted 'utility'. But archetypes are challenging to conceptualise because whenever singular acts are defined through family resemblances (polythetic) then the aggregate patterns of those behaviours cannot be conceptualised as homogenous or uniform in type. The broader patterns are not necessarily a set of a particular type A{a1,a2,a3...} but potentially contain multiple types A{a,b,c}. The 'undecidability' problem of family resemblances when considered in relation to individual acts leads to a troubling categorical problem*: no economy can be declared a gift economy, a sharing economy or even a quid pro quo economy.*

This creates an obvious challenge: how to categorise multiple or repeated economic relations? The solution advanced here contends that moral or teleological categories must be resisted. Categories are only possible for interactions which demonstrate specific property right transmissions through basic network arrangements.

Proposition 7: Individual transactions must be understood synchronically but multiple transactions can be analysed diachronically to reveal how the structure of property rights, and therefore institutions, are reproduced or transformed over time.

The potential forms of property regime vary enormously, much like the triad census introduced in chapter 6 (a single triad, or in other words a directed relationship between three people, can have 16 possible configurations!). Figure 16 illustrates how the examples within this thesis can be compared and contrasted with other property regimes. The following section attempts to outline some archetypal institutional arrangements.

An attempt to define institutional archetypes

So far an argument has been advanced that the significance of economic acts cannot be inferred from terms such as exchange, giving or sharing. This is crucial since it implies the following proposition:

Proposition 8: Analysis of economic action must be situated within a *stratified social ontology.*

Social structure cannot be ignored in preference of methodological individualism. The intentionality of individuals is constrained or enabled not only by their personal agency, but also by social structure and culture. The term social structure should be understood in the topological sense that it implies i.e. as a description of the objective relations of influence and dominance between people. Social structures are activity-dependent and are therefore either reproduced or transformed through social interaction. Property rights also share this characteristic, because relations between people and goods are constantly reconstituted through social interaction. This is to some extent made possible because of the brute characteristics of goods *in-themselves*, but more importantly because the knowledge people have of goods is transitive. Indeed, the process of reappropriation fundamentally depends on the transitivity of knowledge.

Transitivity, is also the word used in network theory to describe the way that particular properties are related between nodes in a network. Sociological approaches which describe social relations as networks are not new. Simmel (1950, p.135) emphasised the understanding that could be gained of social action when examining triads (or in Simmel's German *'associations of three'*) as opposed to simple dyadic interaction. Since then, other economic sociologists

(e.g. Granovetter, 1985) have demonstrated how network analysis can provide insight into how knowledge flow, and social influence, are consequences of specific social structures. All economic acts have a particular object to which action is directed. This may be a private good, a common pool resource or a purely public good but it is always nonetheless an object of intention. Directed graphs can be used to model individual or institutional (grouped) agents and the 'flow' of appropriated rights between them. The directional flow can be used to model the transmission of specific property rights rather than the goods in themselves. This distinction introduces a practical method for modelling economic interaction which can bolster emic approaches to anthropology. It can specifically be used to help answer questions similar to those in chapter 1, that focus on topics such as the transformation or balance of social relations. Central to the method are a set of questions that in theory can be applied to all economic objects as per the description provided earlier:

a) What are the appropriable properties of the economic good in question i.e. can the good be appropriated by an agent, is it excludable and/or subtractable?
b) Do the people in question possess individual or institutional agency?
c) What longitudinal network relations emerge e.g. Intransitive, transitive, direct/indirect reciprocity?

Alongside these questions there are guidelines which can help classify economic relations. An institution can be defined as the set of subject-subject and subject-object-subject interactions between any given agents over time - e.g. institution A (Person A gave to Person B; Person B exchanged with Person C; Person C gave to Person A). Interactions are emergent phenomena between two people (e.g. exchange, giving, or sharing) they must therefore be classified through polythetic means; but because interactions occur at different points in time the transformation of property rights can be analysed diachronically rather than synchronically. Property rights precede production, consumption and exchange. This means that the interactions can be modelled using social networking analysis for reciprocity at a dyadic and network level. The presence of transitivity and/or reciprocity reveals how close an institution (i.e. a set of interactions) is to a

particular archetype. Archetypes can be compared to see how effectively they manage externalities for different forms of goods as is common for institutional economics. This approach focuses on what anthropologists refer to as *base* or *infrastructure*, indeed following Sahlins we might refer to it as *infrastructuralism*. In the infrastructuralist account of action, economic culture can be defined by the dominance of particular institutional archetypes that emerge over time. The following figure offers a preliminary sketch of the isomorphism of economic institutions and describes practical examples of each, including the case studies presented in chapter 5 and 6. A limitation of the graphs shown below is that institutions regularly involve more than three subjects and numerous objects which overlap. However, the basic unit of analysis is still applicable at scale irrespective of the quantity of agents. Another limitation is that reciprocal agent-principal relationships (between an institution and an individual) are not defined as a basic category. Agent-principal relationships may be reciprocal in kind, but reciprocity or balance should not be assumed without longitudinal study. By suggesting reciprocity (or for that matter, exchange or redistribution) as a universal principle it is broadened to the extent it becomes meaningless. Inquiry should instead ask questions of infrastructure – how is it preserved, to what extent is the agent-principal divide at work, and how does tenure niche overlap into nested structures? Sahlins (2010) summarises this eloquently:

'We must suspect that something more than pecuniary goes on in the Infrastructure. Epistemologically, anthropology is a two-edged sword. We too have a culture - of which our economics is one expression.'

Figure 16: Categories of Economic interaction

Category	**Graph Example(s)** Nodes = Agents (individual or institutional) Edges = Transmission of property rights	**Real world examples and anthropological evidence**
Intransitive (closed)		'*Brute' intransitivity* – the good is impossible to exclude from other people, thus sharing occurs by default e.g. air, sunlight, radiowaves '*Institutional' intransitivity* – property regime prohibits individuals from excluding the good e.g. common pool resources such as fish stocks and forest timber (Ostrom, 1990)
Partially Transitive (non-vacuous)		'Positional' giving – typically between people in different social positions e.g. adult-child food sharing (e.g. Elder-Vass, 2015) Prosocial exchange systems – e.g. Streetbank, Freecycle 'Intracommunity' gift giving – anonymous gifts between strangers at community celebrations (e.g. Weinberger & Wallendorf, 2011)
Indirect reciprocity		Intercommunity gift giving – trade between institutions e.g. Kula ring (Malinowski, 1922/1992) where objects must circulate Egoist gifts – attempts to demonstrate social status within an institution through giving or destruction of objects e.g. Moka, Potlatch
Direct reciprocity		Market exchange – requires commensurable objects and quantitative equivalence Balanced exchange – ritualised swapping of distinct but qualitatively equivalent objects
Principal(s)-Agent relationship (hierarchical)		Taxation e.g. Income Tax Cosmological sacrifice (Hubert& Mauss, 1964; de Heusch, 1985)
Agent-Principal(s) relationship (hierarchical)		Redistribution e.g. Welfare Digital peer-to-peer file sharing (e.g. Giesler, 2006) – reciprocity is eschewed in favour of property regimes that evade reciprocal arrangements for political reasons

Implications of the new approach – Reimagining base/market dualisms

Economists must account for specific property rights transmitted between people that reproduce or transform social structure. Proposition 3 argued that economics is not a deductive science, but it can provide an abductive explanation of action. Economic interaction never occurs in isolation, individual acts always have social ramifications. Indeed, the great strength of anthropology and ethnographic method is the way it helps uncover the broad institutional relations that make specific interactions possible. The most important aspect of the categories defined above is that they never occur in complete isolation. Instead subject-object relations overlap in multiple contexts. This feature of economic life is an example of network *multiplexity.* If we model people as nodes in a network there will be multiple goods and property rights between them at any given moment. The practical consequence of multiplexity means each individual property right transformation must be understood in relation to the other property rights within and between institutions. By emphasising individual transactions as the basis of institutions many economists are guilty of committing a form of *exchangeism*[52]. This has long been recognised by feminist economists (e.g. Nelson & Ferber, 1993; Gibson-Graham, 1996) but it is not merely a political or gender-equality problem, it is a methodological issue of utmost importance. The quote by Williamson at the beginning of chapter 1 that *'in the beginning there were markets'* (1975, p.20), is a typical demonstration of exchangeist epistemology. Williamson argued that it is individuals that create firms to compete in the market and that they will endure only insofar as they reduce transaction costs faster than their competitors. Others have argued that markets *themselves* are institutions that rely on complex social interactions (Hodgson, 2007; McMillan, 2002; Vanberg, 2001), but the reproduction of markets also depends upon economic objects to structure action situations in a familiar or habitual manner.

The relationship between institutions and habit formation is a matter that has provoked the interest of contemporary organisation theorists (e.g. Mutch, 2007, 2010; Faulkner & Runde, 2013) and economics could benefit from further engagement. Habitual actions, or what might be referred to as durable

[52] See Elder-Vass (2015) For an exemplary commentary on exchangeism dogma.

dispositions to act, have long been a contentious point in the social sciences. In sociology the *'yoke of habit'* (Durkheim, 1912, p. 103) has been suggested as the chief determinant of human action and the means through which tradition is preserved[53]. So too in structuralist anthropology, habitual action has been described as the way primitive societies organise in order to promote social integration, absorb the perturbations of novelty and resist change *(E.g. Sahlins, 1976,p.23;* Hénaff, 1998, p.9). This raises some interesting further questions for the comparative study of non-monetary economic interaction in different institutions:

a) For which goods does *institutional intransitivity* occur? Given the possibility of private exclusion, why do people choose common property regimes?
b) Where goods are excluded, which property rights occur in transitive form? And when does transitivity introduce resistance against existing social structures?
c) How do property regimes that encourage reciprocity also promote habitual action and thus reproduction of the existing social order?

Transitivity enables people to feel an individual association with a good. Without transitivity gifts and debts would cease to be meaningful. In the early studies that shaped economic anthropology Mauss and Malinowksi both drew attention to political aspects of giving and exchange. The tension between reciprocal and non-reciprocal arrangements is a fertile area for future research, which can only be explored further by examining transitivity in multiplex human relations. Economic action cannot be understood as a singular instance, an essential behaviour or as an expression of institutional archetypes. It must instead be examined as part of a broader social structure in which topological changes occur because of, and in spite of, the agency of individuals.

[53] Camic (1986) provides an insightful discussion of how habit has been dismissed from subsequent sociological accounts of action following Durkheim and Weber in particular.

Chapter 8: Conclusion and Future Research Recommendations

This chapter provides a conclusion to the thesis. The following sections provide a summary of the research findings, a consideration of the theoretical and practical implications of the findings, an impact statement, and finally a series of recommendations for future research. The findings primarily advance a theoretical and methodological contribution to institutional economics, but also offer a practice-focused set of recommendations for HCI design and research.

Research Summary

Two research questions were asked at the beginning of this thesis. It was shown that to answer these questions a dynamic account of social structure was required. Computer-mediated interaction has influenced the way millions of people think about the things that they own and how those belongings should be shared with other people. This trend towards access over ownership seems likely to increase in the coming decade, but the format that non-monetary economics takes will to a large extent be influenced by financialised versions of services that are similar to the examples described within this thesis. The capacity of non-profit organisations to innovate is unlikely to keep pace with companies, but the success of these organisations has arguably more to do with engineering social arrangements than creating technical innovations. If prosocial exchange systems are to have an effect on policy makers this will only be possible if the impact of such systems can be demonstrated empirically. This represents an opportunity and a challenge for designers, to provide evidence of the real impact they are having for people. The scale of the informal economy will be slowly revealed as more contextual information is made publicly available. As data is made available to social scientists it will be possible to examine the extent to which balance is fundamental to economic life. In chapter 6 it was shown clearly that Streetbank does not exist as a means to help people form reciprocal partnerships. Most people occupy a separate role as either donors or receivers, and for those that do give and receive, only one in a hundred people actually experience dyadic reciprocity. Indirect reciprocity does exist to a small extent, but generalised reciprocity should not be presumed as a motivational cause without investigation into specific practices.

The following sections focus on three main implications of the research. The first is the measurement of non-monetary forms of economic life. The second considers how the social structures made possible by prosocial exchange systems might affect future HCI design. The third considers the methodological implications of diachronic property rights analysis.

Theoretical Implications for measuring economic activity

Economists can easily point to what should be measured for the purpose of policy, but this reflects a political stance on the preferred type of economic interaction: *monetary-based exchange*. Take for instance, the most commonplace measure for the purpose of comparing economies: Gross Domestic Product (henceforth GDP). According to the UK Office for National Statistics (2011, p.2) GDP is:

'a measure of the output of an economy expressed in money units and as such is useful for summarising economic activity. For many years, GDP has been used as a proxy for well-being, despite GDP not being developed for that purpose. Increases in GDP provide the resources for additional expenditure on goods and services to satisfy individuals' needs.'

Despite its name GDP is not simply predicated on production, it also relies on an aggregate calculation of quantified exchange. It relies not only on the production of saleable goods, it is an account of the saleability of produced goods. This is arguably anti-scientific, because it presupposes a moral teleology, namely that exchange is the superior form of interaction, and thus performance of exchange and observation become problematically entwined. The economy is not measured by passive observers, it is performed by those same people. In a paper outlining the challenge faced for social scientists analysing economic 'progress' Dalton (1969) argued that economists can answer the question '*what constitutes successful development?'* with little difficulty, but it is not so easy for anthropologists. For the economist the unit of analysis is the nation-state, to which comparisons can be made with other 'developed' countries. The indicators of success are impersonal and do not relate to social relationships or

culture. But for anthropologists the unit of analysis is a community not a nation state, despite their obvious interdependence. They are concerned with folkviews, attitudes, social relationships, and culture as well as technology and the economy, however they are conceived. Furthermore, they are analytically concerned with the process of social change. The idea of 'progress' for anthropologists is therefore not social change congruent with capitalist development, but change which meaningfully relates to the cultural values of the community being studied. Despite criticising economic metrics the substantivists fail to provide a formal metric that can be used to assess economic activity. This position is too self-congratulatory and it is open to criticism because it is veers dangerously close to moral relativism. Substantivist economics provides a critique of methodological individualism but it nonetheless is ambivalent to action guidance. The shortage of substantivist guidance perhaps stems from an acknowledgement, just as Barthes recognised, that myths such as GDP give a historical intention a natural justification (1972, P.155). The effect of this myth is that the idea of GDP itself becomes depoliticised and is seen as a prerequisite to a functioning economy. This critique can be seen in the work of others (e.g. Gibson-Graham,1996; Williams, 2004) and has been summarised by Graeber (2011, p.502), who notes:

'Any production not for the market is treated as a form of consumption, which has the incredibly reactionary political effect of treating almost every form of unalienated experience we do engage in as somehow a gift granted us by the captains of industry.'

The challenge for social scientists is not necessarily a theoretical problem, but it is a methodological problem. Accounting for economic interaction which is not exchange is essential if a scientific account of economic life is to be taken seriously. For the purpose of examining specific practices, the distinction between base and market is interesting, but when analysing interaction at scale it becomes redundant. An account of reciprocal and non-reciprocal forms of interaction is essential if questions of morality, redistribution or entitlement are to be studied. If a person, is clothed, well fed, has a roof over their head and a bed to sleep in, but receives access to these goods without exchange what can be learned from GDP alone? This is a controversial point and one that is likely to

be scoffed at from neoliberal political perspectives, but increased exchange does not necessarily increase the welfare of all. Indeed, if an individual occupies a disenfranchised position within social structures then it is questionable whether an increased emphasis on exchange will provide the necessary means to *'satisfy individuals' needs'*. This is a provocative conclusion, but it is one that requires further consideration because the distinction between market and base is too often caricatured into a harsh dichotomy. Understanding how people become enabled or constrained through membership of multiple economic practices is unquestionably a fertile area for further research.

Practical implications for HCI Design and Branding

A common theme of the organisations featured within this thesis is that they were created with the explicit intent of subverting the market. All of the examples featured use language in their promotional material which speaks of kindness, generosity, benevolence etc. and yet the prosocial behaviour encouraged is actually defined using the language of markets. Take for instance 'Free' cycle or Street 'bank', or the expression 'pay it forward' often associated with these organisations. The branding contrasts morality with money, but in doing so it reinforces a sense of instrumental reasoning associated money, whereas autotelic interaction arguably has more in common with playing than it does with paying. This a subtle point, but if the branding of the services demonstrated an awareness of the behavioural patterns of the people using the service this may more effectively resonate with potential audiences.

From a design perspective the HCI of prosocial exchange systems should prioritise certain features to ensure the relationship between donors and recipients are as effective as possible for both parties. Three factors are recommended here as critical, these include the provision of *contextual awareness*, *ubiquitous access* and *ritualised feedback*:

Contextual awareness – Central to each of the systems described is geospatial information i.e. the location of the donor and the associated desirable object for the recipient. The process of partner selection was identified in chapter 5 as critical to the success of interactions that don't rely on money. This means that the potential for interaction between people is to a large extent influenced by the

location of the people involved when they are using the service. A potential area for innovation is in using information (friendships, connections, user generated content etc.) from other social networks to help contextualise interaction e.g. demonstrate that a person may already have friends that are using the same system. This can be accomplished through the use of application programming interfaces (APIs) and is already becoming increasingly common for commercial organisations.

Ubiquitous access - Both studies illustrated the variety of ways that people access the Internet. Optimising web services so that they are accessible regardless of location can improve the potential to create opportunities linking donors and recipients. A failure to embrace new web technology (such as HTML5) has resulted in many of the services providing a lower standard of access and navigation than their commercial counterparts, particularly on mobile devices such as phones and tablet computers.

Ritualised feedback – commercial buying and selling websites often incorporate reputation mechanisms as a means of fostering trust between unknown people. This represents an interesting area for prosocial exchange systems because the relationship is not always considered one of exchange or commensurate duty on the part of both parties involved. The question inevitably arises 'To what extent should someone that agrees to donate to another person be subject to criticism from the recipient?' This is further exacerbated when the relationship is exposed to the community as a means of fostering more interpersonal relationships. A popular expression in England is that one should 'never look a gift horse in the mouth', which means a person should never count the teeth of an animal if it is received freely. Quantifying the value of generosity is challenging, but to ensure that behaviour actually becomes ritualised there is a necessity to inform and provide feedback to interaction. HCI designers create technical innovations but they also create novel forms of social practice and in doing so they must find effective ways to inform and reinforce behaviour, particularly if it has no obvious historical precedent.

Methodological implications of diachronic property rights analysis

The method outlined in chapter 7 represents arguably the most significant contribution of the thesis. Each of the propositions provide a basis for analysing property rights as they are evaded, transformed or reproduced by people at an individual or group level. Research into non-monetary economics could gain enormously from demonstrating the empirical impact that sharing, giving and other non-monetary social practices have on human life. This is extremely important because too often work in this area is trivialised as either a) being unimportant to welfare and the financial economy, or b) only understandable in terms of money. Despite the lengthy philosophical discussion that was necessary to articulate the position adopted within the thesis, the gist is remarkably simple and can be summarised by two basic axioms. Firstly, human reasoning must be treated as causally efficacious, however this should not come at the sacrifice of social structure or culture. Secondly, goods and the property rights assigned to goods must be recognised as being distinct. If both of these axioms are accepted there is thus a means to observe the way that people interact and use the results to inform abductive reasoning. This is significant because it emphasises that economics will never be totally comprehensible as a deductive science, it must always be rooted in human experience. The scope for researchers to build on the diachronic property rights analysis approach is enormous, insofar as it can be used to bolster ethnographic insight or as a means of analysing existing datasets, particularly those that already exist online. Only by examining the ways that reciprocal and non-reciprocal forms of economic interaction take place will it possible to fully comprehend the role of distribution and welfare at a collective level.

Impact statement

The work completed within this thesis has provided an insight into new forms of economic arrangement made possible by the development of the Internet and associated digital technologies. The case studies demonstrate different ways that social groups can organise to resist the market and monetary transactions. The present moment is a fascinating period in history for social scientists to study how technology influences the way people interact and thus reproduce or transform the current social order. The impact of research in this area will have significant

practical consequences. The success or failure of these systems will depend on a variety of contextual factors, including whether they cater to individual preferences as well as generating sustainable social structures. A serious challenge for services that encourage autotelic behaviour (where balance is absent) is ensuring the continued loyalty to any given service. A wide variety of services now provide the same functionality, but there are obvious benefits of belonging to a group with a high number of members. A possible avenue for further research would be to examine how interpersonal communication that does not necessarily lead directly to offline interaction might influence feelings of loyalty. If individuals feel loyal to the online 'community' of users this might provide the necessary impetus to encourage continued offline interaction between unfamiliar people. As part of the work alongside Streetbank the research results were discussed with volunteers as a means to inform HCI design. Hopefully, Streetbank will share insights with the broader community to show how the service is having a genuinely positive impact on the lives of thousands of people. In chapter 1 it was stated that the thesis would not argue for or against specific economic institutions, but it is clear Streetbank and the other case studies considered, have a profound effect on the way people think of resource ownership.

Recommendations for future research

There are a variety of research avenues that should be explored for the purpose of informing HCI design. These include:

- To what extent do reputation mechanisms that record the outcome of transactions influence the likelihood of indirect reciprocity within prosocial exchange systems?
- Do the recommendations of strangers improve the likelihood that long-term interpersonal relationships will form between other dyads?
- Furthermore, if a relationship becomes highly personal, does this then lead to relationships being mediated through alternative means of communication, such as phone or text messages rather than the original service?

It would be interesting to examine whether 'success' for this type of system is best conceived in terms of new friendship formation, or whether the service should aim to foster intermediate relations (somewhere between complete stranger and close friend), for the purpose of encouraging ongoing relations mediated through the website. If dyadic relations become very friendly, then the prosocial exchange system may actually be circumvented. This is a research project that could be conducted with Streetbank in the event that the design a reputation mechanism and generate a dataset of comparable size for the purpose of analysis.

The main recommendation for future research, is to develop the approach outlined in chapter 7. A diachronic account of property rights transformation is potentially an informative new method for examining the way that people use economic objects to transform social structure. Economic measurement should not be set against a backdrop of presupposed moral progress. It should be a reflection of actual transformations of property regimes. This is a challenging task because the datasets required to demonstrate how property regimes transform are not always collected, nor are they publically available. But if economic measurement is to move beyond the false production-consumption dualism there must be a strenuous attempt to collect and aggregate statistics which demonstrate the multi-faceted nature of economic experience. Researchers must attend to how property rights emerge from one another such that exchange can take place. The view that property systems are ill-defined without clear rights of alienation also needs to be challenged. Economic life (whether production, consumption or exchange) manifests through nested hierarchies of social structure and overlapping property rights. Recognition of this idea is necessary if alienation dogma is to be confronted. The potential sources of new data which could reflect such changes are numerous, particularly from digital sources as interaction becomes mediated by computers. Offline non-monetary economic relations are increasingly being digitised. These digital records have the potential to contribute to national statistics of economic behaviour and reveal new patterns of interaction that were historically unamenable to analysis.

This plea to capture data on a range of economic interactions is not an attempt to romanticise the commons. It would shed light on private goods normally acquired through quid pro quo exchange, which are instead being acquired

through donations e.g. Foodbanks (a growing poverty issue in the UK and other countries – see for instance Cooper & Dumpleton, 2013). Access to allotments demonstrate that increased rights of alienation are not the only means to improve the independence or self-reliance of citizens. Examining the subtle transformations of overlapping property rights will help to direct economic policy and responses to social mobility issues. Economic metrics are necessary for understanding social change, but the creation of new metrics should not be premised on a naturalised view of progress. This is a nuanced point but it is important, because historical intentions often go unquestioned and receive justification through a false essence, even though social structure and culture are always subject to change. Economics need not perpetuate the same old binary myths, it should focus instead on a genuinely poetic exploration of human interaction.

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APPENDICES

APPENDIX A – Participant Information Sheet

PARTICIPANT INFORMATION SHEET

Thank you for agreeing to participate in this study. Our aim is to understand how people use the internet to share and give away their belongings. Specifically, we are interested in how you use online services to help manage access and ownership of the things that you own.

There are two sections to the study. In the first section we would like you to take part in an interview to discuss your relationship to online communities and the ways in which you use digital technologies to manage your physical belongings. This should not be seen as a test, rather as a way of discussing how you use technology to accomplish your goals.

This will then form the basis for section two which will be a simple observation of you exchanging, giving, or sharing your physical belongings with a member of the online community of which you are part. This can take place wherever you typically feel most comfortable, for example, at home, work, or in a public space. After the exchange you may be asked to reflect on the experience to provide further insight of the interaction. This observation will only take place if the other person involved in the transaction gives their consent and agrees to participate in the research.

The session will be audio recorded for the purpose of transcription. All data will be anonymised with access only made available to the researcher during the write-up. If for any reason that during or after the study you would like any references made by you to be removed you are free to do so and can leave at any time. Likewise, if you have any concerns or would like more information about the study after the research has taken place you may contact the researcher at the email address: human.factors@nottingham.ac.uk (please put 'John Harvey – Gift Research' in the title so we can get back to you quickly). Data collected may be used for publication purposes; should any data be presented in the paper that could be linked back to you personally you will be asked to confirm your willingness first. The data will be kept for three months after publication or one year after the study concludes, whichever is sooner.

APPENDIX B – Participant Consent Form

PARTICIPANT CONSENT FORM

Project title: Ethnography of computer-mediated consumer gifting systems

Researcher's name: John Harvey

Supervisor's names: Dr. David Golightly and Dr. Andrew Smith

You are free to leave the study at any time, and if you have any queries you are free to contact us directly at human.factors@nottingham.ac.uk (please put 'John Harvey – Gift Research' in the title so we can get back to you quickly).

- I have read the Participant Information Sheet and the nature and purpose of the research project has been explained to me. I understand and agree to take part.
- I understand the purpose of the research project and my involvement in it.
- I understand that I may withdraw from the research project at any stage and that this will not affect my status now or in the future.
- I understand that while information gained during the study may be published, I will not be identified and my personal results will remain confidential.
- I understand that I will be audio taped during the interview.
- I understand that data will be anonymised and transcribed for incorporation in study. The original recordings and the transcript will be stored in a fire-proof chest. Only the researcher and his supervisors will have access to this material.
- I understand that I may contact the researcher or supervisor if I require further information about the research.
- I confirm I have read these instructions and consent to take part in the study.

Signed ..... (Research Participant)

Print name ..... **Date**

APPENDIX C – Streetbank Questionnaire Results

What is your age?
Answered: 753
Skipped: 2

Answer Choices	Responses
Under 25	3.72% 28
25 to 34	18.86% 142
35 to 44	23.24% 175
45 to 54	20.98% 158
55 to 65	23.37% 176
Over 65	9.83% 74
Total	753

Sex
Answered: 753
Skipped: 2

Answer Choices	Responses
Female	62.82% 473
Male	37.18% 280
Total	753

Employment status
Answered: 747
Skipped: 8

Answer Choices	Responses
Full time employed	34.40% 257
Part time employed	17.14% 128
Unemployed	6.56% 49
Self-employed	20.21% 151
Student	6.02% 45

Other (please specify) Responses	23.56% 176
Total Respondents: 747	

How did you find out about Streetbank?
Answered: 753
Skipped: 2

Answer Choices	Responses
Friend recommended	26.43% 199
Newspaper article	14.21% 107
Google search	8.37% 63
Local community group	6.77% 51
Facebook	7.57% 57
Twitter	0.93% 7
Don't know	22.84% 172
Other (please specify) Responses	15.80% 119
Total Respondents: 753	

How did your friend recommend Streetbank to you?
Answered: 198
Skipped: 557

Answer Choices	Responses
Word of mouth	70.20% 139
Facebook	11.62% 23
Twitter	1.01% 2
Email	18.69% 37
Letter	0% 0
Other (please specify) Responses	2.53% 5
Total Respondents: 198	

Why did you join Streetbank? (select the most appropriate)
Answered: 749
Skipped: 6

Answer Choices	Responses
It looked like a nice idea	58.74% 440
I wanted to learn more about my neighbourhood	16.15% 121
I wanted to get rid of some things	6.28% 47
I wanted to borrow something	2.54% 19
I was looking for something for free	2.14% 16
Other (please specify) Responses	14.15% 106
Total	749

Do you still use your Streetbank account?
Answered: 749
Skipped: 6

Answer Choices	Responses
Yes	70.63% 529
No	29.37% 220
Total	749

Why do you no longer use your account?
Answered: 217
Skipped: 538

Answer Choices	Responses
Not enough people use it near me	55.30% 120
It doesn't seem to be kept up to date	5.99% 13
The site is too slow	1.84% 4
There is nothing on there that I want	19.82% 43
I don't need anything	12.44% 27

The other members are too slow to respond to my requests	4.61% 10
I only needed it for a short period of time	2.30% 5
Other (please specify) Responses	30.41% 66
Total Respondents: 217	

What devices do you use to access the internet? (select all appropriate)
Answered: 748
Skipped: 7

Answer Choices	Responses
Desktop	50.53% 378
Laptop	77.54% 580
Tablet	23.93% 179
Smartphone	43.18% 323
Other (please specify) Responses	1.60% 12
Total Respondents: 748	

Roughly how many apps do you have on your phone?
Answered: 317
Skipped: 438

Answer Choices	Responses
1 to 10	23.97% 76
11 - 25	34.38% 109
26 - 50	22.40% 71
Over 50	13.88% 44
None	1.58% 5
Don't know	3.79% 12
Total	317

With which device do you spend the most time online? (select one)
Answered: 741
Skipped: 14

Answer Choices	Responses
Desktop	29.15% 216
Laptop	49.12% 364
Tablet	7.02% 52
Smartphone	12.96% 96
Don't know	0.81% 6
Other (please specify) Responses	0.94% 7
Total	741

Do you use any of the following websites? (select as many as you like)
Answered: 741
Skipped: 14

Answer Choices	Responses
Freecycle	57.62% 427
Ecomodo	2.02% 15
Just for the love of it	6.61% 49
Streetlife	4.99% 37
Streetclub	0.67% 5
I have never used any of these sites	38.73% 287
Total Respondents: 741	

How often do you visit these sites?
Answered: 451
Skipped: 304

Answer Choices	Responses
Every day	10.86% 49

2 or 3 times a week	13.30% 60
Once a week	12.20% 55
Once a fortnight	7.54% 34
Once a month	16.41% 74
2 or 3 times a year	24.39% 110
Once a year	9.53% 43
Never	1.55% 7
Don't know	4.21% 19
Total	451

Do you use any of the following sites? (select as many as you like)
Answered: 739
Skipped: 16

Answer Choices	Responses
Facebook	78.35% 579
Twitter	38.84% 287
Pinterest	18.54% 137
Tumblr	6.09% 45
I don't use any of these sites	16.10% 119
Other (please specify) Responses	5.01% 37
Total Respondents: 739	

Have you ever used any of these to share your activity on Streetbank?
Answered: 619
Skipped: 136

Answer Choices	Responses
Facebook	27.46% 170
Twitter	5.65% 35
Pinterest	0.32%

	2
Tumblr	0% 0
I have never shared my Streetbank activity	68.17% 422
Other, please specify Responses	5.01% 31
Total Respondents: 619	

Why have you not shared your Streetbank activity in these ways?
Answered: 417
Skipped: 338

Answer Choices	Responses
I don't use social media	6.95% 29
I don't share personal information in this way	43.41% 181
I would never share Streetbank activity	4.08% 17
I didn't know I could share my activity	23.26% 97
My friends wouldn't be interested in my activity	14.87% 62
Other (please specify) Responses	20.38% 85
Total Respondents: 417	

How often do you visit Streetbank?
Answered: 738
Skipped: 17

Answer Choices	Responses
Every day	0.54% 4
2 or 3 times a week	3.25% 24
Once a week	8.13% 60
Once a fortnight	10.16% 75
Once a month	35.09% 259
2 or 3 times a year	24.39% 180
Once a year	6.91% 51

Never	3.79% 28
Don't know	7.72% 57
Total	738

What tends to be the reason when visiting? (select multiple as appropriate)
Answered: 701
Skipped: 54

Answer Choices	Responses
I want to get rid of some things	25.25% 177
I'm looking for something for free	14.84% 104
I'm looking for something to borrow	19.97% 140
I'm looking for help	11.13% 78
To get updates about my neighbourhood	41.37% 290
Responding to messages I have received	24.54% 172
Reading notices	25.25% 177
I want to post a notice	12.27% 86
I want to see who my neighbours are	22.54% 158
I see something in the newsletter that interests me	25.96% 182
Don't know	4.71% 33
Other (please specify) Responses	10.27% 72
Total Respondents: 701	

What is the most important thing to you when deciding who you deal with on Streetbank?
Answered: 701
Skipped: 54

Answer Choices	Responses
Their distance from me	47.22% 331
I have dealt with them before	1.57% 11

They have a photo on their profile	2.43% 17
They have a description on their profile	13.41% 94
Don't know	20.97% 147
Other (please specify) Responses	14.41% 101
Total	701

When was the last time you visited Streetbank?
Answered: 701
Skipped: 54

Answer Choices	Responses
In the last 7 days	17.12% 120
In the last 14 days	18.40% 129
In the last 30 days	31.95% 224
Within the last year	26.25% 184
Over a year ago	1.14% 8
Can't remember	5.14% 36
Total	701

What did you do on that visit?
Answered: 664
Skipped: 91

Answer Choices	Responses
Found something for free	1.51% 10
Found something to borrow	1.51% 10
Found something to help me	1.36% 9
Requested something for free	1.96% 13
Requested something to borrow	2.11% 14
Requested help	3.01%

	20
Offered something for free	13.70% 91
Offered something to lend	10.09% 67
Offered help	5.57% 37
Posted a community notice	3.01% 20
Read a notice	27.71% 184
Replied to a message	9.94% 66
Updated my details	9.04% 60
Looked at neighbours' profiles	28.16% 187
Can't remember	14.16% 94
Other (please specify) Responses	7.83% 52
Total Respondents: 664	

How would you rate that experience?
Answered: 664
Skipped: 91

Answer Choices	Responses
Very easy	23.49% 156
Easy	46.84% 311
Neutral	26.20% 174
Difficult	2.11% 14
Very difficult	1.36% 9
Total	664

Have you ever had any difficulties while trying to...
Answered: 564
Skipped: 191

Answer Choices	Responses
Request something for free	3.01%

	17
Ask to borrow something	2.84% 16
Ask for help with something	1.60% 9
Give something away	6.03% 34
Lend an item	3.19% 18
Share a skill with someone	1.77% 10
Post a notice	3.01% 17
Comment on an existing notice	1.42% 8
I've never had any problems	80.32% 453
Total Respondents: 564	

How would you rate the Streetbank newsletter?
Answered: 704
Skipped: 51

Answer Choices	Responses
Excellent	10.94% 77
Good	32.67% 230
Ok	31.96% 225
Not great	3.84% 27
Awful	0.71% 5
I don't receive a newsletter	19.89% 140
Total	704
Comments(73)	

What do you like about Streetbank's newsletter?
Answered: 536
Skipped: 219

Answer Choices	Responses
It's local to me	28.36% 152

It keeps me updated about my neighbourhood	33.96% 182
It feels personal	15.67% 84
It lets me know about new items in my area	34.89% 187
I don't like the newsletter	6.90% 37
Other (please specify) Responses	15.86% 85
Total Respondents: 536	

In the future, how likely would it be for you to donate to Streetbank if you used Streetbank to...
Answered: 718
Skipped: 37

	Very Likely	Likely	Neutral	Unlikely	Very unlikely	Total	Average Rating
Get something for free	12.55% 88	29.81% 209	29.39% 206	16.55% 116	11.70% 82	701	2.85
Borrow something	10.01% 70	28.47% 199	30.04% 210	18.60% 130	12.88% 90	699	2.96
Get help from someone	10.50% 74	30.21% 213	30.35% 214	16.88% 119	12.06% 85	705	2.90

How much do you think you would be likely to donate (one-off donation)?
Answered: 718
Skipped: 37

Answer Choices	Responses
??1 - ??5	27.44% 197
??6 - ??10	11.28% 81
??11 - ??15	1.81% 13
??16 - ??20	3.62% 26
Over ??20	0.97% 7
Don't know	25.63% 184
I wouldn't donate	29.25% 210
Total	718

If Streetbank were to start showing advertising from selected third parties, how would this affect your usage?
Answered: 718
Skipped: 37

	I'd use it more	I'd use it less	I'd stop using it	It wouldn't make any difference	Total	Average Rating
Advertising from local shops and services	16.74% 119	11.67% 83	3.80% 27	67.79% 482	711	3.23
Advertising from nationwide third parties	2.31% 16	31.46% 218	15.01% 104	51.23% 355	693	3.15

If Streetbank began charging a small fee for membership, how would this affect your usage?
Answered: 718
Skipped: 37

Answer Choices	Responses
I'd use it less	19.64% 141
I'd use it more	0.97% 7
I'd stop using it	63.79% 458
It wouldn't make any difference	15.60% 112
Total	718

What would you be willing to pay per year?
Answered: 711
Skipped: 44

Answer Choices	Responses
Nothing	61.88% 440
??1 - ??5	16.32% 116
??6 - ??10	5.49% 39
??11 - ??15	1.27% 9
??16 - ??20	1.41% 10
Over ??20	0.28% 2
Don't know	13.36% 95
Total	711