Spending Time:

An investigation of the relationship between emotions, time and spending

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Preface

a world defined by the retail consumption of goods and services; a world in which social relations are often disciplined by the exchange of money; a world where it increasingly makes sense that if there are solutions to be had, they can be bought. Consumption is our way of life. (Ewen & Ewen, 1982, p.42)

Acknowledgements

Abstract

The significance of exchange within our daily lives encompasses not only the economic exchange of physical commodities but more abstract entities such as knowledge, skills and beliefs. This research investigation developed from a desire to understand my personal engagement with money and the design of money, through the exploration of shopping and spending habits. The activity of spending and everyday provisioning is one which has come to form a large component of our everyday lives and is partly informed by the non-economic aspects of exchange described above. This has led researchers, such as Daniel Miller (1998), to investigate the cultural phenomenon of consumerism. As our ability to consume has expanded to an almost unlimited wealth of products to choose from, a consumer has been able to form an imagined relationship with their purchases and may even regard it as a physical manifestation of various emotions. This level of constant spending and provisioning demands further examination, as the systems designed to enable us to consume are the same which have capitalised on our emotions. By making use of ethnographic methods of investigation (specifically interviews and qualitative survey tools), this research explores how an increased level of monetary literacy could be developed towards a consumers everyday spending. Through the design of a research tool, The Spending Map, a process of critical reflection is encouraged where it is possible to exhibit a dialogue that can capture, catalogue and critique the emotional engagement a consumer has towards their spending.

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Introduction

A keen sense of money matters and wanting to grow my entrepreneurial skills since the age of ten years old instilled in me a strong interest in the power that money can evoke. Running my own cake stand at my primary school's fete day and wanting the coveted reward of Primary School Entrepreneur of the Year, which I repeatedly and rather begrudgingly lost out to Trevor (another equally trophy-driven student) held an element of overt excitement. The selling, exchange and watching of my gently crafted, if not slightly over-decorated, baked creations lifted from the gingham covered trestle table translated into a reciprocal and, importantly for my young keen fiscal appetite, instant gratification.

My understanding of the reciprocity held in the relationship of money and exchange and the complexity it engenders in society has matured somewhat since my cake stand days. Money, I know now, is not alone fundamental in life. The idealistic hopes and dreams money had held for me as a child have been somewhat tainted by the tangible and very brutal truths it is able to deliver. Trevor and cakes aside, consumption continues to pervade our lives. 'Be more, do more, have more, want more and need more,' are standard sound bites that stem from the twentieth century ideology of conspicuous consumption. This ideology maintains that public displays of expenditure on goods and services provide a flow-on effect of positive outcomes for the larger community. Whilst this theory holds a certain, perhaps proven logic, I will argue it is as short-sighted and - in the larger scheme of things - as short lived as my cake stand's gratification.

As a designer, I had been drawn to investigating the design of money and the monetary system. I had come to find that money and design share many common likenesses, with money being a design response of how to address the perceived shortcomings that primitive forms of trade had previously provided. Money as we have come to know it today, is really just one step in an evolutionary process of many economic design iterations, aimed at facilitating more efficient means of trade between two parties. The idea of money being part of an iterative and evolutionary process, had made me inquisitive as to what the future of money might be, and the different design process that might lead the next monetary evolution. This design lead research investigation aims to explore this evolutionary process in money design, through creating an increased level of monetary literacy towards a consumers everyday spending.

Research Interest

> Our enjoyment of life is almost synonymous with the quantities (and to a lesser extent qualities) of what we consume. Our success is measured in terms of how well we are doing as consumers. Consumption is not just a means of fulfilling needs but permeates our social relations, identities, perceptions and images (Gabriel & Lang, 2006, p. 1).

The above quote is one which I had found while researching money and the design of money. It resonated powerfully with me for two reasons. Firstly, I feel that as an individual, I am a part of a community where a significant emphasis is placed on obtaining monetary wealth and material belongings. Secondly, it often follows that once said wealth has been obtained happiness should follow. I wonder how we, as a society, have been able to come to see money and consumerism as the route to our happiness. As a designer and researcher, this had fuelled a desire to understand why I spend the way I do and the design processes which underpin this healthy appetite to spend.

Figure1.1 Ancestral and Olive Cafe receipts which had been carried around in my wallet, forgotten. (Source: Authors own image)

The two Eftpos receipts (*figure* 1.1) illustrate my desire to consume. Both receipts which I had carried with me for months, forgotten, tucked into my wallet. The two establishments, one a cafe and one a bar, were places that I do not visit often. I had now come to have almost no recollection of my visits to these places. What had I bought at $14? I would not have gone alone. Who was I with? Had I an enjoyable time or was it something which I have now chosen to subconsciously block from memory? It interests me that such a purchase could have been so easily forgotten and become so unmemorable. But the fact remained the same, I had been there and spent money, and this was documented proof of it. The two purchases had been lost from my memory, and became just another part of my everyday spending.

Paralleling my experience of pervasive spending is German photographer Andreas Gursky. In his images, Gursky captures and communicates humankind's impact on the environment, showcasing different perspectives of the contemporary industrial consumer landscapes we live in. Gursky's use of large format colour prints emphasise the sheer scale and mass, where "within it (the photograph) the anonymous individual is but one among many" (Galassi, 2001, p.29). Gursky has done well to capture an image of contemporary pervasive industrial design and the toll that it has had on our natural and man-made environments.

Figure 1.2 Andreas Gursky. (1999). [photograph]. 99 Cent. (Source: *Andreas Gursky : Museo Nacional Centro de Arte Reina Sofia*, 2001)

The image (*figure* 1.2), the interior of a grocery store is lit in a cold blue light, the neon strip lighting providing the only available light source. The aisles are neatly stacked, with each lane almost overflowing with produce. Products sit face forward with their reflective coloured plastic wrappings, creating a patchwork of multi-coloured goods which customers wade through. The consumer becomes small and insignificant in comparison to the sea of goods which surrounds them. There is an element of banality to this image, but that is what draws the viewer closer. You can start to pinpoint certain brands which you are able to visually recognise, familiar colours of packing, the signature red of a Kit Kat, the iconic blue of an Oreo. You start to realise that this store could be anywhere in the world, its location no longer relevant to the availability of the products - a new "commercial reality – (where) the emergence of global markets for standardised consumer products (is made available) on a previously unimagined scale" (Levitt, 1983, p92).

As a design researcher, I feel an affinity with the consumers in Gursky's image, wandering the different aisles, filled with a wide variety of cultural mass production with which to explore my interests in the field of consumption. This brought me to define for myself the essence of this investigation: if we as consumers became more literate in our spending process and understand the emotions associated with our purchases, could we spend more thoughtfully and purposefully? What tool could be established to help facilitate teaching this literacy and assist in increasing our consciousness towards our everyday spending? The act of consumerism is of great interest to me. The purchasing process is something that everyone engages with daily in some form or other. As economist Theodore Levitt (1983) states: "almost everyone everywhere wants all the things they have heard about, seen or experienced" (p.92). With the technological platforms of consumption diversifying from physical to include digital (online) shopping, consumption has become almost effortless. This ubiquity should not, I will suggest, go unchallenged. Scrutinising and reflecting on some of my own past purchases, I wonder what were my motivations and thoughts when I bought what now sits dis-used taking up space in my room. Not only did I feel wasteful in a monetary sense but also wasteful in the resources which I had unnecessarily consumed. The motivation for this research began on a personal note, but I believe it has much larger applications. I want to buy less and become more actively thoughtful in my spending process.

The nature of consumerism and the numerous states in which it exists are echoed in the numerous methods of investigation that could possibly be utilised in the exploration of this subject area. Ranging from various ethnographic approaches, observational methods, interviews, quantitative and qualitative methods and surveys, each method holds their own unique merits and drawbacks to that particular researcher and topic. The different ethnographic approaches which I have chosen will assist in the exploration of this subject area and, I believe, share a common link - a desire and natural curiosity to better understand the diversity of the motives in the choices we as consumers make.

Thesis Overview

The thesis is broken down into four chapters, each chapter exploring different aspects of the exchange process, that of physical commodities and the non-economic aspects of exchange. Chapter 1 – Understanding Consumer Culture, begins with an initial investigation into consumer culture, aimed at understanding some of theoretical frameworks around the consumption of goods and the cultural capital that these goods hold. Chapter 2 – Money and Design, continues this exploration of exchange through considering the evolutionary design process of primitive forms of trade to modern money, and how the application of different design elements could portray a national identity through a nation's national currency. This exploration is supported by various design experiments, looking into my everyday dealings with money and the exchange process, where a desire developed to create an increased level of monetary literacy towards a consumer's everyday spending. This then follows into Chapter 3 – The Spending Map, which explores the process of recording and cataloguing an individual's spending, with the ultimate goal of creating a tool which is able to exhibit a critical reflection and dialogue to critique the emotional engagement a consumer has towards their spending. In conclusion, Chapter 4 – Discussion, examines the final discussion of the findings and the design process.

Chapter 1: Understanding Consumer Culture

> In struggling to cope with the necessity of making trade-offs between need and pleasure, whilst seeking to reconcile their Bohemian and bourgeois selves, modern individuals inhabit not just an 'iron cage' of economic necessity, but a castle of romantic dreams, striving through their conduct to turn the one into the other (Campbell, 1987, p. 227).

Consumer culture has many different faceted angles, where the process of purchasing and the consumption of goods is driven by a diverse range of motivations. This could range from either as a means of fulfilling a specific practical use or playing a larger role in conveying, in a social sense, an identity or lifestyle. The field of consumer culture and consumption has many strong ties to the design process. As designers we have come to create an environment where products form a relationship between consumers and has become part of this narrative, indicating who we are as an individual and how we want to be seen. As Collin Campbell identified in the above quote, our everyday lives are ones which are filled with numerous compromises and trade-offs, and as consumers, we are constantly engaged in a relationship between satisfying basic needs and a desire of realising our own 'romantic dreams'. A cultural phenomenon has come to form where as consumers we are driven to aspire to obtain certain goods. This is what I wish to explore.

To investigate this phenomenon, there are two aspects of consumer culture which I wish to explore in this research. Firstly, the element of wastefulness and secondly the creation of individual identity through what we chose to consume. As a means of firstly understanding this aspect of wastefulness, I looked to understand the concept of value which economist Karl Marx had explored. Here Marx argues goods hold both a social value as well as a commodity value. Marx had been able to distinguish the difference between user-value and practical utility, which a consumer could gain from a product as being two different things. I had interpreted this distinction between these two as goods which had a value of 'I need this in order to survive' verse a 'I want this' – going on an idea of fulfilling more than just a practical utility. The idea of consuming goods that goes beyond fulfilling a practical utility is one which has been explored a number of times. But it was sociologist Thorstein Veblen's in his work *The Theory of Leisure Class* (1899), who was able to cement the idea of a consumer culture developing out of a wasteful means.

Veblen explored a concept of conspicuous consumption by examining the personal expenditure in relation to different luxury commodities and how a lifestyle of leisure was able to indicate and display to others a level of prestige and social status. Veblen had identified that there was a certain level of wastefulness which existed in this expression of prestige and status. The "element of waste that is common to both … In the one case it is a waste of time and effort, in the other it is a waste of goods" (Veblen, n.d, p. 36). The idea that consumer culture had come to develop through an expression of excess and the level of 'wastefulness' an individual might be able to exude through their expression of a particular lifestyle was something which I had come to find as interesting.

I wished to further explore how it may be possible to design a tool or a set of processes which was able to actively articulate and encourage a greater critical reflection in an individual's spending. A tool where an individual could rethink and re-evaluate the manner in which they consumed, and encourage a thought process that was more critically mindful of unnecessary expenditure and wastefulness of resources. This exploration of conspicuous consumption in relation to a social grouping and consuming goods that went beyond practical utility had highlighted how the consumption of different goods were able to play an important role within different social relations. But this had also emphasised how the expression of a unique identify of an individual could also be formed though what they choose to consume.

How the desire for, and consumption of, specific goods could form part of an individual's social narrative was the second element of consumer culture which had grabbed my curiosity. This includes the consumption of specific products, for example designer label goods, which could be used to create and express a level of exclusivity. The consumption of these products held within them a certain level of social capital, as had been identified before and as Celia Lury (2011) recognises:

> that consumption is to do with meaning, value and communication as much as it is to do with exchange and economic relations. (...) the utility of goods is always framed by a cultural context, that even the use of the most mundane and ordinary of object in daily life has cultural meaning (...) material goods are not only used to do things, but they also have a meaning, and act as meaningful markers of social relations (p.14).

A good's sole function has gone beyond simply gratifying a basic need but has come to "form a basic part of the human story" (Stearns, 2012 p. 213). Each purchase that a consumer makes reveals something unique about ourselves as individual consumers. The creation and expression of a unique identity was something which I wanted to explore further in this research investigation. By examining and cataloguing the purchases of an individual, could I construct a picture of that individual through what they choose to consume? Sociologist Mike Featherstone has examined a similar topic, in his book *Consumer Culture and Post Modernism* (2007). Here, Featherstone examines how the consumption of goods had come to permeate our social lives, where our ability to consume has come to form a fundamental component of the expression of our identity. What I had come to find interesting was how a consumer is able to construct a lifestyle through a means of developing and expressing a specific lifestyle:

rather than unreflectively adopting a lifestyle, through tradition or habit, display their individuality and sense of style in the particularity of the assemblage of goods, clothes, practices, experiences, appearance and bodily dispositions they design together into a lifestyle. The modern individual within consumer culture is made conscious that he speaks not only with his clothes, but also with his home, furnishings, decoration, car and other activities with are to be read and classified in terms of the presence and absence of taste. The preoccupation with customising a lifestyle and a stylistic self-consciousness are not just to be found among the young and the affluent; consumer culture. (Featherstone, 2007, p. 27)

Here, Featherstone has been able to identify how sourcing and gathering can come together as and how an individual could curate and design a specific lifestyle which was reflective of them and how they might by seen by others. Identifying these two core ideas around consumer culture, the element of wastefulness and the strong desire to and express identity, had helped to construct an important background framework within which to work from. I wanted to explore the relationship a consumer might form with their purchases and spending and explore this physical manifestation of their various emotions. This level of constant spending and provisioning demands further examination, as the monetary systems designed to enable us to consume are the same which have capitalised on our emotions. What I continue to explore in Chapter 2 is the design of these monetary systems and considering the evolutionary process of money design.

Chapter 2: Design and Money

Money has come to create a platform on which the exchange of commodities can be facilitated but also cater to a greater desire to exchange ideas, knowledge and skills. The exchange between two parties is one that has been culturally ingrained into us and has "enabled us to satisfy a natural curiosity (of the world around us, and) about the key role played by money, one of the oldest and most widespread of human interactions" (Davies, 1997, p.xvii). This exchange of different ideas and skills is something which is typically prevalent in the design process, with a solution found through the familiar shared experience of a problem. Money has come to be so central within our lives that as a result we seldom, if ever, think about the various design processes that went into getting money and the monetary system to where it is today.

Money is something which has played a large role in shaping my identity as a designer and my research. Growing up in a large African city which is driven purely by the spectacle of money, people travelled far and wide from around the continent on the premise of obtaining great wealth and success in the 'City of Gold'. Johannesburg's gold rush now long gone, the city has moved its dependence for survival to catering to manufacturing and large multi-national financial institutions that now scar the horizon line with their gleaming glass-clad facades. Great wealth for some, sadly brings with it great poverty for others, with the vast majority of migrants who come to seek their own wealth and success being met with a city made up of stark contrasts.

Figure 2.1. Long, wide and gridded streets characterise the inner city of Johannesburg, with streets being named after gold mining activities and past influential members of the gold mining community, such as Eloff Street and Rissik Street. (Source: Authors own image)

Figure 2.2. Many high-rise office blocks stand empty or in different states of neglect, with many large corporations moving out to newer office park developments throughout the cities suburbs. (Source: Authors own image)

The many new and unskilled migrants find a home in the growing poverty stricken informal settlements which form a belt around the city's outskirts. The poverty of the informal settlements is contrasted with the high walls and gated communities of the leafy northern suburbs. Large estate-like houses and rambling gardens house the elite minority. This constant interplay between rich and poor provided me with a source of constant reflection, of as to why some are able to have so much and others have almost none. The unavoidable contrasts of wealth offer a grim reminder of the distinct fragmented states of how so many different cultures, classes and races all exist in the one common pursuit of obtaining wealth and success.

Figure 2.3. Abandoned office and apartment blocks have become a home to a variety of people. Above is one of these abandoned buildings, many of which don't have access to basic utilities such as electricity and water. (Source: Authors own image)

Figure 2.4. An old building stands in the shadows of the previous Johannesburg stock exchange, highlighting the stark contrasts between the old and new buildings which exist within the fragmented inner city. Great efforts have been placed by the city council to revitalise the inner city with urban regeneration projects, converting disused office blocks into apartment living. (Source: Authors own image)

Johannesburg is certainly not the only example of where the outright pursuit for wealth exists, but a good example of how the stark contrasts between rich and poor can so easily be seen within day-to-day life. It is within these contrasts, between those who have and those who have not, that money can be seen as a solution to many problems. Money plays an important role that goes beyond purely facilitating an exchange and as Glyn Davies (1997) identifies, "it is not enough merely to examine the narrow economic aspects of money in order to grasp its true meaning. To analyse the significance of money it must be broadly studied in the context of the particular society concerned" (p.1). I intend to explore further the evolution of money and how the design of money continues to evolve within our society, exploring how money has come to represent different cultural identities. Money is able to take many forms. I intend to explore the criteria it must meet in order to ensure its successful adoption as a form to conduct an exchange.

Modern money had developed and evolved out of trading system known as barter, which Anne Chapman refers to as a swapping or direct exchange between two social human beings or groups with the motivation of the acquisition of the other party's goods. As Chapman explains, barter played a vital role of cultural diffusion by where the "insertion of foreign goods into local groups (brought) new concepts and alternative ways of dealing with all sorts of problems both practical and ideological" (Chapman, 1980, p.43). The trade of material goods and subsequent ideas showcase how trade and a unit of exchange, in this case barter, had been able to perform so many different functions other than that of just facilitating exchange. Chapman acknowledges that trade has been able to bring with it a universally understood method of communication that is able to transcend different cultural and language barriers.

Similarly to how a designer would overcome a design problem or issue, the money that we know today is a direct design response to a problem of how to better facilitate a more efficient method of conducting an exchange. With an increasing market and growth of the market space, traditional methods of trading, such as barter, started being unable to accommodate the complexity that the market place now held. There was a need to create a better form of accountability and efficiency, "as the extent and complexity of trade increased so the various systems of barter naturally grew to accommodate these increasing demands, until the demands of trade exceeded the scope of barter, however improved or complex" (Davies, 1997, p.10). There was a need to create a universally accepted method of holding and facilitating exchange, and this process was an evolutionary step in the design of money and a trading system, to accommodate the increase in the amounts of products and services being traded.
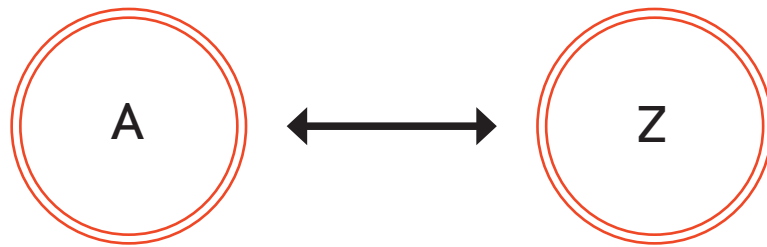
Figure 2.5. A model of pure barter as discribed by Chapman where "A" represent one of the goods exchanged and "Z" the other. Barter is direct exchange in that no intermediate object is introduced in the transaction. Only objects are exchanged. (p.35, 1980)

Glyn Davies also highlights in his book, *A History of Money: From ancient times to the present day*, that money is something which does not exist in a vacuum but which has profound social and cultural importance, and a connection not only to the individual but also the larger community. Davies describes money as not having one single origin but having a multitude of different origins and existing in a number of different forms, where value was placed within a physical unit and a "vast multitude of different kinds of objects (...) such as amber, beads, cowries ..." (Davies, 1997, p.27) that could be used to facilitate trade and exchange. Davies identifies the change in the physical form of money, from cowrie shells to current and digital currencies, as still holding the same core attributes (which I explore below), with only a change in the physical appearance.

The same core attributes which Davies had described had also been identified by Vili Lehdonvirta and Edward Castronova in their book *Virtual Economies: Design and Analysis*. This book has a slightly different angle to it than the other sources which I had previously cited, with a strong focus on how the design of a successful currency and trading system can be created within an online or gaming environment. Lehdonvirta and Castronova examined various sources from both the real world and fictional worlds, creating a checklist which a designer can refer back to when designing their own currency. Lehdonvirta and Castronova have identified three ideological core elements of what money is - a form of money needs to facilitate trade, preserve its value, and be a measure of value, which were the same elements which Davies also identified. They state that anything can be a form of currency as long as it was able to hold some or all of the core characteristics (Table 2.1), "if a money fails to address these basic needs, it is unlikely to win much adoption" (Lehdonvirta & Castronova, 2014, p.179). I have placed what Davies had identified in a table alongside what Lehdonvirta and Castronova had identified as to create a comparison.

Core functions a medium of exchange should hold, defined by Davies.

- Medium of exchange: facilitating trade
- Store of value: preserving value over time
- Unit of account: providing a standard measure of value

Core functions a medium of exchange should hold, defined by Lehdonvirta and Castronova.

- A store of value: needs to be able to hold its value over a period of time
- Should be durable, not deteriorate or loose utility over time
- The cost of owning and holding it should be low
- Should be difficult to steal

Table 2.1. Some of the core functions a medium of exchange should hold defined by Davies and Lehdonvirta and Castronova.

Lehdonvirta and Castronova continue to breakdown these core elements further, defining money as "a good or a record that is generally accepted as payment for goods and services in a given cultural or social context" (Lehdonvirta & Castronova, 2014, p.178). What I enjoyed about this analysis which they had explored, was the close reference which they had made to the importance of both cultural and social contexts which inform how a currency and money is created, even within a gaming environment.

- Verifiably countable: easily able to quantify in weight, size or other measures on which value is measured upon.
- Recognisable: not being easily confused with other objects, where something could be passed on as something that it might not be.
- Divisibility: able to be divided into smaller unites without losing value
(Rice and gold are very divisible but diamonds and paintings are not. If cut in two they are less valuable than when together).

Table 2.2. What makes a currency a good medium of exchange, store of value and a unit of account as defined by Lehdonvirta and Castronova.

The other element which Lehdonvirta and Castronova had done well to successfully identify was a general set of attributes, as to what makes a currency a good medium of exchange, store of value and a unit of account (Table 2.2), creating a checklist with which to refer back to. What I liked about this was the way in which they have created a discussion articulating the design considerations someone might have when designing a currency .

What I have been able to establish through my research thus far is that we as humans have constantly been engaged and a part of a process of exchange coming to inform and create our identity as both individuals and community. This quote below from Davies (1997), is able to showcase the enormity that trade and exchange has had on us:

> there are far more people using much more money, interdependently, involved in a greater complex of debts and credits than ever before in human history. However, despite man's growing mastery of science and technology, he has so far been unable to master money, at any rate with any acceptable degree of success, and to the extent that he has succeeded, the irrecoverable costs in terms of mass unemployment and loss output would seem to outweigh the benefits (p.10).

I have been able to identify core functions for what makes a medium of exchange successful but I now wish to explore how money, in an everyday sense, continues to shape so much of the world around me. I want to explore how a currency is able to express a national identity, through the use of significant designs elements. The frequency with which I interact with this process of trade is explored though a visualisation focusing on the frequency of Eftpos transactions, entitled *One Week* in Trade. I also wish to explore what happens when the method of electronic trading fails, such as when the Eftpos goes down, in a visual essay entitled *Cash Only*. With this knowledge, I aim to obtain a clearer and informed idea of the way in which money and trade continues to perform as more than just a form of exchange but has become an integral part of creating a unified cultural identity within a community.
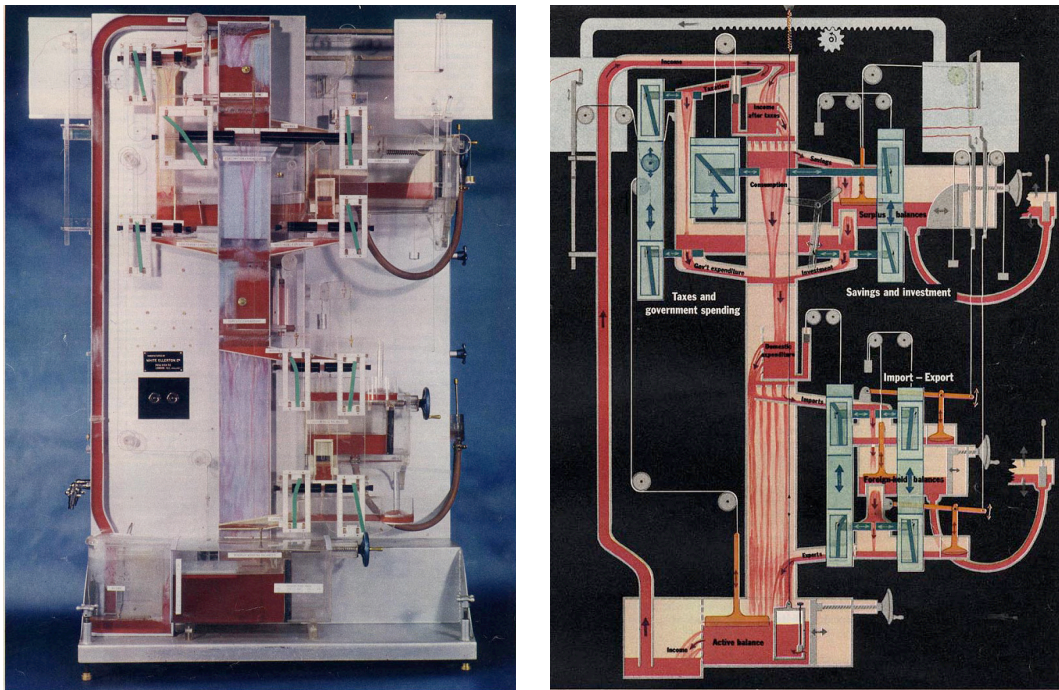
Figure 2.6. An image of the MONIAC (left) and a diagram (right) showing the MONIAC designed by economist Bill Phillips's in the late 1940s, visualising the flow money through the economy. (Source: Fulltable, na)

As a means of gaining a greater understanding of the role which trade and currency plays in creating New Zealand's identity, I looked to the Reserve Bank of New Zealand. The Reserve Bank not only plays an integral part in shaping and setting monetary policy but also facilitates a platform on which to express national identity through banknotes and coinage. I explore this further later in the chapter. On a visit to The Reserve Bank Museum I had come across Bill Phillips's, Monetary National Income Analogue Computer (MONIAC), which was designed as a working visualisation and educational tool to simulate the complexities of New Zealand's macro economy. Through making use of a series of tanks, pipes and the flow of water to represent how money moves around the economy, it had been able to represent how different monetary policies could affect household, business and government spending. By restricting the flow of water and watching this gradually affect how the tanks fill, monetary policy that was put into effect could visually be seen. What this simulation had been able to do successfully was simplify all the complexities of how the economy works into a few elements, laid out in a thoughtful visual manner. This had informed my understanding of how money in a greater sense effected the choices of how people choose when to spend and when to save, such as when low and high interest rates are set. The Reserve Bank has made an online version of the MONIAC, which has made it easier to play around and explore different aspects of the macro economy.
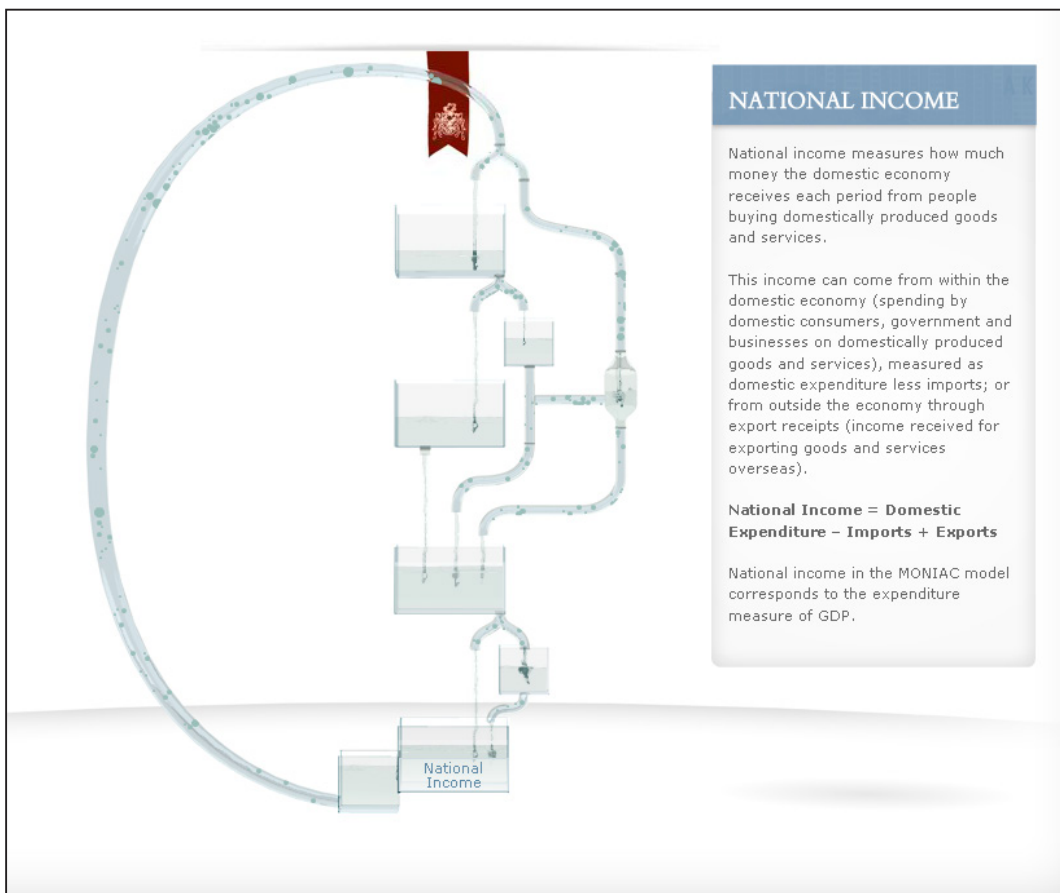
NATIONAL INCOME

National income measures how much money the domestic economy receives each period from people buying domestically produced goods and services.

This income can come from within the domestic economy (spending by domestic consumers, government and businesses on domestically produced goods and services), measured as domestic expenditure less imports; or from outside the economy through export receipts (income received for exporting goods and services overseas).

National Income = Domestic Expenditure − Imports + Exports

National income in the MONIAC model corresponds to the expenditure measure of GDP.

Figure 2.7. The Virtual MONIAC [screen shot], which has become an fun and interactive tool, which a user could explore different aspects of MONIAC through applying different state changes.(Source: rbnz museum, na)

The Reserve Bank of New Zealand and Museum has done well to highlight the importance of creating and maintaining a level of trust within a currency, as it was this level of trust which gave something a certain level of value. This value that had been created manifested in the physical form of a currency which we make use of everyday, such as banknotes and coins. If this level of trust and subsequent value was not maintained by the Reserve Bank through monetary policy, counterfeiting deterrents and other measures, something like a banknote would just be a piece of paper and valueless. Figure 2.8 is an example of an early twenty pound New Zealand note from 2nd January 1865. Upon the note, the inscription of 'promise to pay the bearer on demand twenty pounds' and 'is under guarantee by The Commercial Bank of New Zealand', signifies its authenticity as an accepted and legitimate means of exchange, with it being supported by the New Zealand General Assembly. Trust is placed within the Bank and General Assembly to honour the value which has been inscribed.

Figure 2.8. Webster, Kenneth Athol, 1906-1967. Commercial Bank of New Zealand Limited.: [Banknote for] twenty pounds. Napier 2nd January 1865. By act of the General Assembly. Perkins, Bacon & Co. London. Ref: Eph-A-BANK-1865-01. Alexander Turnbull Library, Wellington, New Zealand.

Creating a National Identity through Currency

Something which had always been distinctly clear, not only in my visit to the museum but also through travels to different countries (Figure 2.9), was how, through the adoption of a set medium of exchange or currency, a country had the ability to visually reflect and portray cultural individuality. Through the unique cultural attributes of native flora and fauna or particular designs - such as architectural forms, patterns or leaders of that particular region. When I first interact with an unfamiliar currency, within moments I able to gain insight into a country's identity. I am to identify, through the visual cues, what that country holds as valuable and celebrates through their currency. A national currency has become a place of great pride constructing a visual narrative of its people, place and identity .

Here a collection of the different currencies which I have been able to accumulate through different travels. Each country has been able to construct a very distinct narrative of who they are. What I had noticed through looking and comparing the different notes, was the significant use of different figure heads or prominent people from that country, such as Nelson Mandela on the South African Rand. Other prominent elements in currencies which were apparent was native dress, agricultural and fishing scenes, and significant landmarks, both architectural and cultural. The use of colour and pattern is a significant element, with a level of high vibrancy seen in the Australian Dollar, with a more refined and controlled use within the design of the European Euro.

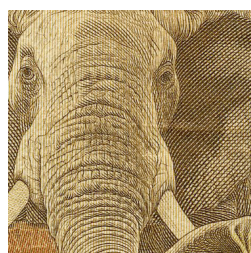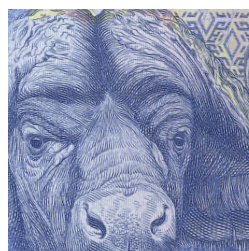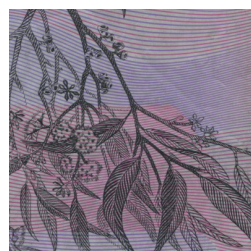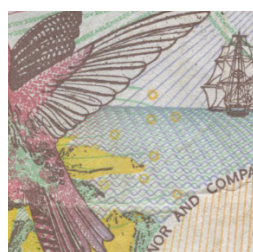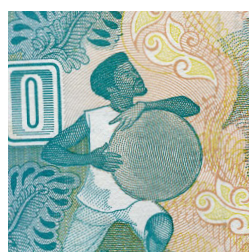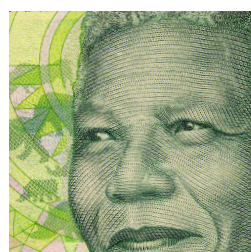|			
10 seychellois rupees	25 mauritian rupees	2 singaporean dollars	50 singaporean dollars
25 mauritian rupees	20 south african rand	5 european euros	10 south african rand
50 singaporean dollars	2 fijian dollars	100 south african rands	5 australian dollars
10 british pounds	2 singaporean dollars	10 seychellois rupees	10 south african rand

Figure 2.9. A collection of currencies, ranging from the Seychellois Rupee, South Africa Rand, Singaporean Dollar and many others, cropped to draw focus to the various distinctive design elements. (Source: Authors own image)
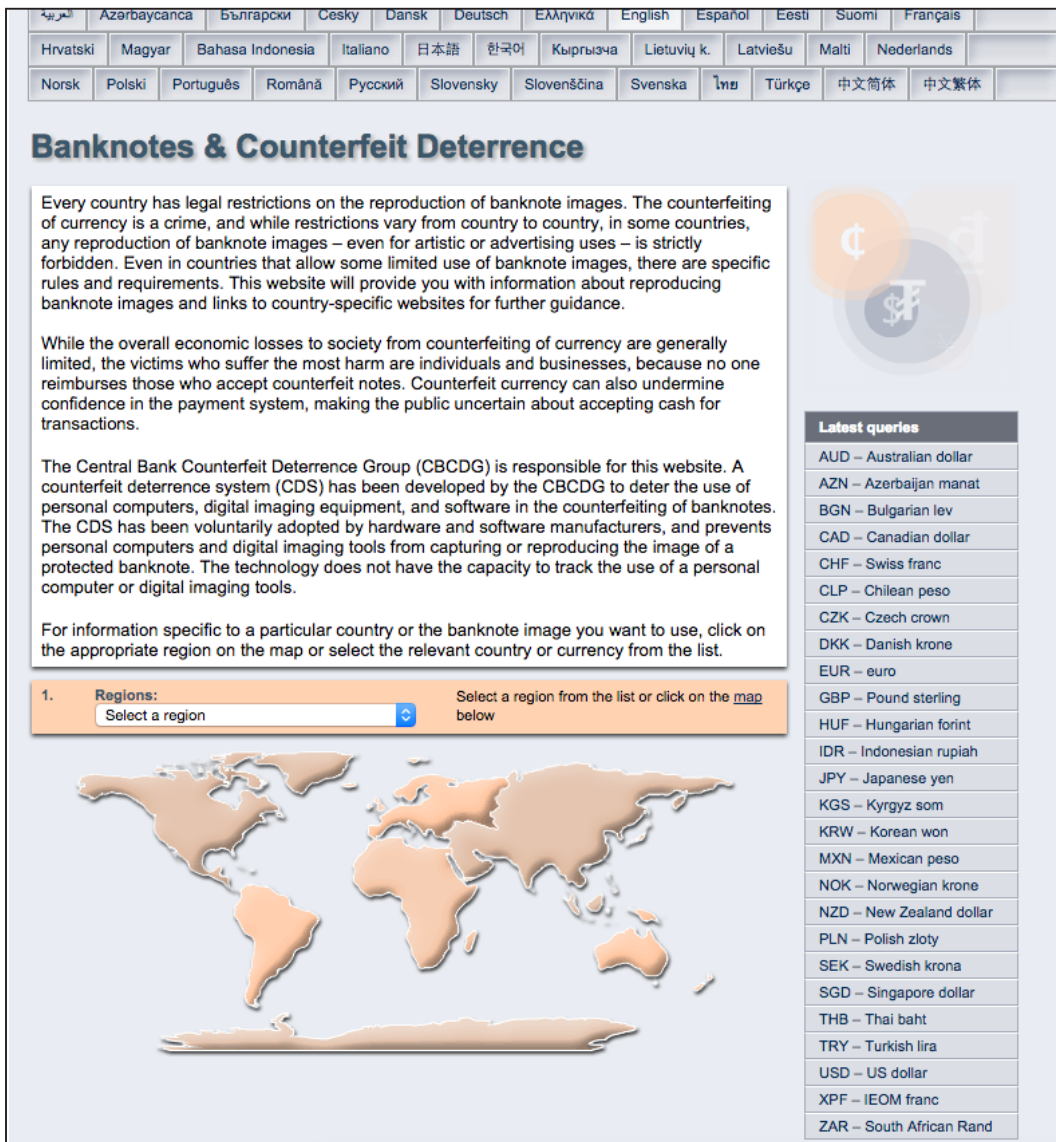
العربية | Azərbaycanca | Български | Cesky | Dansk | Deutsch | Ελληνικά | English | Español | Eesti | Suomi | Français

Hrvatski | Magyar | Bahasa Indonesia | Italiano | 日本語 | 한국어 | Кыргызча | Lietuvių k. | Latviešu | Malti | Nederlands

Norsk | Polski | Português | Română | Русский | Slovensky | Slovenščina | Svenska | ไทย | Türkçe | 中文简体 | 中文繁体

Banknotes & Counterfeit Deterrence

Every country has legal restrictions on the reproduction of banknote images. The counterfeiting of currency is a crime, and while restrictions vary from country to country, in some countries, any reproduction of banknote images – even for artistic or advertising uses – is strictly forbidden. Even in countries that allow some limited use of banknote images, there are specific rules and requirements. This website will provide you with information about reproducing banknote images and links to country-specific websites for further guidance.

While the overall economic losses to society from counterfeiting of currency are generally limited, the victims who suffer the most harm are individuals and businesses, because no one reimburses those who accept counterfeit notes. Counterfeit currency can also undermine confidence in the payment system, making the public uncertain about accepting cash for transactions.

The Central Bank Counterfeit Deterrence Group (CBCDG) is responsible for this website. A counterfeit deterrence system (CDS) has been developed by the CBCDG to deter the use of personal computers, digital imaging equipment, and software in the counterfeiting of banknotes. The CDS has been voluntarily adopted by hardware and software manufacturers, and prevents personal computers and digital imaging tools from capturing or reproducing the image of a protected banknote. The technology does not have the capacity to track the use of a personal computer or digital imaging tools.

For information specific to a particular country or the banknote image you want to use, click on the appropriate region on the map or select the relevant country or currency from the list.

1.　**Regions:**　　　　　　　Select a region from the list or click on the map
　　Select a region ▾　　　　below

Latest queries

AUD – Australian dollar
AZN – Azerbaijan manat
BGN – Bulgarian lev
CAD – Canadian dollar
CHF – Swiss franc
CLP – Chilean peso
CZK – Czech crown
DKK – Danish krone
EUR – euro
GBP – Pound sterling
HUF – Hungarian forint
IDR – Indonesian rupiah
JPY – Japanese yen
KGS – Kyrgyz som
KRW – Korean won
MXN – Mexican peso
NOK – Norwegian krone
NZD – New Zealand dollar
PLN – Polish zloty
SEK – Swedish krona
SGD – Singapore dollar
THB – Thai baht
TRY – Turkish lira
USD – US dollar
XPF – IEOM franc
ZAR – South African Rand

Figure 2.10. Adobe Photoshop warning [Screen shot] highlighting the seriousness of counterfeiting banknotes. (Source: Authors own image)

While putting together *Figure 2.9*, which I had made through a series of scans taken into Adobe Photoshop, I was met with a surprise. Being unable to open the files due to the program picking up that they were banknotes. This had been Adobe's deterrence to counterfeiting, highlighting the seriousness of counterfeiting as a crime. I was impressed by the program picking this up, highlighting successfully the different built-in security features that the banknotes have. Interestingly, older banknotes, such the Seychellois rupee which had not been used in a while and as likely to be now outdated had not been picked up. Notes which had the greatest success rate of being picked up was the new South African Rand, New Zealand and Australia Dollar, and European Euro. I feel this might have occurred due to their more recent use.

During my research investigation, The Reserve Bank of Zealand had launched their Brighter Money campaign (2015), which marked the release of New Zealand's Series Seven banknotes. Offering the initial introduction of new $5 and $10 (2015) notes, with the other denominations to follow later in the year. The campaign, which was online, offered an interactive platform in which the public could explore the significance of the various elements which appear on the notes. According to The Reserve Bank there were a number of reasons as to why this introduction of a new series of banknotes was introduced. Partly, as an update to the graphic quality of certain elements, and the introduction of Māori language and motifs but also the incorporation of new security features - "periodic upgrades maintain confidence in the New Zealand currency" (Langwasser, 2014, p.1). Elements such as raised ink, larger holographic windows and colour changing images help to act as a deterrent to counterfeiting. This increased security feeding back into The Reserve Bank's maintenance of trust. As Langwasser (2014) identifies in the Reserve Bank of New Zealand Bulletin - "the challenge in designing banknotes is to create pieces of art that incorporate features of cultural significance, while integrating a suite of security elements needed for functional banknotes" (p.2).

Langwasser continues to explore the six different design requirements and constraints a banknote has, such as having security features which make a note difficult to replicate and for the public to easily verify. Cultural representation that New Zealand public is able to identify with, and express a significant cultural identity where the country's banknote could be referred to as the 'county's business card'. With an increase in automated money handling services, a note that is clearly detectable by banknote equipment was important. The manufacturing and printing process is sophisticated, and if the constrains of manufacturing are not considered it might not be possible to mass produce notes to the required specifications. Accessibility for the visually-impaired is important, where a successful banknote should use design features of strong contrast and large fronts and introducing tactile features (such as raised ink) to assist this.

I have chosen to explore the new $5 and $10 notes as a means of understanding how bi-cultural heritage is communicated visually through these new series of notes. The banknotes still hold many of the same narratives, themes and bi-cultural elements that the series six issue banknotes had. With the Brighter Money campaign, it has made it easier to explore these narratives and understand how they are able to relate and represent a New Zealand identity. In *Figure 2.11 & Figure 2.12*, I explore each element and the significance of these elements to come together to represent a narrative.

Colour Change
The colour inside the hoiho/yellow-eyed penguin changes as you move the note, showing a bar of colour which runs diagonally across the bird.

Puzzle Number
When holding up the note to the light, different and irregular shapes on the front and back of the note come to form the number 5.

Holographic window
A much larger transparent window has been created, holding a hologram within it. As you move the note new colours appear, revealing a silver fern, map of New Zealand and hoiho.

Aoraki/Mount Cook
The highest mountain of New Zealand, situated in the South Island. This is the same mountain which Edward Hillary gained his early mountain climbing successes.

Sir Edmund Hillary (1919 - 2008)
New Zealand's best known mountaineer, where he was one of the first men to reach the summit of Mount Everest (1953), and first to drive over continental Antarctica to the South Pole.

Figure 2.11. Series 7 bank notes ($5). The $5 note depicts mountaineer Sir Edmund Hillary as well as other native flora and the rare yellow-eyed penguin. (Source: Reserve Bank of New Zealand, 2016)

Campbell Island

New Zealand's southernmost island, where a population of hoiho/yellow-eyed penguin live.

Campbell Island Daisy

A colourful pink and purple flower from the daisy family, which is found on the Campbell and Auckland Islands.

Hoiho/yellow-eyed penguin

Unique to New Zealand and is one of the rarest birds in the world. Found along the south-eastern coastline of the South Island, the hoiho has distinctive yellow iris and a yellow band of feathers. The hoiho is threatened by habitat destruction and predation of cats, dogs, ferrets and stoats.

Raised Ink

Raised print can be felt across large numbers and words throughout then note.

Tukutuku panel

A pattern included on the banknote called kaokao form the Tane-Nui-A-Rangi meeting house at the University of Auckland marea. The pattern symbolises strength and shelter of the Māori meeting house, which are prominent proverbs of the Māori people.

Security feature

Colour Change

The colour inside the whio/blue duck changes as you move the note, showing a bar of colour which runs diagonally across the bird.

Puzzle Number

When holding up the note to the light, different and irregular shapes on the front and back of the note come to form the number 10.

Holographic window

A much larger transparent window has been created, holding a hologram within it. As you move the note new colours appear, revealing a silver fern, map of New Zealand and whio.

White camellia

White camellias were given to Members of Parliament who had supported the bill to give New Zealand.

Kate Sheppard (1848 - 1934).

A prominent leader of the campaign to give women the right to vote in New Zealand, who work tirelessly to organise and promote this issue. New Zealand became the first country in the world where all adults could vote (1893).

*Figure 2.12.*Series 7 bank notes ($10). The $10 note depicts prominent leader Kate Sheppard who lead the campaign to give women the right to vote in New Zealand, as well as the white camellia, which became a symbol of the fight to vote by New Zealand woman, along with native flora and fauna. (Source: Reserve Bank of New Zealand, 2016)

New Zealand Kiokio

A common New Zealand fern that is found throughout the country, where young fronds can be tinged red.

Pineapple scrub

A scrub whose leaves resemble those of a pineapple which is commonly found in the south-western parts of the South Island and Stewart Island.

Whio/Blue Duck

An endangered species found mainly in mountainous areas of New Zealand. Seen always in pairs or family groups and lives on the same riverside for most of their lives. The whio was the first bird to become protected in 1903, as habitat destruction and introduced predators effected their survivable.

Raised Ink

Raised print can be felt across large numbers and words throughout then note.
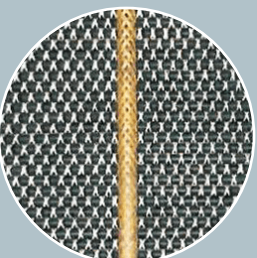
Tukutuku panel

This pattern Mangaroa or Milky Way, represents the stars. Stars were used to navigate to Aotearoa and symbolises the finding of a new direction. The multitude of stars in the heaves is also seen to reflect the multitude of people of Aotearoa, Māori, Pakeha, men and women.

The successful creation of a strong narrative within the New Zealand banknotes has come from being able to successfully identify those elements which are specifically unique to New Zealand. The challenges would have been the same for those designing a central currency for the European Union (EU), but having so many different countries which make up the European Union would have made this process slightly more challenging. Heike Winter writes a good record of this process in The Design of Euro Banknotes, examining drafts and the process which this was done. Winter identifies that with having such a strong and diverse range of nations all with very distinct cultural and social heritage. Imagery and designs needed to be chosen that would portray these each equally. The new banknotes would have to carry the sense of optimism for the future of the new currency and nations who would now call this their new medium of exchange and ultimately become part of their identity - an identity that represents cultural and social inclusion and an image of moving forward, as well being current and progressive.

As Winter explains, general themes were decided upon and defined as 'ages and style of Europe' and 'abstract/modern' as guiding elements in the creation of the new notes. A design competition was launched in 1996, inviting national banks of the EU to participate, with a brief sent out of what the new notes might contain. These were stipulated clearly within a brief that all 'designs must ensure gender equality and avoid national bias', as a means of creating an inclusive design. The new banknotes should also be 'clearly identifiable as European and should embody a cultural and political message that is acceptable to all European citizens'. Each bank note was assigned an individual historical and architectural period, representing Europe in a 'contemporary or modern depiction', and are defined as follows in the table below:

€5	Classical
€10	Romanesque
€20	Gothic
€50	Renaissance
€ 100	Baroque and Rococo
€ 200	Age of iron and glass
€ 500	Modern 20th century architecture

Table 2.3. Showing the denomination value of the note and the historical and architectural period of the European Union notes. (Source: The design of euro banknotes. Drafts and design processes, 2004)

The importance of designing a new currency that was to be used within such prominent cultural and social centres throughout the European Union required great participation and buy in from a number of different parties to ensure its success. First and foremost, ensuring a fiat currency that could facilitate exchange but also create a new national identity for a 21st Century Europe. This idea of creating a national identity is one which was explored by Benedict Anderson in his work Imagined Communities (2006). Here Anderson (2006) analyses the concept of nationalism or 'nation-ness' as "cultural artefacts" (p.4), where an identity of community can be socially constructed through the employment of culturally symbolic images and designs. People who consider themselves as a part of this identity come to form a community and amass that group identity, forming a nation. This again shows the importance of how a community's identity is portrayed and communicated through a form of mass media, such as money.

Through the identification of different 'real world' examples, I have been able to identify various examples of how a national currency is able to express a unique identity. A banknote can become "a tangible expression of a national culture" (A. Fletcher, 1995, p.79), which has helped to create and inform my knowledge of the greater role which currency and exchange has been able to play in a macro economic. What I wished to explore further were the more everyday interactions which I had with a currency and the people around me, starting by looking at the way in which I conduct and interact in the daily activity of exchange.

I began looking at the way in which I, on an almost daily basis, conducted various transactions, which highlighted the most frequent use of Eftpos. This not only highlighted the transition I personally made coming from South Africa, which has a large cash economy contingency, but also how the form of money had changed to resemble a simple card. The ease and efficiency which I now had to pay for things was evident, but so to was the fact that I rarely ever held physical cash. This increased dependency on electronic means of conducting trade was something which I was interested in exploring further. Not having physical cash in hand, left me susceptible to the possible failure of the Eftpos system going down. Without having direct physical access to funds in case of a power outage or in an emergency event, I would be left literally and digitally penniless. This susceptibility was highlighted in the 2011 Christchurch earthquakes, were there was not sufficient amounts of cash available at the time of the quake. It made the task of conducting simple transactions challenging, adding to the state of panic which ensured in the aftermath of the devastating quakes.

Figure 2.13. An image from *Cash Only*. (Source: Authors own image)

Cash Only

With these thoughts in mind I conducted an investigation, which I later entitled Cash Only, to photograph and interview a series of entry level staff, mainly cashiers, who worked in a wide variety of different retail environments such as the local fish 'n chip start-up, right through to the large national and multi-national corporations. The aim was to understand the cashier's computational interactions within their workplace and how it might be effected when their tools malfunction, such as Eftpos, not working all together. I was focused on gaining an understating as to what extent the cashiers might be dependent on these various tools to conduct their job, putting forward questions such as what might happen when their tools malfunction or stop working all together? Through the various brief interviews that I carried out, meeting a wide range of different people, the solution to a malfunctioning system was simple yet effective. The one liner solution – cash only.

Having this 'cash only' solution being put forward when their tools failed, brought its own unique challenges which would be experienced differently according to that employee's specific skill-base, such as mathematical literacy. This reflected the employee's ability to adapt to various and sometimes sudden changes that would require them to not be solely dependent on their tools to complete their job.

It was important to me to capture a wide variety of different retailing environments as to discover if there were any significant differences which might exist between the larger and smaller retailing environments. Some of the people I had spoken to were better than others with regards to adaptability, with the thought of a malfunctioning system striking fear in some employee's with their only reassurance of avoiding such a situation was "no, it doesn't really happen ... well not since I worked here ...". It was interesting to note how most of the cashiers that I had interviewed were unaware of any real physical alternatives as a means of carrying out their job, such as the paper credit card processing machine which is commonly referred to as the 'zip-zap machine'. This revealed the heavy reliance and dependence on these electronic systems but the solution of cash only was never too far from their response.

Figure 2.14 "I don't understand how ... but I'm good with math."A quote from the casher at the Waitoa Store, Hataitai, Wellington, when asked what would happen if their Eftpos went down. (Source: Authors own image)

Figure 2.15. "It makes it very difficult to count things out". A quote from the casher at Golden Wok, Hataitai, Wellington, when asked what would happen if their Eftpos went down. (Source: Authors own image)

No credit,
Eftpos only,
Thank you.

DPT   RPT   AMOUNT

0.00

LBS SHIFT AMT   RET VOID ⊖ CHK CHG TL CNG
            DUE

DIMOCK MODEL 634
ELECTRONIC CASH REGISTER

NEW ZEALAND LIMITED

Figure 2.16. "It all gets stressful and messy, well … not since I worked here." A quote from the casher at Pizza Hut, Newtown, Wellington when asked what would happen if their Eftpos went down. (Source: Authors own image)

Cash Only was an interesting ethnographic study, as it revealed the beauty of our everyday retail environments and the various people who work in these spaces. It was refreshing to engage with these various cashiers, as they were all willing to share a bit about themselves, creating a break in the monotony of working in a entry level position. It gave me insight not only to their capabilities, but also an idea of who they might be outside of the burning neon lights. This exploration highlighted the high dependency which both small and large business relied on electronic means of trading, such as Eftpos to conduct trade. This dependency which was experienced by the various businesses which I had visited, made me think back to the dependency which I myself had on this card to facilitate an exchange. I wished to investigate how the frequency with which this method of payment was being used by others over the course of a week.

Figure 2.17. An image from *Cash Only*. (Source: Authors own image)

One Week in Trade

Understanding the frequency of Eftpos use was important, but I was also interested in understanding how the frequency of spending might be visualised, as it was something that otherwise would not be directly visible to individual consumers. Through conducting a successful online survey of around 80 people, based around understanding the use of Eftpos, I was able to use the data from the survey to better augment my design process and guide the final visual outcome of this investigation.

The survey, which was entitled Your Eftpos Spending, was able to gather a lot of different kinds of information around the use of Eftpos and the spending habits. The survey starts by defining the various age groups of the participants and then continues to investigate their use of physical cash. There was a significant lack of use of physical cash, with the majority of the surveyed participants identifying with the option on rare occurrence/not very often at all. I feel this signifies a significant point of transformation and reliance on electronic methods of conducting everyday transactions. The participants were asked how many Eftpos transactions they had roughly conducted in the past week, with most of the surveyed participants identifying that had conducted between 11 - 20 transactions.

Figure 2.18. A close up detail of the fragile cone like shape which housed the beads. (Source: Authors own image)

This frequency of use of Eftpos use was something I had wanted to focus on in the final visualisation, with the thought of how I could portray one week's worth of transactions made visible in physical form. I decided to assign one bead as equal to one transaction. The use of beads is a significant one, as it makes historical reference to one of the first methods of trade, where beads and shells (such as cowrie shells) were used as a means of currency and exchange. The beads which were housed within a fragile cone like shape, were then released and free to fall, the sound of the rolling beads on the floor echoing around the room. I was focused on creating something which was highly visual and emotive, evoking a different emotional connection to our spending and our increasing use of electronic methods of conducting trade.

Figure 2.19. An image of the beads which had fallen from the cone out onto the plinth and then onto the ground (above). (Source: Authors own image)

Figure 2.20. A close up of the beads which had fallen (right). (Source: Authors own image)

From the survey, I have been able to note that the increase in Eftpos transactions meant that this process of payment had been reduced to that of a single card. Physical currency was no longer being used to the same extent that it had once been used before. Going in and out of different stores an almost default question would be 'is that Eftpos today?' and those who made the choice to use physical cash, met with something of novelty. This left me and ASB Bank with a similar question of how do you teach the value of money and the importance of money in an increasingly cashless society and culture? Growing up, I had been taught the value of money through seeing my parents conducting cash transactions and then also receiving physical cash in exchange for doing chores. There was a level of literacy which I had experienced first-hand, and taught, through physically interacting with this process. Learning the value of money was something which was important in shaping my understanding of the world in which I lived.

ASB Bank has subsequently put forward their solution to improve the process of literacy - ASB Clever Kash. In late 2015, ASB Bank in partnership with Saatchi & Saatchi developed a prototype of a cashless money box, which enable parents to 'swipe' virtual notes and coins from their online ASB account into their child's account. A parent would be able to transfer digital currency from their account to their child's, through the use of cashless moneybox as a learning tool, the screen on money box would light up, reflecting the amount which had just been transferred or 'swiped'. The money would be stored on ASB servers, making it a secure and safe means of storing payments. This process would assist in building a richer and more tangible experience for children and assist to improve this literacy around the value of money. Barbara Chapman, Chief Director at ASB, identifies in the promotional video clip:

> Parents are telling us they're finding it challenging to teach their children about the value of money as they don't tend to use cash and coins for everyday purchases. Today, children are more likely to see their parents handing over a card to pay, and so may not appreciate how much things cost or see change calculated, as we do when paying in notes and coins (ASB, 2015).
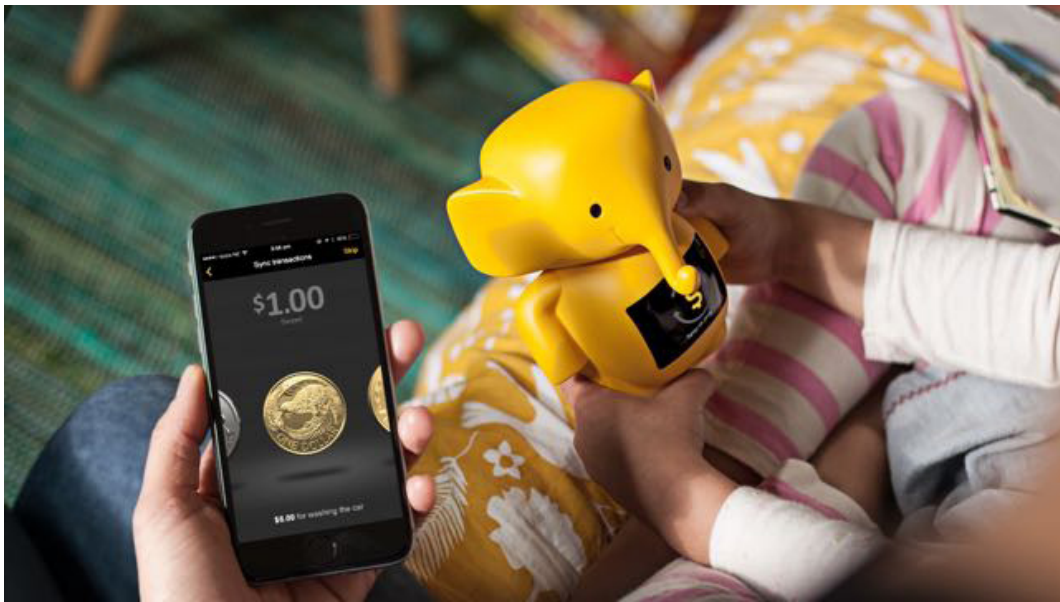
Figure 2.21. ASB Clever Kash in use. (Source: Saatchi & Saatchi, 2015)

This fun and novel response to teaching children the value of money is an attractive one as it allows for an exciting level of engagement with the learning process of money and its inherent qualities. The shift in money box design is able to reflect the shift and change in money design. Where the novelty of having a money box as a child, which previously collected odd bits of spare change, has now been reintroduced as a powerful learning tool. This is an important and invaluable part of learning different life lessons as well as the value of money, which is increasingly harder to teach and understand, when making more use of online banking and Eftpos facilities in order to conduct everyday transactions.

Figure 2.22. ASB Clever Kash front and back view. (Source: Saatchi & Saatchi, 2015)
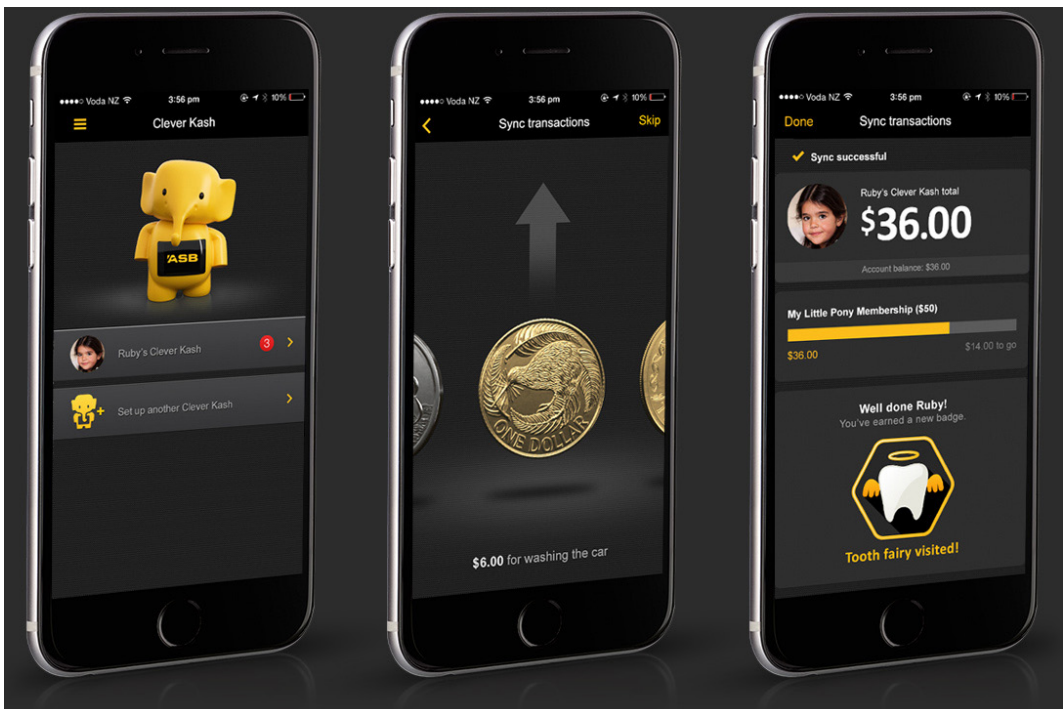
Figure 2.23. ASB Clever Kash App design. (Source: Saatchi & Saatchi, 2015)

Money is time

What I enjoyed most from ASB's Clever Kash was the ability of re-constructing a tangible experience of exchange through the use of digital media. This lead me to re-think how to utilise a similar concept of teaching literacy of time and the exchanges which we make within our everyday lives as a means of earning income. What we are giving up when we go to work for the day is ultimately your own free time. Time is your ultimate finite resource and a commodity which you are willing to sell in exchange for a monetary value. Money is essentially a value unit for the amount of your own time which you are willing to give up.

This lead me to develop a web-based prototype call Money is Time. Money is Time was a simple one-page website which asked participants what their ultimate resource is worth. A participant would input their total income, and the hours which they had worked in order to earn that income, as a means of creating their 'minute wage' value. This 'minute wage' value would then be logged against the purchases that they would input next. This would give a time value verse a dollar value with which the participant could see how long it would take them to earn that amount of money, placing a value in something else other than just a monetary value. For example

> If you were to work a 5-hour day at a rate of $15 per hour, 1 hour of work is equal to $0.25 per minute – giving you your minute value.

> If you did a grocery shop of $22.20, that would then be equal to spending 1 hour and 28 minutes of your time in order to earn that amount.

> A lunch out of $18 would then be equal to spending 1 hour and 12 minutes of your time working to earn that amount.

Through creating this design outcome, I hoped I would be able to communicate the idea of time being a finite resource and your life energy as precious and valuable. What I hope to achieve with this web-based application is getting a participant to re-evaluate the way in which they spend. In getting a participant to grasp the idea that 'maybe this purchase of $90 is not worth the six hours of my life that I spent working for that amount of money time'. Further developments that I might want to include is getting participants to log a specific category of purchase, so by the end of the day/ week/month they could see where they have spent their time.

Not having had any previous web-based experience, I was eager to grow my skill-base and design knowledge. I had chosen to develop an internet-based application, as I wanted it to be something which a user could have easy access to. I began the initial design process with the idea of developing a mobile application, which a user could have on their phone. When making a purchase, a user could input the price of the purchase and get in return the minute value that purchase would cost them.

loading screen   about   login/ sign-up

Figure 2.24. Initial design iteration of the Money is Time, which I had uploaded to Invision. (Source: Authors own image)

My initial prototype was made in Adobe Illustrator, where I could export the user interface screens as a png. file to Invision – a free web and mobile prototyping platform. Here I was able to quickly develop the user flow, getting an idea of what prompts would need to be added and how it would work. Figure 2.24 shows the initial look and feel which I had created. I had been impressed at how easy it had been to design, upload and experience a prototype. One of the main things I struggled with was how to visually represent this spending of time which goes beyond just a numerical value. I needed to seek technical help as this project was developing well beyond my limited skill base.

working out hourly value   cost of purchase   visulisation

loading screen

about

sign up

ENTER PIN

sign in

(goes right to when signed in)

working out
your hourly value

welcome

1
process
and
details

2

3

welcome

view spent resources

log a purchase

cost of purchase

logged results
week/ month

visualised results
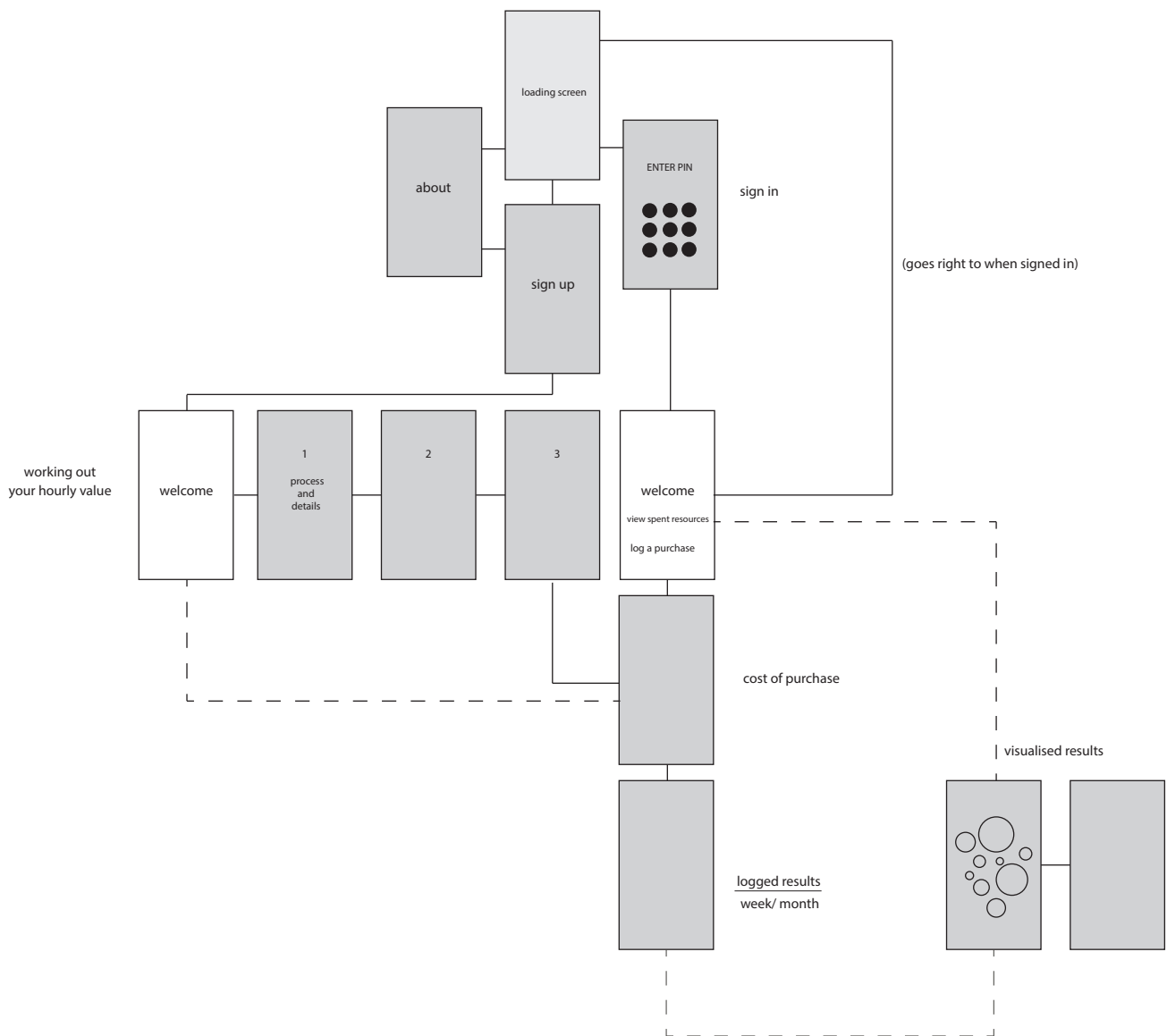
Figure 2.25. Initial App architecture which I had designed to understand how the user might work/flow

through the app. (Source: Authors own image)
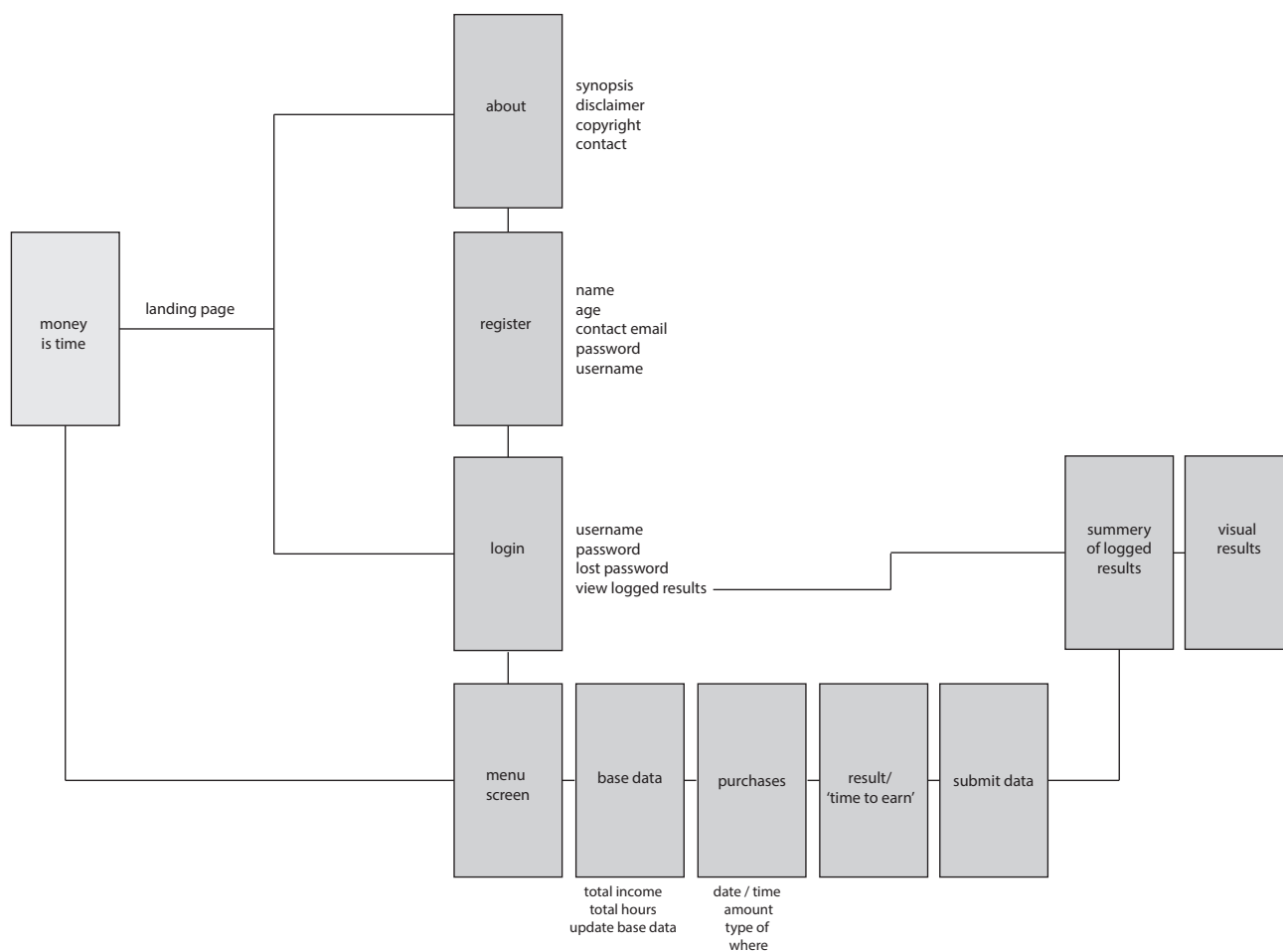
Figure 2.26. A further revised architecture plan and layout, which had become more simplified after my initial meeting with Eliot. (Source Authors own image)

Figure 2.27. An initial test of what the final visulised outcome might have been, displaying the amount of time spent and minute value. (Source: Authors own image)

Help came in the form of a fellow media student Eliot. In our first meeting it became apparent that I needed to streamline the use of application and what could be achieved within the timeframe. The decision was made to create a website as opposed to an application, as technically it would be a lot simpler. From the original architecture which I had presented (Figure 2.25 & Figure 2.26), the decision was made to drop the login/registration process, and instead of having multiple pages which the user would click through, it would become less with one page to scroll through. Eliot felt that the simple algorithm of cost over time could be achieved, but the lack of knowing how to visually represent these results still remained the main challenge. It was agreed that Eliot would get the html working for the site, while I focused on continuing to experiment with how to construct the style sheet for the site.

In the second meeting with Eliot, he had been able to get the main html for the website working and responsive. This meant that for the first time I was able to input data and get a result. This had again made acutely apparent, the need for a working source code that could be used in the reveal of the data. The lack of visual appeal was something which was concerning me and had started to set the first set of alarms off as to whether this was the direction which I wished to continue to explore.

59

What is your minute value?

Your last Paid Amount 75   **Hours Worked** 5

Calculate

Your Minute Wage is : $0.25

0.25

Your purchases

$ 22.20   **Type :** coffee   Delete
$ 18   **Type :** lunch   Delete

New Purchase

$ 18   **Type :** lunch   Add

You spent 160mins of your ultimate resource

You spent 88.8 minutes of your life on coffee

You spent 72 minutes of your life on lunch

Figure 2.28. A screen shot from the website with the working algorithms (Source: Authors own image)
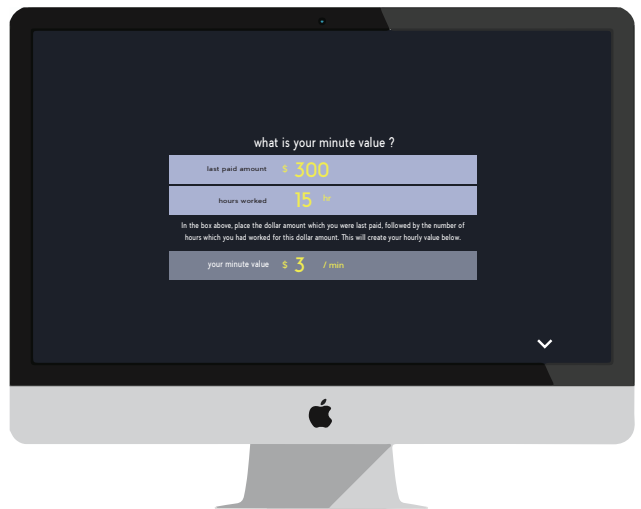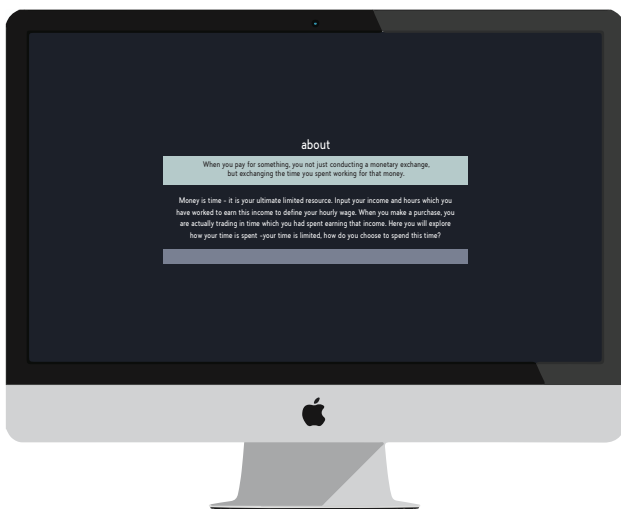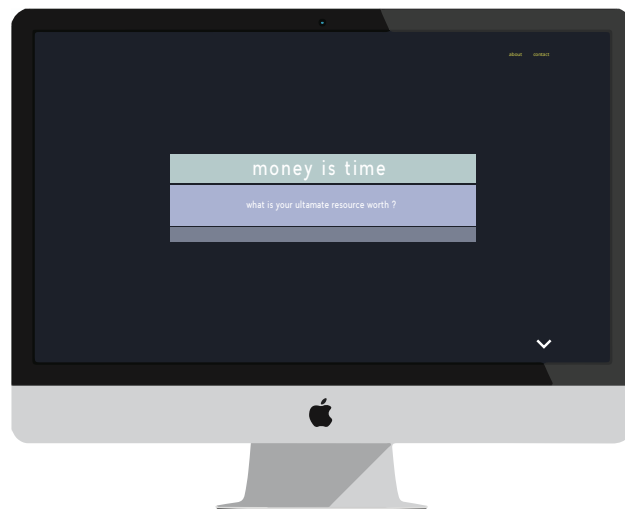
Figure 2.29. Test screens which I had made up in Adobe Illustrator to help workout and convey the look

and feel which I had wanted to achieve with the website. (Source: Authors own image)

Not long after the third and fourth meeting with Eliot, my new found web development skills had been tested beyond what they could take and I made the final decision to discontinue work on this aspect of project. This had been for a few reasons, the main one being my lack of knowledge with regards to the technical aspects of web and app design, which had begun to overwhelm me and remove the control I had over the direction of the project. I still felt that the initial idea had been something interesting, which I still wish to pursue perhaps as a future project. What I felt I had come to learn from this process was the importance of having the right support base and tools to execute a final idea. Not having this support in the first place, and not receiving guidance necessary to complete this outcome had made me realise the importance of developing clearer communication channels between those you are working with and the importance of acquiring the right skill set to cope with the different design and technological challenges.
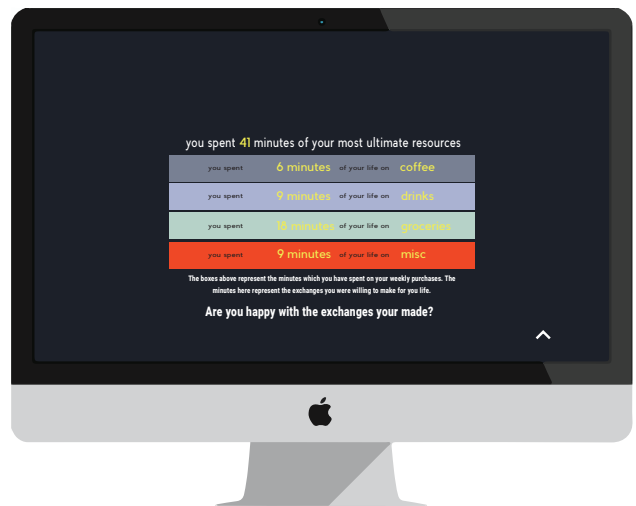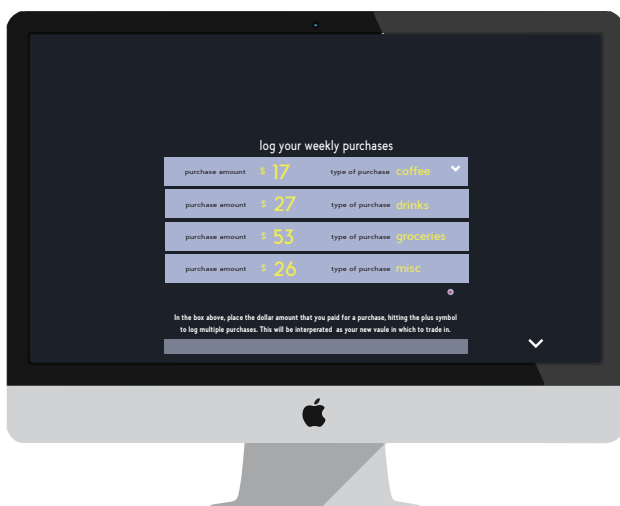
Concluding Thoughts

The customs and behaviours around exchange have come to reflect unique cultural attributes and identities which have become defining elements of our culture. Through the various explorations of the evolution of trade and money design, I have been able to gain a greater understanding around the central role that the exchange process plays within our everyday lives. It is something which goes beyond simply exchanging one commodity for another. I feel that the power of money and what it is able to represent is something which we do not give much thought to as "the very notion that you can persuade millions of people that two virtually identical pieces of paper can be worth either one pound or fifty pounds, deserves some serious thought" (A. Fletcher, 1995, p.79). In the chapter which follows I intend to continue to explore this exchange process through the mapping of a consumer's spending, and the development of a research tool which is able to help create an improved literacy towards our own everyday spending.

Chapter 3: The Spending Map

Part 1: Understanding the Shopping Process

Many external and internal factors contribute to our final decision to make a purchase. This has made it challenging to decide where to limit the extent of my research. For example, if I looked at one specific purchase singled out on its own and removed from context, I would not be able to gain a full understanding of the different factors which lead the consumer to this point. An ethnographic approach would need to be undertaken, utilising various observational and interview techniques to gain an understanding into this purchasing process. As a means of understanding how I might employ these techniques, I made reference to works by Daniel Miller. Miller's work entitled *A Theory of Shopping* (1998) which explored the topic of everyday provisioning, where he immerses himself in a yearlong ethnographic study of various North London households. Miller observed the everyday provisioning and shopping habits of various households where "the constant provisioning that provides the dominant activity" (Miller, 1998, p11). In this study, Miller is able to explore various notions of thrift, treat and sacrifice, which could be identified through the spending which was carried out on "grocery shopping, clothing, furnishing and domestic shopping" (Miller, 1998, p11).

One of my favourite chapters from A Theory of Shopping, aptly called 'Making love in supermarkets', Miller accompanies various members of different households to the supermarket. Through a series of conversations and discussions around their shopping and habits, he is able to successfully explore the relationship which exists between people and the products they purchase. Miller is able to establish a conversation around their shopping habits and gain insight into the various motivations around the purchases that they make. One of the interactions with shopper Mrs. Wynn made a lasting impression on me. Mrs. Wynn does the shopping for her household, which includes her recently unemployed husband and the kids who she is paid to looked after. She moves through the supermarket, making a number of different decisions to best fit the various needs of the household, where her "actual purchases are related back to household preferences" (Miller, 1998, p17). Mrs Wynn makes use of the mental notes, which she had made, of what she bought last time that had gone down well previously in her household:

> Her shopping is primarily an act of love, that in its daily conscientiousness becomes one of the primary means by which relationships of love and care are constituted by practice. That it is to say, shopping does not merely reflect love, but is a major form in which this love is manifested (Miller, 1998, p.18).

This manifestation of love that Miller has identified, is able to show how these products and purchases, which are a part of our everyday lives, goes beyond more than just fulfilling its original intended function. An emotive value is present within these products and purchases and come to be a carrier of a variety of feelings and emotions. Through the purchases that are made, the "commodities do not have meaning, in that neither relationship nor identity are a form of language. Rather they are meaningful - they come to matter as means of constituting people that matter" (Miller, 1998, p.152). The reason as to why this resonated so strongly with me, and something which I hope to capture, is the level of thoughtfulness and reasoning which surround a purchase. When I reflect back to when my mother had done the household shopping, she was not only just buying products for the week's meals but was carefully curating a thoughtful process that manifested and expressed her love and care towards me and my family.

The approach which Miller has undertaken in the exploration of the shopping and purchasing process, I feel has been successful, and holds a wealth of elements which I would like to employ similarly in my investigation, such as the conversational and interview techniques. I aim to develop the same level of conversation with my participants, providing insight into their spending with reference to specific purchases and spending. As well as identifying this conversational element as an important form of my research, I wish to establish something that is able to record and catalogue this motivation and reflection towards the purchasing process. It is these processes that I feel will assist in providing the basis for my choice of methods and for exploring the shopping process.

Types of Goods, and Goods used as social markers, status and membership.

As a means of further understanding this shopping process, I felt it important to acknowledge the different categories of goods and purchases, which has been defined according to use and fulfilment of a consumer's wants and needs. To explore the different categories, I have made reference to a set of definitions taken from *The Dictionary of Marketing (3rd Ed.)*. I have also included a set of definitions that Lehdonvirta and Castronova have created for how different goods and products are categorised as to express social identity and status. This, I hope, will help create a clearer understanding of the manner and thought processes which consumers might go through when a product is bought and used.

The *Dictionary of Marketing (3rd Ed.)* explores the classification of different types of goods and purchases in an objective and clean cut manner, making it clear to define the various products and how a consumer might make use of them. These I have included in *Table 3.1* as my re-interpretation of these definitions of the different types of products category of the purchases. Through doing this it has been able to highlight the different levels and complexities of the decision making process that a consumer might go through when purchasing a product. This has been able to show how the complexities of buying can change dependent on the type of product which might be bought.

Type of Product	Category Definition
Convenience	A purchase with limited analysis or comparison by the consumer, where the purchase is made out of habitual and regular purchasing, such as a specific brand of shampoo.
Staple	Essential basics which are purchased frequently and on a regularly basis, something which is much more a need than a want, such as bread and milk.
Impulse	A purchase which is unplanned without any prior thought or decision making process, playing into buyer's temptation, such a sweets at the checkout.
Shopping	A purchase which requires time, searching and comparison of different products from a variety of different places. The quality of a good is undifferentiated but the price is, such as home furnishings, clothing and shoes.
Specialty	A purchase which requires an intensive search, comparison, and a set of complex decision making processes such expensive jewellery.
Grudge	A purchase which the consumer has little interest in purchasing but something that they need. The need for buying this product outweighs not having it, such as insurance and life cover.

Table 3.1. My interpretation of the definitions from the *Dictionary of Marketing (3rd Ed.)*

The types of products which I feel will have the most relevance to assisting me in this investigation, are those products which fall into the category of more regular purchasing and use. These products would come into the category of either convenience, staple or impulse purchases, as these purchases demand the least amount of critical reflection for a consumer. It is also something which I feel has come to make up the majority of everyday purchasing. It would be interesting to see how different participants are able to engage and catalogue their different thought processes and level of engagement towards these purchases, that normally require a very limited level of critical reflection. Through getting participants to actively engage and critically reflect more within these purchases and processes, it would hopefully, in turn, create an increased awareness towards these purchases.

To contrast the relatively clear cut definitions of the types of products in The Dictionary of Marketing, that make reference to fulfilling actual and physical needs, sociologists and anthropologist have been able to observe the roles which goods are able to play within human relationships. Lehdonvirta and Castronova explore this, acknowledging that certain goods or purchases are capable of fulfilling a multitude of intangible desires which goes beyond the actual physical needs of a consumer. The exploration of how a certain product is able to cater to specific personal and emotional pleasures within human relationships, indicates that a product is able to perform a multitude of roles. This can include signifying social status and expressing a specific membership to a group status. This is an incredibly large and complex aspect of consumerism, and I feel it is important to acknowledge it in reference to this investigation. Due to the large complexity and extent of this subject in itself, I won't be able to explore this in its entirety but feel it is important to acknowledge and be aware of.

Tracking spending and purchases.

Being able to track and catalogue spending is something which is not greatly unfamiliar to most people. There is an abundance of web-based applications and applications which are widely available, making it increasingly easier to have a up-to-date documented record of your spending. In my efforts to track and better manage my own spending, I had inadvertently come to use many different applications, such as writing it down, mental arithmetic and the use of these applications. Some had been more successful, but which had been unable to maintain sustained engagement. What I had found to be the most challenging with this process of recording, was how removed it had become from the actual spending process. It had been able to reduce a highly emotive and almost everyday activity to a very limited set of variables, of just price, time and location. One application I had previously trialled had been ANZ Money Manager. What had drawn me to trialling this web-based application was having Money Manager directly plug into my spending account. The application would be able to run in the background, recording my spending and requiring very limited input from the user. It had been able to define the category of shop e.g. grocery, restaurant ... and build up a highly accurate financial catalogue of my spending. *Figure 3.1 and Figure 3.2* show how the data from my spending account has been translated into a pie graph showing the percentages of my spending. As a design outcome, it had not been able to visually engage me as viewer, and had removed a lot of the intricate narratives about me as a spender. It had reduced this highly emotive experience to a few numerical values.

Color	Category	Percent	Amount
	My Expenses for 26/02/2016 - 26/05/2016		
	Rent	47.38 %	$2,372.50
	ATM/Cash Withdrawals	14.18 %	$710.00
	Groceries	8.96 %	$448.88
	Personal Care	7.90 %	$395.44
	Clothing/Shoes	6.27 %	$314.00
	General Merchandise	5.51 %	$275.90
	Restaurants/Dining	3.54 %	$177.35
	Online Services	3.28 %	$164.33
	Travel	2.00 %	$100.14
	Home Maintenance	0.80 %	$40.00
	Home Improvement	0.16 %	$8.20
	Taxes	0.01 %	$0.48
	Total	**100.00 %**	**$5,007.22**

Figure 3.1 & Figure 3.2. (above) shows my spending in both graph from and percentages in a pie chart, made in ANZ Money Manager. [screenshot]. (Source: Authors own image)

The idea of being able to construct a highly accurate image of who I was through the use of my own banking data was one which I was interested in exploring further. Utilising my personal banking data, I wanted to create a visualisation that was able to capture a more in-depth image than had been previously created with ANZ Money Manager. The visualisation which I had created, entitled Spent, was created through making use of the same data from my spending account. I was able to gather core elements from the dataset such as: date of when the transaction took place, where the transaction had taken place and dollar amount of each purchase. With most of my purchases being done within the relatively small geographical location of Wellington City, I was able to use a basic map to geographically plot the various data points. From the data, I was able to work out the movements I had made through the city, linking where one purchase had taken place to the next. What I found to be the most interesting from this data was the level of accuracy it had with regards to my spending. I was directly confronted with the amount of money which I had spent, as well as the frequency of my spending, which I had not been able to experience previously. For the first time I had been able to gain a more meaningful insight into my spending, seeing what my spending looked like in the greater scheme of things.
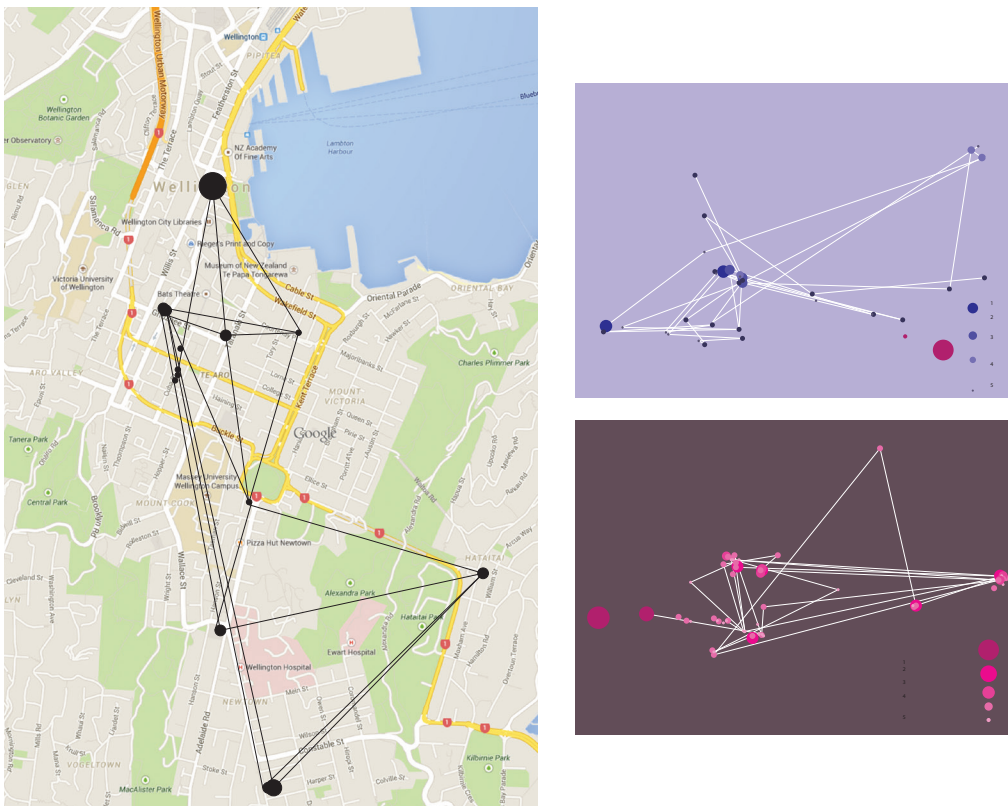
Figure 3.3. Showing initial iterations of the development process, which I had started to develop when I first began the mapping of my Etpos data (Source: Authors own image)
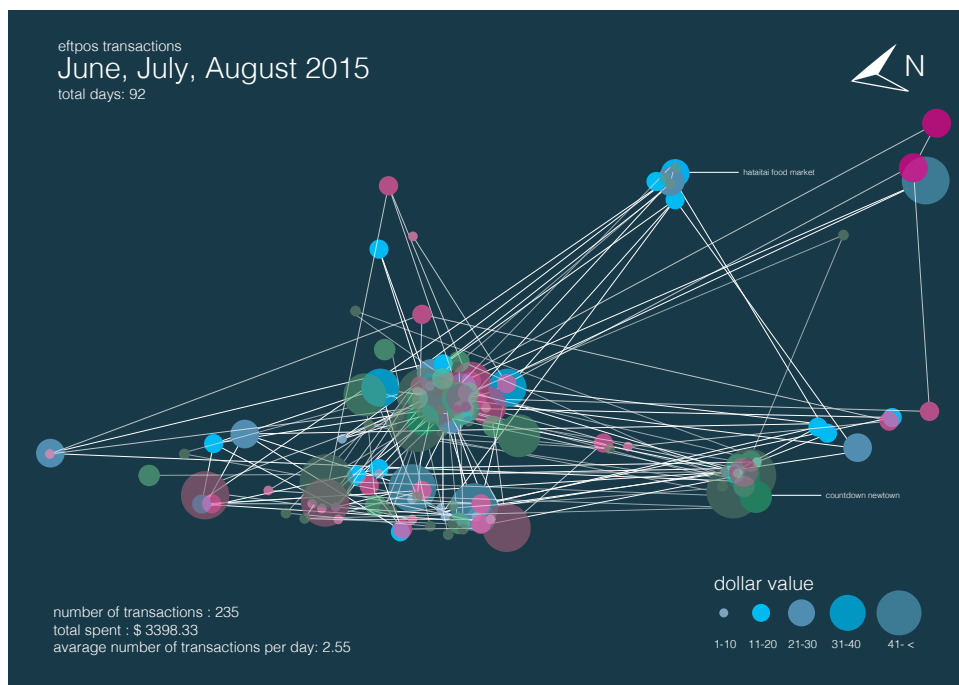
Figure 3.4. One of the first iterations which I had done, where I had successfully mapped my Eftpos data but further refinements where still needed to be carried out, such as indication direction of where one purchase was made to the next. (Source: Authors own image)

Figure 3.5 - Figure 3.9. (Next page) The final set of visulisations which I had completed of my tracked spending which I had entitled Spent. The first set of visualisations show my mapped spending over the three months, July, August, September. Followed by a combined version of the three months of spending in one.

July 2015

total days: 30

wellington, new zealand

number of transactions: 87
total spent: $1112.83
avarage number of transactions per day: 2.96

lambton quay & willis street
29.89%

tory street & courtney place
43.24%

dollar value

0-10 11-20 21-30 31-40 41 - >

% frequency of use in area

direction traveled

August 2015

total days: 31

N

wellington, new zealand
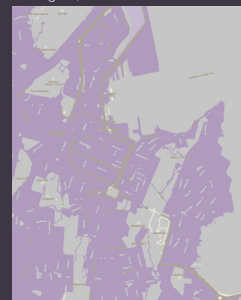
number of transactions: 88
total spent: $1341.79
avarage number of transactions per day: 2.61

tory street & courtney place
45.93%

countdown newtown
24.85%
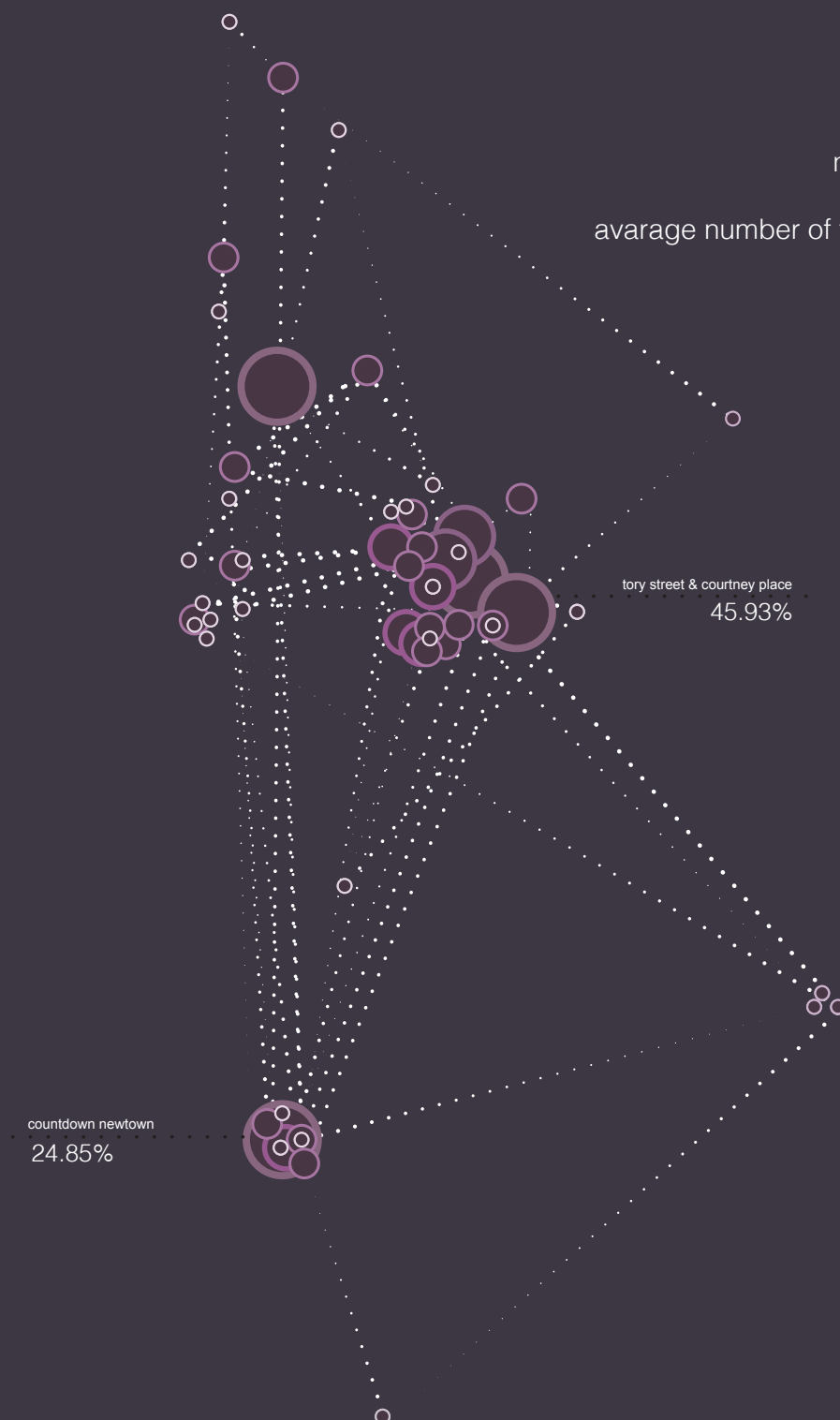
dollar value

0-10 11-20 21-30 31-40 41 - >

% frequency of use in area

direction traveled

September 2015

total days: 30

N

wellington, new zealand

number of transactions: 116
total spent: $1414.96
avarage number of transactions per day: 3.8

tory street & courtney place
31.78%

v.u.w & cuba street
35.24%

countdown newtown
21.64%

dollar value

○ ○ ○ ○ ○

0-10 11-20 21-30 31-40 41 - >

% frequency of use in area

direction traveled

3 Months
total days: 91

number of transactions: 291
total spent: $ 3869.58
avarage number of transactions per day: 3.19

N
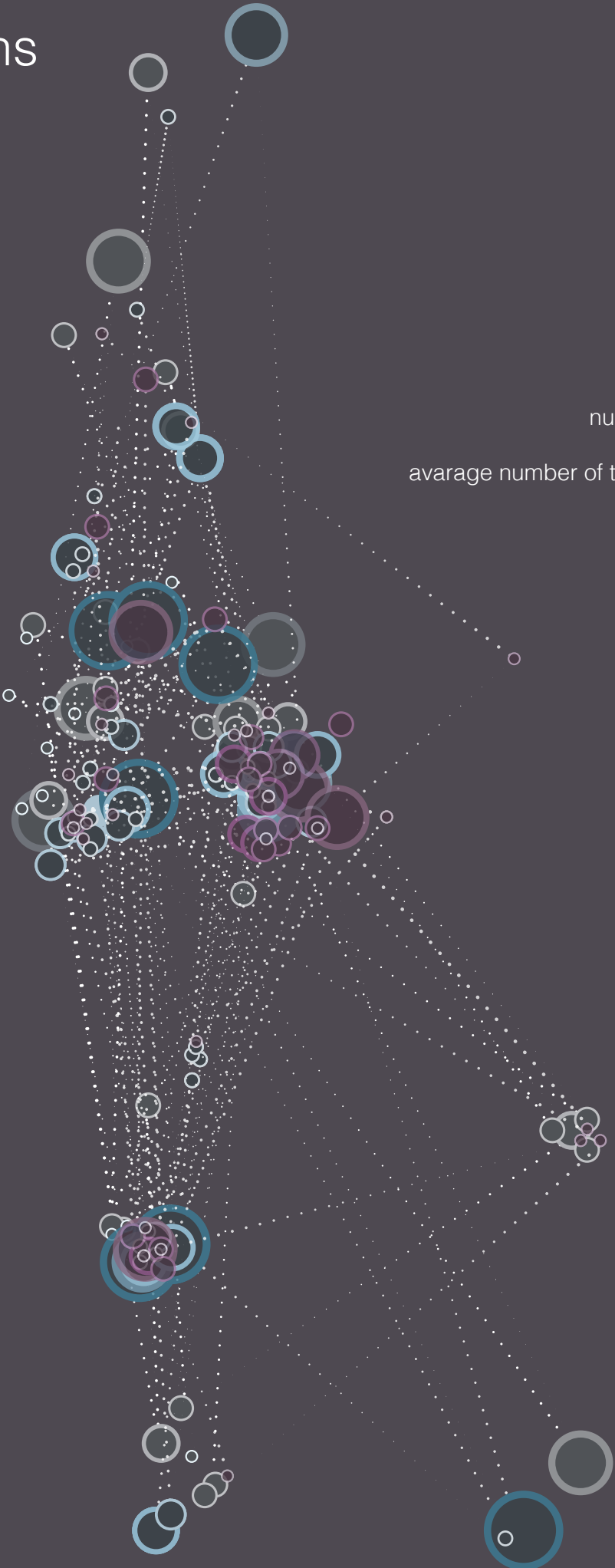
dollar value

0-10 11-20 21-30 31-40 41 - >
% frequency of use in area

direction traveled
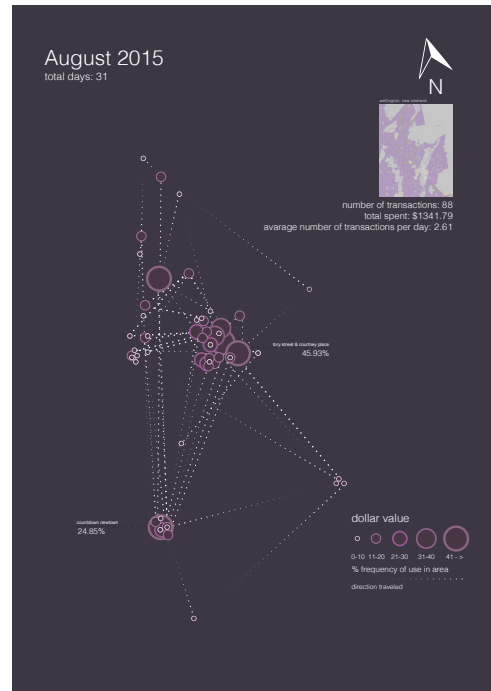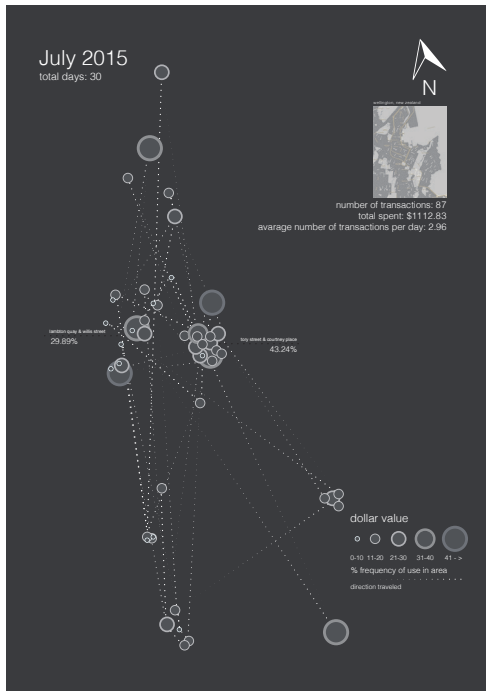
Figure 3.10 & Figure 3.11. Showing the distinct change in my spending from one month to the next due to me having moved flats.

What had been drawn to my attention through this process was the frequency which I had visited Moore Wilsons. If you refer to the different visualisations this, is possibly the most frequented place I visited. I was aware that I had visited often, but was unaware to what extent, and through visualising my banking data, it highlighted to me that I might need to stop visiting as often as I did. What I had also been able to see from the Spent visualisations, was a distinctive change in my everyday spending. This had been because within this three month documented time period I had moved flats, from the Newtown area closer to the city, around middle of July. Where once I had done a lot of my grocery shopping within the Newtown area, such as at New World, you can see a change from the August visualisation, where purchases are made closer to my new flat.

Figure 3.12. (Right) A simplified version of my spending from over the three months, giving a more in depth review of the most frequently visited places and what they had come to represent to me as a spender.

3 Months Simplified
total days: 91

Lambton Quay
The main trunk route which runs through the heart of the city, which is lined by large high rise buildings. housing many corporate and government organisations. Many large department like stores cater to the many people who flock here on a daily baisis, either for work or for shopping.

Victoria St & Willis St
A busy connection point between the two distinct parts of the city. it is filled with a good selection of up- market stores, while also catering to the needs for fast fashion clothing.

Cuba Street
The shops filled with interesting 'things' just as the street is of people. this street, often defining of the essence of wellington, it is a place to find some of the best coffee that is on offer among the many varied cafes and vintage clothing stores.

Courtney Place, Tory St, Moore Wilsons
Filled with many bars and eateries courtney place is the heart of downtown wellington, where many of a 'good night' has been had by all. tory street is an access way to the many boutique shops selling fine select goods but at the heart of it is moore wilsons. selling the finest of fresh and local.

Hataitai Village
A wealthy, leafy suburb of wellignton. made up of one main shopping thoroughfair which has helped to established a warm, inviting community . it is also home to the best sausage rolls available this side of the town belt!

Countdown, Newtown
A relatively new additon to the wellington supermarket scene. it strategically placed on one of the busiest city intersections. a large complex offering a wide variety of goods but more often than not, empty shelves and long ques.

Newtown
An area of wellington, a little bit rough around its edges, home to a large student population sand many alternative trendy like bars on its main shopping street that is lined with large character filled earthquake prone buildings.

Kilbirnie
A busy collection of grid like streets, which run parallel to wellignton airport. home to the wellington yellow bus depot and many larger featureless warehouse like shops.

This had been an interesting and insightful project, as the visualisation was able to capture a highly insightful likeness of me and my spending habits. It had been able to highlight the frequency with which I had spent and the amount I had spent. Through cataloguing my spending, I had been able to generate a richer image of myself as spender and increase my engagement towards my spending that I had previously not been able to capture or experience. What I had come to learn from this process was the value of and importance of having a visual representation of my spending. It had reduced the numerical values to a few simple graphic elements, making it easy to quickly reference and understand my spending habits. It had helped make the process of reviewing my spending a lot my enjoyable and amplified the level of insight I had towards my spending. This process of mapping is something which I hope to make use of later in this investigation. The next section of this chapter - Part 2, continues in the development of a research tool to capture the richness of a consumers spending.

Part 2: Investigation

As a researcher and designer, it was important to create a comprehensive investigation into the emotive engagement a consumer has towards their spending. That would be able to facilitate my specific area of interest without becoming too broad. Money and consumption, alongside economics, is a vast area in which it would be easy for a designer to get lost or overwhelmed. For that reason, I have decided to undertake an investigation into a consumers spending and their emotive engagement (or lack of) towards their own spending. That would help narrow my focus upon the most relevant areas of the relationship between design, culture and money, utilising the insight I had gained through my research thus far. The diagram, Figure 3.13 describes visually the route that this research investigation took. The research and exploration from previous chapters, has assisted in creating a theoretical framework which these methodologies and research fit within.

A brief overview of the different processes of the investigation are described below. The investigation and the development of my methodologies starts with User Development, which includes the creation of personas and identification of my ideal user demographic. These personas helped to create and structure a short narrative about the manner in which the tool might be used. This process of creating personas and understanding the potential user demographic assisted in the refinement and development of the research tool, which works as a means of quantifying the emotive engagement a consumer has to their purchases. Once initial user testing and feedback had been carried out, and the various changes made, The Spending Map was created. The Spending Map could then be sent out to the prospective participants and the process of data collection could begin. In addition to the creation of the tool, a successful ethics application needed to be submitted to the Victoria University Human Ethics Committee, which would ensure that I was meeting the committee's specific guidelines and expectations. Once the potential participants had been identified and The Spending Maps had been collected, the process of correlation could begin. Through making use of the data created by the participants in The Spending Maps and the informal interview process, I could then start to draw conclusions which would inform the final design output.
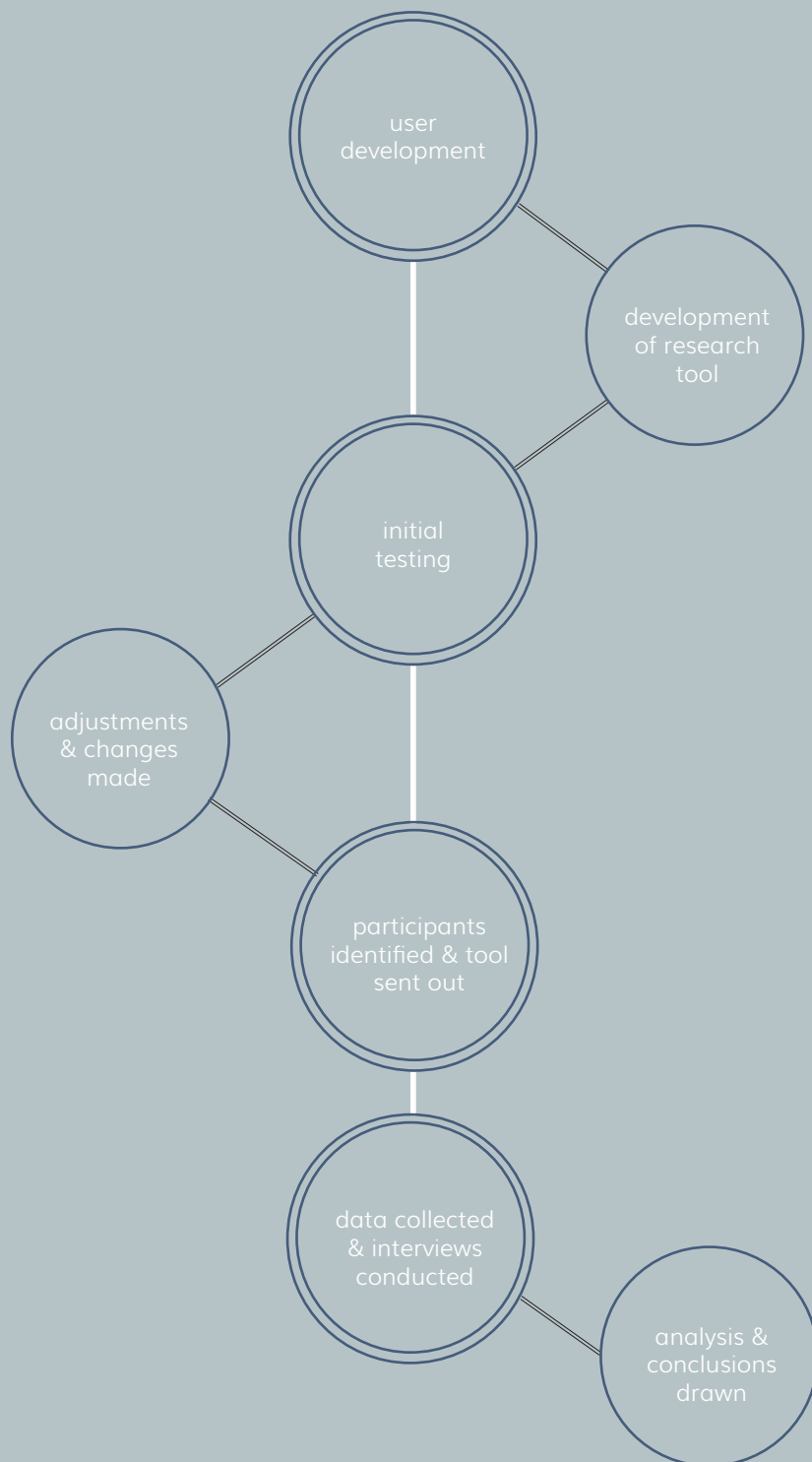
Figure 3.13. Diagram of research investigation flow.

User Development

Through making use of a number of ethnographic, quantitative and qualitative methods, such as surveys and informal interviews, in order to understand some of the core characteristics of each spender, the process of creating a set of personas would assist in the design process of how the tool might be used and function. Centring the user around the development of such a tool helped to improve the understanding of potential participant's motives. The development of a set of personas makes use of fictional characters, which represent the different users or spenders who might make use of this tool. This initial exploration created a platform on which the different types of users could make use of tool, helping to establish a clearer focus for the design of the tool. With an aim of analysis, the daily process of buying and consuming these goods, as well as the emotive implications that these choose might have to the consumer. The creation of a fictional environment of common and relatable behaviours helps to hone in this design process. The active choice which I had made, to limit the created personas to three, was important in helping to maintain a sharp design focus.

User Demographic

As a means of understanding the different potential users, I decided to use a very specific age bracket of individuals aged between 21 and 29 years of age. This age bracket is of particular interest to me, as I find myself as one of these individuals, who has increasingly become more aware and accustomed to my own unique financial responsibilities that are associated with being a young upwardly mobile independent individual. With these various financial responsibilities and prospective challenges which an individual might face, I believe it is at this point in the process of becoming an independent adult that the consequences of a person's unique and specific relationship to money becomes apparent. A healthy conducive relationship that an individual might have with their money is one in which they are able to define and achieve their financial goals, with regards to either their spending or savings. An unhealthy relationship that an individual might develop towards their money might be not fully understanding the various repercussions of their constant frivolous spending, with not having set financial savings goals. I have broken the age bracket of individuals between 21 to 29 year olds into three distinct groupings, as a means of understanding the different types of spenders and spending behaviour, relating to who might make use of this tool.

The first group of individuals which make up the bottom third of this age bracket, 21 to 23 year olds, are mainly those who are second, third and fourth year tertiary students. They are a group of individuals, many of which might up until only recently have become accustomed to their own unique financial demands and responsibilities. These students are having to learn important life skills, such as how best to achieve a healthy equilibrium between university studies and how best to manage their new monetary responsibilities. This group of individuals are meeting week-by-week and monthly personal budgets, with the opportunity of working in part-time student roles. This group of individuals would have a limited income restricting their opportunity to have much larger savings goals and purchases.

The middle age bracket, made up of individuals aged 24 to 26, are individuals who might only have become recent university graduates, who are stepping into working roles that are more full-time in its nature and receiving a much larger income than those in the previous bottom third. This set of individuals are starting to establish their own professional careers and are at the beginning of their professional working lives. This group of individuals have become slightly more accustomed to their own unique financial responsibilities that working in a full-time position brings with it. As young adults of increasing affluence and increased spending power, the potential to earn more and achieve an increase in disposable income comes with it an opportunity to meet larger savings goals.

The final upper third of this age bracket, are those individuals between 27 to 29 years of age. These individuals are slightly more seasoned with regards to their spending and the potential to create savings. They have become well aware and accustomed to the various challenges of managing their own financial wellbeing and independence, having worked in more full-time positions for longer than the other groups in this age bracket. This group of individuals are setting and aiming towards longer term and permanent goals, such as a deposit for a house and thinking of different investment incentives and options for the future, with a focus on creating long term finical stability.

The identification of these different groups and individuals were informed partly through careful observation of fellow friends and acquaintances, as well as through first-hand experience of learning to manage the various responsibilities of becoming increasingly financially independent. With the creation of a set of personas as a means of further understanding who these prospective users might be, each persona holds a unique set of spending and income traits, informing how such a tool might be used to facilitate an improved literacy around their spending.

Ava Harrington

Age: 28
Job Title: Personal Assistant
Typical Work Schedule: Monday to Friday
Payment Cycle: Bi-weekly payments

How would you describe your spending?

One week I live like a queen, the next - struggle city!

Ava's spending is what she describes as being erratic and something she wished she were better with. Not having had any formal tertiary education, Ava started working at the age of seventeen and as a result has worked in a wide variety of different job roles, from a hotel receptionist to makeup assistant. Ava's wide variety of different jobs titles and having worked from such a young age, has made her well accustomed to receiving a regular source of income. Ava's greatest regrets with regards to her spending, are those purchases which she makes in the spur of the moment, such as her recent purchase of greatly discounted designer sunglasses which were on a two for one special. Along with these spur of the moment purchases, her late night drinking and cigarette habit have really started to take a toll on her finically. As a 28-year-old, Ava feels her spending habits are not reflective of others who are of a similar age, with some of her friends already putting money aside for house deposits. Ava's ultimate goal is to pay off her personal loans so that she is able to put some money aside for a deposit on a small apartment. Ava is aware she needs to address her debt and her spending in order to achieve her savings goals. In order for Ava to achieve her savings goals and gain further insight into what drives her to spend, she hopes to identify and reduce the amount of regretful spending she does and improve her understanding of what drives her to spend.

Ethan Shaw

Age: 22
Job Title: Full time 3rd year Marketing student who works part-time as a waiter
Typical Work Schedule: Dependent on the weekly roster - evenings and over the weekend
Payment Cycle: Varying amounts each week, dependent on the hours rostered

How would you describe your spending?

> I spend erratically, the same way in which my money comes in.
> When it's there I spend it. But when it's not ... I just have to sit tight.

Ethan has very few weekly expenses, with rent in his house share being the only real constant expense. Having so few expenses, Ethan is able to afford a certain level of versatility and flexibility within his week-by-week spending. Working front of house as a waiter part-time, Ethan has the opportunity to earn some high value cash tips from customers, which he refers to as his 'play money'. He uses this to buy various weekly treats, such as new items of clothing and PC games. Ethan feels this 'play money' is an added bonus, supplementing his hourly wage. He views these tips which he receives as not 'real money', hence his justification to spend it on superfluous things. The amount of 'play money' which Ethan receives varies greatly week by week, with Ethan putting his part- time earnings towards rent and other household expenses such as groceries. As a 22-year- old Ethan, feels he is doing well comparatively to his flatmates: always having money to do what he wants, never having to say he can't go out. Ethan has started to realise the importance of having some savings in place, as things have gotten a bit tight when he doesn't receive his regular share of shifts on the roster – something which has started to occur more frequently. Ethan hopes that by making use of such a tool, he could document his spending more closely, and help to create a better understanding and reflection of his spending and the frequency at which he spends his 'play money'.

Harper Collingwood

Age: 25
Job Title: Administrator
Typical Work Schedule: Monday to Friday
Payment Cycle: Monthly payments and
receives money from parents on occasion.

How would you describe your spending?

> Thoughtful - if it is something I need, I will buy it. Although
> almost always it is more of want than a true need.

Harper hasn't always had the spending power that she holds today. Having had to save hard and become quite thrifty with her money while studying, Harper has gained a relatively high competency with regards to handling her money and her spending. Harper is an avid home cook and as a result of being so money conscious, is able to take calculated 'spending splurges' where she indulges in her favourite past time of gourmet food shopping. Having monthly payments makes it slightly more challenging than those who receive bi-weekly payments. She has to carefully plan out a detailed budget for each month ahead, leaving some room to put some savings aside for unexpected events. Harper's careful planning and thoughtfulness towards her spending has worked well for her, but is still struggling to save enough money to put towards a Vietnamese holiday. She feels her money which she 'splurges' might be a little more than she would like, and being so busy, her constant buying of lunch from her favourite cafe is becoming quite unexpectedly expensive. Harper hopes that through this use of such a tool, she can start identifying the different purchases which she enjoys and which purchases she doesn't, with hopes to create a means of reflection and justification for what she spends her money on.

Development and creation of The Spending Map.

Having a clear understanding of who my potential user group is, I could start designing a tool which a user could utilise as a means to understand their spending habits, and facilitate this process of improved spending literacy. As a designer, it was important to have a clear set of aims and objectives for what this tool ought to be and how it would be used. I have outlined below the different aims and objectives.

I wanted to create a tool that users could easily interact with, one which they are able to log different purchases easily and efficiently. I wanted to establish a tool that could articulate the nature of their spending and the thought processes that they have towards their purchases. I wanted to create an investigative tool, which is able to catalogue an individual's emotive response to their everyday spending. This process of cataloguing would build up a rich documented record of an individual and their spending habits. This tool would capture an emotive profile of the spender, which moves away from other spending and budget tracking applications that I explored earlier in this chapter. This method and tool of investigation is not looking at larger purchases, such as appliances, furniture and other larger household products but more towards the everyday activity of provisioning in the regular cycle of everyday spending. This research tool focuses on the spending that is carried out on goods such as the purchasing of coffees, groceries and impulse buys, "it is about the activity you undertake nearly every day in order to obtain goods, (...) (which) you eat, wear and employ in a multitude of tasks" (Miller, 1998, p.2).
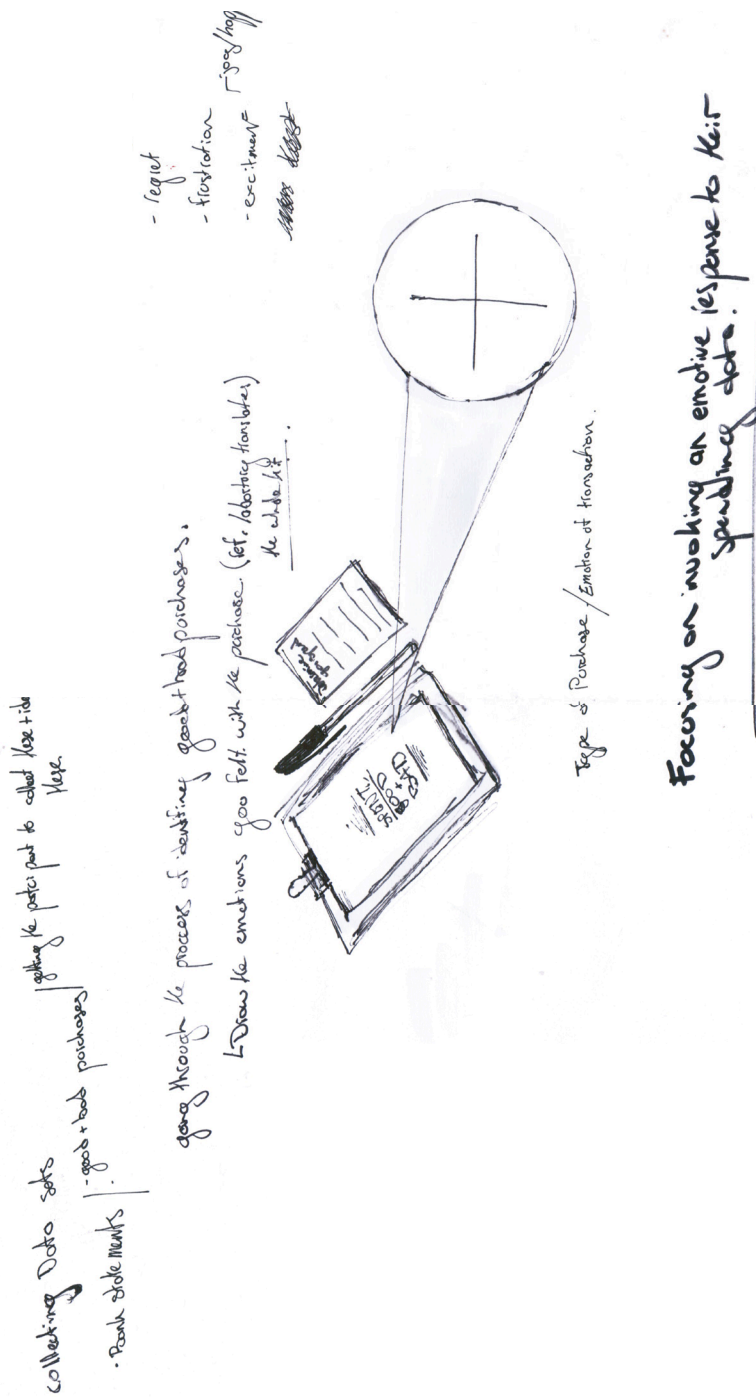
Figure 3.14. One of the many initial sketches which I had done, when coming up with how to create The Spending map.

A number of thoughts and considerations were given towards the overall visual quality of what this first iteration might look like and how it might function. One such thought was getting the participant to identify and separate out purchases into two distinct categories of good and bad. Then start the process of articulating why a certain purchase may or may not be a good or bad. This initial process felt slightly disjointed, not least because there were too many variables at play. To combat this, I decided to make use of a number of different emotive words and various adjectives that might be associated with a purchase. Thinking that a participant could make this choice for themselves, through selecting from a word cloud different words which they might associate with, the process still remained disjointed. The need for a solution that was easy to use and would reduce participants becoming hesitant or apprehensive in filling out and documenting still needed to be identified. Another consideration of what this solution might be was the possible inclusion of a 'circle box' or 'tick box' in which participants could choose between good and bad spending and then through the use of strict set of adjectives and emotive response words, participants could articulate this process.
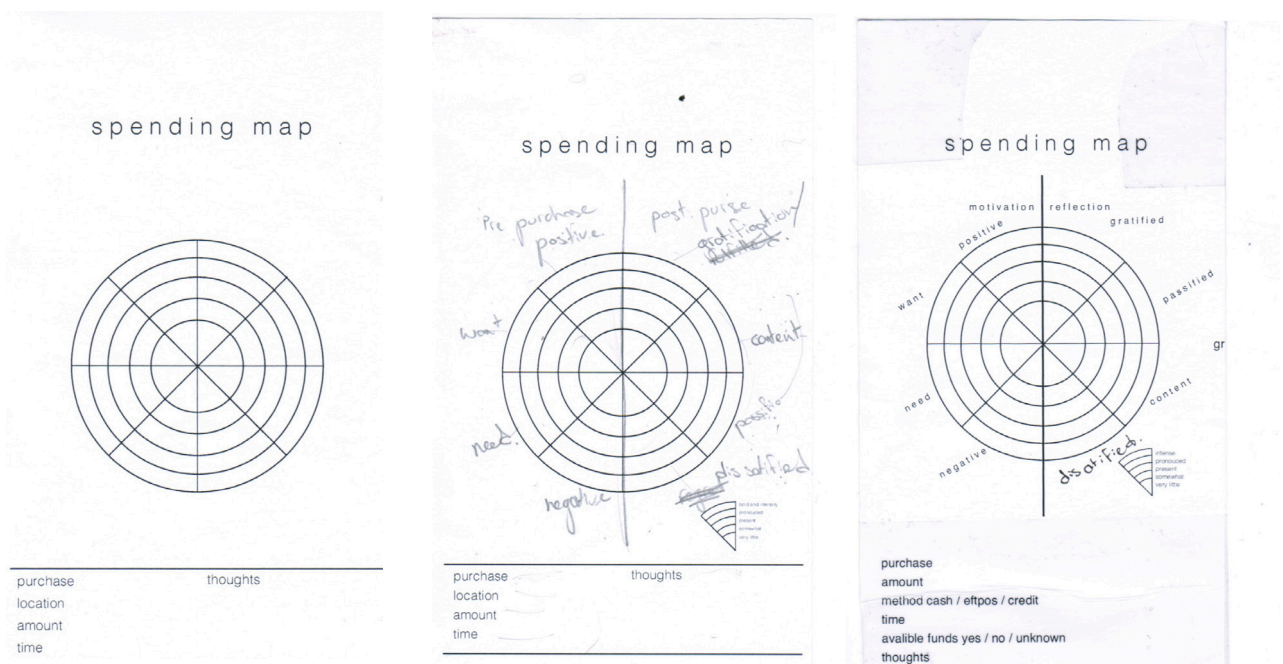
Figure 3.15. (Above and Right) Some of the initial test prints which I had done, evolving how the map functioned and would be worked by a user. Refinement of the choice of adjectives and emotive words as well as some initial tests which had been completed by me and others.

My thoughts shifted to how other such thought processes were expressed in a more visual and graphical sense, that were equally easy to understand and able to record a complex set of information - such as the emotive engagement to your spending. This exploration lead me to the identification of the flavour wheel which is used to help visualise the sensory experience of taste.

.

The use of flavour wheels has become increasingly prominent, especially with the rise in specialty food and drink, and notably in the example which I found - coffee. Flavour wheels assist in the creation of a flavour toolbox which people use as means of explaining a sensory experience of complex flavour combinations and tastes. Figure 3.16 comes from the Specialty Coffee Association of America (SCAA) depicting this complex sensory experience, being able to identify a wealth of different flavour combinations that could be found in the variations of coffee beans that are created through the type of bean, roasting and brewing technique. This final outcome is the result of a number studies created in partnership with "sensory panellists, scientists, coffee buyers, and roasting companies" (SCAA, 2016) and is the "largest and most collaborative piece of research on coffee flavour ever completed, inspiring a new set of vocabulary for industry professionals" (SCAA, 2016). With the introduction of unique beans, blends and roasting techniques, it has become increasingly challenging for coffee enthusiasts to identify and explain the unique flavour attributes that a specific bean or blend might hold. Such a tool is used similarly in other food and drink areas such as wine, beer and chocolate. In certain coffee houses, such maps are being included with the service of a particular coffee brew and bean, then being used by the consumer to help better quantify what exact unique flavour notes are being tasted and, most importantly, creating a common flavour language.

Working example.

As you take a sip of your coffee, you are able to choose between a set of 10 different flavour notes. If you taste fruity notes, you could then further define the flavour by deciding what the distinction of fruity could be, being either berry, dried fruit, other fruit or citrus fruit. These then all have another level of fruit flavours. The creation of a common flavour toolbox and language was one of the elements which I felt I could possibly replicate within The Spending Map. This meant a need to establish a set of variables with which the user could work to identify their emotive experience to their spending. The other element which I was drawn towards was the graphic simplicity with which complex flavour combinations could easily be expressed. This graphic and visual simplicity would facilitate my need for user efficiency with regards to the use of the map. The user would be able to explore, document and gauge the different levels of intensity which they might have felt to their purchases.

Figure 3.16. An example of one of the many flavour maps which are in use, this one above depicts the that of a coffee tasters flavour map. SCAA flavour map. (Source: SCAA, 2016)

Further refinement and reflection in my thought processes, taking into account what I had learnt with regards to the flavour wheel, I was in a better position to put into place the desired changes required to create a tool that increased usability and the creation of a common language. The creation of a common set of parameters was the most important development, as before it had been open to interpretation by the user. Now there was a clear set of variables which the participant could then use and identify with. Included in this set variables were the various degrees with which a specific emotion or adjective might be felt by the user toward their purchase.

The Spending Map is divided into pre-purchase and post-purchase, as a means of understanding the users thought process. Building off the initial idea of identifying good and bad spending, the map was segmented by making use of two positive and two negative adjectives or emotions that a user might associate with that particular purchase. These adjectives and emotive words that I identified were chosen through careful examination of my subject's initial descriptions of their emotive engagement to various purchases, and then further tested out on fellow colleagues (*Figure 3.17*). Having identified and tested out the specific adjectives and emotive words, it was found there was a need to reduce the ambiguity of what these adjectives and emotive words meant. In response to this need, a set of exact definitions of what each word meant and were included as part of The Spending Map, so a participant would able to record a purchase with confidence and ease knowing what the emotive words or adjectives meant. I have included the set of definitions which were used in The Spending Map on the next page.

Along with the creation and building up of a rich documented record of an individual and their spending habits, I was also interested in collecting other information that other budget tracking applications collected, such as date, amount and location, as well as method of payment. This would also help to provide a context around where this purchase took place. The decision to include a section to collect any additional thoughts that a user might have was to gather any final thoughts which might not have been able to be captured in the map.

Figure 3.17. An example of one of test Spending Map which had been completed by one of my classmate, and had worked well with only a few minor adjustments to be made, such as font size and paper size.

Final design outcome

The Spending Map is made up of five concentric circles, which correspond to different levels of intensity, varying from most intense (the greatest) to very little (the smallest). An explanation and key for what each segment represents is printed overleaf, making it easy for a participant to refer back to if needed. Within each segment participants are required to shade in the map, relating to the weight and intensity they might gauge with that specific segment. This requires a participant to objectively shade in or fill in the segments with either a pen or pencil in an analogue fashion, as a means of recording their emotive engagement, assisting in creating a document record of their spending. Each map is to be used once, documenting one purchase. *(Figure 3.18)*

Working Example

If an individual were to record their spending on a mid-morning flat white and savoury scone, costing $8, they would possibly shade in that their need was intense and was a somewhat positive motivation in the pre-purchase section. But then on reflection of this, post-purchase, they gauged a high level of dissatisfaction due in part to the coffee being burnt and the slow service, they would then shade the map in accordingly. The participant would then continue to fill the map out, recording price, location, method of payment and any other thoughts they might have had. The purchase which they had just completed would then be catalogued within the map, reflecting their mood and the thoughts that they had around this purchase.
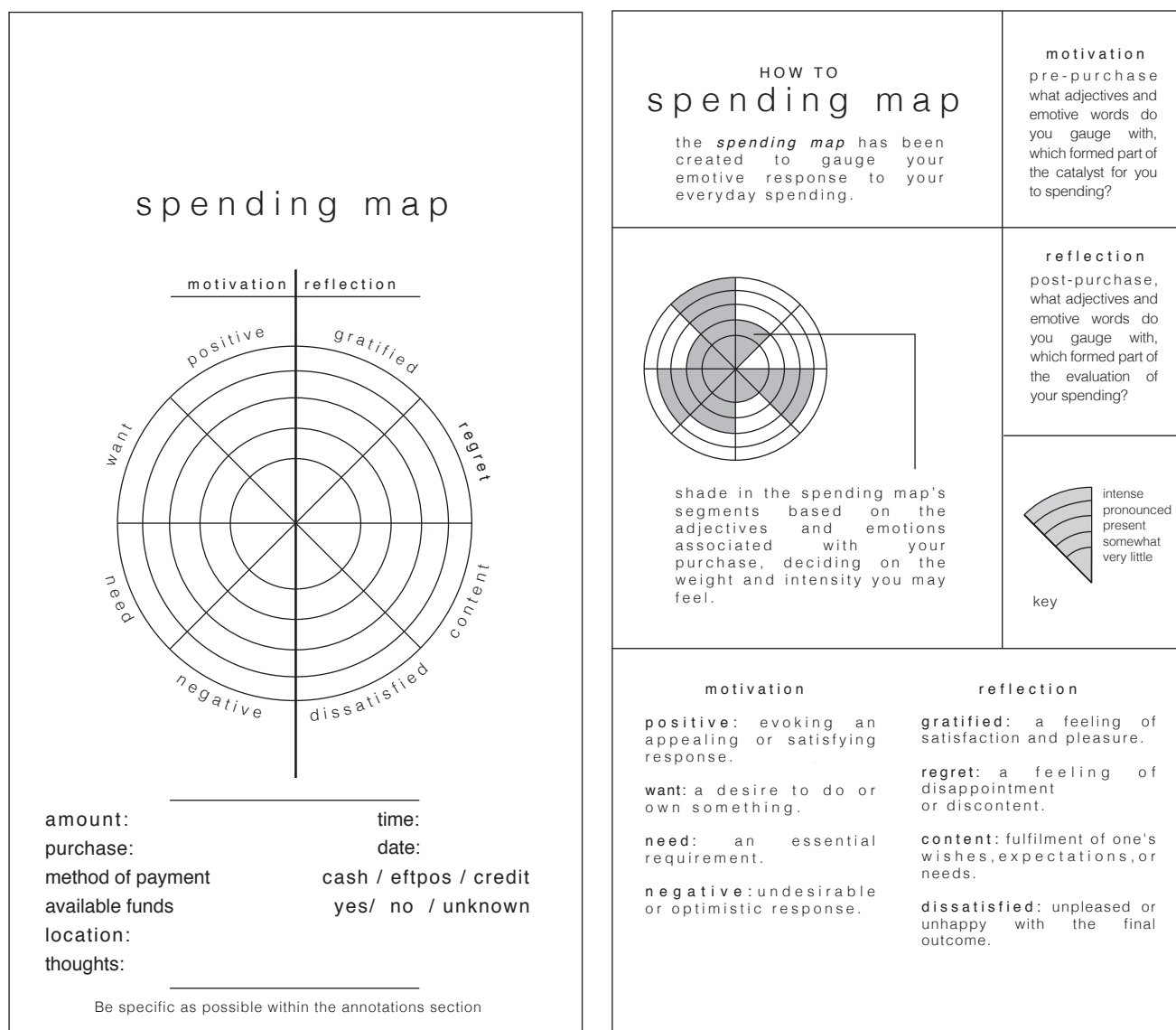
spending map

motivation | reflection

positive

gratified

want

regret

need

content

negative

dissatisfied

amount: _____ time:
purchase: date:
method of payment   cash / eftpos / credit
available funds   yes/ no / unknown
location:
thoughts: _____

Be specific as possible within the annotations section

HOW TO
spending map

the *spending map* has been created to gauge your emotive response to your everyday spending.

shade in the spending map's segments based on the adjectives and emotions associated with your purchase, deciding on the weight and intensity you may feel.

motivation
pre-purchase what adjectives and emotive words do you gauge with, which formed part of the catalyst for you to spending?

reflection
post-purchase, what adjectives and emotive words do you gauge with, which formed part of the evaluation of your spending?

intense
pronounced
present
somewhat
very little

key

motivation

positive: evoking an appealing or satisfying response.

want: a desire to do or own something.

need: an essential requirement.

negative: undesirable or optimistic response.

reflection

gratified: a feeling of satisfaction and pleasure.

regret: a feeling of disappointment or discontent.

content: fulfilment of one's wishes, expectations, or needs.

dissatisfied: unpleased or unhappy with the final outcome.

Figure 3.18. Showing the final designed outcome for the research tool front and back.

Which would then be printed and given to various participants.

Process

The Spending Map is intended to be shaded in pre-purchase and post-purchase over a period of a week - two weeks if the participant wanted to continue. Each map was to be used once, documenting one transaction. On receiving a set of maps, I would explain the process to the participant and field any question or queries that they might have. I would also provide each participant with a consent form, information sheet and waiver. On collection of the maps, participants were to be informally interviewed, making use of a rough outline of questions which I had formulated as a means to gain further feedback into the process of how cataloguing their spending went (These questions are explained later in this chapter). Certain participants who made it clear that they would like to continue with this cataloguing process would be sent away for another week, to see if there were any significant departures or increased awareness and engagement to their spending.

Who

The selection process of who the various participants might be was guided heavily through the development of my persona's and user demographic. With the selection of participants, I aimed to gather a varied cross section of individuals aged between 21 to 29 years of age, all of which were living within the central city. Central Wellington is a city that offers a wide demographic of individuals who hold different cultural and economic values. The city is made of many varying income groups, with Central Wellington playing host to a large student population, large governmental administrative and parliamentary workforce and many corporate head offices, all being located within a compact geographical area. This age group of 21 to 29 year olds holds within it a diverse range of incomes and expenditures that I feel is specifically unique to this age group and is unlikely to be found as prolifically or as prominent in other age brackets.

Pre-purchase.

Motivation - what adjective and emotive words do you gauge with, which formed part of the catalyst for your spending?

> positive: evoking an appealing or satisfying response.
>
> want: a desire to do or own something.
>
> need: an essential requirement.
>
> negative: undesirable or pessimistic response.

Post-purchase.

Reflection - what adjectives and emotive words do you gauge with, which formed part of the evaluation of your spending?

> gratified: a feeling of satisfaction or pleasure.
>
> regret: a feeling of disappointment or discontent.
>
> content: fulfillment of one's wishes, expectations, or needs.
>
> dissatisfied: unpleased or unhappy with the final outcome.

How

One of the key features of The Spending Map is the physical process of shading in the map. By getting the participant to engage in this process of shading, they are able to fill in the intensity of their emotive engagement with regards to that specific purchase. This process of shading should act as a disruptive element in an individual's spending, actively getting those to set aside time to shade in each segment, reflecting on their purchase. This process should also help to create a greater sense of ownership and connection that an individual has towards their purchases, making them more actively aware of their everyday spending. Another aspect which I hope capture through this method of cataloguing, is the level of idiosyncrasy and unique mannerisms that would come through in the way a participant shaded in the map. Where some individuals might be more expressive and loud in their shading - creating a highly emotive reflection of their spending and of their personality, other individuals may be more careful, creating a consistent shade or tone in their map, staying neatly within the segments, reflecting potentially their more calculated, cautious nature. This process of shading is particularly analogue, and is something that participants would be well accustomed to.

Part 3: Results and Process

The Spending Map was ready, final adjustments made and the successful application approved by the Victoria University Human Ethics Committee. The process of identifying participants, with reference to the personas and user development I was able to get a total of twelve different participants to undertake this process.

With a clear idea of who might be the most desirable participants, I could start constructing a pack for each participant, that would consist of a set of Spending Map's, roughly twenty maps, which were attached to a clip board that I had laser cut, to fit the proportions of the map. Working closely with my printers, I was able to achieve a high level of craftsmanship and was really proud that my vision for The Spending Map was able to be brought into reality. As a designer, it was important to show prospective participants that I had taken great care and thoughtful considerations into the creation of this tool, and that they would be able to reciprocate the same when filling in their responses. I was also pleased that I was able to meet the aims and objectives which I had set out at the beginning of this process.

Being slightly apprehensive at first to begin the process of handing the maps out, I chose my first set of participants to be people who I was in regular contact with. By doing this, I would be able to field any questions or misinterpretations that might crop up. These initial anxieties that I had were uncalled for as over the preceding week the participants did not have any major questions or queries relating to what they were doing or to the process. This knowledge helped to build my own confidence as a designer and also in the tool which I had created. Before these initial participants were sent away for the week, I had a discussion about them as a spender and the nature of their spending, almost immediately revealing telling truths about their spending habits. This discussion was facilitated through making reference to The Spending Map, and was used to help prompt and probe the participant into giving predictions of what they might expect from this process and the emotive engagement which they might catalogue. The discussion then moved on to the process of how to the map was to be used, giving concrete examples with which to work with, such as the example I used earlier in this chapter. The discussion was concluded with the participant asking any final questions and making sure that both parties were confident with what was expected in the coming week.

When The Spending Maps had been with the initial participants near on a week, I was eager to collect the maps and hear how this process had gone for them with tracking and cataloguing their emotive engagement. A collection time and location was chosen that would suit an informal interview and discussion about their spending. What I had hoped to gain from this discussion was further insight into the participants thinking towards their spending and how this made them feel, in regards to their motivation to spend and reflection of this spending. The questions which I had formulated were to be used by myself as a general guide of prompts, allowing the informality of the discussion to reveal specific insights into how the process had gone for the participant. Other questions which would structure the discussion about their spending, was through making reference to the actual physical Spending Maps. Getting participants to identify for themselves through the conversation, purchases which they had catalogued as the most positive, most negative or most regretful, would work as a great catalyst to enable an insightful discussion and debate around their spending.

Figure 3.19 & Figure 3.20. Images which I had taken when I had asked the participants to lay out the filled spending maps, which had helped to fascilitate a further discussion towards their spending. (Source: Authors own image)

On reflection, this process of getting participants to identify physical examples of different catalogued purchases was one of the most revealing and insightful. The map was being used as a tool which participants could refer back to, giving concrete examples of the engagement they had to their spending. When this had occurred, often quite early on the discussion process with a number of different participants, I knew that what I had designed had been able to fulfil its role of facilitating a discussion around spending and the emotive engagement to these purchases. I had created a tool which spoke clearly of the unique emotive characteristics that each participant had to their spending.

With Miller covering a very similar subject area of interest in *A theory of shopping* (1998), I was able to learn a lot from the manner which he had approached the subject. A sense of sensitivity, respect and understanding was put forward towards his patricians and was something which I whole-heartedly intended to employ. The questions which I had structured were aimed at getting the participant to describe for themselves what kind of spender they thought they were. For example, were they being a cautious and calculated spender who was well aware of prices and what they spent their money on, or perhaps more frivolous and carefree in their spending, not taking as much notice of price? I wanted to understand how their spending habits made them feel, was this something which they wished to change or improve, or was it something they were happy with? I wanted to understand how the process of recording and cataloguing their spending had gone for them, and how they had kept track of their spending previously. Through the emotions that they had been able to gauge, had it been able to reflect themselves?

Process

One of the challenges I faced with this investigation was working out how best to deal with the unique and varied results of each participant. When I had initially began synthesising the datasets and evaluating the results, the uniqueness and strength of the dataset didn't lay within the spreadsheet approach which I had initially undertaken, or in one single element, but in the intricate narratives that are held within each map. I began with an overall exploration of the collected results in a broader sense, followed by a more in-depth and detailed approach of four selected participants.

The Spending Map had been able to capture a number of unique attributes, and explored, the participants spending habits and what the participants had experienced through this process of critical reflection and cataloguing their purchases. As a further exploration of the results collected from The Spending Map, and in combination with the discussion process that I had with each participant, I decided to explore the results of four individuals in greater detail. Using the same visualisation techniques which I had previously employed in my Spent visualisation, with a goal of providing a similar level of insight which I had received from the visualisation to these four participants. I had made three visualisations for each of the four participant. The first titled actual spending verses catalogued spending, was made using the participants actual spending data from their Eftpos card from the same time period which they had catalogued their emotive engagement. This was to see if there was a significant difference between what they had been able to catalogue verse what actually occurred. The second titled emotive spending, focuses on the emotive aspect of their spending. This map is broken into three components. The first, percentage of emotions gauged, which is displayed in pie chart from. The second, showing the highest level of engagement of specific emotions grouped according to geographic area. And then finally a general overview of the frequency which these emotions had been engaged. These maps had been created after the informal interview and collection process, using the discussion process as a means to further help inform the visualisation. These visualisations were then presented to the participant, as to see if this had provided more insight towards their spending. The final visualisation tilted emotive spending overview, is a summary of the participant's reaction to the visualisation of the maps and their emotive engagement.
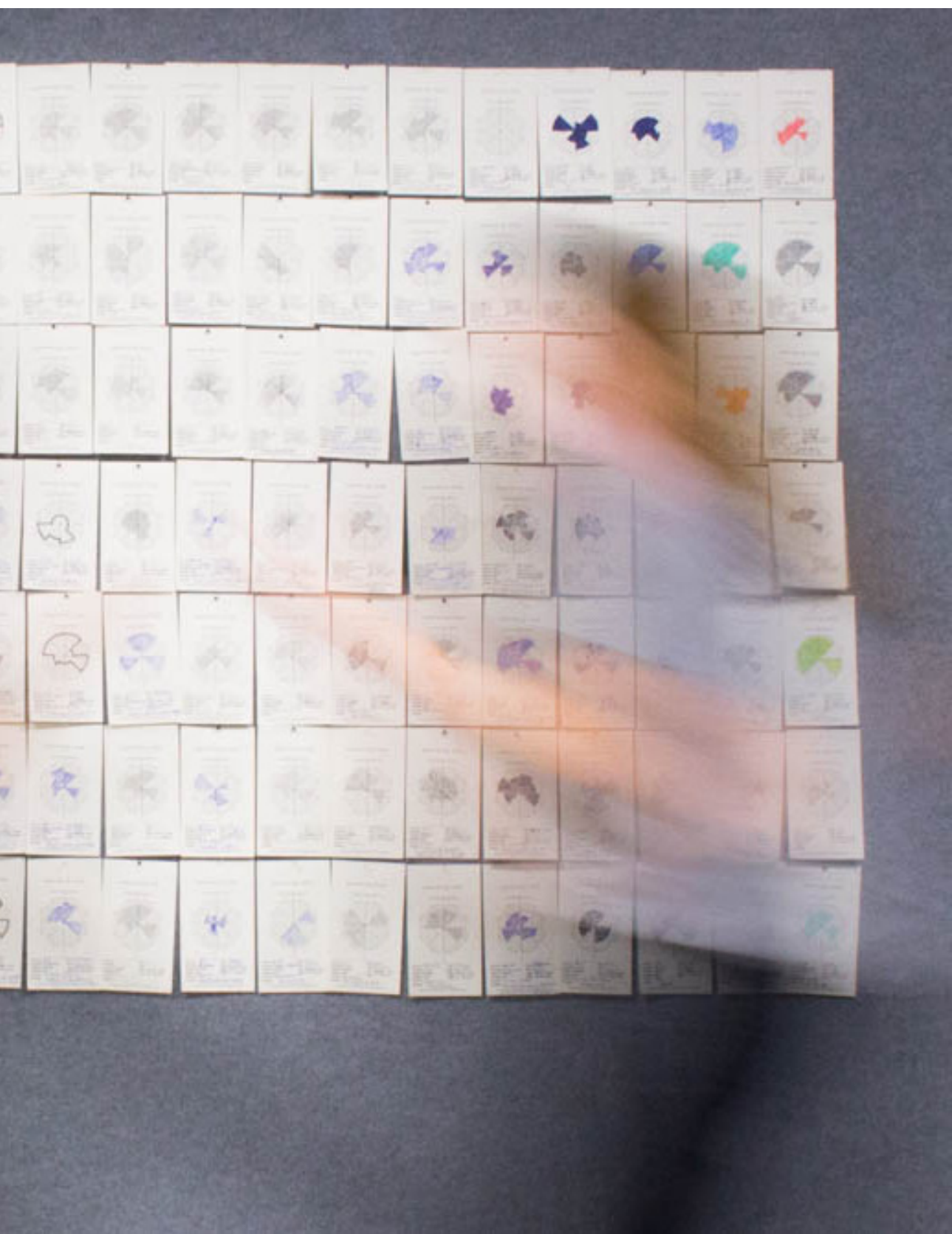
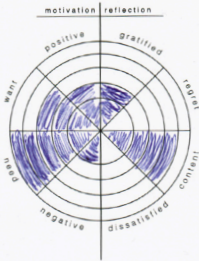*Figure 3.21*. Image of some of the Spending Maps which had been pinned up to view.

(Source: Authors own image)

Figure 3.22. (Next page) A sample of some of the maps which had been filled out.

(Source: Authors own image)

Card 1

spending map

motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $40.80 time: 7.25 am
purchase: Train Ticket + tea/coffee date: 30-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Railway Station
thoughts: Need it for work
Be specific as possible within the annotations section

Card 2

spending map

amount: $24.32 time: 10pm
purchase: Food for week date: 30-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Countdown Newtown
thoughts: Cost essentials plus 2 free loaves of bread, voucher after complaint...
Be specific as possible within the annotations section

Card 3

spending map
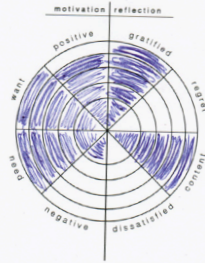
amount: $5.00 time: 5.22pm
purchase: Sushi date: 1-10-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: One Sushi Manners St.
thoughts: Really Hungry - No energy...
Be specific as possible within the annotations section

Card 4

spending map

amount: $20.60 time: 8.0? pm
purchase: date: 25?
method of payment cash / eftpos / credit
available funds yes / no / unknown
location:
thoughts: Picked up bread.
Be specific as possible within the annotations section

Card 5

spending map

amount: $8.20 time: 9.45 am
purchase: Coffee + Scone date: 18/9/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Home Cafe

Card 6

spending map

amount: $4.00 time: 9:45 am
purchase: Coffee + Scone date: 12/9/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
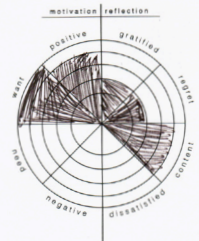location: Home cafe
thoughts: FREE COFFEE :)

Card 7

spending map

amount: $20 time: 11:30pm
purchase: APA Jug Beer date: 19/09
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: San Fran Bathouse
thoughts: didn't need it and tasted funny...
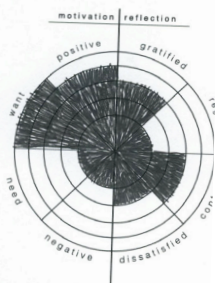Be specific as possible within the annotations section

Card 8

spending map

amount: $22.10 time: 6.43pm
purchase: BURGER FUEL date: 3? Oct
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Burger fuel
thoughts: I feel fat and full
Be specific as possible within the annotations section
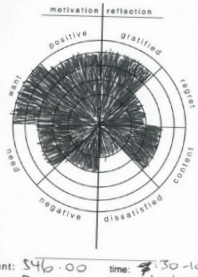
Card 9

spending map

amount: $52.69 time: 6.00pm
purchase: Wine + nibbles date: 18/9/15
method of payment cash / eftpos / credit

Card 10

spending map

amount: $8.87 time: 4.00 pm
purchase: NOT NEEDED groceries cash / eftpos / credit date: 15/9/15
available funds yes / no / unknown
location: New World Chaffers
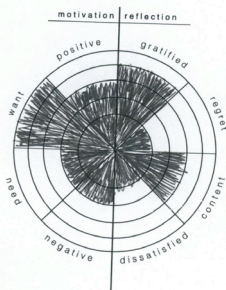thoughts: Used eftpos even though...

Card 11

spending map

amount: $46.00 time: 9:30-10
purchase: Dinner + Drinks date: 11/9/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Egmont St Eatery
thoughts: Did not need final...
Be specific as possible within the annotations section

Card 12

spending map

amount: $8.20 time: 10.15 am
purchase: Scone + coffee date: 4/9/15
method of payment cash / eftpos / credit

Card 13

spending map

amount: $8.20 time: 10.00
purchase: Coffee + Scone date: 17/9/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Home cafe

Card 14

spending map

amount: $24.50 time: 21:28
purchase: Beer Jug date: 25-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Fork & Brewer
thoughts: ... so used credit card, not...
Be specific as possible within the annotations section

Card 15

spending map

amount: $3.00 time: 03.31
purchase: Chips date: 20-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Courtenay Place Bakery
thoughts: Drunken Food
Be specific as possible within the annotations section

Card 16

spending map

amount: $15.00 time: 12-1.30pm
purchase: Brunch date: 13/9/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Loretta
thoughts: Used $20 voucher + 1/2 with friend
Be specific as possible within the annotations section

spending map

Card 1

motivation · reflection — positive / gratified / want / regret / need / content / negative / dissatisfied

amount: $40
purchase: Petrol
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: BP Adelaide rd
thoughts: The attendant talked too much
time: 19:45
date: 7/10
Be specific as possible within the annotations section

Card 2

amount: ...
purchase: Coffee
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Customs
thoughts: great catch up + coffee
time: 1400
date: 14/09

Card 3

amount: 20.
purchase: Wine
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Countdown
thoughts: time to go out / should hd...
time: 1800
date: 14 Sept

Card 4

amount: $2
purchase: art print
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Unity
thoughts: perfect gift for bro's bday
time: 17h55
date: 14/09

Card 5

amount: $9
purchase: kebab
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
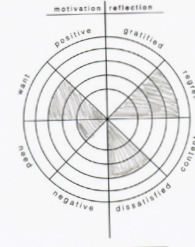location: Cuba st
thoughts: wanted quick semi healthy
time: 6:30pm
date: 30/9/15
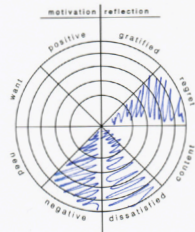
Card 6

amount: $6.50
purchase: Coffee + harbour
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: McDonalds
thoughts: RAGRATS
time: 7:20
date: 01/10/15

Card 7

amount: $22.70
purchase: Giggis
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: The Shop
thoughts: rd one me #2
time: 20/10
date: 20/10

Card 8

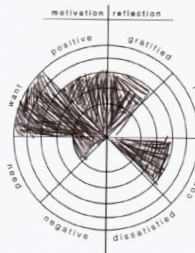amount: $20
purchase: APA Jug beer
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: San Fran bathouse
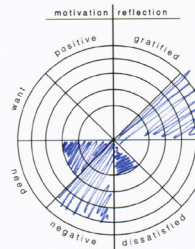thoughts: didn't need it and tasted funny :(
time: 11h30pm
date: 19/09

Card 9

amount: $3?
purchase: food
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
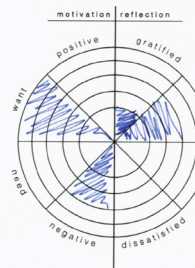location: Laundry
thoughts: Yum burger. I'm tired
time: 8:30
date: 14/10

Card 10

amount: $20.60
purchase: thai the
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: My McDreamY
thoughts: Picked up Brett
time: 8:00pm
date: 25/9

Card 11

amount: $4.90
purchase: Sushi
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: St Pierre's, Cuba
thoughts: needed something quickly for lunch
time: 1:45
date: 29/09/15

Card 12

amount: $3.50
purchase: V-energy
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Monty's Cuba st
thoughts: Did I need that? Guilt
time: 11:00
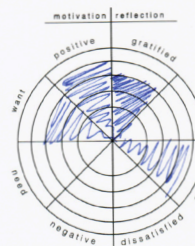date: 01/10/15

Card 13

amount: $3.00
purchase: Chips
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Courtenay Place Bakery
thoughts: Drunken food
time: 03:31
date: 20-9-15

Card 14

amount: $5.00
purchase: water + gum
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Patel's superette
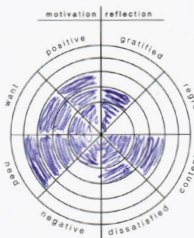thoughts: wanted food - too indecisive so bought gum + still a bit hungry
time: 10:15am
date: 29/09/15

Card 15

amount: $2
purchase: Bananas
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
location: Cuba Fruit Mart
thoughts: wanted something 'rea...'
time: 11:13am
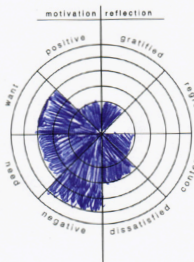date: 01/10/15

Card 16

amount: $0.79
purchase:
method of payment: cash / eftpos / credit
available funds: yes / no / unknown
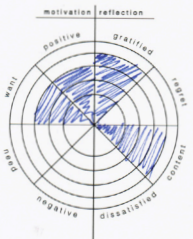location: Moore Wilsons
thoughts: Good
time: 7:50
date: 21/10

spending map

Card 1:
motivation | reflection
positive / gratified / regret / content / dissatisfied / negative / need / want

amount: $24.32 time: 10pm
purchase: Food for week
method of payment
available funds
location: Countdown Newtown
thoughts: Got essentials plus 2 free loaves
of bread, voucher after complaint
date: 30-9-15
Be specific as possible within the annotations section

Card 2:
spending map
amount: $14.17 time: 20:00
purchase: Groceries date: 7/10
method of payment
available funds
location: Countdown
thoughts: I hate Countdown
cash / eftpos / credit
yes / no / unknown
Be specific as possible within the annotations section

Card 3:
spending map
amount: $5 time: 4:06 pm
purchase: Flowers date: 02/10/15
method of payment
available funds cash / eftpos / credit
location: Flowers Manuela yes / no / unknown
thoughts: Wanted to brighten my room
Be specific as possible within the annotations section

Card 4:
spending map
amount: $3.00 time: 03:31
purchase: Chips date: 20-9-15
method of payment
available funds cash / eftpos / credit
location: Courtenay Place Bakery yes / no / unknown
thoughts: Drunken Food
Be specific as possible within the annotations section

Card 5:
spending map
amount: $2.00 time: 2:46 pm
purchase: Miso soup date: 24th Sept
method of payment
available funds cash / eftpos / credit
location: Sushi on Willis yes / no / unknown
thoughts: Lunch mymouth
Be specific as possible within the annotations section

Card 6:
spending map
amount: $59.25 time: 12:21
purchase: date: 21/10
method of payment
available funds cash / eftpos / credit
location: New World yes / no / unknown
thoughts: little bits & lunch & washing ma—
Be specific as possible within the annotations section

Card 7:
spending map
amount: $12.90 time: 18:14
purchase: Food for dinner date: 17-9-15
method of payment
available funds cash / eftpos / credit
location: New World Railway Station W— yes / no / unknown
Be specific as possible within the annotations section
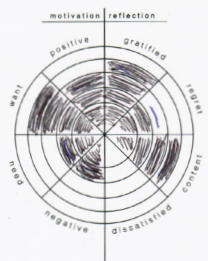
Card 8:
spending map
amount: $24.80 time: 21:28
purchase: Beer - Jug date: 25-9-15
method of payment
available funds cash / eftpos / credit
yes / no / unknown
Be specific as possible within the annotations section

Card 9:
spending map
amount: $4 time: 5/10/15
purchase: Coffee date: 1:03pm
method of payment cash / eftpos / cr—
available funds yes / no / unknown
location: Cafe Kaizen
thoughts: Needed caffeine

Card 10:
spending map
amount: $4 time: 5/10/15
purchase: Coffee date: 1:03pm
method of payment cash / eftpos / cr—
available funds yes / no / unknown
location: Cafe Kaizen
thoughts: Needed caffeine

Card 11:
spending map
amount: $8.99 time: 21:59
purchase: Wine date: 19-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New World Newtown
thoughts: Drunken purchase - Peer pressure
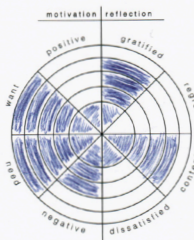Be specific as possible within the annotations section

Card 12:
spending map
amount: $25 time: 11:00
purchase: Wallet date: 13/10/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Echo Brothers
thoughts: great haircut from a dude boo—
Be specific as possible within the annotations section
13

Card 13:
spending map
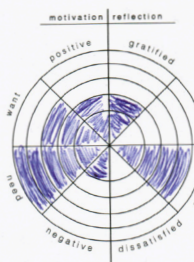amount: $5.80 time: 16:54
purchase: Food date: 16-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Westfield Queensgate - V2
thoughts: Sick & starving to start with
Be specific as possible within the annotations section

Card 14:
spending map
amount: $5.80 time: 16:54
purchase: Food date: 16-9-15
available funds yes / no / unknown
location: Westfield Queensgate - V2
thoughts: Sick & starving to start with
Be specific as possible within the annotations section

Card 15:
spending map
amount: $40.80 time: 7:25 am
purchase: Train Ticket date: 30-9-15
method of payment - 10 trip cash / eftpos / credit
available funds yes / no / unknown
location: Railway Station
thoughts: Need it for work
Be specific as possible within the annotations section
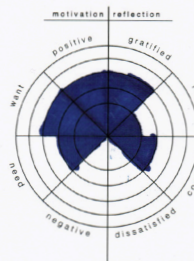
Card 16:
spending map
amount: $37 time: 8:30
purchase: Food date: 14/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Laundr—
thoughts: Yum burger. I'm tired
Be specific as possible within the annotations section

Row 1:

spending map

motivation | reflection
positive / gratified / regret / content / dissatisfied / negative / need / want

amount: 9820 time: 10.00
purchase: Coffee + Scone date: 17/9/15
method of payment cash / eftpos / credit

11

spending map

amount: 4.00 time: 2.00
purchase: Coffee date: 14/09
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Customs
thoughts:

Be specific as possible within the annotations section

12

spending map

amount: 820 time: 2.00
purchase: Coffee + Muffin date: 15/09
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Memphis
thoughts: Don't wake me up

Be specific as possible within the annotations section

---

spending map

amount: $3.00 time: 03.31
purchase: Chips date: 20-9-15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Courtney Place Bakery
thoughts: Drunken Food

Be specific as possible within the annotations section

Row 2:

12

spending map

amount: $25 time: 11.00
purchase: coffee date: 13/10/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Raglan Rosr
thoughts: Scone + 50c coose roe Shopadin
Nicechange

Be specific as possible within the annotations section

15

spending map

amount: 499 time: 2:30pm
purchase: Back Scratcher date: 18/09
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Japan City East Blackheads
thoughts: RACNE

Be specific as possible within the annotations section

14

spending map

amount: 450 time: 11:30
purchase: coffee date: 16/09
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: memphis
thoughts:

Be specific as possible within the annotations section

---

spending map
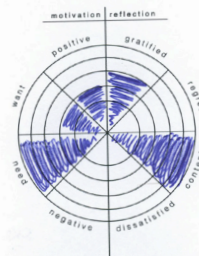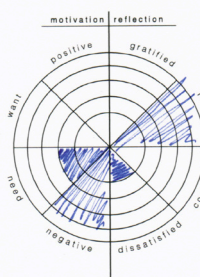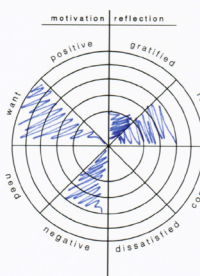
amount: 40 time: 7.45
purchase: Petrol date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location:
thoughts: Petrol.

Be specific as possible within the annotations section

Row 3:

spending map

amount: $20.60 time: 8.00pm
purchase: Finger Plub date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Manchenent
thoughts: Picked up Brett.

Be specific as possible within the annotations section

---

spending map

amount: $4.90 time: 1:45
purchase: Sushi date: 29/09/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: St Pierre's, cuba
thoughts: needed something quickly for lunc!

Be specific as possible within the annotations section

---

spending map

amount: $8.50 time: 11:00
purchase: V-energy date: 01/10/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Monty's Cuba St
thoughts: Did I need that? 7am

Be specific as possible within the annotations section

---

spending map

amount: $7.70 time: 2:00pm
purchase: date: 17/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Memphis Belle Coffee
thoughts:

Be specific as possible within the annotations section

Row 4:

spending map

amount: $5.00 time: 10:15am
purchase: Water + gum date: 29/09/15
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Patels supprette
thoughts: Wanted food - too indecisive so bought gum! still a bit hungry

Be specific as possible within the annotations section

---

spending map

amount: $2 time: 11:3am
purchase: Bananas date: 01/10/15
method of payment cash / eftpos / credit
available funds yes / no / unkn
location: Cuba Fruit Mart
thoughts: Wanted something heal

Be specific as possible within the annotations section

---

spending map

amount: 60.79 time: 7.50
purchase: date: 21/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Moore Wilson
thoughts: Good

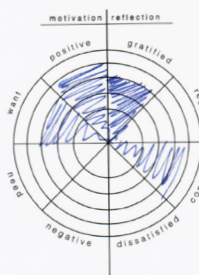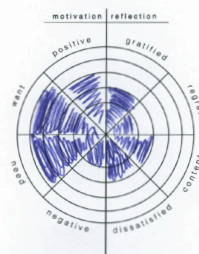Be specific as possible within the annotations section

---

spending map

amount: 7.40 time: 12
purchase: lunch date: 23/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: new world
thoughts: Hungry

The process of identifying participants, handing out the maps and the collection and interviewing was carried out over a period of a month. I had been able to succesfully identify twelve participants, who were able to engage with the map over a period of a week. Out of the twelve participants, four had chosen to continue with the cataloguing process for a further week. The majority of participants had been able to catalogue well over fifteen purchases over the time period.

I have included a cross section of some of the scanned maps which I received from the different participants. What I enjoyed most about these maps was the level of idiosyncrasies which they each held. Within each map, there is a clear narrative and level of engagement that had been inscribed, a documented thought process. When I had first begun receiving the maps, I had decided to pin them up to a wall to view. Not only was the overall effect visually overwhelming, but the experience of exploring these intricate narratives draw you in. Fellow colleagues had also been drawn to the wall of maps, exploring the different comments and with most colleagues actively reflecting in conversation about how their spending might look.

When I had begun the process of synthesising the data in spreadsheet form I wanted to get an idea of what the most and least engaged emotions were. I had assigned a numeric value of one to five to the different emotions. Emotions which had been shaded as receiving very little engagement gained a score of 1 and emotions which had been shaded in as receiving intense engagement gained a score of 5. Each participant's maps had individually been inputted into the spreadsheet in a chronological ordering. The various elements, such as amount, time, and method were also placed within the document, trying to capture and gather as much information of this spending process as possible. *Figure 3.23* shows the manner in which I had initially began quantifying The Spending Map's results. As I was compiling this, I was noticing again that the wealth of the dataset was a number of elements working together, not individually.
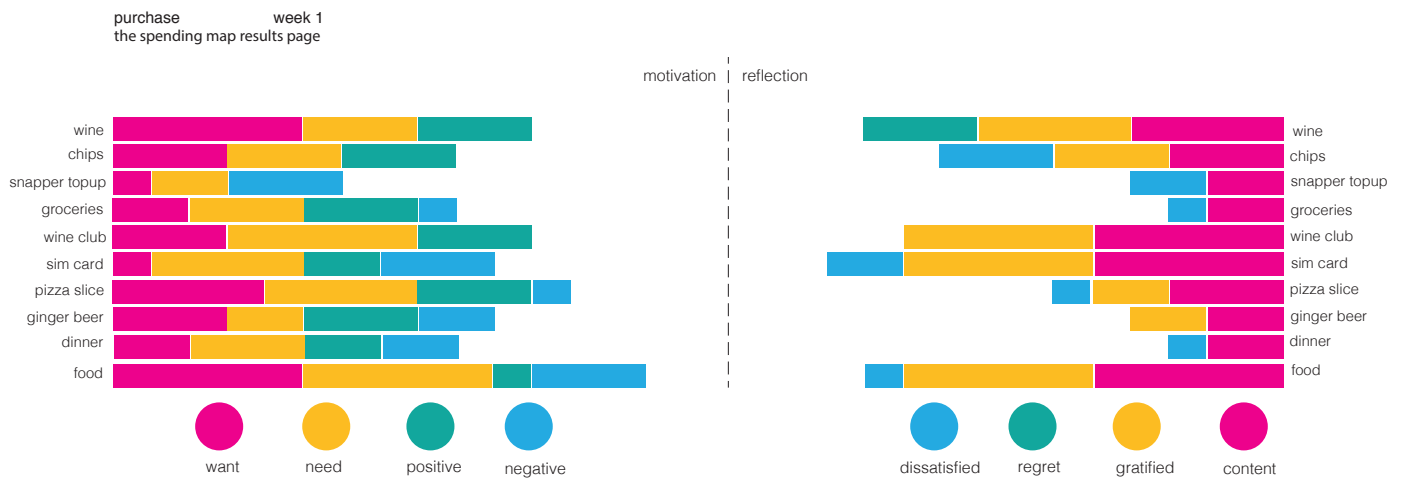
Figure 3.23. An example of how I had initially begun synthesizing one of the participants results.

Once this had been compiled, I was able to identify that most participants had measured a high level of want - more than any other emotion. With the exception of one participant - where their highest emotive engagement was in need (reflecting his unique financial position and strong ideals towards consumerism, which had been spoken about in their interview). This high level of want was not surprising, as I had anticipated that this might have been the case, but to what extent was unknown.

To contrast this high level of 'want', there was a low level of negativity detected within the maps, with 'regret' being one emotion that received almost no engagement at all. This I hadn't expected to be as prominent as it was, but when looking through the thoughts section of each map, participants had made use of this section as a means of justification for their purchases. Which I feel explains as to why 'regret' was not shaded in, as the justification which they had written made up for it. What I had also found interesting was my ability to work out how much each participant had spent over the period. One participant spending close to $800 in one week, with another spending less than $80.

spending map

motivation | reflection

positive gratified

want regret

need content

negative dissatisfied

amount: 15·60   time: 11:45
purchase: Vegetable   date: 13/09
method of payment market   cash / eftpos / credit
available funds   yes / no / unknown
location: Vivian Market
thoughts: ♡ Vegetables

Be specific as possible within the annotations section

10 September - 21 September

The "I don't buy much other than food! " spender.

spending map

motivation | reflection — positive, gratified, want, regret, need, content, negative, dissatisfied

amount: 4.00 time: 2:00
purchase: Coffee date: 14/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Customs
thoughts:
Be specific as possible within the annotations section

spending map

amount: 8.30 time: 2:00
purchase: Coffee + Muffin date: 15/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Memphis
thoughts: Don't wake me up
Be specific as possible within the annotations section

spending map

amount: 4.50 time: 11:30
purchase: coffee date: 16/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Memphis
thoughts:
Be specific as possible within the annotations section

spending map

amount: 4.99 time: 2:10pm
purchase: Back Scrubber date: 18/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Japan City Capt Warkheads
thoughts: RACNE
Be specific as possible within the annotations section

spending map

amount: 16 time: 6:00pm
purchase: Wine date: 19/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Cuba St Liquor
thoughts:
Be specific as possible within the annotations section

spending map

amount: 22 time: 1pm
purchase: Lunch date: 20/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Olive
thoughts: Catch up lunch
Nice but very small

spending map

amount: 3.00 time: 9:00 am
purchase: Coffee date: 21/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Raglan
thoughts: Guy was rude
Be specific as possible within the annotations section

spending map

amount: 40 time: 12:00
purchase: Groceries date: 11/09/15
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Moore Wilsons
thoughts: Planning Lunch; Saving $
Be specific as possible within the annotations section

spending map

amount: 40 time: 1pm
purchase: Salad grains date: 11/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Vivian Market
thoughts:
Be specific as possible within the annotations section

spending map

amount: 3.90 time: 11am
purchase: Bread date: 10/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location:
thoughts:
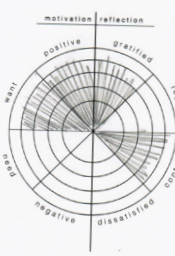Be specific as possible within the annotations section

spending map

amount: 28 time: 9:00
purchase: Beer date: 18/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: garage project
thoughts:
Be specific as possible within the annotations section

spending map

amount: 28 time: 4:30
purchase: Groceries date: 16/9
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Chafers NW
thoughts: Walking effort
Be specific as possible within the annotations section

spending map

amount: 15.60 time: 11:45
purchase: Vegetable market date: 13/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Vivian Market
thoughts: ♥ Vegetables
Be specific as possible within the annotations section

spending map

amount: 14 time: 2:30
purchase: Lunch date: 10/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Wellington CBD
thoughts: slight guilt but super hungry
Be specific as possible within the annotations section

spending map

amount: 30 time: 11am
purchase: date: 20/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Willis Market
thoughts: Was really cold
Be specific as possible within the annotations section

spending map

amount: 32 time: 2:00
purchase: Groceries date: 20/09
method of payment
cash / eftpos / credit
available funds yes / no / unknown
location: Metro
thoughts: Kinda expensive
Be specific as possible within the annotations section

Results of participant 1

One of the first set of results which I had received was from a participant who fitted into the first category of individuals aged 21 to 23 years of age. This individual was studying and working in a part-time role, which had meant that they had access to limited funds. I began the conversation by asking them to describe themselves as a spender. This question was met with slight hesitation, and provoked a need to reflect on an answer which wasn't straightforward:

> It depends, when it comes to food I buy whatever I want. But when it comes to clothing I am a bit more thoughtful. But then again if I want something, if I really want something, I will go buy it. If it is something that doesn't excite or if I don't get an entertainment value out it, like a stereo cable which I have needed for three months, I just make do.

This was clear from the purchases which they had catalogued, with most of it being made on food purchases and activities which involved food. I got the participant to lay their catalogued purchases out according to like-purchases. They began defining for themselves out aloud "getting coffee, food out, food, food, food, pharmacy, food, groceries, coffee, coffee, groceries ..." The process of physically laying out the maps and categorising the like-purchases had given them a nervous laugh and caused them to exclaim "I don't buy much other than food!" Only once they had gone through this process had they realised how often they had spent money on just food. This had lead the conversation well into discussing some of these purchases.

Figure 3.24. Some of the results of the maps filled out by participant one.
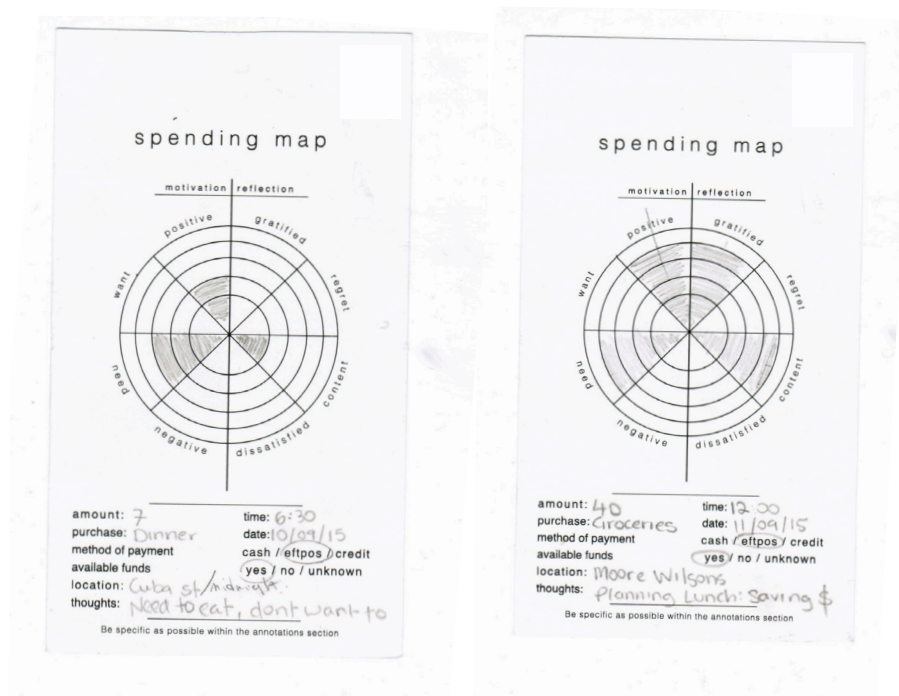
I asked them to identify a purchase which they felt represented the most positive purchasing experience. After some thought they had selected a grocery purchase which they described as being an 'effective purchase', as it was creating a positive change not only in their eating habits but also in the hope of saving money. This highlighted that they were conscious of their spending on food and had identified a solution to this. When they were explaining the calculated nature of this purchase, you could sense the relief which they had now gained from this. I then followed this question up by asking which was the most negative and almost immediately they were able to identify it. Again it was a food purchase but what had driven the negative connotations were the circumstances surrounding it. The participant had to eat because they were working and hadn't the time to prepare something else. Looking at these two purchases alone, you are able to see a significant change in the level of engagement which they had. There was a significant difference between the cost of the two purchases, the final overall experience and circumstances surrounding each dictated how the participant had ultimately gauged the purchase.

Figure 3.25.(Right) the first visulisation titled actual spending vs cataloged spending.
Figure 3.26.(Next page) emotive spending.

actual spending vs catalogued spending

September 2015

total days: 12

N

number of transactions: 37
total spent : $441.97
avarage number of transactions per day: 3.08

dollar value

0-10   11-20   21-30   31-40   41- >   catalouged
                                        spending

% frequency of use in area

direction traveled

cuba street & ghuznee street
68.35%

tory street
15.89 %
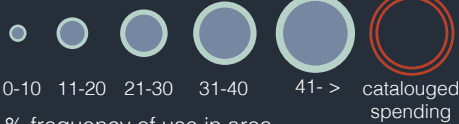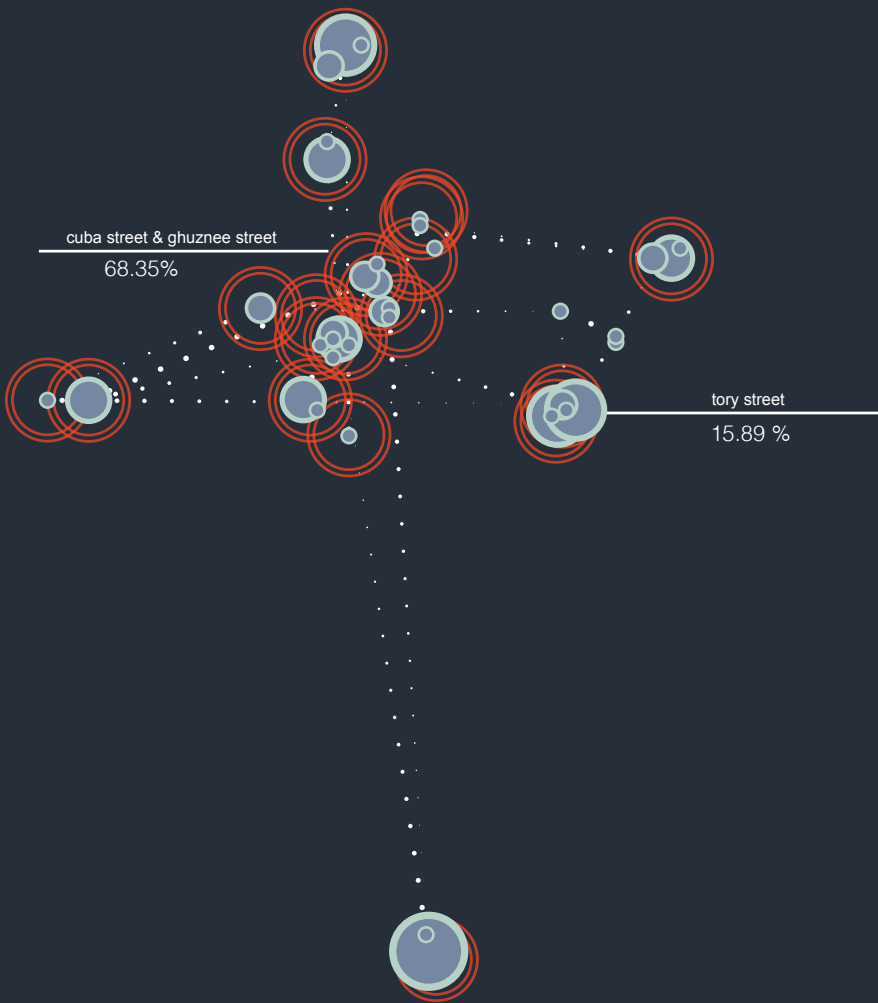
emotive spending

September 2015

total number of maps: 19

motivation . reflection
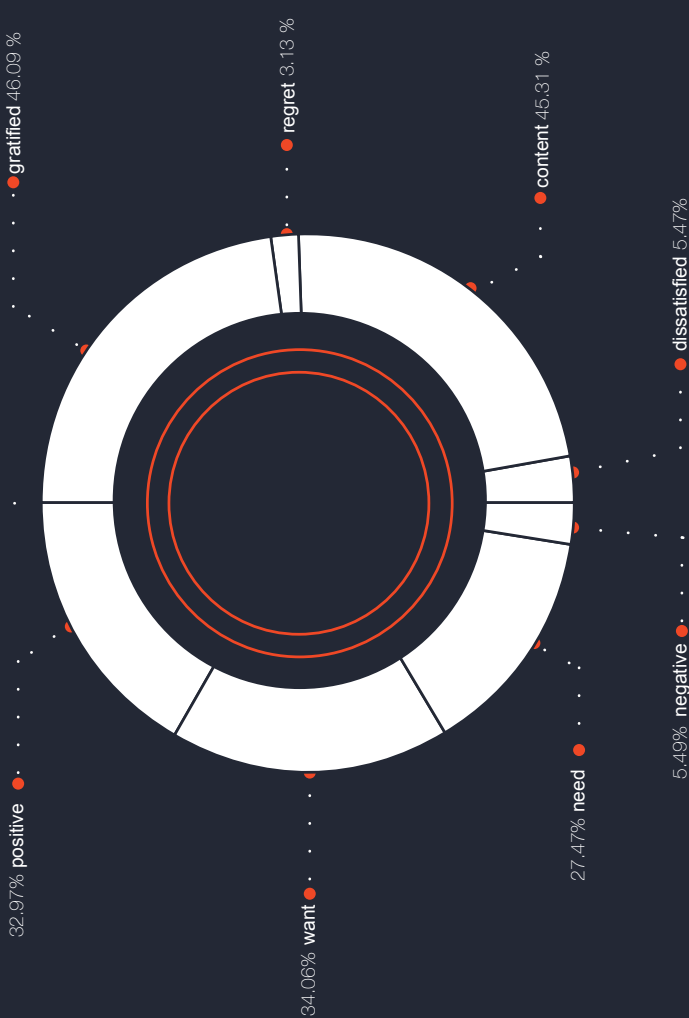
gratified 46.09 %

regret 3.13 %

content 45.31 %

dissatisfied 5.47%

positive 32.97%

want 34.06%

27.47% need

5.49% negative

charts showing the most engaged emotions via area of the city

% based off maps grouped according to area,
showing the highest level of enguqments of
each emotion.

cuba street & ghuznee street

22%

18%

want

content

tory street

22%

19%

22%

positive

need

gratified

table showing frequency of emotions engaged

least · · · · · · · most

these purchases had been much larger in dollar value, and had been conducted more as a grocery shop, highlighting the increased level of need as necessity.

these purchases had been smaller in dollar value and had been conducted more frequently on purchases such as coffee and food. a much higher level of want had been identified towards these food purchases.

* due to the particiapnts zero to low engagment with negative and disatisfied emotions, these have been removed from the results

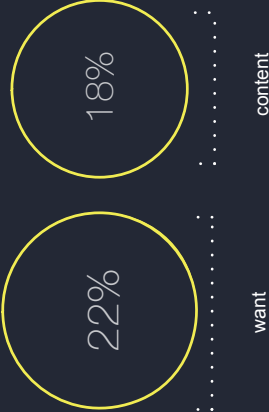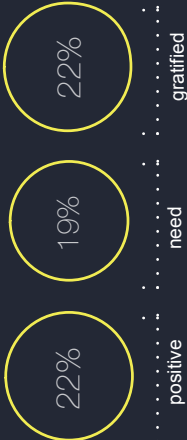| purchase	amount	location	motivation				reflection				thoughts
			positive	want	need	negative	gratified	regret	content	dissatisfied	
Lunch	$14	Fidels Cafe									slight guilt but super hungry
Medication	$10	Amcal Pharmacy									hopefully these work
Dinner	$7	Mid-Night Cafe									need to eat, dont want to
Salad Grains	$40										
Groceries	$40	Moore Wilsons									planning lunch: saving $
Coffee	$8	Ragland Roast									guy was rude
Bread	$3.90										
Vegetable Market	$15.60	Vivian Market									vegatables
Coffee	$4	Customs Cafe									
Coffee	$4	Customs Cafe									
Coffee & Muffin	$8.30	Memphis Belle									didn't wake me up
Groceries	$28	Chafers New World									walking effort
Coffee	$4.50	Memphis Belle									
Back Scrubber	$4.99	Japan City									I got blackheads
Beer	$28	Garage Project									
Wine	$16	Cuba St Liquour									
Lunch	$22	Olive Cafe									nice but small
Willis Street Market		Willis Street									was really cold

On presentation of the two visualisations, the participant had been excited to see what their results might have looked like. The first visualisation, actual spending vs catalogued spending, they had been quite surprised by the relative compactness of their spending in relation to the rest of the city. Their frequency of spending along Cuba Street and Ghuznee Street, hadn't surprised them but had also highlighted the frequency which they had spent within this area over twelve days. They had also been surprised by the amount of times which they had used their Eftpos card but then the low amount of money which they spent, which had been reflected in the map, with the participant making smaller in price purchases but more frequently.

The second visualisation, emotive spending, had again provided another element of insight towards their spending. The participant had mentioned to me that they had been thinking about this significantly since the initially mapping process. What had drawn their attention firstly was their low negative and dissatisfied emotive engagement and had been surprised that it had been that low. But when they had gone through the table of each purchase displaying the frequency with which they had engaged those emotions they had been able to vividly recall those moments of negativity and dissatisfaction experienced in those purchases. This conversation, which had been facilitated by The Spending Map in combination with the visualisation of their spending, had been able to reveal an interesting and detailed reflection of this participant's spending, which they had not experienced before.

Figure 3.27.(Right) the last visulisation, emotive spending overview.

emotive spending overview

September 2015

map showing an overview of

N

wellington, new zealand

catalouged
spending

· · · · · · · · · ·

direction traveled

tory street

purchases had been made less frequently
but had been much larger in dollar value.
grocery shopping and purchases which the
particiapant had called 'effective' had been
conducted, which had recieved a high level
of gratification and positivity.
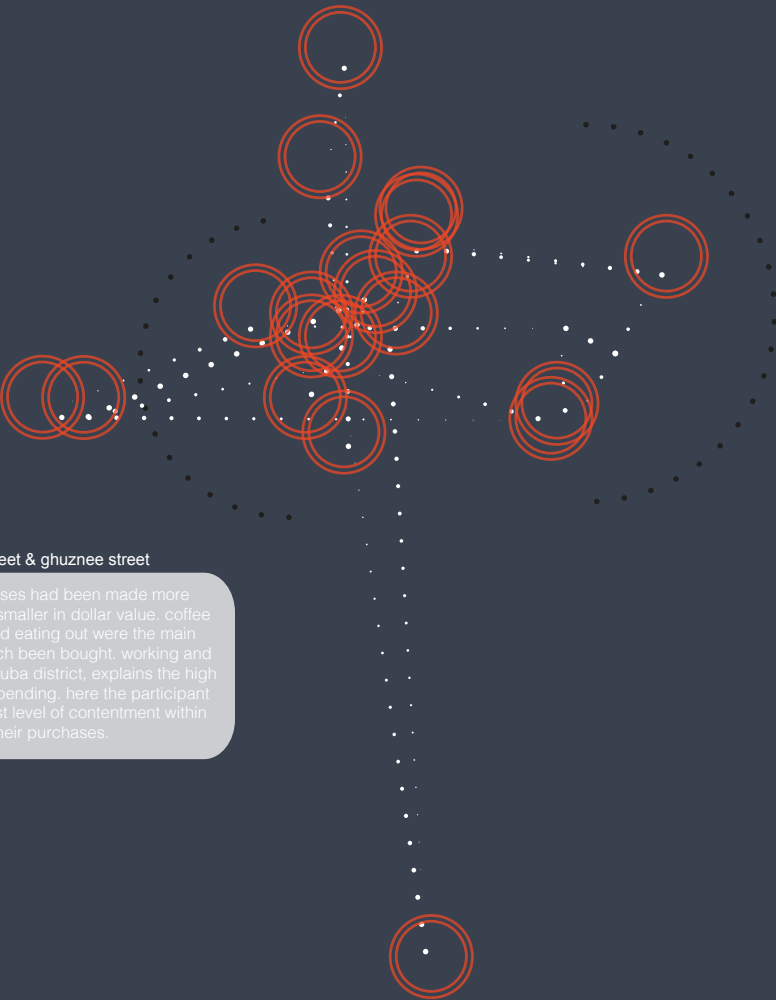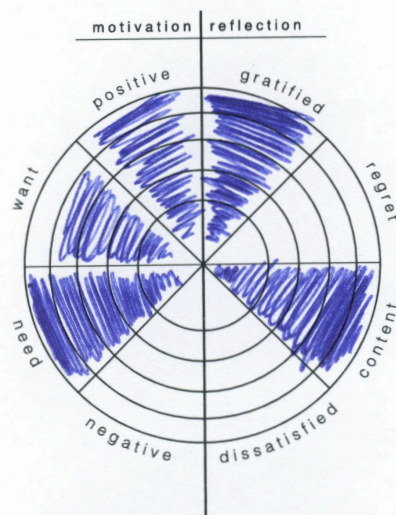
cuba street & ghuznee street

here purchases had been made more
frequently but smaller in dollar value. coffee
and lunch and eating out were the main
purchases which been bought. working and
living near the cuba district, explains the high
frequency of spending. here the participant
felt the greatest level of contentment within
their purchases.

spending map

amount: 44:30   time: 17:03
purchase: Groceries   date: 24/9
method of payment   cash / eftpos / credit
available funds   yes / no / unknown
location: Moore Wilson
thoughts: good

Be specific as possible within the annotations section

18 September - 29 September

The " I get bored and go to the supermarket " spender.

spending map

1
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: [?] time: 10:5?
purchase: sausage roll date: 20/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New world
thoughts: So good omg
Be specific as possible within the annotations section

2
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $3 time: 1·00pm
purchase: Soda water date: 28/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New world
thoughts: 'Calmer'
Be specific as possible within the annotations section

3
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $30 time: 9·00am
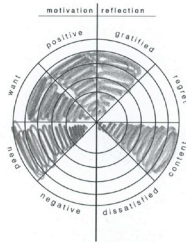purchase: Veges date: 27/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Harbour market
thoughts: love veg market
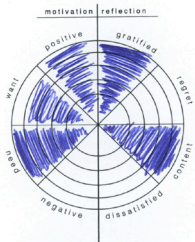Be specific as possible within the annotations section

4
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 16·50 time: 1pm
purchase: Beer date: 27/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: The realm
thoughts: The realm is a bit shit
Be specific as possible within the annotations section

5
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 44·30 time: 17·03
purchase: Groceries date: 24/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Moore Wilson
thoughts: good
Be specific as possible within the annotations section

6
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $22·50 time: 7am
purchase: Cigarettes date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Fix
thoughts: high
Be specific as possible within the annotations section

7
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $18 time: 1pm
purchase: Beer date: 27/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Imataia
thoughts: nice catch up
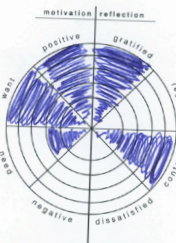Be specific as possible within the annotations section

8
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: lunch time: 12
purchase: date: 24/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New world
thoughts: Instant regrets
Be specific as possible within the annotations section

9
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $7 time: 10:00
purchase: Cheese muffin date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Greenland
thoughts: Yum
Be specific as possible within the annotations section

10
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 13·22 time: 22/9
purchase: Groceries date: 13·22
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New world
thoughts: thing
Be specific as possible within the annotations section

11
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 40 time: 7·45
purchase: Petrol date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: BP
thoughts: Petrol
Be specific as possible within the annotations section

12
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 13·80 time: 7·30
purchase: Cappucino date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: 93
thoughts: Coffee
Be specific as possible within the annotations section

13
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 7·40 time: 12
purchase: lunch date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: New world
thoughts: Hungry
Be specific as possible within the annotations section

14
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: 7·70 time: 2·00pm
purchase: date: 19/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Memphis Belle coffee
thoughts:
Be specific as possible within the annotations section

15
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $0·50 time: 3
purchase: Sushi date: 38/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: TJ Katsu
thoughts: Yum
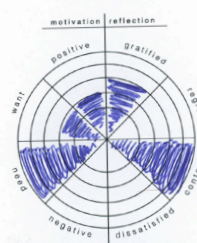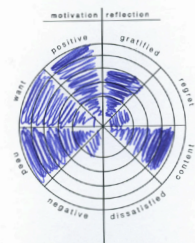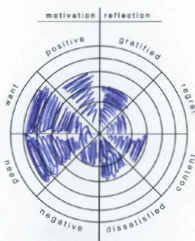Be specific as possible within the annotations section

16
spending map
motivation | reflection
positive · gratified · want · regret · need · content · negative · dissatisfied

amount: $18 time: 17·30
purchase: Drink date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Thief
thoughts: Wind down after work
Be specific as possible within the annotations section

Results of participant 2

This was one of the most interesting results which I received from this process. The participant was twenty-eight, working full-time and, through the conversations which we had, was someone who was well aware of their spending, made use of budget and had larger saving aspirations such as putting a deposit down on a house. But what had been distracting them from reaching these aspirations were, as they described it, the 'on the whim' purchases. Before I sent them away, I had asked them what purchases they might make and the emotions they might catalogue:

> Probably alcohol, cigarettes and lunch out. All with a great deal of regret and dissatisfaction. I see the girls at work come in with all these new things which they have bought and I'm like 'that would be nice if I could do that too', but I can't.

This prediction that they had made showed a certain level of resentfulness towards their spending habits. When I went through their maps, I saw there was a strong motivation to buy but almost always a limited level of actual reflection being recorded in their spending maps, and when it was recorded, they were never fully satisfied with the purchase. I wanted to explore why this level or resentfulness existed by further asking why they hadn't implemented a way of changing it. They said that they had tried to change to overcome these habits which they had slipped into, through various methods, such as leaving their bank card at home, quitting smoking and cutting back on drinking. It had worked, they had seen a difference by actually doing this. But, the bad habits would start to slip back in, and the participant would say they would get depressed or bored and wanted to buy something to feel something.

Figure 3.28. Some of the results of the maps filled out by participant two.

Their initial prediction of lunch out, alcohol and cigarette purchases had been proven correct, but what was also bundled within these maps were a grocery and market day shop. I had asked which ones they had felt were the most positive and after looking over them, the harbour-side market came out on top. They acknowledged the need to buy vegetables, but what had made this such a positive purchase was the final overall experience. What they had identified was being able to go outside, see all the different vegetables on offer and relish in scouting out the different prices. This purchase was much more about an experience than the actual need for vegetables.

On presentation of the first visualisation, actual spending vs catalogued spending, the participant had been impressed, firstly by the frequency which they had spent over the eleven day's, and secondly by how much they had travelled, almost constantly, throughout the city. What had been the greatest source of interest for the participant was where they had spent, and seeing the different size circles which represented the amount they had spent. The participant took a bit of time looking over the visualisation, which I then asked how it had made them feel seeing their spending like this They replied with a tone of slight frustration towards the amount of spending that they had done around work (Molesworth Street), explaining that they wished they hadn't spent so much money on small things like coffee and lunches out which they felt had been unnecessarily 'wasted' money. They had also commented on the dollar amount which they spent as being higher than expected, as they felt they had not really got anything to show for spending nearly $700.

Figure 3.29.(Right) the first visulisation titled actual spending vs cataloged spending.
Figure 3.30.(Next page) emotive spending.

actual spending vs catalogued spending

September 2015

total days: 11

N

wellington, new zealand

number of transactions: 45
total spent : $700.75
avarage number of transactions per day: 4.09

dollar value

0-10   11-20   21-30   31-40   41- >   catalouged
spending

% frequency of use in area

direction traveled

thorndon new world & molesworth street
46.10%

tory street & courtenay place
30.10 %

cuba street
14.22%

hataitai village
9.40 %

emotive spending

September 2015

total number of maps filled: 17

charts showing the most engaged emotions via area of the city

% based off maps grouped according to area, showing the highest level of enguments of each emotion.

motivation . reflection

gratified 39.55 %

regret 9.70 %

content 41.79 %

8.96%

dissatisfied

32.57% positive

36.04% want

25% need

6.39% negative

tory street & courtenay place

21%

21%

18%

positive

gratified

need

cuba street

27%

8%

6%

want

regret

negative

thorndon new world & molesworth street

20%

3%

content

dissatisfied

table showing frequency of emotions engaged

least · · · · · · most

purchases made either on groceries or drinks, which had a larger dollar value but were purchases which the participant had enjoyed making, gauging a high level of gratification and positivity.

these purchases had been been conducted on lunch, alcohol and cigarettes, which had been able to gauge a high level of negativity and regret.

these purchases had been conducted at a higher frequency on smaller purchases such as cafe and food items throughout the work day. the purchases here gained the highest level of dissatisfaction.

purchase	amount	location	motivation				reflection				thoughts
			positive	want	need	negative	gratified	regret	content	dissatisfied	
Sushi	$8.50	TJ Katsu									yum
Groceries	$44.30	Moore Wilsons									good
Coffee	$7.70	Memphis Belle									coffee
Cigarettes	$22.50	Fix									ugh
Drink	$18	Thief									wind down after work
Beer	$18	Tuatara									nice catch up
Veggies	$30	Harbour Market									love vege market
Petrol	$40	BP									petrol
Beer	$16.50	The Realm									the realm is a bit shit
Lunch	unknown	New World									instant regrets
Sausage Roll	$4.70	New World									so good oms
Soda water	$3	New World									'calmer'
Drinks	$9.20	Mish Mosh									good catch up
Coffee & Muffin	$7	Greenland									yum
Groceries	$13.22	New World									things
Cappucino	$3.80	Cafe 93									coffee
Lunch	$7.40	New World									hunger

We then moved onto looking at the visualisation of their emotive spending, the dissatisfaction which they had expressed previously when looking their Molesworth Street purchases had translated again, with this gaining a high level of dissatisfaction. What they had also come to notice was how the three emotive words of need, positive and gratified had grouped together under the Tory Street and Courtney place, where a lot of these purchases had been either grocery purchases or purchases made over drinks with friends and felt this had been an accurate depiction of their emotive engagement. They had also enjoyed looking at the table showing the frequency of the emotions which they had gauged and through looking the comments which they had noted, had been able to recall purchase quite clearly.

What I enjoyed most about the conversations with this participant, was the detailed narratives which they had been able to re-construct through the use of the maps. They had been able to create a vivid account of their spending which had gone beyond solely financial and become something which reflected a lot about their overall character and their spending.

Figure 3.31.(Right) the last visulisation, emotive spending overview.

noneemotive spending over view
September 2015

N

nonewellington, new zealand

thorndon new world & molesworth street

purchases made here were close to the
participants work place, and were mostly
made on quick trips to the new world or
cafe's which had been made throughout the
working day. purchases here were made the
most frequently.

catalouged
spending

direction traveled

tory street & courtenay place

purchases had been larger in dollar value but
made less frequently on either groceries or
drinks with friends. these purchases gained
a higher level of positive engagement
towards them overall.

cuba street

purchases had been made here
had gained the highest level of
negativity being either on alcohol
or cigarettes, whihc had been
made later the evening's

spending map

motivation | reflection

positive   gratified

want   regret

need   content

negative   dissatisfied

amount: 225   time: 9.30pm
purchase: Dress   date: 29/9
method of payment   cash / eftpos / credit
available funds   yes / no / unknown
location: The mews Trois
thoughts: Lovely impulse buy

Be specific as possible within the annotations section

23 September - 1 October

The "I shouldn't have bought that!" spender.

spending map (row 1)

amount: 17·40 time: 7·40
purchase: Drinks date: 1/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Apartment bar
thoughts: catch up with Bret "
Be specific as possible within the annotations section

amount: 11·50 time: 1pm
purchase: lunch date: 26/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Chow main cube
thoughts:
Be specific as possible within the annotations section

amount: 20 time: 8·20am
purchase: Snapper top up date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Railway station
thoughts: Necessary.
Be specific as possible within the annotations section

amount: 26 time: 9·10
purchase: Drinks date: 1/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Apartment
thoughts: catch up w friends."
Be specific as possible within the annotations section

spending map (row 2)

amount: 20 time: 2·30pm
purchase: tights date: 1/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Glassons
thoughts: Work clothes.
Be specific as possible within the annotations section

amount: 12·10 time: 2·50
purchase: Sushi date: 1/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Catch
thoughts: Sushi for lunch
Be specific as possible within the annotations section

amount: 122·40 time: 2·45
purchase: Train pass date: 1/10
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Fix
thoughts: Monthly expense
Be specific as possible within the annotations section

amount: 225 time: 9·30pm
purchase: Dress date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: The mews / trois
Be specific as possible within the annotations section

spending map (row 3)

amount: 25 time: 3pm
purchase: Lunch date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: chow
thoughts: catching up with a friend.
Be specific as possible within the annotations section

amount: 18·90 time: 1·45
purchase: Groceries date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Countdown
thoughts:
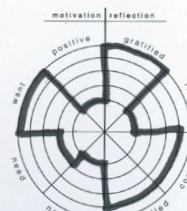Be specific as possible within the annotations section

amount: 9·50 time: 9·30pm
purchase: Beer date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: LBQ
thoughts: enjoyable after a long day
Be specific as possible within the annotations section

amount: cigarettes time: 9·15pm
purchase: 22·70 date: 29/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Fix courtenay place
thoughts:
Be specific as possible within the annotations section

spending map (row 4)

amount: $4 time: 2·56pm
purchase: coffee date: 23/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Pandoro
thoughts: Needed this! according to my map.
Be specific as possible within the annotations section

amount: 44·50 time: 7·30pm
purchase: Wine date: 25/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: TSB Arena
thoughts: WOW gala night
Be specific as possible within the annotations section

amount: 85·50 time: 11·20
purchase: dinner date: 23/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Charley Noble
thoughts: Blind date gone right.
Be specific as possible within the annotations section

amount: 27·75 time: 9·25pm
purchase: Wine date: 23/9
method of payment cash / eftpos / credit
available funds yes / no / unknown
location: Ancestral
thoughts: looking forward to this
Be specific as possible within the annotations section

Results of participant 3

Not long after I conducted this interview and explored their different spending maps, this participant had successfully achieved their ultimate goal of buying their first home. I feel this interview and catalogued spending has come to form an interesting snapshot not only of their spending, but also their thought processes leading into the purchase of their first home. We started off by talking through some of the sacrifices which they had come to make in order to reach this goal and how it might have changed their spending:

> Last year I would have walked into a shop, thinking I had spare money that I could easily spend, but this year I have not seen that as spare money but as unaccounted savings. I moved in with my parents, that has been the biggest push to reduce my spending, I have not bought things aside from getting to work, work related things and lunch.

It had been interesting to hear of the various sacrifices they felt they had come to make, such as moving back in with their parents. Here, they spoke of not only the financial sacrifice but also of sacrifice and compromise in spending time engaging if various social interactions, which played an important role within their day to day life. When we began going through their various purchases, this desire to main social ties was clear, with many of the purchases being made at bars with friends. This was something which they had annotated in the 'thoughts' section of the map, as something that they had long been looking forward to throughout their day.

Figure 3.32. Some of the results of the maps filled out by participant three.
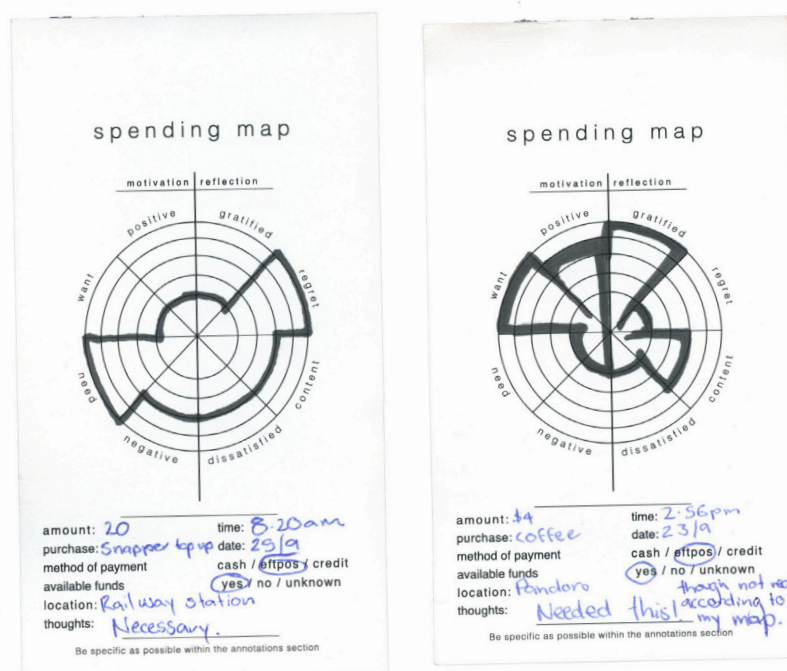
Throughout the discussion process they spoke about spending which they had seen as 'necessities' and purchases which they saw as 'frivolous'. I wanted to know where they felt their spending on drinks had fitted into these two categories, and if the map had been able to reveal anything to them about the emotions that they had been able to gauge with. They gave some thought, looked at the maps spread out on the table and started to piece together their thoughts. They identified purchases which were necessities, such as transport cost, and had noticed their emotive engagement and reflection were low, as 'it was just something that I had to do' but purchases, such as lunch with a friend or drinks, the positivity and engagement was a lot higher, "it wasn't something I actually needed but a greater want." They hadn't come to see their spending on drinks as a frivolous purchase but as a purchase, which had come to fulfil a number of needs, such as social interaction, which had become compromised by living with their parents.
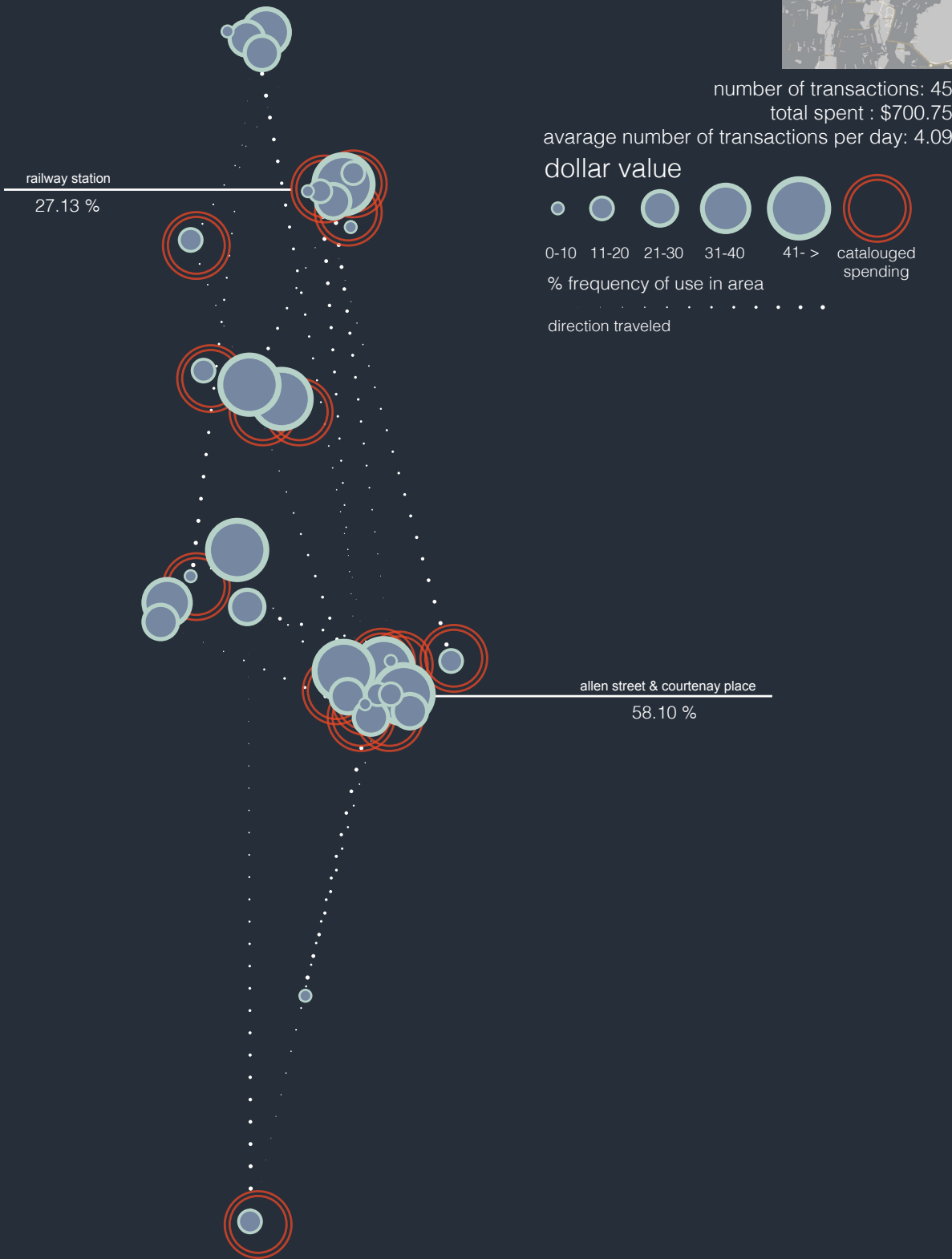
Figure 3.33.(Right) the first visulisation titled actual spending vs cataloged spending.
Figure 3.34.(Next page) emotive spending.

actual spending vs catalogued spending

September/ October 2015

total days: 9

wellington, new zealand

number of transactions: 45
total spent : $700.75
avarage number of transactions per day: 4.09

dollar value

0-10   11-20   21-30   31-40   41- >   catalouged
                                        spending

% frequency of use in area

direction traveled

railway station
27.13 %

allen street & courtenay place
58.10 %

N

emotive spending

September/October

total number of maps: 19

● gratified 36.24 %

● regret 15.60 %

● content 33.02 %

● dissatisfied 15.14 %

m o t i v a t i o n . r e f l e c t i o n

36.36% positive ●

35.23% want ●

17.80% need ●

10.61% negative ●

charts showing the most engaged emotions via area of the city

% based off maps grouped according to area,
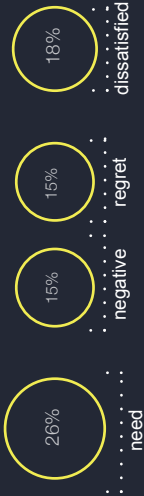showing the highest level of engagments of
each emotion.

railway station

26%

15%

15%

18%

need

negative

regret

dissatisfied

lambton quay

21%

18%

gratified

content

allen street & courtenay place

18%

15%

want

positive

table showing frequency of emotions engaged

least ·· ○ ○ ○ most

purchase	amount	location	motivation			reflection				thoughts
			positive (want)	(need)	negative	gratified	regret	content	dissatisfied	
Dinner	$83.50	Charley Nobel								blind date gone right
Coffee	$4	Pandoro								need this!
Wine	$27.75	Ancesteral								looking forward to this
Lunch	$25	Chow								catching up with a friend
Groceries	$26.19	New World								lunch stuff for work
Wine	$44.50	TSB Arena								WOW gala night
Wine	$9.99	New World								Saturday nights drinks
Lunch	$11.50	Chow Main Cube								
Groceries	$18.90	Countdown								
Beer	$9.50	LBQ								enjoyable after a long day
Snapper top-up	$20	Railway Station								necessary
Cigarettes	$22.70	Fix Courtenay Place								:(
Dress	$225	The Mews								lovely impulse buy
Drinks	$26	Apartment Bar								lovely catch-up with pretty boys
Drinks	$17	Apartment Bar								catch-up with Brett :)
Drinks	$26	Apartment Bar								catch-up with friends :)
Sushi	$12.10	Catch								sushi for lunch
Train Pass	$122.40	Railway Station								monthly expense
Tights	$20	Glassons								work clothes

When it had come to present the set of visualisations to this participant, they were excited to see how their spending had been tracked throughout the city, and had already made some predictions as to what this might look like. Indicating that their map would have a large proportion of spending done just within a relatively small space. They had not been far off but when it came to reveal their actual spending vs catalogued spending, they had been surprised by how much spending had taken place at spaces particularly like the railway station and in other spaces in the city. The participant had not given much thought to her purchases at the railway station as these had been necessity purchases such as their monthly train pass.

We then moved onto exploring emotive spending and one of the first things that the participant had noted was the overall negativity and resentment which had been grouped together under the railway station purchases. They felt that this had accurately been able to capture their feelings towards the purchases which were made here, highlighting their resentment having to spend money on transport costs. What the participant had not been able to see before till now was to what extent these negative purchases had made up their spending. What they had also come to notice when looking at the table displaying the frequency of their emotions gauge, where their thoughts of each purchase had been able to jog their memory of what they had bought and who they had been with.

What they had come to enjoy most about this process was their ability to create different shapes through their outlines. Being a very visual person, they had become interested in seeing what a happy shape might look like, or what a negative shape might look like. They gave thoughts as to what this might look like over a extended period of time, and how reflecting back to this shape might encourage them to change their spending to create a shape which was able to represent a happy experience.

*Figure 3.35.*(Right) the last visulisation, emotive spending overview.

emotive spending over view
September 2015

N

wellington, new zealand

railway station

purchases here recieved overall a
negative engagement, with
purchases being made mainly on
transport costs. this had
highlighted their resentment of
having to travel into the city for
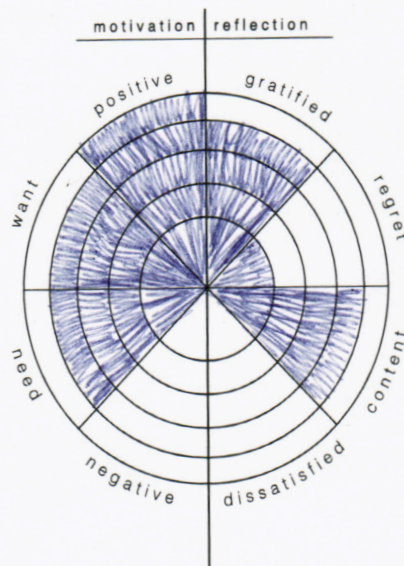work each day.

catalouged
spending
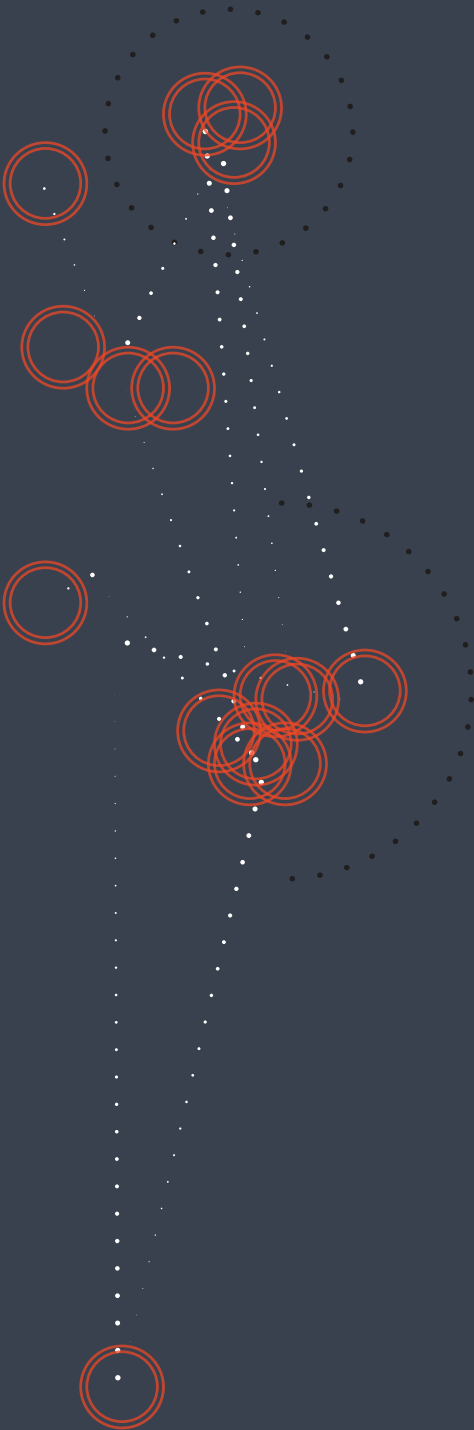
direction traveled

allen street & courtenay place

purchases here had been made with the
most frequency, with the particpant working
close to courtnay place. most purchases
made here received overall a high level of
positive engagment.

spending map

motivation | reflection

positive — gratified
want — regret
need — content
negative — dissatisfied

amount: $4
purchase: coffee
method of payment
available funds
location: Customer coffee
thoughts: was looking forward to this + was great!

time: 1100
date: 6/10/15
cash / eftpos / credit
yes / no / unknown

Be specific as possible within the annotations section

23 September - 1 October

The "cost conscious and thoughtful" spender.

spending map

motivation | reflection
positive | gratified
want | regret
need | content
negative | dissatisfied

amount: | time:
purchase: | date:
method of payment
available funds | cash / eftpos / credit
location: | yes / no / unknown
thoughts:

Be specific as possible within the annotations section

Results of participant 4

This participant was by far the most unique in the manner in which they had tracked and managed their spending. Fitting into the category of recent graduate and working full- time, they explained that they have always been that person who had kept a detailed track record of their spending. Initially we spent some time talking about the way in which they managed and kept tracked of the spending. Out of all the participants that I had interviewed, this had been the only one who kept an active spreadsheet of all their outgoing expenditures, and was someone who would plan their week ahead, making note of the anticipated spending. This document they would then use to ensure that they were maintaining their larger financial goals, of paying to go overseas. Clearly being very goal oriented in their spending, I wanted to gain an insight into how this had come to be something which informed the manner in which they now spent:

> It's interesting, I think it might just be a family thing, it's something I feel I would have learnt from Dad. When I was younger I would ask him for lunch money, he would give me the $5 and say give me the change! But if I were to ask mum she would just give me the money unconditionally. It made me think about money a lot from an early age.

This had been interesting, as the way in which they had come to manage and inform their spending had been driven heavily from what she had learnt and observed from her parents. Being able to identify the distinctive spending differences between her mum, more carefree and relaxed, and her dad, being more controlled and thoughtful.

Figure 3.36. Some of the results of the maps filled out by participant three.
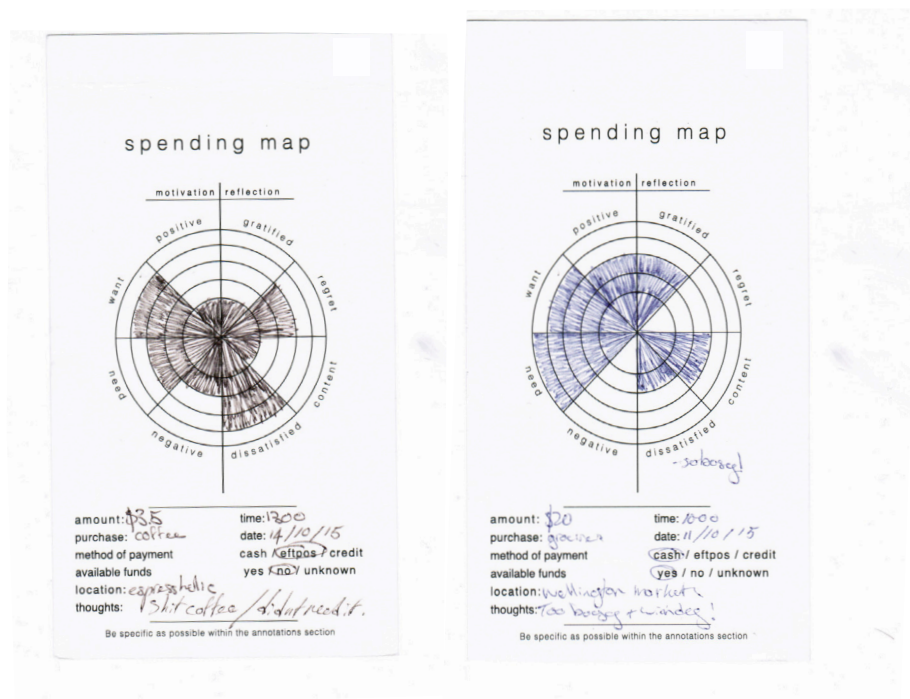
We moved onto exploring some of the purchases which they had catalogued. They began by explaining that they made the choice not to map every purchase, since they already tracked their purchases so extensively, but to focus on tracking purchases which they felt might hold a highly emotive aspect to their spending. Most of what we had talked through were their food purchases. Their desire to try new foods and places reflected a certain level of expectation that they hoped would be met. Had these levels of expectation not been met, it had been recorded. The Spending Map had come to feature as more of a reviewing tool of the establishment and the time that they had spent there. Through talking to the participant and referring back to the maps, I had been able to get a sense of their experience.

With this participant having such an active role already in recoding and documented their own spending, I was interested to see if this visualisation process could come to reveal anything else which might be significant to their spending which they had not seen before. When it had come to the reveal the first of the visualisations actual spending vs catalogued spending, what they had first come to notice was how close together their spending had been relative to the rest of the city. Working closer to parliament, they hadn't done much spending around work but travelled to a place either on the way home from work or gone out of their way to visit somewhere. This visualisation had not been able to show them anything which they had not seen before, but only portraying their spreadsheet data which they had created in a graphic and visual manner. But they had enjoyed looking at the map and the visual representation of what each circle represented.

Figure 3.37.(Right) the first visulisation titled actual spending vs cataloged spending.
Figure 3.38.(Next page) emotive spending.

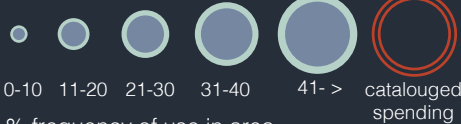actual spending vs catalogued spending

October 2015

total days: 10
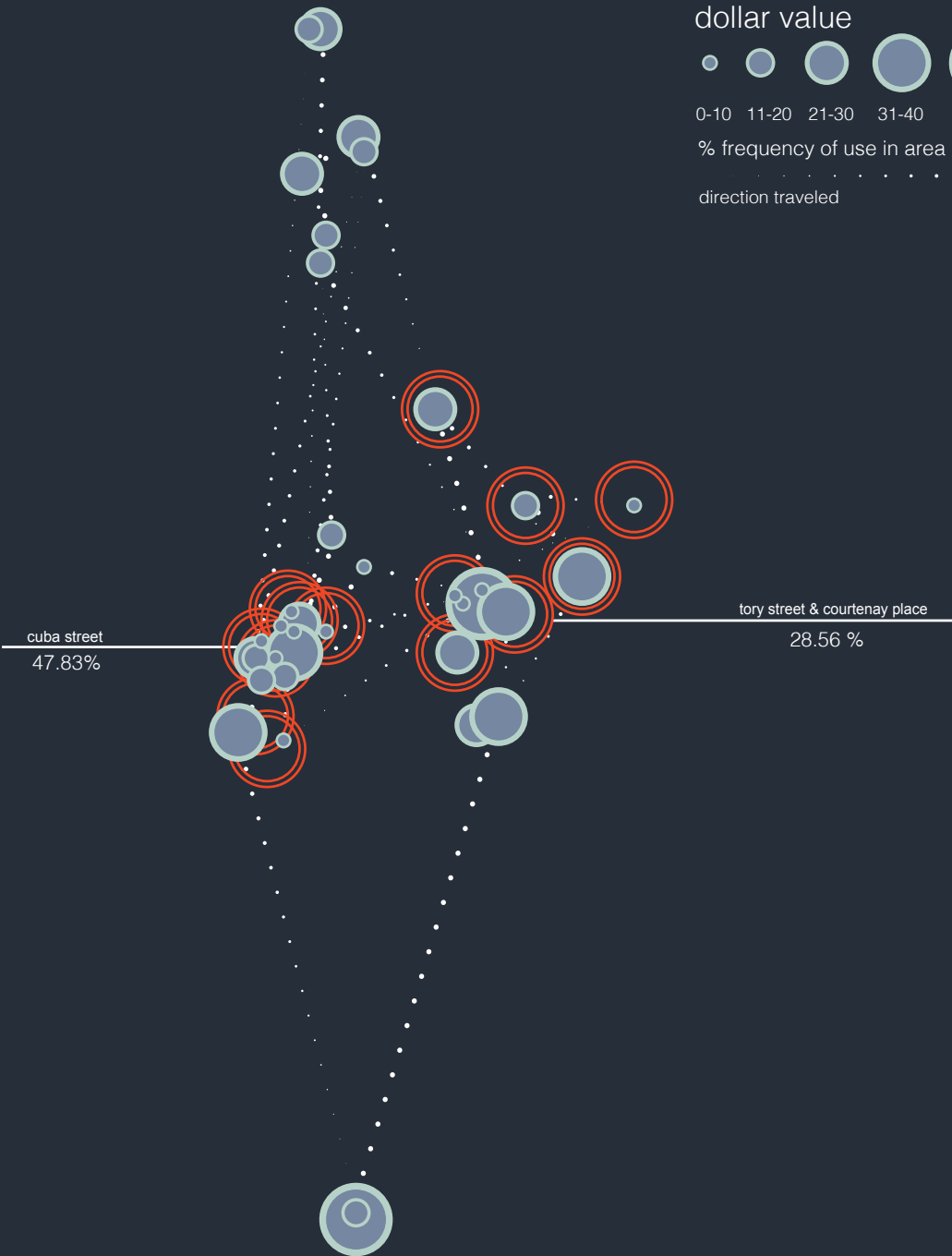
N

number of transactions: 36
total spent : $436.80
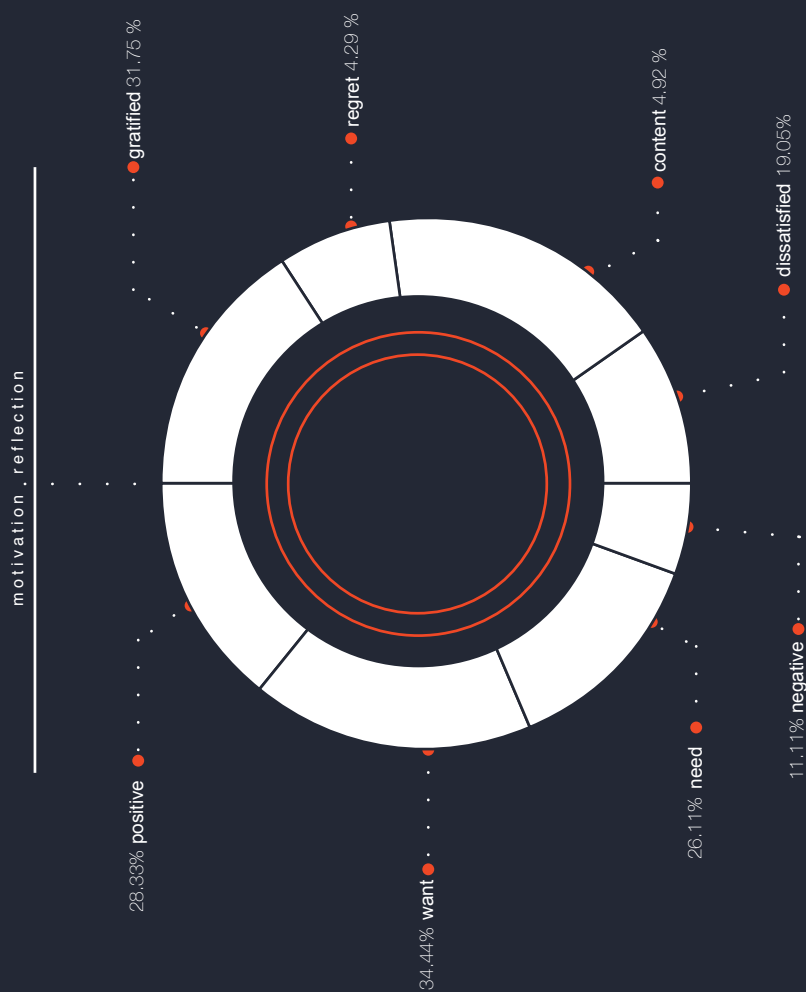avarage number of transactions per day: 3.27

dollar value

0-10   11-20   21-30   31-40   41- >   catalouged
spending

% frequency of use in area

direction traveled

tory street & courtenay place
28.56 %

cuba street
47.83%

emotive spending

October 2015

total number of maps filled: 16

motivation . reflection

gratified 31.75 %

regret 4.29 %

content 4.92 %

dissatisfied 19.05%

28.33% positive

34.44% want

26.11% need

11.11% negative

charts showing the most engaged emotions via area of the city

% based off maps grouped according to area,
showing the highest level of enguments of
each emotion.

tory street & courtenay place

17%   10%   7%   10%

postive   negative   regret   dissatisfied

cuba street

21%   16%   13%   15%

want   need   gratified   content

table showing frequency of emotions engaged
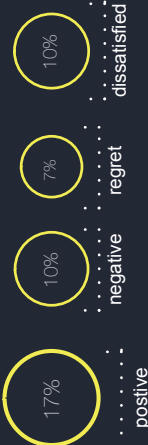
least · · · · · · · most
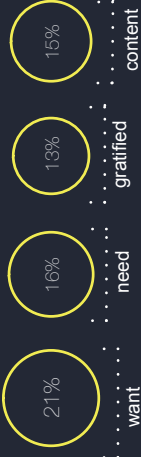
here a variety of emotions had been gauged with the majority of emotions being slightly more negative than positive. purchases made were mostly on drinks with friends and the occasional grocery shop

here emtions which had been gauged had been more postive in nature, with purchases being made on dinners out and a number of coffee purchases

purchase	amount	location	motivation				reflection				thoughts
			positive	want	need	negative	gratified	regret	content	dissatisfied	
2 4 1 drinks	$9	Vinyl									great catch-up!
Coffee	$4	Customs coffee									was looking forward to this
Lunch	$6.50	Mid-Night									yummy pie
Coffee	$4	Customs coffee									
Beer	$9	Duke Carvels									needed a beer
Coffee	$3	Ragland Roast									good, yummy and cheap
Drinks	$36	Mish Mosh									lovely evening out
Dinner	$24	Ostoron Tory Street									dinner was a bit boring
Drinks	$23	Lagoon									bought drink with hannah
Groceries	$33	New World									just things
Veggie Market	$20	Habour Market									too busy and windy
Coffee	$2.50	Ragland Roast									saved 50 cents
Haircut	$25	Cuba Street Barbers									great haircut from a cute boy
Coke	$1.70	Nick Nacks									just wanted something sweet
Coffee	$3.50	Esspressoholic									shit coffee didn't need it
Dinner Drinks	$37	Laundry Bar									great dinner and early night

I had hoped that the next visualisation, emotive spending, might help to provide further insight into their spending which had gone beyond exploring purely their financial data. They firstly had been drawn into the pie chart and had been pleasantly surprised by the low amount of dissatisfaction which they had been able to gauge from their purchases and could clearly remember why and when they had gauged those few past purchases. When looking at the table representing frequency that had laughed about what their thoughts had been and felt they remained true to what they had gauged, especially that of 'shit coffee'.

What I had enjoyed most about this participant, was manner in which they had carried out their spending and recorded their experience. As this in itself had provided a lot of insight into the different ways in which they had thought about their spending, constantly weighing up both the financial and emotive aspect of each purchase.

Figure 3.39.(Right) the last visulisation, emotive spending overview.

emotive spending over view
September 2015

N

wellington, new zealand

catalouged
spending

direction traveled

tory street & courtenay place

purchases here had been made less
frequently but overall higher in dollar value.
with purchases. which has resulted in a
similar and consistent level of emotive
engagement across the emotions

cuba street

purchases here had been made
more frequently at a lower dollar
vlaue but overall a consistent level
of engagement had been
recorded. where want had been
the leading emotion in their desire
to spend.

Concluding thoughts on The Spending Map

The process of developing, designing and utilising a research tool to investigate the emotive engagement a participant might have towards their spending, is one which had come to challenge me as a designer, but also something which I had come to gain the most satisfaction. What I come to enjoy and found to be the most rewarding aspect of this investigation had been the various meetings and conversations with the various participants. These conversations had gone beyond the normal face value conversations which might take place between two people to be something which came to show a great level of insight and depth into an individual's spending. Taking time out to critically reflect on such an everyday activity, such as purchasing, I felt provided me and a lot of the participants a refreshing change in pace and topic.

What I had also come to find the most insightful through making use of The Spending Maps was its ability to provide for myself a level of self-critical reflection towards my own spending which I had not experienced previously. I had always viewed my spending as something of an anomaly and something which only I had struggled with to have and maintain control over what I purchased and didn't. Throughout the various conversations, viewing the emotive engagement and comments from The Spending Maps, I had come to realise that I am in fact not alone in this struggle to maintain real control over my spending. The other aspect of this process which I had also enjoyed was how talking about the small and seemingly insignificant purchases which were made. These smaller, more frequent, and almost habitual purchases of coffees, drinks and lunches provided a great source of narrative and was something which revealed a lot about an individual and their emotive engagement to their spending.

I felt that the maps had been able to capture a good level of emotive engagement and had worked well in facilitating this conversation process but what I had come to find as one of the greatest challenges was working out a means of presenting the findings. Being able to showcase the rich set of narratives that had been captured through this cataloguing process. In part I feel that I have been successful in the presentation of these results through the visualisation process, which provided each of the four participants with a further level of insight into their spending. But felt I could have pushed this aspect further, somehow further incorporating the conversation aspect of their spending into the visualisation.

Chapter 4: Discussion

The idea of money being part of an iterative and evolutionary design process, had established a strong level of curiosity as to what the future of money might be, and the different design process that might lead the next monetary evolution. This design lead research investigation had begun with a personal desire to understand why I spend the way I do, but in reflection feel has gone beyond simply understanding my own 'good' and 'bad' spending. I feel that I am still nowhere closer to understanding my particular motivations as to why I spend but through this process of investigation has come to provide me with a wealth of critical reflection. Through exploring my spending and my interactions with exchange, not only in a monetary sense but in the abstract entities of knowledge, skills and beliefs of others, I feel that this process has come to challenge me. Not only as a designer but as a consumer, to be more reflective and re-evaluate the manner, frequency and emotive engagement with which I spend.

Through the design and development of The Spending Map, I had been able to successfully establish a process of critical reflection, between the relationship a consumer has to their spending and their emotive engagement. This process had made it possible to exhibit a dialogue that could capture, catalogue and critique the emotional engagement a consumer has towards their spending. This process had offered a means of tactility and tangibility through the physical method of cataloguing their emotive engagement. Through the various interviews and conversation's, The Spending Map had become a platform which I have been able to have a structured debate and conversation about a consumers spending. This conversation process has become the most rewarding and in further developments, like I had previously stated, would want to work out a means of incorporating these conversations further into this design process.

Further Development

The level of convenience, which we as consumers have become accustomed to, is one where it is almost possible to never have a need to leave the house, with online shopping becoming a constant hobby for many. More and more communities are increasingly becoming less dependent on physical cash to conduct transactions, and a level of increased autonomy which a consumer now has to spend has now been realised. It is within these technological developments that it is more important than ever to establish a tool which is able to break this fast-paced level of provisioning and engage in a process of greater critical reflection.

I would like to see this project continue to develop into one of two ways. One going completely digital or going completely analogue. If this process were to go completely digital, I would like to see the main focus being placed on the collection of a participant's emotive engagement with the goal to further visualise their emotive engagement. With a goal of gathering other aspects of their spending in hopes of encouraging critical reflection through a visual means. Creating an application or tool which a user would be able to track both their emotive spending as well as the financial spending in a much closer partnership.

The other route, which is almost completely opposite to the previously mentioned, is for it go more and more analogue. Where the emphasis is placed on the idea of pausing, breaking, and setting aside time to work on something which is able to build up a detailed image of the consumer and their spending over a greater length of time. In the same manner which I had gotten participants previously to shade their emotive engagement. But with a more detailed and diverse range of 'maps' to fill. This would be something which the user might not initially gain immediate reward but something which they could constantly work towards, through cataloguing and recording their spending in a much more richer form being more of possible speculative designed outcome.

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Figure List

Figure 3.1 - Figure 3.4. Anz Money Manager screen shots. Authors own image.

Figure 3.5 - Figure 3.12. Spent Visulisation: Authors own images.

Figure 3.13. Diagram of research investigation flow: Authors own diagram.

Figure 3.14. Initial sketches. Authors own image.
Figure 3.15. initial test prints. Authors own image.

Figure 3.16. Coffee tasters flavor map. Retrieved from http://www.scaa.org/chronicle/wp-content/
uploads/2016/01/SCAA_FlavorWheel.01.18.15.jpg

Figure 3.17. One of test Spending Map. Authors own image.

Figure 3.18. Final designed outcome. Authors own image.

Figure 3.19 & Figure 3.20. Photograph of completed maps laid out. Authors own image.
Figure 3.21. Spending Maps which had been pinned up to view. Authors own image.
Figure 3.22. A sample of some of the maps which had been filled out. Authors own image.
Figure 3.23. initial example of synthesizing one of the participant's results. Authors own image.

Figure 3.24. Some of the results of the maps filled out by participant one. Authors own image.
Figure 3.25 - Figure 3.27. Visulisation of participants results. Authors own image.

Figure 3.28. Some of the results of the maps filled out by participant two. Authors own image.
Figure 3.29 - Figure 3. 31. Visulisation of participants results. Authors own image.

Figure 3.32. Some of the results of the maps filled out by participant two. Authors own image.
Figure 3.33 - Figure 3. 35. Visulisation of participants results. Authors own image.

Figure 3.36. Some of the results of the maps filled out by participant one. Authors own image.
Figure 3.37 - Figure 3.38. Visulisation of participants results. Authors own image.

Persona Drawings commissioned by Author.

Appendix

Information & Consent form for the Spending Map

Information Sheet

Participant Information Sheet for: The Spending Map

VUW Researcher: *Brett Liebenberg, School of Design,* Victoria University of Wellington

I am a Masters student majoring in *Culture and Context Design* at Victoria University of Wellington. As part of this degree I am undertaking a research project leading to my thesis. The project has received approval from the Victoria University Human Ethics Committee (Code Ref 2218) to investigate an individual's emotive response to their everyday spending.

This research will create a documented record of several people's individual spending habits through gauging the emotive engagement a participant has to their everyday spending. The data collected from the *Spending Maps* will directly contribute to the production of a series of visualisations of the spending habits and patterns of individuals. This project seeks to improve the communication, understanding and interpretation of individual spending data to develop new methods of visualising and understanding personal data.

Data collection will take the form of participant oriented *Spending Maps* filled in over a period of two to four weeks. The *Spending Map* is intended to be shaded in by the participant after purchases to gauge their emotive response to their everyday spending. It is anticipated that this take no longer than a minute to complete after each purchase. Once the *Spending Map's* have been completed participants will be informally interviewed to receive feedback on the process and if or how it may have impacted on their spending. The interview process will take place upon the collection of the *Spending Map's* (between two – four collections). The individual findings will be directly accessible to the participants via email once collated. The overall data visualisation will be available the participants at the completion of my thesis.

Please note participants are under no obligation to participate and can freely withdraw for any reason at any time before *1 October 2015* by emailing *liebenbret@myvuw.ac.nz*. Any information and data will be returned to the participant and/or destroyed.

Responses will form the basis of research and will be put into a written report on a confidential basis. It will not be possible for you to be identified personally. Only grouped responses will be presented within the research. All material collected will be kept confidential. No other persons besides myself, the principle investigator (Brett Liebenberg) and my supervisor Dr Leon Gurevitch will see the collected data. The thesis will be submitted for marking at the *School of Design* and deposited in the University Library. With the possibility of presentation of the findings at academic or professional conferences.

If you have any further questions or would like to receive further information about the project, please contact me at *liebenbret@myvuw.ac.nz or* my supervisor Dr Leon Gurevitch, *leon.gurevitch@vuw.ac.nz* at the *School of Design* at Victoria University.

If you have any other concerns about the ethical conduct of the research you may contact the Victoria University HEC Convener: Associate Professor Susan Corbett *+64-4-463 5480 or susan.corbett@vuw.ac.nz.*

Best Wishes, Brett Liebenberg

Consent Form

Project Title: Gauging an individual's emotive response to their everyday spending.

VUW Researcher: *Brett Liebenberg, School of Design,* Victoria University of Wellington

Introduction
This research will create a documented record of several people's individual spending habits, through gauging the emotive engagement a participant has to their everyday spending. The data collected from the *Spending Maps* will directly contribute to the production of a series of visualisations of spending habits and patterns of individuals. This project seeks to improve the communication, understanding and interpretation of individual spending data to develop new methods of visualising and understanding personal data. The individual findings will be directly accessible to the participants via email once collated. The overall data visualisation will be available the participants at the completion of my thesis.

Consent
By signing this form I declare that I have read the information sheet provided, have had any questions answered satisfactorily and am willing to participate in this research. I understand that I am under no obligation to participate and can freely withdraw for any reason (or any information I have provided) from this research before *1 October 2015*. I understand that any information I provide will be kept confidential to the researcher and supervisor. I understand the published results will not use my name, and that no opinions will be attributed to me in any way that will identify me.

☐ I agree to take part in this research.

☐ The research may be published in articles, conference presentation and in a thesis available from the University Library.

Name _____ Signature_____ Date_____

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Thank you,
Brett Liebenberg