

# **I Can Resist Anything Except Temptation: Self-regulatory Fatigue and Ethical Spending**

Submitted by David Crelley to the University of Exeter  
as a thesis for the degree of  
Doctor of Philosophy in Psychology in May 2013



This thesis is available for library use on the understanding that it is copyright material  
and that no quotation from the thesis may be published without proper  
acknowledgement.

I certify that all material in this thesis which is not my own work has been identified  
and that no material has previously been submitted and approved for the award of a  
degree by this or any other university.

A handwritten signature in black ink, appearing to read 'D. Crelley'.

**David Crelley**



## Abstract

Within western societies the act of consumption is not merely concerned with satisfying basic human needs. Rather, consumption has become a source of leisure and self expression for the masses (Belk, 1988). This has meant that humankind's wants have tended to outstrip the world's finite resources available, leading to environmental damage, questionable farming practice and the widespread abuse of human labour. In response to these issues the phenomena of ethical consumption was born. Ethical consumption attempts to limit the environmental, human and animal costs of our spending via the favouring of products that are deemed to be for the betterment of wider society. At face value ethical consumption has been hugely successful in terms of market share, with sales of products stressing their ethical credentials having grown rapidly in recent years (Cooperative Bank 2011). However, despite this success, ethically branded products still represent a minority of purchases (Thøgersen, 2006).

Psychological research exploring the reasons why consumers purchase ethically is dominated by papers focusing upon consumers' attitudes, values and intentions (Andorfer & Liebe, 2012, Milfont & Duckitt, 2004). However, consumers' attitudes do not always mirror actual spending (Auger, Burke, Devinney & Louviere., 2003; Auger & Devinney, 2007). Whilst one third of consumers describe themselves as being ethical spenders, only 1-3% of products purchased are Fair Trade certified (Cowe & Williams, 2000). The divergence between attitude and behaviour has been referred to as the 'ethical purchasing gap' (Andorfer & Liebe, 2012, Clayton & Brook, 2005). One factor that may be partially responsible for the divergence between purchase intention and actual behaviours is self-regulatory fatigue (ego depletion).

Chapter one of the thesis presents the argument for ethical spending being affected by, amongst other things, our ability to suppress our impulsive desires via a process known as self-regulation (Bagozzi, 1992; Baumeister, 2002; Baumeister & Vohs, 2007).

According to the self-regulatory fatigue literature, self-control requires the expenditure of blood glucose (Gailliot, 2008, Inzlicht & Gutsell, 2007). However, the available level of blood glucose temporarily diminishes with continued use of the self-regulatory system.

In response to the lower availability of blood glucose, individuals begin to limit all non-essential cognitive expenditure, including further acts of self-regulation.

Individuals who have exhausted their capacity for self control are said to be ego depleted or in a state of self-regulatory fatigue (Baumeister & Heatherton, 1996; Hofmann, Friese & Strack, 2009; Muraven & Baumeister, 2000) Chapter one argues that self-regulatory fatigue may restrict an individual's capacity to consider the social and long-term impacts of their spending to resist the temptation of cheap consumer goods. As a result, it is predicted that ethical spending may be negatively affected by self-regulation fatigue. Following this theoretical foundation, Chapter two presents the methodological rationale for the research project that set out to test various aspects of this foundational hypothesis.

Chapter three presents the findings of the first empirical study. The purpose of the study was to use open-ended questionnaires to explore the principles that guided participants' spending, as well gaining an insight into instances where there was a

discrepancy between spending and principle. The study is included within the thesis primarily to show the genesis of the research agenda. The study indicated that consumers within the sample were primarily concerned with traditional forms of ethical consumption, namely environmental, human and animal welfare concerns. Participants justified non-principled purchasing as being a result of financial consideration or impulsive urge. It was thus decided to explore the possibility that self-regulation fatigue may have a potentially negative impact upon ethical spending, due to its known relationship with impulsive spending (Vohs & Faber, 2007).

Chapter four explores the effects of self-regulation fatigue upon socially-minded economic behaviour within the controlled setting of a social dilemma game. Ethical consumption can be considered to be a prime example of a 'social dilemma' in the sense that decisions relating to whether or not to consume ethically involve a direct conflict between an individual's short term interests (e.g. to save money) and the collective interests of wider society (Gattig & Hendrickx, 2007; Milfont & Gouveiac, 2006). Therefore it was decided to measure the effects of self-regulatory fatigue within an experimental social dilemma task. The task used was based upon the forest game, which was first outlined by Sheldon and McGregor (2000), with the white bear thought suppression task (Wegner, Schneider, Carter, & White, 1987) being utilised to manipulate self-regulatory fatigue. The results revealed a clear divergence in behaviour within the game as a function of the manipulation of self-regulatory fatigue, with non-depleted groups sustaining the central resource longer than their depleted counterparts.

Chapter five builds on the findings of chapter four through an exploration of the relationship between ego depletion and participants' willingness to pay for ethical goods. The study utilised a discrete choice measure in order to measure participant's willingness to pay for ethical goods. The findings did not show a significant effect of self-regulatory fatigue on the willingness to pay for ethical goods. However a potential explanation for this result was the fact that the decision-making processes involved in this study were less arduous than those required within a real-life shopping environment (or, for that matter, than the decisions required in the forest game reported in chapter four). It is possible that the complexity of the choice presented may have been insufficient for the decision to be negatively affected by self-regulatory fatigue. The study is thus included in order to illustrate the importance of utilising more realistic measures of spending that incorporate more of the complexity of decision-making required in real-world contexts.

Chapter six presents four separate experiments exploring the relationship between self-regulatory fatigue and ethical spending. The first study utilised an online supermarket simulation and asked participants to go shopping for one week's worth of groceries after either completing, or not completing, the white bear thought suppression task. The simulated supermarket allowed participants to select from a range of over 1900 products. The pattern of results indicated that participants in a state of self-regulatory fatigue spent significantly less on ethically branded products than their non-depleted counterparts. However, this was only true for individuals with a high food budget. Those with a low budget were not significantly affected, presumably due to having

relatively little flexibility in terms of product choice and/or having established shopping habits focusing upon value.

The second study in chapter six explored the ways in which social appeals interact with self-regulatory fatigue. Participants were presented with an attention control task before reading either an article praising students for their ethical behaviours or a control article. Participants were then asked to “go shopping” within the online store. Results once again indicated that self-regulatory fatigue reduced spending on ethically branded goods. However, contrary to predictions, the social appeal had no significant effect on levels of ethical spending either as a main effect or in interaction with self-regulatory fatigue. The study also explored the effect that self-regulatory fatigue had upon the relationship between behavioural intentions and subsequent ethical spending behaviour. The findings revealed that behavioural intention was shown to predict ethical spending only at times when self-regulatory fatigue was low. When self-regulatory fatigue was high, the frequency of previous ethical purchasing was shown to be a more important determinant of ethical spending than behavioural intention.

The third study further investigated the influence of self-regulatory fatigue on ethical spending by comparing the effects of an article stressing the fact that engaging in ethical spending would bring social approval with an article stressing that ethical spending was an individual’s personal responsibility. Chapter six sets out the argument that since personal norms are internalized appealing to an individual’s sense of personal responsibility, they may have a relatively automatic influence upon individual’s behaviour. In contrast, social approval may have less influence under the

influence of ego depletion as it requires the consideration of others points of view (Moore and Loewenstein, 2004). The analysis revealed a marginally significant interaction between self-regulation fatigue and article type in relation to rates of ethical spending. At times of high self-regulatory fatigue, stressing personal responsibility appeared to be more effective in increasing ethical spending than stressing social approval.

The final empirical study in the thesis aimed to explore the impact of self-regulatory fatigue on ethical purchasing in a real-world context by comparing shopping receipts with self-reported levels of self-regulatory and mental fatigue during actual supermarket shopping trips. The results indicated that self-regulatory and mental fatigue did indeed have a negative impact upon ethical spending and this effect was detectable even in the face of the increased background noise that is associated with taking such measures in a naturalistic context rather than in the lab.

The final chapter of the thesis integrates all of these empirical results and considers their potential implications, limitations and the directions that they offer for future research. The thesis concludes that under the specific circumstances, where consumers have some discretion over their spending, self-regulatory fatigue has a negative effect upon consumers' rates of ethical spending. The findings suggest that to fully understand ethical spending researchers are required to consider the economic, habitual and social psychological factors (such as attitudes and levels of self-regulatory fatigue) that may be involved. However, the relationship between self-regulation and ethical



behaviour, identified for the first time in the current research, represents an exciting finding and a potential building block for future research in this area.

## Contents

Abstract.....	3
List of tables and figure .....	15
Declaration .....	20
 Chapter One: Literature Review.....	 22
<i>The Attitude Behaviour Gap</i> .....	28
<i>External Influences on Ethical Consumption</i> .....	32
<i>Increasing the Predictive Validity of Attitude Models</i> .....	33
<i>Self-regulation and Ethical Spending</i> .....	35
<i>Self-regulatory Fatigue</i> .....	38
<i>Self-regulatory Fatigue and Impulsive Spending</i> .....	41
<i>Self-regulation Fatigue and Temporal Discounting</i> .....	42
<i>Self-regulation Fatigue and Socially Minded Behaviour</i> .....	44
<i>Conclusion</i> .....	45
 Chapter Two: Methodology .....	 48
<i>Experimental Manipulations of Ego Depletion</i> .....	48
<i>Relationships between self-regulatory fatigue and other constructs</i> .....	53
<i>Self-regulation Fatigue and Self Reported Measures</i> .....	54
<i>Measures of Ethical Behaviour</i> .....	56
<i>Qualitative Investigation into Most and Least Ethical Purchases</i> .....	57
<i>The Forest Game</i> .....	58
<i>More Realistic Measures of Consumer Spending</i> .....	60
<i>Online Supermarket Simulation</i> .....	60
<i>Real Life Spending Study</i> .....	66
<i>Summary</i> .....	68

Chapter Three: A Qualitative Analysis of the Principles Driving Consumer Spending .....69

<i>Background</i> .....	69
<i>Introduction</i> .....	69
<i>The Current Study</i> .....	72
<i>Methodology</i> .....	72
<i>Participants</i> .....	72
<i>Procedure</i> .....	73
<i>Results</i> .....	74
<i>Most and Least Principled Purchases</i> .....	74
<i>Animal Welfare Concern</i> .....	76
<i>Human Rights Concern</i> .....	76
<i>Environmental Concern</i> .....	78
<i>Less Familiar Forms of Ethical Consumption</i> .....	79
<i>Factors motivating and preventing ethical spending</i> .....	81
<i>Attitudinal Factors</i> .....	81
<i>Impulsive Purchase</i> .....	82
<i>Conclusion</i> .....	84

Chapter Four: Ego Depletion and the Tragedy of the Commons: Self-regulation

Fatigue in Public Goods Games .....85

<i>Background</i> .....	85
<i>Introduction</i> .....	86
<i>Self-regulatory Fatigue</i> .....	88
<i>The Present Study</i> .....	89
<i>Participants</i> .....	91
<i>Design</i> .....	91
<i>Materials and Procedure</i> .....	91
<i>Results</i> .....	94
<i>PANAS</i> .....	98
<i>Time Perspective and Intrinsic and Extrinsic Values</i> .....	98
<i>Discussion</i> .....	99
<i>Limitations</i> .....	100

	12
<i>Conclusion</i> .....	101
Chapter Five: .....	102
Self-regulatory fatigue and Willingness to Pay for Ethical Products.....	102
<i>Background</i> .....	102
<i>Introduction</i> .....	102
<i>Self-regulatory Fatigue and Willingness to Pay for Ethical Goods</i> .....	104
<i>Study One: Self-regulatory Fatigue and Willingness to Pay for Ethical Goods</i>	105
<i>Methodology</i> .....	107
<i>Design and Participants</i> .....	107
<i>Procedure and Materials</i> .....	107
<i>Results</i> .....	109
<i>Discussion</i> .....	110
<i>Study Two: Self-regulatory Fatigue and the Secretary Dilemma</i> .....	111
<i>Method</i> .....	112
<i>Participants</i> .....	112
<i>Design and Procedure</i> .....	113
<i>Results</i> .....	114
<i>Discussion</i> .....	115
<i>Conclusion</i> .....	117
Chapter Six: Self-regulatory Fatigue and Spending Upon Ethical Products.....	118
<i>Introduction</i> .....	119
<i>Self-regulatory fatigue and Ethical Spending</i> .....	121
<i>Study One</i> .....	123
<i>Methodology</i> .....	124
<i>Participants and Design</i> .....	124
<i>Materials and Procedure</i> .....	125
<i>Results</i> .....	126
<i>Discussion</i> .....	128
<i>Study Two</i> .....	129

	13
<i>Methodology</i> .....	132
<i>Participants and Design</i> .....	132
<i>Procedure</i> .....	132
<i>Results</i> .....	134
<i>Discussion</i> .....	139
<i>Study Three</i> .....	141
<i>Methodology</i> .....	142
<i>Results</i> .....	144
<i>Discussion</i> .....	145
<i>Study Four</i> .....	146
<i>Methodology</i> .....	147
<i>Participants and Design</i> .....	147
<i>Materials and Procedure</i> .....	148
<i>Results</i> .....	149
<i>Discussion</i> .....	152
<i>General Discussion</i> .....	154
<i>Future Directions</i> .....	155
<i>Conclusion</i> .....	157
 Chapter Seven: General Discussion .....	 159
<i>Summary of empirical findings</i> .....	160
<i>Chapter 3: Qualitative investigation of consumers' ethical choices</i> .....	160
<i>Chapter 4: The Forest Game</i> .....	160
<i>Chapter 5: Willingness to Pay Studies</i> .....	161
<i>Chapter 6: Online and In-store Shopping</i> .....	163
<i>Integration of empirical findings</i> .....	168
<i>Limiting the Negative Effects of Self-regulatory Fatigue upon Ethical Spending</i> ..	172
<i>Future Research</i> .....	174
<i>Conclusion</i> .....	177
 Appendix .....	 225
Manipulations of Self-regulatory Fatigue .....	225

	14
Article Manipulations .....	229
Original Scales.....	231
<i>Measures of Ethical Spending</i> .....	234
Additional Statistical Analysis .....	238
Reference.....	179

## List of tables and figure

Table 1: Self Reported Most and Least Ethical Purchases .....	75
Table 2: Number of Trees Remaining in the Forest (Common Pool) by Experiment Condition .....	95
Figure 1: Number of Trees Remaining in the Forest (Common Pool) Each Year by Group.....	96
Figure 2: Number of Trees Remaining in the Forest (Common Pool) by Experiment Condition – G2 Excluded .....	97
Table 3: Willingness to pay for ethical goods by condition (high vs. low self-regulatory fatigue).....	109
Table 4: Number of Chocolate Bars Considered by Self-regulation Condition (high vs. low self-regulatory fatigue) .....	114
Table 5: Total Spending on Ethically Branded Goods by Self-regulatory Fatigue Condition. ....	126
Figure 3: Total Spending on Ethically Branded Goods (Fair Trade, Organic, Free range/freedom food, Locally Sourced) by Self-regulatory Fatigue and Typical Spending (error bars represent standard error).....	127
Table 6 Total Spending on Ethically Branded Goods by Self-regulatory Fatigue and Article Condition .....	134
Figure 5: Simple Slopes Analysis of the Relationship Between Ego Depletion and Behavioural Intention with Relation to Ethical Spending .....	138

Figure 6: Simple Slopes Analysis of the Relationship Between Ego Depletion and frequency of previous ethical spending with relation to ethical spending .....	139
Table 8: Binary Logistic Regression - Ethically Branded Purchase Self-regulatory Fatigue and Mental Fatigue & PANAS – at Level of Shopping Trip .....	151
Table9: Ethically Branded Purchase by Self-regulatory Fatigue and Mental Fatigue, Food Budget, Frequency of Previous Ethical Spending & PANAS – at Participant Level .....	152
Figure 8: The White Bear Manipulation of Self-regulatory Fatigue .....	225
Figure 9: Attention Control Video Manipulation of Self-regulatory Fatigue .....	226
Table10: Self Report Measure of Mental and Self-regulatory Fatigue .....	227
Figure 10:Vowel Count Manipulation of Self-regulatory Fatigue .....	228
Figure 11: Article presented in Chapter Six Study Two .....	229
Figure 12: Article presented in Chapter Six Study Three .....	230
Table11: Items from Time Perspective Scale.....	231
Table 12: Items from Frequency of Previous Ethical Spending.....	232
Table 13: Items from Frequency of Previous Ethical Spending.....	233
Figure 13: Screen Shots taken from the Forest Game Experiment .....	234
Figure 14: Screen Shots taken from the Online Shopping Experiments .....	235



Figure15: Brands Featured in the Online Store.....	236
Figure 16: Online Store Schematic.....	237
Table15: Intrinsic and Extrinsic Values by Experimental Condition.....	238

### **Acknowledgements**

This thesis would not have been possible without my first supervisor Stephen Lea. He has acted as both a steady and reassuring influence throughout the research project. I am exceedingly grateful to him for his guidance and patience. I would also like to thank my various co-supervisors. Firstly, I would like to thank Tim Kurz for his in-depth feedback and support, which have helped to improve the quality of this written thesis. He has really gone beyond the call of duty. Secondly I would like to thank Peter Fischer who helped point me on the right path in the early days. Finally, I would like to thank Thomas Kessler for the philosophical insights he provided. These individuals have helped forge the outline of the research project and I am incredibly grateful for their help.

I would like to thank the third year project students (Emily and Courtney) who worked on third study in chapter six. I would also like to thank Eleanor O'Brien for some unexpected but highly welcome help. I would also like to thank my friends and family for providing me with immeasurable support and encouragement. Special thanks should go to Tobias Stephens, Bibiana Rojas, Dale Weston, Niklas Steffans and Lara Cox.

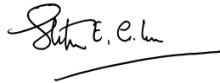
I would like to thank my son Noah for going to bed early giving me time to work on the thesis and my father in law Andrew Hutt for his advice and feedback.

Finally I would like to thank my wife Alice. She has been there for me throughout this

research project and has supported me more than anybody. I can't begin to tell her how instrumental in the process she was.

### **Declaration**

Chapters five and six of this thesis were published as papers at the IAREP / SABE conference 2009 and the IAREP/SABE/ICABEEP 2011 conference as part of conference proceedings. Stephen Lea has aided the research project via theoretical discussions, he has advised on relevant literature, statistical analysis and writing. Stephen Lea and Tim Kurz have read and commented on each chapter of the thesis. The candidate has however, taken the lead role in the research - preparing the literature review, designing and conducting experiments, running statistical analysis and the ultimate write up.

A handwritten signature in black ink, appearing to read 'Stephen E. Lea', with a horizontal line underneath.

Professor Stephen Lea

Dr Tim Kurz

“The only way to get rid of a temptation is to yield to it”

(The Picture of Dorian Gray. Oscar Wilde 1890)

## **Chapter One: Literature Review**

### **Ethical Consumption**

Human existence is marked by a profound duality. On the one hand we feel a strong desire to follow our immediate urges and yearnings. On the other, we are aware that many of the activities that bring us the greatest short term pleasures such as drinking, gambling and over-eating may prevent us from reaching our long term goals. As any connoisseur of children's cartoons can tell you, on our left shoulder sits a devil telling us to indulge our every desire, on our right shoulder sits an angel begging us to consider our actions. This review will argue that there may be some merit to this popular characterisation.

Human beings have both a rational and an impulsive side, which frequently stand in conflict. Controlling our urges is not always an easy task, with people experiencing serious difficulties in exercising restraint with regards to their own behaviour. As this review will illustrate, this internal battle is psychologically costly and frequently won by our impulsive side. One domain in which the battle between impulse and self-control is potentially fought is within the realms of consumer behaviour. Over the past few decades it has become evident that western consumers' relationships with material goods have radically altered. The act of consumption has moved well beyond being solely concerned with satisfying basic human needs, to become a means of expressing our beliefs, aspirations and identity (Belk, 1988). Consumer desire is not solely fuelled

by feelings of necessity but also by the ways in which products and the act of purchasing makes us feel (Dittmar & Drury, 2000). Even essential purchases, such as food, have become concerned with far more than mere nutritional value and sustenance. Unfortunately, humankind's wants are infinite whilst our resources remain very much finite. As the quotation from Porritt below illustrates, the potential ramifications of our consumption patterns are immense.

“Fascism. Communism. Democracy. Religion. But only one has achieved total supremacy. Its compulsive attractions rob its followers of reason and good sense. It has created unsustainable inequalities and threatened to tear apart the very fabric of our society....it is consumerism.” Jonathon Porritt (Sunday April 8, 2007 The Observer).

Human societies potentially consuming more than what they can sustainably produce is not a new phenomena. The ancient Egyptians, Babylonians and Romans all consumed beyond their basic needs, resulting in environmental damage and conflict (Winter & Cava, 2006). But while it may be true that humankind's desires have always outweighed what can be sustainably produced, the industrial revolution and its production techniques has led to consumption and environmental damage on a previously unknown scale (Winter & Cava, 2006).

As the global population grows, the environmental, social and animal costs of consumption are also set to increase (Engelman, Halweil, & Nierenberg, 2002). The problem is exacerbated by the fact that population growth is predicted to be highest in

developing nations with burgeoning desires for high-end consumer products (Csikszentmihalyi, 1999; Diener, Suh, Lucas, & Smith, 1999; Noorman & Schoot Uiterkamp, 1998; Stern, Dietz, Ruttan, Socolow, & Sweeney, 1997). Economic growth can bring security, health and comfort to society's citizens, making it an understandable aspiration for developing nations (Csikszentmihalyi, 1999; Diener, Suh, Lucas, & Smith, 1999). However, economic prosperity is often synonymous with environmental damage, animal suffering and abuse of human well-being (Noorman, Schoot, & Uiterkamp, 1998; Stern, Dietz, Ruttan, Socolow, & Sweeney, 1997).

In recent years there has been a marked increase in concern about the social and environmental impacts of consumer culture (Cooperative Bank 2011; Thøgersen, 2005). As a result of increased media coverage and well-organised awareness campaigns, an increasing number of consumers are gaining an appreciation of the negative externalities that accompany the act of consumption. As a result of this awareness, an increasing number of shoppers are joining the ethical consumption movement. Ethical consumption involves the purchase of products that stress their ethical credentials and the boycotting of companies that fail to meet their moral standards (Thøgersen, 2006).

### *Definitions of Ethical Consumption*

The first known use of the term "ethical consumption" coincided with the launch of the Ethical Consumer magazine in 1989. The Ethical Consumer magazine was initially launched with the explicit aim of educating readers and encouraging consumers to limit



the human, social and environmental impacts of their spending. Ethical consumption allows consumers to express their moral values by supporting companies that meet their underlying ethical standards and by boycotting those who do not (Thøgersen, 2005; Shaw, & Shui, 2002). However, in spite of its prominence within popular discourse, ethical consumption remains poorly defined within academic disciplines (Auger et al., 2003; Shaw & Connolly, 2006).

Definitions of 'ethical consumption' range from the vague (e.g. ethical is defined by the consumer) to the overly prescriptive (e.g. a list particular of products which could be considered as ethical). The inherent difficulties associated with defining the concept stem from the fact that the range of concerns falling under the title of ethical consumption is wide and dependent upon an individual's moral position (Craig-Lees & Hill, 2002; Newholm, 2005). According to mainstream understanding, ethical consumption involves favouring businesses and products that are perceived to be for the greater good, such as fair trade, recycled, free range, organic, or locally produced). Ethical consumption is frequently depicted as being synonymous with the notions of anti-consumption and voluntary simplification (Shaw & Newholm, 2002). However, in contrast to these movements, ethical consumption does not explicitly reject the act of consumption. Rather, it merely aims to switch consumers' current spending patterns such that they buy less problematic or damaging versions of the same products.

This thesis will primarily focus upon the issues most commonly associated with the notion of ethical consumption, including human wellbeing (e.g. worker treatment, fair trade, racial and gender discrimination), environmental sustainability (e.g. organic,

genetically modified food, energy saving products, locally sourced), and animal wellbeing (e.g. animal testing, free range). As chapter three will show, these are not the only issues UK consumers consider as ethical but they constitute what the mainstream consider to be ethical spending and mirror what has studied academically.

### *A Brief Introduction to Products*

#### *Commonly Associated with Ethical Consumption*

Perhaps no cause is more closely identified with ethical consumption than that of 'Fair Trade'. The primary objective of the fair trade movement is to bring improvements in living standards of workers in developing nations via the mechanism of equitable international trade (Fair Trade Federation, 2009; Raynolds, 2000, 2009; Raynolds, Murray, & Taylor, 2004; Bryant & Goodman, 2004). The origins of Fair Trade are found in the Mennonite Central Committee in the USA, who, during the 1940s, imported the work of artisans in developing nations to the US with the explicit aim of selling goods and returning the profits directly to the producers (Fair Trade Federation, 2010).

The European Fair Trade Association (EFTA) was born in 1987, with the International Fair Trade Association being founded in 1989 (now rebranded as the World Fair Trade Organization and the World Fair Trade Federation). In 2008 the annual market for Fair Trade was valued at approximately US\$2 billion (Raynolds, 2009; Fair Trade Federation, 2009). In the UK 20% of all coffee currently sold is Fair Trade certified.

Moreover, Cafe-direct (a brand that only sells Fair Trade products) is now the 5th largest coffee supplier in the UK (Cafédirect, 2010).

Another movement typically associated with ethical spending is the organic produce movement. The term organic was first used by Lord Northbourne in 1940, who used the term to describe a system of farming that was firmly opposed to the rapid industrialisation occurring at the time. Today, the term organic refers to a method of production free of pesticides, antibiotics, genetic modification and chemical fertilizers. Organic products claim to deliver a number of potential environmental benefits, including using less energy and avoiding the potential damage to ecosystems, plants and animals associated with pesticide use. An issue frequently related to organic produce is the purchasing of locally produced goods. The local food movement aims to increase consumers' reliance on goods produced in the local community. The objective of such behaviour is to help limit the environmental damage caused by transporting food over large geographical areas by supporting local producers and communities. The term 'food miles' refers to the distance food is transported and is a key consideration when assessing the environmental impact of food production (Paxton, 1994; Pretty, Ball, Lang, & Morison, 2005). Current estimates suggest that 12% of emissions caused by food provision can be directly attributed to transportation. Cutting the emissions associated with food transportation therefore holds the potential to have large-scale environmental benefits. The local food movement is not without criticism however. For example the Department of Environment and Rural Affairs (DEFRA, 2008 ) has suggested that importing tomatoes from Spain may actually have a lower environmental impact than growing them in the UK, once the energy use of building,

maintaining and powering heated greenhouses is considered. DEFRA have also argued that small producers often lack efficient distribution networks required to transport food efficiently, resulting in more frequent transportation and greater net carbon emissions.

The thesis will also focus upon free range / freedom food products. The term free range describes a system of farming husbandry where animals are not confined and have extensive access to outdoor space. With regard to poultry farming, UK free range standards include open-air runs and having a poultry density of less than 2500 hens per hectare. Free range eggs account for 28% of all egg production in the UK, compared to 4% produced in barns and 6% organic (with the remainder involving battery hens). There are currently no European Union Regulations regarding classifying non-poultry products as free range which UK regulation would be required to implement. However, within the UK, pork can only be described as being Free Range if sows are kept in outdoor grounds and provided with straw bedding for rooting and bedding. Currently 40% of UK pigs can be considered free range.

### *The Attitude Behaviour Gap*

At face value the ethical consumption movement has been incredibly successful, with there being little doubt that in recent years the market for ethical products has grown rapidly (Berry, & McEachern, 2005; Bray, Jones, & Kilburn 2010). A longitudinal study by the Co-operative Bank showed that sales of ethical goods within the UK have nearly tripled since 2000, reaching £46.7 billion in 2010 (the Co-operative Bank's survey has been treated as being authoritative cited within ethical consumer literature

e.g. Carrigan & De Pelsmacker 2009). During this period the global annual sales of Fair Trade certified products nearly tripled, increasing from €832m to €2,381 m (Krier, 2008). However, the market share for ethical goods still represents a minority of purchases.

The study of ethical consumption behaviour has drawn heavily from mainstream social psychology and consumer research. Notably, over half of all psychological investigations into ethical spending focus upon consumers' attitudes (Fukukawa, 2003; Fransson & Gärling, 1999). Andorfer and Liebe (2012) conducted a review of empirical papers exploring consumers' purchasing of Fair Trade certified products. The review explored 51 publications and concluded that empirical research in the area was dominated by social psychological approaches. These studies could be roughly divided between those studies focusing on social demographics and those exploring consumers' values, primarily via modified versions of Ajzen's (1991) Theory of Planned Behavior (TPB).

In the broadest sense, attitudinal models argue that individuals hold general values that lead to specific attitudes, which, in turn, help us form behavioural intentions and ultimately guide our behaviours (De Pelsmacker & Janssens, 2007). Whilst attitudes and behavioural intention are closely related, the relationship between intention and behaviour is not as reliable as might often be assumed (Stern, 2000). It has been argued that one of the most effective ways of increasing ethical behaviour is to increase positive feelings towards ethical action (Kaiser, Wolfing, & Fuhrer, 1999; Fransson & Garling 1999). A large body of literature has argued that attitudes are a crucial precursor to a range of spending behaviours (Bogers et al., 2004; Dreezens et al.,

2005). It is however, somewhat simplistic to assume that all ethical purchases are result of a heightened awareness of ethical issues. Issues such as fashion, health concern and personal preference will undoubtedly also influence consumer behaviour. Therefore, one can not argue that ethical purchase is not motivated solely by personal taste. Likewise, ethical purchasing can happen for reasons other than purely altruistic ones, including warm glow (Andreoni, 1989, 1990), social approval (Hollander, 1990), and signalling about income (Glazer & Konrad, 1996). However, it seems reasonable to argue that when personal taste and an understanding of the ethical impacts of spending align that ethical spending is more likely to occur.

The majority of studies exploring ethical spending attitudes have utilised the Theory of Reasoned Action (TRA) or its extension, the Theory of Planned Behaviour (TPB) (Ajzen, 1991; Bamberg & Schmidt, 2001; for an overview, see Kasier et al., 2005). According to the TPB, attitudes towards the behaviour, subjective norms and perceived behavioural control predict behavioural intention and behavioural intention, in turn, predicts actual behaviour. These two models have been repeatedly used in order to predict consumer's spending and ethical choices (Bogers, Brug, van Assema & Dagnelie, 2004; Carrington, Neville, & Whitwell 2010; Chatzidakis, Hibbert, & Smith, 2007; Kaiser, Hubner, & Bogner, 2005; Smith & McSweeney, 2007; Vermeir & Verbeke, 2008). However, despite its widespread use the theory of planned behaviour is far from a perfect predictor of ethical spending.

In developing the Theory of Planned Behaviour, Ajzen, (1985) added the concept of 'perceived behavioural control' (PBC) to the variables already within the Theory of

Reasoned Action (attitudes towards the behaviour and subjective norms). The concept of perceived behavioural control was introduced in order to better account for the variance between intention and behaviour. However, even Ajzen et al. (2004) warn that researchers should be cautious when using behavioural intention as a proxy for actual behaviour. People commonly overestimate their abilities to control their behaviour and therefore do not accurately predict the degree that external and situational factors may exert influence over their behaviour (Davies et al., 2004; Kidwell & Jewell, 2003; Vitell, 2003).

Armitage and Conner (2001) conducted a meta-analysis of research that had utilised the theory of planned behaviour (across all fields). The analysis revealed that the theory of planned behaviour accounted for only 39% of behavioural intention and 27% of actual behaviour. In updating Hines, Hungeford and Tomera's (1987) meta analysis, Bamberg and Moser (2007) found that within the field of environmental behaviour the theory of planned behaviour only accounts for only 27% of variance in environmental behaviour. Whilst it is true that some studies may be better designed or include better predictors than others, such findings suggest that it is necessary to consider the effects of other factors beyond just those of the TPB when theorising about consumer behaviour.

Whilst one third of consumers describe themselves as ethical spenders, only 1-3% of products purchased are Fair Trade (Cowe & Williams, 2000). It appears that whilst the majority of consumers are willing to announce their support for causes such as Fair Trade when questioned, in the relative privacy of the supermarket aisle they are less

willing to pay for their moral principles (Auger et al., 2003, 2007; Carrigan & Attalla, 2001; Page & Fearn, 2005). This divergence has led many researchers to express concerns over the divergence between attitudes and behaviours (Carrington, et al., 2010; Thøgersen & Ölander, 2006, Organisation for Economic Co-operation and Development, 2004). The discord between attitude and behaviour has been referred to as the ‘ethical purchasing gap’ or more generally, as the ‘attitude–behaviour gap’ (Auger & Devinney, 2007; Clayton & Brook, 2005; Cowe & Williams, 2000; Cotte & Trudel, 2009; Vermeir & Verbeke, 2006). Explaining the disparity between attitudes and behaviours is thus a high priority for researchers in this domain (Auger & Devinney, 2007; Carrigan & Attalla, 2001; Carrington, et al., 2010).

### *External Influences on Ethical Consumption*

When discussing the factors that can prevent consumers from engaging in ethical consumption, economists have naturally focussed on external factors such as price, earnings and socioeconomic characteristics. Ethical products can cost more to produce for various reasons, including minimum price guarantees and lower yields associated with less intensive farming practices. The increased production cost of ethical goods has frequently translated to higher retail price tags (De Pelsmacker et al., 2005). It is clear that ethically branded goods and services frequently carry a price premium in excess of any associated increase in quality perceived by the consumer (Auger, Burke, Devinney & Louviere, 2003; Fotopoulos & Krystallis, 2002; De Pelsmacker et al., 2005; Thøgersen & Ölander, 2006). Such high price tags can be prohibitive, even if individuals identify with the principles associated with ethical spending (Carrigan &



Attalla, 2001).

According to Belk et al., (2005), the majority of consumers prefer competitive pricing to prices that incorporate the moral and ethical dimensions of the provision of the product. Research has illustrated that although consumers are prepared to pay slightly more for ethically branded products the acceptable premium is frequently below the actual elevation in price of ethically branded products (De Pelsmacker et al., 2005; Blend & Van Ravenswaay, 1999; Trudel & Cotte, 2008). However, it is clear that ethical spending has increased in recent years in spite of the supposedly prohibitive price tags. Therefore, whilst price is clearly an important determinant of ethical spending, it is not the only issue that needs to be considered. Falguera, Aliguer and Falguera (2012) argue that the complexity of ethical consumption requires an integrated approach, linking psychological and economic research. An approach bringing together both economics and psychology can potentially be of benefit to the field of ethical consumption through the examination of the ways in which individual utility maximisation might interact with more psychological variables such as attitudes and social norms.

#### *Increasing the Predictive Validity of Attitude Models*

One strategy for increasing the predictive validity of attitudinal models is to incorporate additional factors into the models. These additions have included moral norms (Arvola et al., 2008), personal values (Vermeir & Verbeke, 2008), perceptions of ethical obligation (Shaw, Shiu & Clarke, 2000; Ozcagalar Toulouse et al., 2006) and altruistic and biospheric concerns (De Groot & Steg, 2007). Bamberg and Moser's

meta-analysis (2007) found that in studies where moral norms were included, 52% of variance in behavioural intention was explained.

Shaw (Shaw & Shiu, 2003; Shaw et al., 2000) has worked extensively on the establishment of a comprehensive model of ethical spending that incorporates notions such as obligation and identity. In order to increase the predictive power of the Theory of Planned Behaviour Shaw et al. (2000) and Ozcaglar-Toulouse et al. (2006) extended the model to include feelings of ethical obligation and, later, self identity (Shaw et al., 2000). The term ethical obligation refers to an individual's personal moral beliefs and the accompanying sense of duty to act accordingly. The explanatory power of the Theory of Planned Behaviour increases when self identity and ethical obligation are incorporated into the model (Ozcaglar-Toulouse et al., 2006; Shaw et al., 2000). Shaw and Clarke (1999) used their extended model of the Theory of Planned Behaviour in order to explain belief formation and Fair Trade buying intentions. Their findings showed that behavioural control and internal reflections (subjective norms, ethical obligations, attitudes towards fair trade and self identity) actually held equal importance in determining ethical purchasing intentions.

The incorporation of variables such as moral norms, personal values and ethical obligation and has helped increase the predictive validity of attitude models of ethical behaviour. However, whilst each of these inclusions is beneficial, a high proportion of variance in ethical purchasing behaviour still remains unexplained (Shaw et al., 2005). Even with these additions, attitude models can be criticised for the assumption that an individual's conscious cognitive intentions or perceptions will directly determine their

behaviour. It has been argued that this kind of assumption may be an oversimplification of how such behaviours play out in reality (Morwitz et al., 2007; Fukukawa, 2003). Morwitz et al., 2007 argued that intentions hold low predictive validity when behaviours are not firmly established, when the goods in question are non durable and when there are long term consequences.

Ethical intentions still do not generally translate into shopping baskets full of ethically branded products (De Pelsmacker et al., 2005; Cotte & Trudel, 2009). Whilst attitudes and intentions most likely do represent key drivers of ethical spending, the argument being made here is that research has frequently oversimplified the complex journey from intention to behaviour. It is our argument that these models could be strengthened if further consideration was paid to the complex processes that allow our intentions to be realised (or not) in our overt behaviours. Between establishing the intentions of action and the actual act of purchase, many things can deter consumers from reaching their intended goals. Belk (1975) outlined a number of situational factors that influence consumer spending. Most interestingly for this current review, Belk identified that antecedent states (individual momentary internal states), could have an impact upon rates of spending. These states include mood, tiredness and illness. The remainder of this review will argue that self-regulatory fatigue represents a momentary internal state that may lower consumers' tendency to engage in ethical spending.

### *Self-regulation and Ethical Spending*

As previously mentioned, human existence is marked by a duality between our biological, hedonic side and our more rationale side. On the one hand we are biological

animals whose responses are emotive, reactive, hedonic and impulsive (Hofmann, et al, 2009; Loewenstein, 1996). The flip side of our humanity is rational, calculating and strategic. Freud (1926) famously outlined this duality in his description of the battle between the id and the ego. Freud described the id as an entity solely concerned with hedonism and serving the pleasure principle. In contrast the superego is described as being our spiritual and moral side. Frequently these id and superego come into conflict, with the role of the ego being to balance the scales through rational control.

Since Freud's work, psychologists have developed numerous dual-systems models of how individuals deal with their impulsive urges (Strack, Werth, & Deutsch, 2006). The Reflective Impulsive Model (RIM) is one of the most widely used models of this type. The RIM argues that there are two systems that underlie human behaviour; firstly, an impulsive system for spontaneous action and a second, more reflective, system. The impulsive side involves automatic behaviour cued by environmental stimuli (Metcalf & Mischel, 1999; Strack et al., 2006). The reflective system is more complex and serves our self-control by representing our long-term goals and generating explicit judgments (Strack et al., 2006). Whilst both systems have a direct determination over our behaviour, the two systems can occasionally come into conflict (Hofmann et al., 2009; Strack et al., 2006). In such situations the reflective side has the capacity to take control and restrain our impulsive side.

The process of restraining our impulsive urges is frequently referred to as self-regulation (Baumeister, Bratslavsky, Muraven, & Tice, 1998). Self-regulation allows individuals to resist temptation and meet their longer-term goals, and as such can be

considered as being a cornerstone of the human condition. Our reflective side uses self-regulatory techniques such as inhibiting impulses, managing emotions and suppressing unwanted thoughts, in order to curtail our impulsive desires (Bagozzi, 1992; Baumeister, 2002; Baumeister et al., 1998; Baumeister, Sparks, Stillman, & Vohs 2008). Individuals with the capacity to successfully rein in their impulsive side are said to have high levels of trait self-control. These individuals have been found to be more likely to enjoy good interpersonal relationships, suffer fewer psychological problems and have higher levels of self-esteem (Tangney, Baumeister, & Boone, 2004).

Self-regulation can fail however, and can do so for a number of reasons. Firstly, individuals may under-regulate their behaviour due to a lack of clear, consistent standards (e.g. a consumer does not have clear moral beliefs about which products they should and should not be purchasing). Secondly, individuals may fail to monitor their own actions and may be unaware that they are acting in an impulsive manner (e.g., a consumer does not think about their moral beliefs whilst shopping and is therefore unaware that their purchasing is violating an underlying belief). Thirdly, they may fail due to what is referred to as self-regulatory fatigue (Baumeister et al., 1998). It is this final source of failure, and its potential role in ethical spending, that will be the focus of this thesis. This should by no means be taken as indication that research into failure to monitor or consistent standards is not also important. However one can argue that that a body of work in social psychology, whilst not conducted under the title of consistent standards, already explores the best ways to provide consumers with understandable information (Andorfer and Liebe 2012). Therefore, this thesis aimed to explore the relatively less explored question of how self-regulatory fatigue might

influence consumers' tendency to engage in ethical purchasing.

### *Self-regulatory Fatigue*

The concept of self-regulatory fatigue (or 'ego depletion') was first developed by Baumeister and colleagues as a means to explain individuals' seeming inability to resist temptation (Baumeister, 2002; Baumeister et al., 1998; Vohs & Heatherton, 2000; Vohs, Glass, Maddox, & Markman, 2011). According to the strength model of self control, self-regulation requires some kind of internal cognitive resource to fuel it. However, this fuel is finite and diminishes with use. Therefore, self control is a limited resource in the same way that one might think of our physical (e.g., muscular) strength as being limited (Baumeister et al., 1998; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Muraven, Shmueli, & Burkley, 2006; Robinson, Schmeichel, & Inzlicht, 2010).

Current research suggests that the fuel required for self-regulatory is blood glucose - the brain's principal source of fuel (Gailliot, 2008). Self-control requires substantial quantities of glucose, resulting in lower levels of blood glucose in the bloodstream following extended periods of self-regulation. As blood glucose diminishes, individuals find themselves in a state of ego depletion or self-regulation fatigue. People are aware on some level of the scarcity of self-control and will make efforts to preserve this capacity for situations that truly merit it (Muraven et al., 2006). As blood glucose diminishes, individuals begin to limit all nonessential cognitive expenditure (Muraven et al., 2006). One nonessential process may be self-control.

Regulating behaviour requires cognitive exertion whilst thinking in a short term

egocentric way is nearly automatic (Street, Douglas, Geiger, & Martinko, 2001). Self-regulation fatigue can thus result in impulsive behaviour and the inability to resist further temptation (Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). According to Baumeister et al. (1998), engaging in self-regulation depletes a specific resource that is drawn upon by all such acts of self-regulation. As a result, fatigue has a carryover effect such that regulation in one activity reduces the ability to regulate subsequent behaviours, even in cases where the two behaviours might seem relatively unrelated in terms of content or context (Baumeister, 2002). Individuals in a state of self-regulatory fatigue tend to be focused on making quick decisions in order to conserve energy, rather than with making choices that are necessarily the most effective in the longer term (Pocheptsova, Amir, Dhar, & Baumeister, 2009). Acting in a more automatised manner helps conserve energy and does not deplete blood glucose in such a dramatic way (Baumeister et al., 1998). Evidence supporting the theory that self-regulatory fatigue is caused by a depletion of available blood glucose comes from research showing that consuming sugar rich products, such as lemonade, restricts the effects of self-regulatory fatigue (Gailliot, 2008; Masicampo, & Baumeister, 2008). This is not, of course, to say that automatic processes are inherently problematic - indeed they are actually crucial to the extent that their use leaves spare capacity for other executive activities (Lieberman, 2007).

Effective self-regulation requires judicious application of both automatic and controlled processing. Automatic processes should be used in the majority of situations with controlled processes being used when automated processes may result in error. However, self-regulatory fatigue interferes with the fine balance between automation

and control (Hofmann et al., 2009). It is however, important to note that whether a behavioural process can be considered an error is highly subjective. For example, if it were automatic for consumers to always buy the cheapest alternative then this may be beneficial for the bank balances of individual consumers, but may be suboptimal in terms of impact upon the wider society.

Hofmann, Schmeichel and Baddeley (2012) found that self-regulation has a negative impact on a variety of executive functions (working memory operations, behavioural inhibition and task switching). Building on this literature, we suggest that if an individual is cognitively drained they will make decisions on the basis of the simplest possible dimension. It would be fair to say that in the UK context supermarkets make prices highly salient while the ethical components of purchase are not as widely publicised. Therefore, we predict that consumers under fatigued conditions would focus more upon simple issues like price and less upon ethical considerations.

It is also possible that self-regulatory fatigue impinges upon people's ability to monitor their own behaviour and detect that their current behaviour may prevent them from reaching their long-term goals. Self-regulatory fatigue has been shown to impair tasks with high fluid intelligence loadings (such as the graduate record exam) and may impair the working of the central executive (Schmeichel, Vohs, & Baumeister, 2003). The central executive is conceived as a supervisory agent responsible for information processing, monitoring behaviour and the distribution of cognitive resources. The central executive is therefore an essential component of decision-making and goal-directed behaviours (Schmeichel et al., 2003). Corresponding neurological evidence



suggests that effortful behaviour depletes the neural systems associated with monitoring the conflict between our current actions and our future goals (Inzlicht & Gutsell, 2007). Therefore, consumers under conditions of regulation fatigue may be unaware that their current behaviours are preventing them reaching their own long-term goals or the longer-term goals of wider society.

### *Self-regulatory Fatigue and Impulsive Spending*

Self-regulatory fatigue has been linked with increased rates of impulsive spending (Vohs & Faber 2007). Vohs and Faber (2007) gave participants \$10 after completing a self-regulation fatiguing manipulation and told them that they could either leave with the money or spend it in the bookstore. For those with high impulsivity, self-regulatory fatigue resulted in higher purchasing in the store, which the authors argue was impulsive because it could not have been planned prior to the experiment. Ethical consumption in many ways represents the opposite of impulsive spending. Impulsive spending is characterized by unregulated and self-serving actions that are focused on short-term outcomes (Dittmar & Drury, 2000). Ethical spending, by contrast, is characterized by socially minded and highly regulated behaviours that are more focused on the longer term (Gattig & Hendrickx, 2007). One may therefore predict that the factors that increase the rates of impulsive spending may also have a negative relationship with ethical spending. Given that self-regulatory fatigue is one factor with a known positive relationship with impulsive spending, it may be hypothesised that it could also have a negative relationship on ethical spending.

Research on spending disorders has indicated that compulsive shoppers use the act of

purchase in order to bolster self-esteem and, in turn, to enliven mood (Belk, 1998; Dittmar & Drury, 2000). One may therefore argue that, like compulsive spending, impulsive spending is also partly driven by the mood-regulating properties that the shopping experience provides. Even though consumer spending can temporarily enliven mood, it can also result in long-term costs such as unwanted purchasing and long-term financial problems (Dittmar & Drury, 2000). The thesis will concentrate on grocery shopping, primarily due to responses collected in an exploratory qualitative study presented within chapter three that showed the strength of the association between principled purchasing and grocery shopping. The phenomenon of comfort eating suggests that food can be used as a mood regulating activity, therefore it is logical to suggest that the purchase of food may also impact mood. When considering emotions and self-regulation we need to make a distinction between immediate affect and anticipated emotion (Loewenstein, Read, & Baumeister, 2003). Our short-term automatic behaviours are rooted in our immediate emotions, whereas our regulating side is more focused upon projections of our future wellbeing or anticipated feelings of remorse. Whilst ethical goods can be purchased as the result of impulse, one might argue that ethical purchasing is primarily motivated by considering the moral aspects of spending. The following discussion section will summarize the reasons why individuals in a state of self-regulatory fatigue may have difficulties in considering the future.

#### *Self-regulation Fatigue and Temporal Discounting*

Due to the aforementioned high price of ethical goods, engaging in ethical spending will result in short term financial loss but, in the long-term, society more generally will

profit. Non-ethical spending is similar to behaviours such as drug use and the accumulation of credit card debt in the sense that it offers short-term benefits but also incurs long-term costs. Ethical spending therefore involves balancing benefits that are certain, immediate and personal (e.g., saving money) against benefits that are far from certain, likely to happen in the future and whose benefits will be shared with others (Gattig & Hendrickx, 2007). Thus, ethical spending can be considered as being an example of both an inter-personal and inter-temporal choice (Loewenstein et al., 2003). With this in mind, we can see that ethical spending presents consumers with two underlying dilemmas: firstly a choice between current benefits and future benefits and, secondly, the choice between the self and others (Milfont & Gouveiac, 2006).

Consumers are remarkably bad at making choices with a temporal dimension due to smaller and immediate payoffs often being preferred over waiting for future rewards (Loewenstein et al., 2003). Previous research has also indicated that short-term horizons are associated with a number of economically misguided behaviours, such as incurring debt (Lea, Webley, & Walker, 1995). Previous research has indicated that cognitive load increases participants' rates of temporal discounting (Ebert, 2001).

Whilst the cognitive mechanisms that determine discount rates are unclear, it seems logical to suggest that ego depletion may be one factor influencing this process given that transcending the present and picturing the future (episodic future thought) is a task of considerable cognitive difficulty (Atance & O'Neill, 2001; Szpunar, 2010; Suddendorf & Corballis, 1997) and therefore may not be possible at times of fatigue. Hinson, Jameson & Whitney (2003) argued that discount rates (the amount that individuals discount the importance of future needs and events) might be directly

related to working memory deficiencies. Individuals scoring highly on the consideration of future consequences scale (CFC) have been found to have a better buffer against self-regulatory fatigue than those with a low score on the scale (Joireman et al., 2008). This leaves open the possibility that self-regulatory fatigue effects are at least partially due to a narrowing of time horizon. I therefore argue that self-regulatory fatigue should result in short-term focused behaviour and, in this case, non-ethical spending.

### *Self-regulation Fatigue and Socially Minded Behaviour*

In the following section I will make the argument that in addition to its potential effects on shortening of time horizons, self-regulatory fatigue may also have a negative impact upon participants' ability to consider the social dimensions of spending, due to the fact that considering others' point of view requires different cognitive process than required for self-focused thought (Ames, Jenkins, Banaji, & Mitchell, 2008; Davis et al., 2004). According to the self-control literature, one of the primary drivers of self-regulation is our desire for social acceptance (Ryan & Deci, 2000). Individuals' personal desires frequently run contrary to what is best for the wider group and thus self-regulatory processes are crucial in achieving group cohesion and efficient social functioning. Individuals who are pro-socially minded are more likely to exercise self-control on a regular basis and therefore can increase their capacity for self-control (Seeley & Gardner, 2003; Balliet & Joireman, 2010). According to Moore and Loewenstein (2004), acting in a self-interested way is (for the majority of people) nearly automatic and frequently unconscious, whilst considering the needs of others is more cognitively demanding. It has also been shown that individuals who are typically socially-minded

begin to adopt a more self-focused perspective when in a state of self-regulatory fatigue (Balliet & Joireman, 2010). In short, self-regulatory fatigue results in individuals falling for the temptation of self-serving behaviour (Alberts et al., 2007; Baumeister, 2002; Baumeister & Vohs, 2007; Vohs & Faber, 2007). Therefore, one might postulate that under conditions of self-regulatory fatigue consumers should make more impulsive, short-term, self-serving and non-ethical purchases.

This approach has much in common with the goal framing approach. According to Lindenberg and Steg (2007), consumers hold a number of different goal frames that influence their spending behaviour. Goal frames are general mental states that lead individuals to tailor their behaviour in order to meet their goals. At different times consumers can be in either a normative goal frame (which involves intending to act in a socially acceptable manner) or in a hedonic goal frame (in which the individual becomes primarily concerned with raising current mood). Individuals in a hedonic frame make decisions on the basis of current mood, which may reduce the likelihood of ethical spending. Individuals in a hedonic goal frame are primarily concerned with their current desires and tend to be less consciously aware of the wider impacts of their behaviour. This thesis builds on this argument by suggesting that the frame people are in may be greatly dependent on their availability of cognitive resources. Specifically, I argue that self-regulation fatigue will result in a more hedonic behaviour.

### *Conclusion*

This chapter has set out the argument that ethical spending is characterised by both social consideration and a long-term perspective. Self-regulatory fatigue has been

shown to make individuals both self-serving and focused upon the short-term. In light of this, I have argued that self-regulatory fatigue will prevent individuals from considering the long term and social impacts of their spending and, consequently, will lead to reduced spending on ethically branded products. The research aims of this thesis are therefore:

- 1) to explore the conditions under which self-regulatory fatigue will result in individuals acting in a more self-serving and short term manner,
- 2) to explore whether self-regulatory fatigue results in a lowered tendency to purchase ethically branded products, and
- 3) to explore whether self-regulatory fatigue lowers the extent to which ethical behavioural intentions predict ethical spending.

Chapter two of the thesis will set out the methodological underpinnings of the research project. Chapter three will present a qualitative investigation into what purchases consumers consider most and least ethical purchases. Chapter four presents an empirical study investigating the relationship between self-regulation fatigue and economic behaviour within a resource dilemma game. In Chapter five, two experiments will be presented that explore participants' willingness to pay for ethical goods whilst in a state of ego depletion. Chapter six will present four studies exploring participants' spending on ethically branded products using an online supermarket and within real life stores. Finally, Chapter seven summarizes and integrates the findings

from previous chapters and discusses the theoretical and practical implications of the research project as a whole.

## **Chapter Two: Methodology**

A number of different methodologies were used in order to investigate the proposed relationship between self-regulatory fatigue and ethical spending. This chapter will begin with a discussion of the manipulations of self-regulation fatigue utilised within the thesis before discussing the techniques developed during the research project in order to measure consumers' ethical spending in an ecologically valid manner.

### *Experimental Manipulations of Ego Depletion*

When establishing the theoretical grounding of the concept of ego depletion (self-regulatory fatigue) Baumeister et al., (1999) utilised a number of differing tasks to manipulate ego depletion. One of the problems with self-regulatory fatigue is that although the theory is commonly used, its operationalisation remains poorly defined. It is therefore possible that the various manipulations of self-regulatory fatigue may in fact have distinct and separate impacts upon behaviour that are driven by slightly different mechanisms. Since the differences between these various manipulations have not been systematically investigated, it is difficult to produce an accurate account of the strengths and limitations of each type of methodology. It is possible that as the processes underlying self-regulatory fatigue are further explored empirically, the concept may fragment into a variety of distinct but related concepts. It was decided to primarily utilise widely used methodologies to manipulate self-regulation fatigue. One advantage of using tried and tested methodologies is the ability to ensure that our



findings are compatible with the largest possible range of papers published under the banner of self-regulatory fatigue.

The most widely known technique we utilised within the thesis was the classic “white bear” paradigm (Fischer, Greitemeyer, & Frey 2007; Muraven & Baumeister, 2000; Wegner et al., 1987). The paradigm features two experimental conditions, with participants divided equally between the low and high self-regulatory fatigue conditions. In the task, all participants were asked to imagine walking through a zoo. As they did this, they were instructed to write down every animal that they encountered. However, in the high self-regulatory fatigue condition participants were specifically asked not to think about a white bear. The instructions were specifically designed in order to ensure that white bears were frequently mentioned in order to make suppression extremely difficult (see appendix figure 8). In addition, participants were asked to mark their script whenever their thoughts strayed to the aforementioned white bear. This process is designed to inspire further thoughts of the white bear.

Wegner (1997) found that people who engage in acts of thought suppression suffer a rebound effect, meaning suppressed concepts readily spring to mind. According to Wegner and Erber (1992) the process of thought suppression involves two underlying cognitive operations. Firstly, a controlled distracter system searches for alternative stimuli to focus attention upon. Secondly, there is an automatic target search that looks for instances of the unwanted thought, in order to ensure that the thought has been suppressed. Ironically, it is this second process that makes the original thought hyper accessible (Wegner & Erber, 1992; Muraven, Collins, & Nienhaus, 2002; Gordijn et

al., 2004). Once a thought becomes accessible, increased cognitive and motivational effort is required to suppress these concepts. Due to its inherently cognitively-conflictual nature, thought suppression requires high levels of self-control. Since our capacity for self-control is limited, such a process cannot be sustained indefinitely (Muraven & Slessareva, 2003).

A related technique that was utilised was the attention control video task first developed by the Baumeister and Tice laboratories (<http://www.psy.fsu.edu/~baumeistertice/>). The task used an attention control video, similar to one used by Gilbert, Pelham, & Krull (1988). In this task participants were presented with a silent six-minute video depicting a woman being interviewed and asked to watch it for its duration. Participants were informed that they would have to make judgments of the interviewee based upon her non-verbal behaviours alone because the soundtrack to the video had been digitally removed. The clip also displayed a series of unrelated common one-syllable words at the bottom of the screen with each word being displayed for a period of approximately ten seconds.

Participants in the high self-regulatory fatigue condition were told not to look at the words as they appeared on the screen. If their gaze fell upon the words they were instructed to immediately divert their gaze. During this time participants were instructed to keep a mental count of the number of times that they looked at the words (see appendix figure 10). In practice, this procedure is highly effortful because the individual's gaze is being drawn to changing words. The participants in the low self-regulatory fatigue conditions were also asked to watch the same video but were given

no instructions regarding the irrelevant words. Other studies that have utilised the attention control video have used different materials for the low self-regulatory fatigue condition, such as watching episodes of the popular animated comedy the Simpsons (e.g. Fischer et al., 2007). However, it was felt that participants might have a very different affective reaction to episodes of the Simpsons, which might potentially confound the experiment. Therefore, the same video was used in both conditions but with different instructions. It was hoped that this would help to minimise the affective differences between conditions. Similar to the white bear paradigm, the attention control methodology is based upon the underlying logic that engaging in unpleasant, cognitively demanding tasks requires a considerable amount of self-control. Therefore, engaging in this type of activity for a prolonged period will leave individuals less able to defend against other forms of temptation.

Another technique we utilised was the “e” manuscript task (Baumeister et al., 1999; Baumeister, 2005). In this task, participants were asked to count every occurrence of the letter “e” within one page passage of text. Participants in the high self-regulatory fatigue condition were also given additional rules to follow. In our experiments, participants in the high self-regulation fatigue condition were asked to count every occurrence of the letter e in a passage of text, but only when the letter was not adjacent to a vowel. However, they were further told that the second rule should be ignored if the word had either four or seven letters. Participants were asked to engage in the task for 10 minutes. As with the two aforementioned manipulations, the task is based upon the underlying logic that engaging in cognitively demanding tasks requires the expenditure of self-control and therefore could not be indefinitely sustained. Engaging

in such tasks has been shown to make it exceedingly difficult to resist temptation in subsequent tasks (Baumeister, 2005).

Several of the most widely recognised methods for manipulating self-regulatory fatigue could not be used within the thesis. The best well known manipulation of self-regulatory fatigue was one developed by Baumeister et al., (1999), in which participants were required to resist eating chocolates before engaging in an impossible task. Resisting this type of temptation for a prolonged period has been found to lower participants' resolve when engaging in an impossible task. Whilst this type of experiment presented participants with a realistic form of temptation, its fame meant that replication would be potentially problematic, because prior knowledge of the study could potentially represent a confound.

Another well-known methodology we were unable to utilise was the emotion suppression technique (Baumeister et al., 1999). In the suppression condition, participants are asked to suppress visual signs of emotion whilst watching either very happy or sad movies. The central logic behind this manipulation is the idea that controlling emotions or restricting emotional expressions is a cognitively demanding activity, meaning that participants are less able to engage in subsequent acts of self-control. However, for this methodology to work, it is necessary for participants to believe they are being monitored, via camera recording or observation. We considered such a method to be potentially problematic with regards to an ethical spending experiment, where the feeling of observation may have an impact on behaviour. For example Bateson, Nettle and Roberts (2006) found that simply displaying the image of

a pair of eyes was sufficient to increase contributions to an honesty box (the contribution being three times higher than in the condition without the eyes). The authors conclude that feeling of being observed was sufficient to raise cooperative behaviour. Therefore, we avoided this approach in the current work.

*Relationships between self-regulatory fatigue and other constructs*

When discussing self-regulation fatigue, the question of how it differs from cognitive load is frequently asked. The one crucial distinction between self-regulation fatigue and cognitive load is temporal distance. Cognitive load manipulations show an effect upon performance in tasks occurring at the same time as another task whilst, in contrast, self-regulatory fatigue manipulations show an impingement on *subsequent* tasks (Hinson et al., 2003; Baumeister, Tice, & Twenge, 1999).

Manipulation checks are included in many paper and pen experiments in order to provide evidence that a method of manipulation affects the independent variable of interest. However, manipulation checks are not always necessary and in some instances potentially problematic. Self-regulation fatigue can frequently work on a level that participants are not fully aware of (Schmeichel, Brandon, Vohs, & Kathleen, 2009), therefore self perceived checks of the current levels of fatigue may not be accurate. Secondly, manipulation checks could help focus an individual's attention upon their current state. Given that raising individuals' self-awareness has been shown to help them overcome the effects of ego depletion, the use of manipulation checks holds the risk of actually restricting the effectiveness of the manipulation (Schmeichel, Brandon,

Vohs, & Kathleen, 2009).

A potential confound in ego depletion experiments is the fact that these activities can be highly frustrating and therefore it is possible that behaviour is changed due to negative emotion and not due to ego depletion. In order to rule out this possibility, it is typical to include a measure of affect, usually PANAS (Positive and Negative Affect Scales e.g. Wegner, et al., 1987). Therefore, a number of the experiments reported in the thesis also incorporated the measure.

### *Self-regulation Fatigue and Self Reported Measures*

Later in this section I will discuss my determination to investigate ethical spending from a naturalistic perspective. This resolve led to the idea of measuring participants' behaviour within a real life retail environment. However, manipulating self-regulatory fatigue prior to participants' real shopping would be both impractical and potentially unethical as it might lead to them making purchases contrary to those that they more have made had it not been for the manipulation. It was therefore decided to measure spontaneous and naturally varying instances of self-regulatory fatigue rather than manipulating it in the studies measuring real purchasing. This required the development of a self-report measure of self-regulatory fatigue, which participants could complete prior to going shopping without unduly influencing their behaviour. The scale was designed in order to measure naturally occurring levels of mental and self-regulatory fatigue. In order to achieve this, we developed a 13-item original measure of mental fatigue and self-regulation fatigue (example items: "I have been very tempted to do something I shouldn't today", "I have engaged in strenuous mental

activity today”) (Cronbach’s alpha of 0.82). A pilot study originally featured an 18-item measure of self-reported ethical spending. However, there was a high dropout rate in this pilot and it was felt that the number of questions might have contributed to the dropout rate. In order to reduce dropout, a shorter scale was utilised in the final experiment (see table 10). Items that did not correlate highly with other items were dropped from the revised scale. One possible limitation of the self report scale relates to the fact it included items measuring both mental and self-regulatory fatigue. It has been argued that mental fatigue and self-regulatory fatigue are separate constructs with different behavioural outcomes (Vohs, et al., 2011). However, in our experiment, factor analysis did not identify more than one underlying construct.

During the real-life shopping experiment, participants were provided with a questionnaire booklet that was in two parts. The first part of the booklet contained a single questionnaire that measured the participant’s typical weekly food budget and the frequency of previous ethical purchasing ( $\alpha = 0.71$ ). The second part of the questionnaire booklet contained ten identical questionnaires, with participants completing a survey every time they went shopping. These pre-shopping measures included a 16-item PANAS scale with two component subscales, positive ( $\alpha = 0.80$ ) and negative affective (also  $\alpha = 0.80$ ) (Wegner, et al., 1987). Participants were also asked to report their spending intentions and complete the original measure of self-regulation fatigue outlined above. After they had finished shopping, participants were asked to photocopy the receipt from the shopping trip and attach it to the questionnaires. Participants were asked to complete this questionnaire prior to each of

their next 10 shopping trips, and keep their receipts.

### *Measures of Ethical Behaviour*

The majority of empirical studies exploring ethical purchasing rely on self-reported measures. These primarily explore participants' spending intentions, using questions such as "when shopping, how likely are you to purchase a fair trade product?" (Ozcaglar Toulouse et al., 2006; Shaw et al., 2000). Self-report measures have been widely and successfully used to measure attitudes and behavioural intention throughout the history of consumer research. However, because of the gap that has been argued to exist between consumers' self reported attitudes and their actual behaviours there are a number of reasons why self reported measures may be problematic in this domain. The effects of social desirability occur acutely within situations with a moral dimension such as ethical spending (Carrigan and Attalla, 2001; Auger and Devinney, 2007). Andorfer and Liebe (2012) expressed concern that by relying upon self-reported measures the study of Fair Trade may be unduly affected by social desirability bias and therefore findings may overstate consumers' ethical spending intentions and behaviour. In addition, self-regulatory fatigue can work on a level where participants are not fully aware (Schmeichel & Vohs, 2009). Therefore, to simply ask participants how self-regulatory fatigue affects their spending would be unlikely to be of benefit. This is not to say that self-reported measurements and focus groups do not have a place within ethical consumption research, but in relation to self-regulatory fatigue the utilisation of more direct measures of behaviour would appear highly preferable.



It was also our aim to use a variety of methodologies. Whilst replication can show consistency in research we should not confuse this with validity. If methodologies utilised within a research project are too similar then the errors found within one study may merely be repeated within all subsequent studies. In order to counteract these potential problems it was decided to explore the issues by triangulating a variety of methodologies. It is hoped that the limitations of each methodology will be compensated for by the strengths of other methodologies used.

#### *Qualitative Investigation into Most and Least Ethical Purchases*

In chapter four we present the results of an exploratory qualitative study. A variety of qualitative approaches have been used in order to explore consumer's ethical purchasing. These include in-depth interviews (e.g. Shaw and Newholm 2002) and focus groups (e.g. Varul, 2009). In this study a more basic content analysis of consumer's written answers to short answered questions was conducted. Participants were asked to reveal the purchases they regarded as being their most and least ethical purchases via an open-ended survey. Four short answer questions were provided: (1) what was your least principled spending decision? (2) why do you consider it your least principled decision? (3) what was your most principled spending decision? and (4) why do you consider this your most principled decision? By asking consumers what they consider to be their most principled purchase, I aimed to identify the issues that consumers regarded as having the strongest moral component. By enquiring about least ethical purchases I aimed to uncover the issues that consumers regard as ethical but do not necessarily follow through on.

### *The Forest Game*

My first study that explicitly explored the relationship between self-regulatory fatigue and ethical spending utilised a resource dilemma game. Many of the issues associated with ethical decision making can be seen as examples of social dilemmas in the sense that consumers are presented with a choice between immediate self-gratification (non-ethical spending) and the long-term social good (ethical purchasing) (Steg, 2003).

Whilst consumers are undoubtedly influenced by other concerns such as personal tastes and possible health benefits, we wished to strip out these other factors. The simplicity of a social dilemmas paradigm allowed us to focus specifically on identifying a potential effect of ego depletion on social and temporal dimensions of decision making, both of which can be considered important in the context of ethical spending (as was argued in chapter one).

In order to explore ethical spending from a social dilemma perspective, we utilised a resource dilemma game that was first designed by Sheldon & McGregor (2000). The resource dilemma game can be described as a reverse public good game, wherein participants are allowed to harvest from a common resource. The game was selected because it mirrored real world ethical issues in the sense that participants were presented with a choice between the long-term good of the group and short-term self interest. In addition, the game depicted a situation where any positive benefit is dependent on the actions of others, which again mirrors the real life context of ethical spending – if only one person switches to an ethical brand then the impact is likely to be minimal (Gärling, Fujii, & Jakobsson, 2003).

Taking Sheldon and McGregor's (2000) design as a basis, a four-player online computer game was created. Whilst the original game was merely a paper and pen exercise, we were able to create a live online four-player game, utilising a MySQL database and a PHP script. The game presented a hypothetical dilemma where the players were asked to share a common resource (a 'forest'). In each round of the game, participants were asked how much of this common resource they would like to personally harvest (cut down). Participants were informed that in every round they could cut down between 0 and 10 hectares of forest and that they would be paid six pence for every hectare of forest they cut down. However, participants were informed that the forest naturally regenerates at a rate of 10% per year (rounded up to the nearest whole number). Therefore, participants were given the choice of immediately harvesting the forest or leaving the forest to grow so that everybody could benefit from the resource. The dividend of 10% per annum was selected in order to encourage collective action. The cash payment was given to ensure participants took the game seriously. Final payoffs ranged from under £3 to over £8 per participant.

Whilst this study allowed us to examine whether ego depletion results in short term and self-serving behaviour, it remains a fairly abstract measure of spending behaviour. In the real world, two factors are required for individuals to make socially-orientated decisions. Firstly, they must rate the potential benefits of collective action as being greater than those of individual action, and secondly they must be aware that their behaviour impacts upon others. Within an economic game, individuals are provided with clear instructions regarding the costs and benefits of collective and individual

actions, but in real life the costs and benefits are frequently less clear (Biel & Thøgersen, 2007; Gatersleben, Steg, & Vlek, 2002). Consumers in the real world are largely unaware that they are acting within a social dilemma and of how their behaviours impact upon others both now and in the future.

### *More Realistic Measures of Consumer Spending*

Real world dilemmas have profound temporal and spatial dimensions that make it difficult to fully gauge the impacts of our behaviour (Vlek & Gideon, 1992). Whilst the use of public good games can clearly demonstrate the choice between the self and one's group, both now and in the future, they are potentially simplistic in the sense that they assume (and experimentally mandate) that such factors are omnipresent in the minds of individuals when making decisions. We therefore decided to conduct a more ecologically valid set of experiments that could incorporate more fully the wider range of factors affecting ethical spending and that did not assume or directly invoke an awareness of the wider social dilemma in which such decisions might (or might not) be conceptually located.

### *Online Supermarket Simulation*

The decision to measure consumer behaviour via an online store was made when we realised the importance of multiple purchasing. The importance of multiple purchases becomes apparent from the findings from two preliminary studies included in chapter five of this thesis. The first aimed to explore the effects of ego depletion on participants' willingness to pay for ethical products. Ego depletion was manipulated via the use of a vowel counting task whilst willingness to pay was measured using a

discrete choice design. Participants were presented with a series of products and were asked to choose between ethical and non-ethical goods. The price of the ethical alternatives was systematically altered, allowing us to estimate the willingness to pay for ethical concerns. However, our experiment did not find any difference in consumers' willingness to pay for ethical goods as result of the ego depletion manipulation.

One possible reason why we did not find an effect of self-regulatory fatigue on willingness to pay for ethical goods may have been the simplicity of the choice methodology utilised. In this study, participants were presented with a relatively small number of alternatives to choose between. Therefore the act of choosing could be considered as less arduous than within a real life shopping environment and potentially less affected by self-regulatory fatigue. Simply choosing between two or three alternatives is a relatively simple task and one that may be maintained under conditions of regulation fatigue.

A follow up study attempted to determine whether increasing the number of products available would be problematic for those in a state of self-regulatory fatigue. The study aimed to determine whether participants would be willing to consider a large number of options in a secretary-problem-style task whilst in a state of self-regulatory fatigue. Participants were divided into high and low self-regulatory fatigue conditions, with ego depletion being manipulated by the vowel counting tasks. Participants were then asked to select a single chocolate bar from a list of approximately 200. The computerised task monitored the numbers of bars they considered prior to selection. However, the results

did not show a significant difference between conditions. One criticism of this study relates to the fact that whilst this offered more choice than in the willingness to pay study, it was still a *single* decision. Multiple choices are particularly important when considering the effects of self-regulation fatigue. When in a depleted state, individuals might be able to defend against temptation long enough to consider a number of alternatives relating to a singular decision. However, they may not be able to do this for the entirety of the shopping trip in which a raft of different decisions must be made, each with numerous dimensions. It was therefore concluded that both the willingness to pay study and the secretary problem were overly simplistic and artificial and that a more realistic experiment was required. For these reasons it was decided to build an online supermarket simulation.

Consumers are increasingly shunning trips to shopping centres, supermarkets and malls, and instead are choosing to shop from the comfort of their own home. Initially consumers viewed the internet as a dramatic, innovative way of shopping for the odd item; however, times are changing, with internet shopping fast becoming the first port of call for many consumers (Eighmey, 1997). This presents the opportunity for researchers to utilise e-commerce in order to create exciting and realistic experiments whilst maintaining a high level of internal validity. Whilst producing an online supermarket simulation is not an easy task, the potential benefits are immense.

One of the fundamental concerns facing consumer researchers is how to balance ecological and internal validity (Barwise, 1995). For many, the ultimate goal of research is to create clear and coherent theory. Conducting work in the real world can

restrict our ability to make the categorical statements that theory requires. However, trends recorded in highly controlled laboratory settings may be of limited utility given their failure to consider the effects of other factors influencing consumer behaviour in the real world. Thus, in practice, internal and ecological validity are not always compatible, leaving researchers with a fine balancing act. Whilst internal validity is a necessity for any experimental study, it should not be at the expense of ecological validity (Lynch, 1999; Winer, 1999). I suggest that the use of online stores can dramatically improve ecological validity of consumer research without impinging upon internal validity. The beauty of online store methodologies is that they can accurately mimic the real world but still allow researchers to control every single aspect of the spending environment. A drop in price can be applied to any single item, “customer” product reviews can be tailored, and layouts and graphics can be instantly altered. A further advantage of using online stores to measure consumer spending is that behaviour can be measured nearly anywhere. In our experimental manipulation, participants were not even in the same room as the experimenter. This allows us to be more confident that participants are not merely giving socially desirable responses. In addition, it was felt that the methodology helped disguise the purpose of the research, and thus avoided funneling participants down particular behavioural paths on account of ‘hypothesis guessing’.

The online store offered a total of 1900 products. Pre-testing revealed that these 1900 products would be sufficient so that the majority of consumer products could be found, or at least a close alternative could be selected. To the best of our knowledge, the store is by far the largest electronic store currently used within empirical research. All prices

were based upon the average prices of actual products from [www.tesco.com](http://www.tesco.com) (the UK's largest supermarket chain, with prices being taken on the 28th July 2008). Prices were matched to product range, such that the organic range was based upon real life organic products.

Due to concerns about copyright infringement, we made the decision not to use branded products. For these reasons, nine product ranges were designed, all of which were based on Tesco product lines. "Bites" range represented a standard product range, "essential" represented the low cost alternative, and decadence represented the luxury range. The various ethical ranges included: organic, fair trade, locally sourced, free range and vegetarian (see appendix figure 15). The vegetarian range included a range of meat replacement products (e.g. vegetable burgers) and can thus be seen as a more animal-friendly alternative to meat.

Given that that website quality has been found to directly influence participants' purchasing intentions (Alba, et al., 1997), it was important to ensure the design of the site was of high quality and features user-friendly logical navigation. Therefore, extensive effort was spent branding the individual ranges and upon the visual design of the site. The store was programmed using osCommerce because this is the most widely used open source software used for programming online stores and thus ensured that the majority of consumers would be familiar with its operation (<http://www.oscommerce.com>). The structure of the store was based upon the layout of [www.sainsburys.co.uk](http://www.sainsburys.co.uk) (at the time of its construction) to ensure its usability (see appendix figure 16).



Utilising an online store represents a step forward in terms of ecological validity from economic games, however a number of limitations remain. One concern I had when I first attempted to measure ethical spending using an online store was that consumers could potentially be more impulsive online than they would be in the physical world. Those suffering with a compulsive spending disorder use the internet in order to spend in a compulsive manner (Dittmar, 2007). Therefore spending online could be considered as more impulsive for those with spending disorders.

Another potential difference between spending in store and online relates to consumers' price sensitivity. The level of competition between online suppliers has meant that many online companies have tried to associate their brands with the lowest possible prices (Häubl & Trifts, 2000). Therefore, researchers should be aware that participants may be marginally more price sensitive online than within the real world. In addition to price, proximity may also be problematic. When spending online the consumer has no ability to physically examine the quality of the goods they are purchasing (Vijayarathy, 2002). However, some products do not require physical examination, for example low cost uniform commodities. In these instances, purchase may be relatively comparable with in store purchasing. For less uniform products (including fresh food), online and in store behaviour may not correspond as closely (Vijayarathy, 2002).

Perhaps the biggest limitation of the supermarket study was the fact that it did not offer products produced by major brands or feature actual products or money. Cognitively

speaking there are many advantages to sticking with existing behavioural patterns, because changing behaviour may take considerable self-discipline and exertion (Street et al., 2001). Self-regulatory fatigue may cause individuals to repeat established behavioural patterns. The decision not to feature major retail brands meant that consumers could not fall back on habitual patterns and were forced to make new decisions for every purchase. In addition, consumers did not actually have to pay for any products out of their own money and therefore they did not shoulder any increased cost for spending ethically. In order to correct for these deficiencies we decided to increase ecological validity further and measure consumers' behaviours within real world stores.

#### *Real Life Spending Study*

Ideally, consumer behaviour should not just be studied within the confines of the experimental laboratory (Barwise, 1995; Cialdini, 1995). In the real world, consumers are influenced by a great number of factors: discounts, store layouts and even the in-store music can all have a profound influence upon spending. The real life experiment could never aim to control all these potential factors and nor would it ever aim to; rather its purpose was to examine whether the effects of self-regulation fatigue could be identified above the noise of the real-world consumer environment. It was therefore decided to examine consumers' receipts from real life shopping trips in combination with taking measures of naturally occurring levels of self-regulatory fatigue.

The real life spending methodology asked participants to complete a short questionnaire prior to each of their next 10 shopping trips. Participants were also asked

to keep and photocopy the receipt from these shopping trips and attach them to the corresponding questionnaire. Only receipts for total food worth over £3 and with more than 2 items were recorded. In order to prevent embarrassment at divulging sensitive items participants were given the opportunity to black out any purchases that they did not wish to divulge, however no participants took advantage of this option.

Examination of the receipts allowed us to classify items as non-ethical or as organic, locally sourced, fair trade or free range / freedom food. Coding was based upon information ascertained from the receipts. For example a receipt displaying F/T was classified as being fair trade while ORG was classified as being organic.

One limitation of this methodology is the fact that it required individuals to complete the procedure every single time they went shopping. It is perhaps unlikely that participants did this with complete fidelity. Since participants were not continually monitored, it is likely that from time to time they were too busy, too fatigued or simply forgot to complete the survey. It is also possible that participants were less inclined to complete the questionnaire at times of self-regulatory fatigue, meaning that the most pronounced cases of ego depletion may never have been recorded. At worst, however, this would mean that the study may have been conservative in its estimates of the strength of self-regulatory fatigue effects.

The study also relied on supermarket receipts giving adequate information. Whilst our preliminary tests revealed that supermarkets do show the ethical credentials of many products, we cannot guarantee that sufficient labels were provided for every product. The online store and the real store methodology are complementary in the sense that

the strength of each method compensated for the limitations of the other. In summary, we believe that by using a variety of ego depleting methodologies, in conjunction with ecologically valid measures, we can conclusively demonstrate a relationship between self-regulation fatigue and ethical spending.

### *Summary*

The chosen methodologies used in this thesis reflect our desire to develop a more ecologically valid approach to measuring behaviour than is possible with self-reported measures. Given the limitations that have been identified with self-report measures, we focused on developing methodologies that aimed to provide a more meaningful contribution to the psychological dimensions of ethical purchasing. Through the triangulation of methods (social dilemmas games, online store simulations in the lab and examinations of real-world purchasing behaviour) we sought to maximise the robustness with which we could make claims about the potential importance of self-regulatory fatigue in determining ethical shopping, if indeed one could be demonstrated to exist.

## **Chapter Three: A Qualitative Analysis of the Principles Driving Consumer Spending**

### *Background*

This chapter describes the findings of a qualitative exploration of the principles that drive consumer spending. The study had two purposes: firstly to explore the full range of principles that guided consumer spending, and secondly to identify the potential road blocks that may prevent individuals from spending in line with their underlying principles. The findings of the study helped establish a novel theoretical framework from which further quantitative empirical research was developed. The study was not intended to present a full qualitative analysis, and its findings are included within the thesis primarily to show the genesis of the research agenda.

### *Introduction*

The first known use of the term “ethical consumption” coincided with the launch of the Ethical Consumer magazine in 1989. The magazine was launched with the explicit aim of encouraging consumers to limit the human, social and environmental impacts of their spending. Since that time the concept of ethical spending has gained increased academic and media attention. However, in spite of its prominence, ethical consumption remains poorly defined within academic disciplines (Auger et al., 2003). Currently there is no single accepted definition of ethical consumption (Cowe & Williams, 2001; Craig-Lees & Hill, 2002; Shaw & Shiu, 2003). However, examination

of the academic literature reveals a number of key principles that have been repeatedly linked with the concept of ethical consumption. These principles include issues relating to human wellbeing (e.g. worker treatment, fair trade, racial and gender discrimination), environmental sustainability (e.g. organic, genetically modified food, energy saving products, locally sourced), and animal wellbeing (e.g. animal testing, free range) (Loureiro & Lotade, 2005; Shaw et al., 2005; Tsakiridou et al., 2008, Thøgersen, 2005). However, it is possible that there may be other principles or motivations that help guide consumer spending.

In June 2005, the Cooperative Bank (the UK's largest ethical bank) closed the account of Christian Voice, a Christian evangelical group, due to its homophobic standpoint. Christian Voice argued that homosexual behaviours were against God's teachings, and therefore immoral, and that they did not wish to invest in companies that promoted sexual equality. Whilst we may not agree with either side's decision, we cannot argue that either side's economic behaviour was not motivated by underlying principle. We must be aware that there are distinct political and ideological divides within society and therefore there may be a range of principles that may influence consumer behaviour. Traditionally, ethical shopping has been associated with left wing ideologies but right wing consumers may also be motivated by their own different underlying morality. Therefore, the full range of principles that guide consumers' behaviour may not fall within traditional definitions of ethical spending. The first purpose of this research was to explore the full range of principles that may guide consumer spending.

The study's second aim was to explore the potential nature of the ethical purchasing gap. As outlined in chapter 1, research has repeatedly demonstrated that even though consumers may claim to hold ethical attitudes, they may not spend accordingly (De Pelsmacker et al., 2005; De Pelsmacker et al., 2006; Belk et al., 2005). The divergence between consumers' ethical attitudes and their actual spending is referred to as the 'ethical purchasing gap', which closely relates to the frequently explored 'attitude-behaviour gap' (Cowe & Williams, 2000; Cotte & Trudel, 2009).

Szmigin, Carrigan and McEachern's (2009) qualitative analysis revealed that participants frequently displayed contradictory behaviours in relation to ethical spending. In order to account for these contradictions, Szmigin et al. (2009) contrasted 'voluntary simplifiers' with 'conscious consumers'. Conscious consumers are not full voluntary simplifiers (individuals fully committed to reducing material consumption and leading a simple non cluttered life), but occasionally consider the social impact of behaviours when spending. Szmigin et al., (2009) argue that conscious consumers' ethical inconsistency can be partially explained by issues such as consumers' tastes and the varying price of goods. However, the review does not conclusively demonstrate that these are the only issues causing inconsistency.

Qualitative research has tended to focus on those who identify themselves as voluntary simplifiers or as strong ethical consumers. This focus has led to a void in research exploring the accounts given by more typical consumers who purchase only a few ethical items and do so inconsistently (Adams & Raisborough, 2010). Further qualitative analysis holds the potential to help identify the situations and environments

that nurture ethical spending, and the reasons why principles and behaviour do not always tally.

### *The Current Study*

The first aim of the study was to explore the full range of principles that guide consumers' spending. Secondly, by investigating when participants violated their principles whilst shopping the study aimed to identify the reasons why consumers do not always spend in accordance with their underlying principles. Qualitative studies exploring ethical consumption have frequently used interviews and focus groups in order to give in-depth feedback into consumers' consumption patterns (Shaw & Newholm, 2002; Shaw et al., 2005). However, in this instance it was deemed more desirable to collect a wide range of opinions as opposed to collecting a smaller number of deep responses, in order to help stimulate further (quantitative) empirical work. Therefore the study used an open-ended questionnaire, with a content analysis performed upon the responses gathered.

### *Methodology*

#### *Participants*

Fifty-five participants from the University of Exeter's external participant panel took part in the study. Thirty nine of the participants were female and the mean declared age of participants was 47 years old, however five participants did not divulge their age or gender. The University of Exeter's external participant panel comprises alumni of the University and other individuals who had agreed to be contacted by the University in



order to take part in experiments for the psychology department. They are not students currently studying at the University.

### *Procedure*

Participants were invited to take part in the study via mail invitation. Participants who chose to return the surveys were entered into a £100 prize draw in order to provide sufficient incentive for completion. Due to the sampling methodology, it cannot be claimed that the sample is representative of the UK as a whole, because the majority of participants were either based within the South West of the United Kingdom or had an association with the University of Exeter.

Participants were presented with a short answer open-ended questionnaire. The main body of the questionnaire contained four short answer questions: “What was your least principled spending decision?”, “Why do you consider it your least principled decision?”, “What was your most principled spending decision?” and “Why do you consider this your most principled decision?” In order to help participants answer the questions, they were provided with the following definition of principled spending: “any purchase decision not solely concerned with price or quality, but is motivated by some underlying ethic or principle”. By asking consumers what they consider to be their most principled purchase, we aimed to identify the issues that consumers regard as being relevant to ethical purchasing. By asking what participants considered to be their least ethical purchases, we aimed to explore which principles consumers did not adhere to at times of purchase. It was hoped that participant’s justifications would shed

light on why consumers' spending behaviours frequently contradict their underlying principles.

### *Results*

#### *Most and Least Principled Purchases*

A content analysis of the finding was conducted, with each product type and motivation being coded. The results of the content analysis are presented in table 1.

The table shows the frequency with which each principle was mentioned.

*Table 1:  
Self Reported Most and Least Ethical Purchases*

	Most principled	Least principled	Total
<i>Principles Typically Associated with Ethical Spending</i>			
Animal Welfare			
Chicken and Poultry	11	2	13
Other Meat	0	3	3
Fur	0	1	1
Environmental Concern			
Environmental Impact of Person Transportation	4	8	12
Environmental Impact of Product's Transportation	5	2	7
Environmental Impact of Production	2	2	4
Organic Foods	7	0	7
Energy Efficiency	4	1	5
Human Welfare			
Fair Trade	6	0	6
Sweatshop Labour	4	10	14
Other Human Welfare	2	1	3
Less Familiar Forms of Ethical Consumption			
Patriotism	8	2	10
Supporting Local Community	6	0	6
Ignoring families needs	0	3	3
Lack of Use	0	9	9
Anti Ethical	7	-	7
Illegal Activity	1	1	2

### *Animal Welfare Concern*

Consumers appeared to be highly concerned with animal welfare when recalling their most and least ethical purchases. The purchase of meat was frequently mentioned, with poultry and eggs being the most commonly mentioned product types. Consumers' motivations appeared to be directly related to animal welfare: "I buy free range because I believe the chickens have had a better quality of life". This figure may have been inflated by a widespread television campaign conducted by UK broadcaster Channel Four, which coincided with the survey. Two participants directly referenced the programmes in their responses: "After watching the recent Hugh's 'Chicken Run' series I decided to support the welfare of chicken. I am a vegetarian so I had to cook it for my family! It cost double an intensively farmed chicken but had a good life".

Three individuals reported that the quality of the product did influence their spending decisions, mirroring Harper & Makatouni's (2002) who found that although consumers were confused by ethical consumption, they in general felt that ethical branding was a symbol of product quality. Other animal welfare concerns included eating veal. A further two participants mentioned the purchase of a fur coat (but only one due to animal welfare concerns).

### *Human Rights Concern*

After food, fashion was the most widely mentioned product type. However, unlike food, the majority of mentions were related to non-principled purchasing (10 out of 14

total mentions). The majority of participants who mentioned clothing were concerned with sweatshop labour: “the cost of clothing item and it fitting with overall outfit was at the time more important than the welfare of foreign clothing makers which, now on reflection, is a poor justification”. “Because I put my needs - cheap clothes - before the bigger picture or even try to deny the knowledge of such atrocity”. However, no participant mentioned the environmental impact of the fashion industry.

Fair trade food was frequently mentioned. In each case individuals mentioned the living conditions of producers “I chose fair trade because it provides... better pay etc...for workers....can be more expensive but aware it's for a good cause”, “because it is only a small action but hopefully it will have a large effect for food producers and their lives”. Three participants stated that their most ethical decisions involved boycotting the produce of specific nations. Two individuals identified that avoiding South African produce was their most ethical action. In both instances this was a reaction to apartheid.

The boycott of Nestlé products was raised by two participants. “ (I)... buy Nestlé chocolate even though I knew they (were) forcing powdered baby milk on the countries that couldn't afford it, endangering babies health and undermining the role of the mother and their knowledge that their own milk was better for their babies”. This is of particular interest as the boycott was called off in 1984 (Boyd, 2012), however, participants in the study were still avoiding the company nearly thirty years later. Interestingly, this directly contradicts perception of ethicality in Spain, where Nestlé was voted as the most ethical brand (Financial Times 20th Feb 2007).

*Environmental Concern*

Organic food was frequently mentioned. Environmental motivations were mentioned by everybody who cited organic produce: “I didn’t previously consider the produce I bought usually going for quality and cost. However, I am now more aware of the environment so have been trying to buy British and organic and if possible, buying local”. A number of individuals reported that their motives were not purely ethically motivated, and the quality of the product did influence their spending decisions: “the food is of better quality” ,“I buy organic for 2 reasons to avoid consuming more chemicals (pesticides, antibiotics etc) and to protect the environment as much as possible”. This finding supports Shaw and Newholm (2002), who found that it is often difficult to disentangle consumers’ motivations, with concern for their own health and wider societal issues frequently coinciding.

A number of participants mentioned locally sourced produce as their most principled decision. Motivation to engage in these behaviours related to desires both to support local communities and to reduce the environmental impact of food transportation by reducing food miles (Paxton,1984). “(I) wanted to support local producers and sellers. (I) wanted to reduce the food miles in my food. (I) wanted to minimize chemicals used in production and their impact on the environment. (I) wanted to give my family health food”.

Car travel was frequently mentioned, with four participants rating the purchase of environmentally friendly cars as their most ethical purchase “To buy a smaller car

(Ford Ka) with lower CO<sub>2</sub> emissions and to share this with my mother... because it was done mainly out of environmental considerations, to reduce the amount of emissions and the quantity of car use, substituting the bus or walking instead". A further three participants felt their failure to purchase an environmental friendly car was their least ethical decision. This finding supports qualitative work conducted by Shaw and Newholm (2002), which identified personal transport as being one of the major concerns for voluntary simplifiers. Participants in the study were more concerned with the environmental damage of running a vehicle as opposed to its construction, with no participants mentioning the environmental damage that could be caused by the vehicle's manufacture. Flights featured frequently on our list with five individuals mentioning it as their least ethical decision: "Have purchased long haul flights knowing full well the environmental impacts of air travel". However, no participant mentioned taking UK holidays or avoiding air travel as their most ethical purchase.

### *Less Familiar Forms of Ethical Consumption*

As outlined within chapter one, the issues most commonly associated with the notion of ethical consumption include human wellbeing (e.g. worker treatment, fair trade, racial and gender discrimination), environmental sustainability (e.g. organic, genetically modified food, energy saving products, locally sourced), and animal wellbeing (e.g. animal testing, free range) (De Pelsmacker & Janssens, 2007; Loureiro & Lotade, 2005; Tsakiridou et al., 2008). However, a number of principles were mentioned that did not fall within traditional models of ethical spending.

One factor that was frequently mentioned was buying British or from the local community. The motivation did not appear to be environmentally motivated or preoccupied with human welfare. The underlying principle behind these purchases related to “patriotism”, with the term being used directly by four participants. Participants also wished to support local communities and industries: “Choosing to buy British apples.... to support local industry”.

Putting the family first was reported as being an act of principle. Cosmetics were mentioned twice as least ethical decisions. In both instances, consumers were not concerned with either animal welfare or environmental damage but felt that these purchases were an “extravagance” their family could not afford. Likewise, one participant purchased a fur coat, and considered this non-principled not due to animal welfare but because her family might go without as a result of its cost. Considering that these consumers are not concerned with their personal utility but the welfare of others, it could thus be argued that under certain circumstances, price sensitivity could be partially motivated by principles such as ‘family values’.

A small number of participants were morally opposed to the ethical movement. This appeared to be directly related to fears surrounding the fidelity of producers’ claims or due to opposition on political grounds. Since consumers cannot observe a company’s means of production they rely on producer’s reputations and it’s labelling in order to determine whether a product meets their ethical ideals (McCluskey and Loureiro, 2005). A number of participants were not convinced by the claims of producers, and



felt that some producers were engaging in ‘Greenwash’ by making fraudulent declarations. Greenwash refers to the potential for environmental claims of producers to be exaggerated in order to help increase sales. As one participant put it: “Organic farming as a gimmick and therefore a bit amoral”. These findings support those of Hoek, Roling and Holdsworth (2012), who used interview studies to explore consumers’ understanding of the claims surrounding ethical products. They found considerable scepticism about the claims of ethical producers. The findings also support Chaniotakis, Lymperopoulos and Soureli, (2012) whose questionnaire study of participants’ views towards organic food uncovered pessimism about producers’ claims had a negative impact on intentions.

Other motivations for the anti-ethical principle appeared to be linked to right wing ideologies or political conservatism e.g. “Basically, I believe in Darwinism in the market place”. However, in other instances it was not clear whether participants were ideologically opposed or felt an unease at supporting what is traditionally viewed as left wing behaviour: “I think "Fair Trade" is too leftist”.

### *Factors motivating and preventing ethical spending*

#### *Attitudinal Factors*

The most frequently mentioned reason for purchasing ethically was holding beliefs in-line with ethical purchasing (52 mentions in relation to principled purchasing). The finding that beliefs were repeatedly identified as being the driving force behind ethical

spending is consistent with a large number of psychological papers that have shown some degree of link between ethical attitudes and ethical behaviours (Fransson & Gärling 1999; Kaiser, Wölfling, & Fuhrer, 1999). However, the present questions directly asked participants about their principles, so this may have made participants unduly likely to report being motivated by underlying attitudes and beliefs.

### *Impulsive Purchase*

A large number of participants (two twenty mentions as least principled purchase) mentioned that they were aware of the ethical dimensions when purchasing but continued to purchase in a non-ethical manner. One factor that frequently featured in participants' accounts of their non-ethical purchasing was impulsive urge. Principled purchasing, however, was often characterised by a period of consideration.

When justifying non-principled purchasing, a large number of participants indicated that their purchases were in fact the result of impulse: "I did this on the spur of the moment looking through a catalogue. It was done very much on impulse". In these instances, participants frequently mentioned that they had failed to associate consumption with an underlying principle: "No real thought given to the fact that they are probably produced in 'sweat shops' by people on very poor wages and in grim conditions". These non-principled spending decisions often resulted in feelings of regret and remorse: "It was bought in haste and not thought through with hindsight foreign made and the old one could have perhaps have been mended.". Whilst this could be post-purchase justification or reaction, it could also be an indication that it is

not always possible to be aware of one's relevant principles when engaging in the act of spending.

Consumers also appeared to use the act of purchase (and in this case non-principled spending) to bolster self-esteem: "they are extravagance - not always necessary - but good for self esteem". It has been theorised that impulsive spending is driven by low self-esteem and negative mood (Baumeister, 2002; Dittmar & Drury, 2000). These findings suggest that the factors influencing impulsive spending may also have a relationship with ethical consumption rates.

In terms of least principled purchasing decisions, 19 participants directly identified price as a determining factor in non-principled actions. Even when purchasing in a principled manner, consumers felt that they needed to mention the price of the goods (20 mentions). The results suggest that it is not merely the moral concern that determines whether an act is the most principled, but also the price and the degree of utility forgone: "It cost double an intensively farmed chicken but had a good life".

The issue of price was particularly prevalent in participants' responses to the clothing industry, with 10 individuals feeling unable to resist the temptation of low prices. It appears consumers have to weigh up the short-term cost saving against the long-term collective interests of society and frequently side with their wallet (as shown in willingness to pay studies by DePelsmacker et al., 2005). Some consumers felt regret and discomfort when they placed cost saving in front of ethical concern: "They are mass produced and very cheap. Therefore they are probably produced in sweat shops

abroad where wages are low and employees and possibly children are exploited - I feel guilty every time I do it!". This suggests that some consumers experience a negative but delayed psychological cost for spending in a way that contradicts their attitudes. Convenience and superior design were also a concern for participants and a determinant of non-principled purchasing: "Despite the environmental implications we continue to occasionally fly because typically it is both a lot quicker (very convenient) and often cheaper too".

### *Conclusion*

Consumers within the sample were primarily concerned with traditional forms of ethical consumption, namely environmental concern, human and animal welfare. More novel issues included patriotism, care for the local community and putting the family first. Whilst these more novel issues were of interest, they were infrequently mentioned. Therefore the remainder of the thesis will focus upon the traditional forms of ethical consumption. The analysis also revealed that the majority of consumers in our sample to some degree considered their morality when purchasing ethical products. In contrast, non-ethical purchasing was characterized by financial considerations or being the result of impulsive urge. Although, we must be aware that answers, at least in part, may represent post hoc justifications as opposed to definitive demonstration of causality, these findings highlighted the potential utility of conceptualising ethical (and less ethical) spending as being at least partly determined by the ability of individuals to resist impulsive urges. This idea was subsequently explored in the experimental empirical work reported in the remaining chapters.

## **Chapter Four: Ego Depletion and the Tragedy of the Commons: Self-regulation Fatigue in Public Goods Games**

### *Background*

The findings presented in chapter three's qualitative exploration of participants' most and least principled purchases raised the possibility that non-ethical purchasing could be characterised by impulse, and a lack of thought. The responses of participants were extremely useful in determining the direction of future research. In particular, the findings suggested that ethical spending represented something of a trade off between consumers' morality and the high price of ethical goods. Building upon this finding, it was decided that I would investigate the relationship between ethical spending and a factor known to increase impulsive behaviour, self-regulatory fatigue (Vohs & Faber, 2007). As a first step, I investigated the potential relationship between ego depletion and non-ethical spending (for the reasons outlined in chapter one) using an experimental economic game.

Many of the issues associated with ethical spending can be seen as examples of social dilemmas (Steg, 2003). In order to explore ethical spending from a social dilemma prospective, we utilised a game based upon Sheldon & McGregor's (2000) forest game. This particular game can be considered as a reverse public good game, in which participants are allowed to subtract from a common resource. The game was selected because it mirrored real world ethical issues in the sense that participants were

presented with a choice between the long-term good of the wider group and short-term self-serving.

### *Introduction*

According to mainstream understanding, ethical consumption and investment involves favouring businesses and products that are perceived to be for the greater good.

Typically, ethical products fall into categories such as fair trade, cruelty free, organic, recycled, energy saving or produced locally. Despite the increased public and media attention, sales of ethically branded goods and services still represent a mere fragment of the entire market (Thøgersen, 2005). Even if the majority of consumers think it is socially and morally right to engage in ethical consumption, there are tangible costs to these behaviours. Ethically branded goods and services frequently carry a price premium that is greater than any associated increase in quality (De Pelsmacker et al., 2005). Therefore, it appears that consumers have to balance their desires for short-term cost saving against the long-term benefit for society.

When we consider the ways in which individuals make such decisions around ethical spending, we must be aware that there are a huge number of factors that could influence consumers' behaviour, including price, convenience, personal experience, branding and personal taste. In light of this, it was decided that, for our initial empirical analysis, we would strip away these factors by exploring whether self-regulation fatigue would make participants act in a more short-term and self serving way in their economic behaviour via the use of a social dilemma task.

Perhaps the most established model of ethical behaviour is Hardin's (1968) concept of the tragedy of the commons. According to this model, a moral decision occurs when people show restraint in a way that compromises immediate personal utility and instead favours the longer-time benefits for wider society. The tragedy component of the model refers to the tendency for many individuals to fail to consider the wider social implications of their actions, ultimately resulting in the common resource being depleted or a failure of the public good to be provided such that *all* members of society lose out. The term 'free-rider' refers to individuals who take from common resources but fail to contribute to their upkeep (Sheldon & McGregor, 2000; Olson 1965).

Ethical consumption can be considered to be a prime example of a 'social dilemma' in the sense that decisions relating to whether or not to consume ethically involve a direct conflict between an individual's short term interests (e.g. to save money) and the collective interests of wider society (Gattig & Hendrickx, 2007; Milfont & Gouveiac, 2006). Sticking with the terminology of a social dilemma, we can see that the failure to engage in ethical behaviour is a form of social trap. The term social trap refers to a situation where individuals choose courses of action that will result in short-term positive consequences for themselves, but long-term negative consequences for wider society (Joireman et al., 2008; Joireman et al., 2004). This is not to say of course that non-ethical purchasing can never be thoughtful or considered, nor that ethical spending cannot ever be motivated by personal interest.

Ethical consumption can be considered to represent an 'impure public good' (Chan & Kotchen, 2012), a notion first developed by Cornes and Sandler (1994) to describe a

good that has both personal and public utility. For example, if we consider organic foods, then we can see that the consumer derives both public (fewer polluting inputs) and private benefits (health and taste; although the taste difference has been disputed Fillion and Arazi, 2002) from their purchase. Likewise if we consider solar panels, we can see that there are both public benefits (environmental) but private benefits (lower spending on electricity and increased social approval).

### *Self-regulatory Fatigue*

People require the capacity for self-regulation in order to defend against their immediate hedonic impulses. Within psychology, the term self-regulation refers to the ability to constrain undesirable urges and to choose behaviour that is more appropriate to the individual's long-term goals (Alberts et al., 2007; Baumeister, 2002; Baumeister et al., 1998; Baumeister & Vohs, 2007). However, work conducted under the banner of ego depletion suggests that self-regulation is a cognitively demanding activity that cannot be indefinitely sustained (Baumeister *et al.*, 1998).

Work within the self-regulatory fatigue/ego depletion literature suggests that some source of internal cognitive resource is used for self-control. The exact nature of this central resource has not been fully determined but as outlined in chapter one this is likely to be related to the availability of blood glucose. It is thought that this central resource can be used for a variety of tasks including denying impulses, processing information and regulating thoughts and emotions (see Baumeister *et al.*, 1998). When an impulse is linked to a negative consequence, a battle between impulse and self-control is fought. However, the longer we have to fight, the less able we are to defend



ourselves from further temptation (Baumeister et al., 1998; Hofmann et al., 2007; Muraven & Baumeister, 2000). This is because self-control is a finite resource and diminishes with use (in much the same way that a muscle eventually tires with overuse). As this internal cognitive resource diminishes, individuals will begin to limit cognitive expenditure. This cognitive reduction will leave consumers less able to regulate behaviour in order to meet their long-term goals (e.g. Vohs & Heatherton, 2000).

From this general position, we could argue specifically that self-regulatory fatigue can lower our ability to consider the social components of spending. Moore & Loewenstein (2004) argue that regulating behaviour takes a large amount of cognitive exertion and considerable self-discipline, whereas thinking in a short-term egocentric manner is nearly automatic. If we assume that acting in accordance with the best outcome of a wider group requires a form of self-regulation, individuals in a state of ego depletion should be more likely to fall for the temptation of acting in accordance with self-interest. In this instance, that means a failure to contribute to the common good (Alberts et al., 2007; Baumeister, 2002; Baumeister et al., 1998; Baumeister & Vohs, 2007).

### *The Present Study*

Categorising ethical spending as a social dilemma allows us to utilise experimental economic decision games in order to make inferences about the potential impacts of self-regulatory fatigue on psychological processes that behaviour in social dilemma paradigms and ethical spending can be theorised to hold in common. In this study, we

utilise Sheldon and McGregor's (2000) 'forest game', a paradigm that was developed specifically to demonstrate and measure the tragedy of the commons. The game can be most accurately described as a reverse public goods game in which participants are offered a choice of harvesting a central resource (cutting down trees from a forest) or leaving the resource untapped in order to accrue interest (grow). The game can therefore be seen to model the real life decision between maximizing short-term utility and constraining consumption for the long-term benefit of the collective.

This study represents, to my knowledge, the first known empirical test of the effects of self-regulation fatigue on behaviour within public goods games and experimental economics more generally. However, previous studies have explored the effects of cognitive load within experimental games. For example, Roch, et al., (2000) found that under conditions of high cognitive load, participants took less readily from the common pool in a public goods game. In contrast, Cappelletti, Güth and Ploner, (2008) found no effect of cognitive load on behaviour in an ultimatum game. However, our current experiment differs from these previous experiments in that calculating the best outcome is highly complex and features a strong temporal element. This means that participants need to deploy computational abilities in order to calculate the consequences of early harvesting from the pool. As a result, it was predicted that individuals in a state of ego depletion would be unable to regulate behaviour in order to sustain the central resource and would cut down the forest at a significantly faster rate than will those in the low-depletion condition.

## *Methodology*

### *Participants*

Forty first-year undergraduates from the University of Exeter took part in this study. Participants were given course credit for attending the session and in addition were paid for according to their performance within the game (6 pence per hectare harvested). The mean age of participants was 20.20 years ( $SD = 3.17$ ). The individuals' responses were anonymous within the game, making it impossible to infer whether gender had a significant impact upon behaviour.

### *Design*

The experiment used a two-cell between-samples design that compared the levels of ego depletion (high vs. low ego depletion). Participants were asked to play the game in "teams" of four players. Five teams (20 participants) were used in each of the two experimental conditions. All four players in each team were exposed to the same experimental condition, that is, all four participants in a "team" would be in the high ego depletion condition or alternatively all four players would be in the low ego depletion condition.<sup>1</sup>

### *Materials and Procedure*

Participants were invited to the laboratory in groups of four. After all members of a group had signed a consent form, which provided a detailed explanation of the

---

<sup>1</sup> Only ten groups were initially recruited due to the financial costs of running these experiments. Further data collection was made impossible due to issues relating to changes of IT infrastructure at the University of Exeter

experimental procedure, the group was randomly assigned to one of the two experimental conditions. In order to manipulate ego depletion, we used the classic “white bear” paradigm (Wegner, Schneider, Carter, & White, 1987). Participants were instructed to imagine a walk through the zoo and to write down every animal they imagined. However, in the high ego depletion condition participants were specifically and repeatedly asked not to think about the white bear despite being repeatedly primed to do just that. The underlying assumptions of this manipulation are that attempting to suppress images of the white bear requires considerable effort and self-control, and that as a result of this prolonged thought suppression, participants’ capacity for self-control will be diminished. In the low ego depletion condition, no mention was made of the white bear. Participants were given 8 minutes to engage in the task.

Participants were then seated individually at computer terminals and asked to log into an online multiplayer social dilemma game. Participants were separated and were unable to view the other players’ screens. The experiment utilised the resource dilemma outlined by Sheldon and McGregor (2000), in which all four participants were given the opportunity to remove resources (cut down trees) from a central resource (a forest). Interest/regeneration of 10% accrued every year (based on the number of trees that remained in the central resource). However, no regeneration occurred from the trees subtracted from this central resource (trees that are cut down). The dilemma was thus a choice between considering the long-term good of the group and short-term self-interest. Participants were also informed that they would be paid six pence for each and every hectare of forest they cut down. The game finished after

25 rounds or once the forest had been exhausted.

After completion of the game, participants were asked to complete an online questionnaire that included the PANAS (positive and negative affect scales) in order to measure mood (Watson, Clark, & Tellegen, 1988). The scale is typically administered after self-regulation activities in order to assess whether the mood of participants was affected by the self-regulation manipulation. One criticism commonly levelled at self-regulatory fatigue experiments is that the manipulations could be potentially confounded by changes in mood. It was therefore decided to include a measure of PANAS in order to assess whether the manipulation altered participants' moods, and if so whether this had an impact on behaviour. The scale actually comprises two separate measures, one measuring positive emotion ( $\alpha = 0.82$  taken from the present experimental data) and one measuring negative emotion ( $\alpha = 0.80$ ). It has previously been suggested that processes such as transcendence and picturing the future requires more advanced cognition than considering present needs (Atance & O'Neill, 2001; Szpunar, 2010; Suddendorf & Corballis, 1997) and it is therefore reasonable to suspect that they will be more affected by self-regulatory fatigue. Therefore, it was decided to explore the effects of self-regulatory fatigue upon an original measure of time perspective. The experiment thus also asked participants to complete an original time perspective scale that included items adapted from Gjesme (1983), and Zimbardo and Boyd, (1999) ( $\alpha = 0.63$ ). This measure was included in order to see if any effects of self regulatory fatigue could be explained by changes in time perspective. As argued in chapter one, self regulation may impinge upon participant's ability to consider the

future. The scale measured how easy participants found it to consider the future (example item “it is difficult for me to picture the future at this current time”).

As an exploratory measure, participants were also given Kasser & Ryan’s (1996) aspiration index scale. In Sheldon & McGregor’s (2000) original forest game experiment, differences in behaviour were attributed to differences in intrinsic values (such as health and hedonism) and extrinsic values (such as community). The Kasser and Ryan scale was therefore included in order to determine whether any difference in behaviour could be attributable to changes in the salience or accessibility of types of values as a result of becoming ego depleted. The primary use of this scale is to distinguish between extrinsic, materialistic values (e.g. financial success, popularity and image) and intrinsic goals (e.g. affiliation, personal growth, community feeling). The scale presents participants with 56 statements about life events, which they are asked to rate in terms of the importance of an event occurring as well as a separate measure of its likelihood. The scale breaks down into a number of smaller subscales measuring participants’ perceptions of money, image, popularity, conformity, self-acceptance, affiliation, community, health, spirituality, hedonism and safety.

### *Results*

Players’ responses were extracted from the online database and each group’s performance calculated. The total number of trees remaining in the forest each year is displayed in Table 2 and Figures 1 and 2. The number of trees remaining at the end of

each year will be referred to as Tree years (it is a measure of the overall harvest of the group).

*Table 2:*

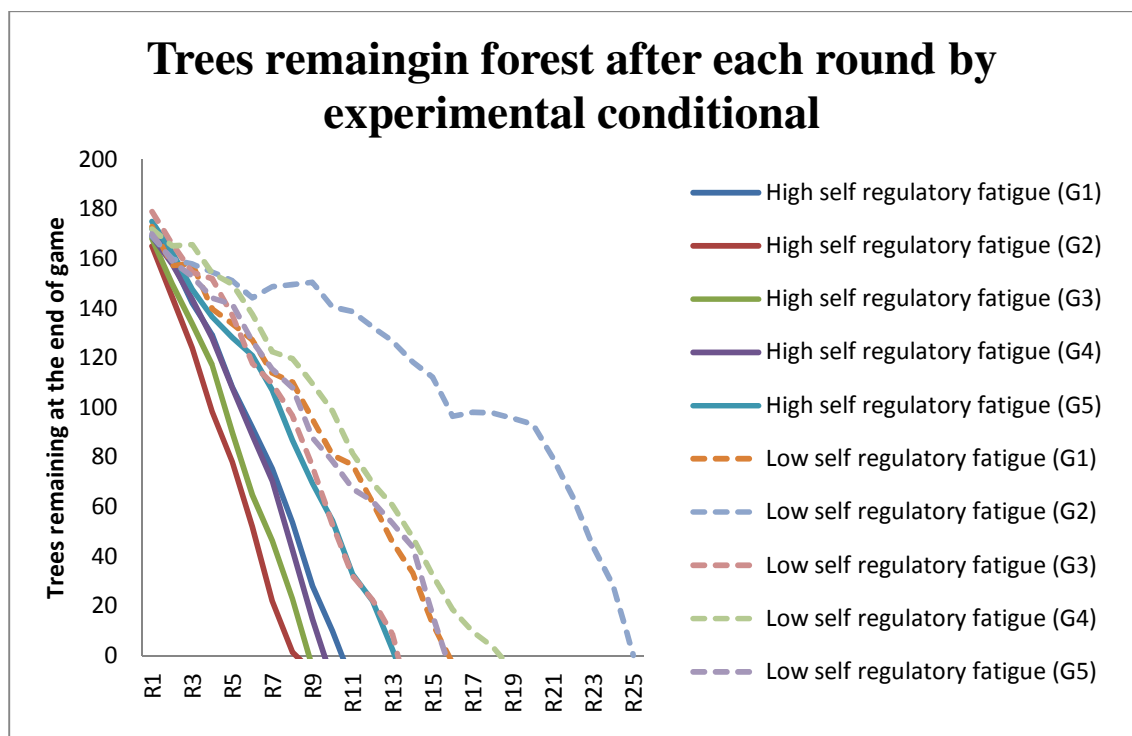
*Number of Trees Remaining in the Forest (Common Pool) by Experiment Condition*

	Low Ego Depletion		High Ego Depletion	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Total tree years	2170.67	621.19	1197.99	248.85
Total number of rounds	18.00	4.30	10.60	1.67
Trees Remaining: Year 1	200	0.00	200	0.00
Trees Remaining: Year 5	160.12	12.00	131.80	12.00
Trees Remaining: Year 10	117.46	28.46	24.74	31.64
Trees Remaining: Year 15	53.50	47.59	-	-
Trees Remaining: Year 20	21.06	47.09	-	-
Trees Remaining: Year 25	6.32	13.93	-	-

Figure 1 presents the data by plotting the number of trees remaining in the forest at the end of each year for each experimental condition. As can clearly be seen, the groups in the low ego depletion condition did not harvest the forest as quickly as those in the high ego depletion condition. The low ego depletion condition was therefore able to prevent complete deforestation for a longer period (on average, games lasted nine rounds longer).

As can be seen below in Figure 1, analyses revealed a large and significant difference

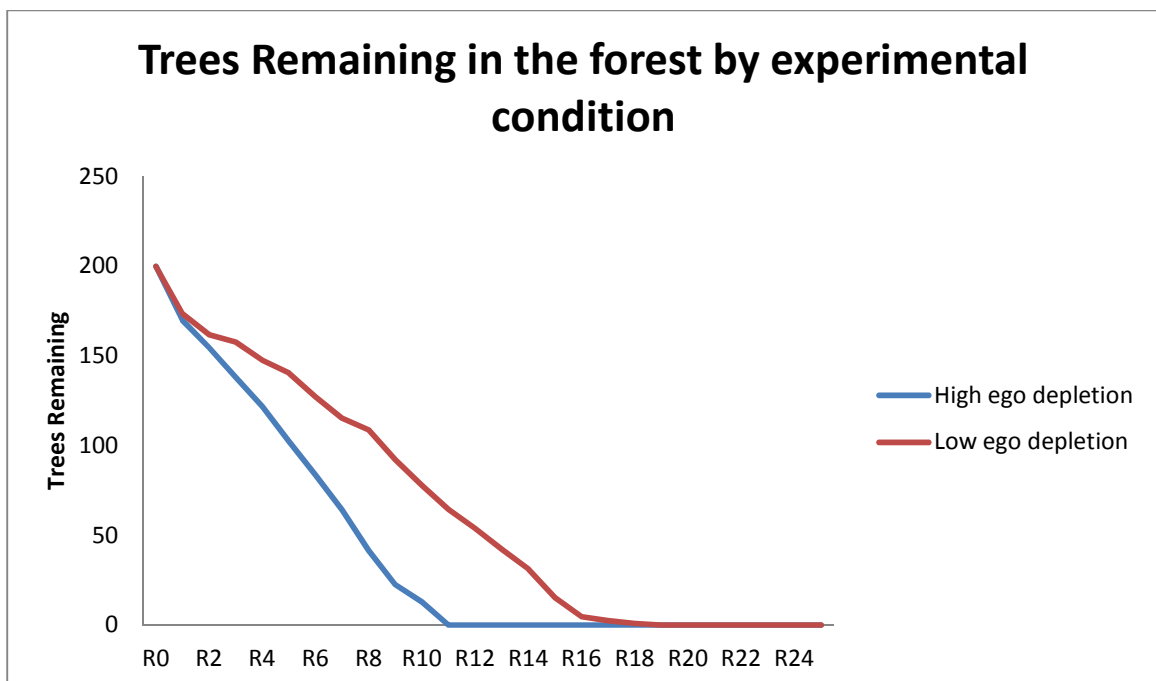
between conditions, with performance being better for every single group in the low ego depletion condition than for any group in the high ego depletion condition. Figure 2 shows the trend averaged across all groups. A repeated measure revealed a significant interaction between experimental condition and the number of trees cut down  $F(9,23)= 4.15, p=0.001$ ). The study featured only ten groups due to financial constraints, therefore there were insufficient participants to explore the data using a more hierarchical approach.



*Figure 1: Number of Trees Remaining in the Forest (Common Pool) Each Year by Group*



Group G2 in the low self-regulatory fatigue group was the only group that sustained the forest until the end of the game. To alleviate any potential concern about the effect of this ‘outlier’ group on the results, we repeated the analysis with this group removed. An independent sample t-test was conducted between high and low ego depletion groups in relation to the total number of tree years. Statistical analysis revealed that groups of participants in the low ego depletion condition were significantly better at managing the forest ( $M=2170.67$ ,  $S.D.=621.19$ ) than participants in a state of high ego depletion ( $M=1197.99$ ,  $S.D. =248.85$ ),  $t(8)= 3.25$ ,  $p=0.01$ .



*Figure 2: Number of Trees Remaining in the Forest (Common Pool) by Experiment Condition – G2 Excluded*

### *PANAS*

The self-regulatory fatigue manipulation had no significant effect on either negative mood  $t(38)=0.79, p=0.44$  or positive mood  $t(38)=0.80, p=0.43$ . Therefore, it is unlikely that differences in behaviour could be attributed to underlying changes in mood. One potential limitation of our experiment was the fact that the PANAS manipulation was presented after the main task. The measurement of mood may therefore be less valid than if presented in between the ego-depletion task and the forest game activity.

However, it was felt that if the measure was presented before the main experiment it would encourage participants to focus on their current mood, which may have resulted in participants engaging in mood regulation that could influence the effects of the ego depletion manipulation.

### *Time Perspective and Intrinsic and Extrinsic Values*

No difference was recorded in time perspective between the high ego depletion ( $M=2.72, S.D.=0.45$ ) and low ego depletion conditions ( $M=2.74 S.D.=0.451$ )  $t(38)=0.29, p=0.77$ . In terms of the intrinsic and extrinsic values scale the measure was separated into separate subscales: extrinsic values of financial success, popularity and image and intrinsic goals of affiliation, affection, health, safety, religion and community feeling. Ego depletion had no significant influence on the perceived importance of any of these values - all  $F < 1.671$ , all  $ps > 0.103$  (see appendix table 15). An earlier version of the scale was utilised by Sheldon and McGregor (2000) who found differences in these measures resulted in different behaviours within the forest game. However, we found no evidence here that scores on this scale were influenced by the level of ego depletion.

### *Discussion*

The initial aim of the study was to explore the effects of self-regulatory fatigue on participants' behaviour within a resource dilemma game. The results indicate the existence of distinct differences in harvesting behaviour as a result of the ego depletion manipulation. As predicted, groups of participants in a state of self-regulatory fatigue were less able to sustain the central resource. Groups in the high ego depletion conditions cut down the forest at a significantly faster rate, with participants in the low ego depletion condition keeping the central resource from exhaustion for an average of nine rounds longer than the depleted participants. The results indicated a profound difference in behaviour with a complete division in outcome, with every group exposed to the high ego depletion being less able to regulate behaviour than their non-depleted counterparts. As a result, individual participants in the high self-regulatory fatigue condition earned less money across the experiment than those in the low self-regulatory fatigue condition. The individual level was not suitable for analysis because of the non-independence of behaviour from other individuals within the group.

These results show that, in this instance, the tendency to act in accordance with the best outcome of a wider group and thus in the individual's long term self interest was undermined when participants were in a state of ego depletion. The findings suggest that self-regulation may be necessary in order to avoid falling into the social trap of acting in an immediately self-interested way (Alberts et al., 2007; Baumeister, 2002; Baumeister et al., 1998; Baumeister & Vohs, 2007). These results can therefore be considered as an important first step in establishing a negative relationship between ego depletion and ethical spending and investment.

As we argued that socially-minded spending incorporates both a social and a temporal conflict, we expected to discover a difference in the time frame measure (Gattig & Hendrickx, 2007; Milfont & Gouveiac, 2006). Since self-regulation refers to the ability to adjust behaviour in order to ensure that it is appropriate for our long-term goals, one might predict that ego depletion could alter our ability to consider future outcomes. There was no evidence for an effect of ego depletion on time frame. This said, a number of methodological shortcomings could have potentially led to this result. The scale used to measure time perspective was an original measure and therefore has no lineage of successfully measuring time perspective. Also, the measure could be deemed to be a measure of longer-term behavioural trends, as opposed to an accurate depiction of current mode of thinking. However, in the absence of any evidence for a link with time perspective, we must consider that ego depletion may simply have made individuals more self-centred or distrustful of the behaviours of others, with the consequences for their long term interests following from that rather than from any contraction of their time horizons

### *Limitations*

Whilst the use of experimental economics can be a useful way to model behavioural decision-making in an experimentally controlled setting, the methodology is not without problems. The experiment remains a fairly abstract operationalisation of co-operative behaviour, which, although theoretically related to the act of ethical consumption, is quite different in nature to the real world behaviour of consumers. As a result, it is perhaps difficult to relate findings to real life shopping. We cannot conclude

from this study how ego depletion might influence spending behaviour in a retail environment, and specific research is needed to see how it influences existing spending patterns and perceptions of price. We must also be aware that the participants involved in this study were all undergraduate students. Whilst we have no specific reason to suspect that their behaviour on the task would be different to any other group within society, we must be aware that our use of a student sample means we cannot rule out this possibility.

### *Conclusion*

In spite of these limitations, this study provides us with an important demonstration of the effect of ego depletion upon the decisions made within commons dilemmas. From these findings, it can be suggested that ego depleted participants may be less able to make economic and consumption decisions that are in the best interest of wider society. If this pattern of behaviour holds true in actual shopping then this has the potential for wide-reaching implications. However, a less abstract measure of ethical spending behaviour is required before we can make these claims. In the chapters that follow we report upon studies that attempted to address this issue.

## **Chapter Five: Self-regulatory fatigue and Willingness to Pay for Ethical Products**

### *Background*

Chapter four presented the findings of an empirical study investigating the hypothesised relationship between self-regulatory fatigue and ethical economic behaviour. The results showed that individuals in a state of self-regulatory fatigue were less able to sustain the central public good within the “forest game” (Sheldon & McGregor, 2000). The findings support the notion that self-regulatory fatigue may result in economic decisions that are both short-term and self-interested. However, further research is required before we can make substantiated claims about the relationship between self-regulatory fatigue and real life ethical spending. In this present chapter, we build upon the findings of chapter four by using measures more closely related to real life spending, namely, measures of willingness to pay.

### *Introduction*

Of all the issues that may prevent consumers from engaging in ethical consumption, the high price of ethical goods is perhaps the most deterring (Thøgersen, 2005). Ethical goods frequently carry a price premium as a result of their increased production costs. Whilst it could be argued that ethically branded goods are of superior quality to their non-ethically branded alternatives, the difference in price is in excess of any normally acceptable increase based on quality alone (Auger, Burke, Devinney & Louviere, 2003;

De Pelsmacker et al., 2005; Thøgersen & Ölander, 2006). Attempting to understand if and when consumers are willing to pay a price premium for ethical goods has generated a large body of empirical research (De Pelsmacker et al., 2005; Loureiro & Lotade, 2005; Krystallis & Chrysosoidis, 2005). Research has shown that consumers are willing to pay a premium for various ethical concerns including locally sourced produce (Darby et al., 2008) and pesticide free produce (Roosen 1998). However, for many consumers, the acceptable premium for ethical causes is below the actual price charged by retailers. In a survey of 808 Belgian consumers by De Pelsmacker et al. (2005), participants were willing to pay an additional 10% for Fair Trade coffee, however this was below the 27% premium charged at the time. Similar findings have been reported by Loureiro, McCluskey and Mittelhammer (2002) in relation to organic apples and by Roe, Teisl, Levy and Russell (2001) in relation to green electricity.

In trying to understand why some consumers are willing to absorb the premium for ethical goods, empirical research has tended to focus upon socioeconomic and demographic factors. For example, educated females of a higher social status are the most willing to pay for ethical goods. However, the predictive power of these variables is relatively weak (Carrigan & Attalla 2001; Maignan & Ferrell 2001) and therefore we argue that it is also necessary to consider how internal psychological factors impact upon consumers' willingness to pay for ethical goods. Consumers' self-regulatory capacity represents one such factor in need of empirical investigation.

*Self-regulatory Fatigue and Willingness to Pay for Ethical Goods*

As outlined in chapter one, the longer we engage in self-regulatory activities the lower our capacity to resist further temptation (in a process known as self-regulatory fatigue) (Baumeister & Heatherton, 1996; Muraven & Baumeister, 2000). Vohs and Faber (2007) found that participants who had engaged in a prior attention control task were willing to pay higher prices for a range of products. Vohs and Faber (2007) argued that self-regulatory fatigue made participants more impulsive in their purchasing and therefore willing to pay a price premium. However, it is important to note that Vohs and Faber's research was not focused upon ethical goods. We postulate that self-regulatory fatigue will actually lower participants willingness to pay when the goods in question are branded as having an ethical qualities.

In many ways, ethical consumption could be considered as the opposite of impulsive spending. Whilst impulsive spending is characterized by unregulated, short-term and self-serving attitudes, ethical consumption represents a long-term, socially minded and regulated behaviours (Dittmar & Drury 2000; Gattig & Hendrickx, 2007; Joireman et al., 2004). According to Thøgersen (2005), individuals have limited cognitive capacities, which may negatively impact upon their ability to consider the wider impact of their spending. Picturing the potential future benefits of ethical spending could be considered as a cognitively advanced process (Atance & O'Neill, 2001; Szpunar, 2010; Suddendorf & Corballis, 1997) and it may therefore not be possible at times of self-regulatory fatigue. Therefore, self-regulatory fatigue could be hypothesised to have a negative impact upon participants' willingness to pay, because they will not see the



value that ethical production adds to a product. We set out to test this hypothesis in the studies that follow.

*Study 1: Self-regulatory Fatigue and Willingness to Pay for Ethical Goods*

The purpose of this study was to determine whether engaging in a task designed to induce a state of self-regulatory fatigue would impact upon consumers' willingness to pay for ethical goods. How to accurately determine consumers' willingness to pay for a product is one of the most debated issues within consumer research (Breidert Hahsler, & Reutterer, 2006). Direct methods that ask participants to estimate how much they would pay for an item have failed to garner realistic estimates of what consumers will actually pay in-store. As Nagle and Holden (2002, p. 345) state, direct measurement of willingness to pay studies "are at best useless and are potentially highly misleading".

A range of techniques has been developed to gain an accurate estimate of the price people are willing to pay for products. Willingness to pay experiments can be broadly divided into experimental methodologies and naturalistic field experiments (Breidert, Hahsler, & Reutterer, 2006). Field studies have been increasingly used by large commercial companies in order to set retail prices. These approaches involve product prices being systematically varied within a test area (a shop or small retail outlet) in order to find out how price increases influence the rate of purchase. This approach eventually helps to reveal the optimal price to charge for a product. However, these studies are of high expense and are often not practical within the context of an

academic study. It was therefore decided to approach willingness to pay with an experimental methodology.

A variety of experimental techniques have been developed in order to measure consumers' willingness to pay for products. Auctions are one such technique that has been extensively used within academic research (Wertenbroch & Skiera, 2002). In these studies, consumers' willingness to pay is typically taken from participants' bids in a closed auction where buyers and/or sellers submit sealed bids that are not public to other bidders. In order to increase the accuracy of the bids, the winning participant has the right to purchase the good at the end of the experiment (Vickrey, 2012). Typically, the willingness to pay estimate is taken from the second highest bid (as this has been found to garner more realistic estimates than taking the highest bids). However, it has been argued that auction studies typically overestimate consumers' willingness to pay due to participants often becoming preoccupied with *winning* the auction, thereby distorting the estimate (Breidert Hahsler, & Reutterer 2006).

Perhaps the most widely utilised methodology for estimating consumers' willingness to pay is conjoint analysis. This technique asks participants to rank product attributes in order of preference (Rao & Hauser, 2004 for review). From these rankings, willingness to pay for various attributes can be estimated. This technique has been used previously in relation to ethically branded products (De Pelsmacker et al., 2005; Basu & Hicks, 2008). However, the methodology has been criticised for being artificial and cognitively demanding (Brown et al., 1996). It was therefore deemed more appropriate

to utilise an approach based upon discrete choice analysis or, as it is sometimes alternatively known, choice based conjoint analysis (Louviere & Woodworth, 1983).

Discrete choice analysis involves presenting respondents with full product profiles (a short textual or visual description of a product) and asking them to choose their preferred option (Haaijer et al., 2001). The prices of the goods, or the product's characteristics, are systematically changed in order to test their effects upon consumer choice (Cooper & Loomis, 1992). The technique has been used in order to explore consumers' willingness to pay for a variety of ethical products including green energy (Rivers & Jaccard, 2005) and washing machines (Sammer & Wüstenhagen, 2005). It was hypothesised that under conditions of self-regulatory fatigue, individuals will be less willing to pay for ethically branded products.

### *Methodology*

#### *Design and Participants*

All participants were undergraduates from the University of Exeter who took part in exchange for course credit. The study was conducted with 41 participants, 33 female and 8 male, with a mean age of 20.7 years ( $SD=5.51$ ). The majority of the participants were British (85.4%). The experiment was based on a self-regulatory fatigue (high vs. low) between-subjects design. Participants were randomly assigned to condition.

#### *Procedure and Materials*

All participants were first asked to complete a vowel task for ten minutes. In the low

ego depletion condition, participants were simply asked to count the number of “e”s in a one A4 page article. In the high ego depletion condition, participants were given additional instructions that made the task extremely difficult. They were told not to count an “e” if it occurred next to another vowel (a,e,i,o,u), but to ignore this initial rule and count the “e” if the word had either four or seven letters (based upon Baumeister, et al., 1998).

Participants were then presented with a computerised discrete choice analysis task. Each description outlined the key attributes of a product and its ethical status. This description contained one paragraph outlining the product type and how it was produced. All three product descriptions appeared side by side on the same computer screen. Each product choice included a standard (‘value’) product, a marginally more ethical choice, and a fully ethical choice. All participants were presented with three different types of products: chicken<sup>2</sup>, fruit juice<sup>3</sup> and chocolate<sup>4</sup>.

In the first round, all products were priced at the same level. In the second round, the marginally more ethical product cost 5% more than the value product and the fully ethical option cost an additional 10%. Every subsequent round the cost of both ethical alternatives increased by an additional 5% (the value remaining at the first round price). An important consideration for conjoint analysis studies is the ‘number of levels’ effect (Bredery, Hashsler & Reutterer, 2006). It is possible that the greater the

---

<sup>2</sup> Chicken ranges: value: produced in a battery cage, lower ethical: barn raised with access to the outside and higher ethical: free range

<sup>3</sup> Fruit juice ranges: value: standard orange juice, lower ethical: fair trade and higher ethical: fair trade and organic)

<sup>4</sup> Chocolate ranges: value: standard chocolate bar, lower ethical: organic and higher: fair trade and organic.

number of price levels, the less accurate the measurement of willingness to pay. This is because a high number of levels can result in participants losing interest and not considering each choice. Therefore the experiment only offered seven different price points per product. The computerised experiment monitored which type of goods participants chose at the different price points.

### *Results*

Willingness to pay was calculated by ascertaining the mean number of price increases before a participant selected, firstly, the marginally more ethical alternative, and secondly the standard, non-ethical alternative. The number of rounds is displayed in Table 3.

*Table 3:*

*Willingness to pay for ethical goods by condition (high vs. low self-regulatory fatigue)*

<i>Product</i>	<i>High or low ego depletion</i>	<i>Mean rounds before accepting lesser ethical standard</i>	<i>SD</i>	<i>Mean rounds before accepting non-ethical product</i>	<i>SD</i>	<i>N</i>
Chicken	Low	4.14	2.48	6.10	2.64	21
	High	4.15	2.68	6.20	2.73	20
Fruit Juice	Low	3.19	2.11	5.57	2.69	21
	High	3.35	1.93	5.40	2.72	20
Chocolate bar	Low	2.86	2.29	3.95	2.50	21
	High	2.05	1.32	4.00	2.73	20

Analysis of variance revealed that the level of self-regulatory fatigue had no significant impact upon the likelihood of initially choosing an ethical or non-ethical product

( $F(1,39)=0.13, p=0.72$ )<sup>5</sup>. Self-regulatory fatigue had no impact upon the number of price increases required for individuals to accept a product of lower ethical standard ( $F(1,39)=0.08, p=0.78$ ) or to select the product with the lowest ethical standards ( $F(1,39)=0.001, p=0.99$ ). The results indicated that, on average, a price of £4.78 to £5.13 was sufficient for individuals to select the non-ethical chicken (compared to a price of £3.54 for the non-ethical alternative), in both the low and high self-regulatory fatigue condition. For the fruit juice a price of £1.16 to £1.25 was sufficient (compared to a base line of £0.86) to select the non-ethical alternative, whilst for the chocolate a price of £0.99 to £1.08 (low self-regulatory fatigue) and £1.08 to £1.16 (high self-regulatory fatigue). Therefore, there was no evidence supporting the hypothesis that ego depletion would lower willingness to pay for ethical goods.

### *Discussion*

The purpose of this study was to explore whether self-regulatory fatigue would lower consumers' willingness to pay for a variety of ethical goods. It was hypothesised that participants within the low ego depletion condition would be more willing to absorb a higher price premium for ethical goods than those in the high ego depletion condition. However, contrary to predictions, self-regulatory fatigue had no effect upon consumers' willingness to pay for ethically branded products presented in the study.

---

<sup>5</sup> In terms of participants not selecting the ethical alternative as their initial choice: four participants did not pick the ethical chicken (two in the high ego depletion condition and two in the low ego depletion condition), three participants did not pick the ethical alternative for the fruit juice as their initial choice (two in the high ego depletion condition and one in the low ego depletion condition), and nine participants did not choose the ethical option immediately (four in the low ego depletion condition and five in the high ego depletion condition).

Clearly, therefore self-regulatory fatigue does not appear to reduce the tendency to make ethical choices under all conditions. Consideration of the present methodology leads to some suggestions about the conditions that may be required for self-regulatory fatigue to be observed.

Within this study, participants were only asked to consider a limited number of products. In the real world however, consumers are frequently asked to choose between dozens of alternatives. Simply choosing between three alternatives is simpler and shorter than negotiating the thousands of products available within a typical supermarket. Considering that ego depletion can restrict our working memory and our ability to make complex decisions, it may be that simple spending decisions are relatively unaffected by self-regulatory fatigue (Schmeichel, Vohs & Baumeister., 2003; Baumeister et al., 1999; Hinson et al., 2003). However, in situations with a large number of choices, self-regulatory fatigue may have a more profound influence upon behaviour. In order to explore this possibility, the second study utilised a dilemma based upon the secretary problem to investigate whether the ability to consider alternatives may be impinged upon by ego depletion.

*Study 2: Self-regulatory Fatigue  
and the Secretary Dilemma*

The secretary problem was first popularized by Gardener (1960), but was actually devised by Flood (1949). The basic problem depicts a situation where an administrator is required to hire the best possible secretary. The administrator interviews the secretaries one by one. After each of the candidates has been interviewed, the

administrator must choose between immediately hiring that candidate or rejecting them and interviewing somebody else. This decision is non-reversible, meaning that once a candidate has been rejected they can no longer be recalled. The paradigm was devised in order to measure how many options an individual would consider before making a decision. Since its invention many variants, under many names, have been studied, particularly in relation to online auctions (Babaioff, Immorlica, Kempe & Kleinberg et al., 2007; Buchbinder & Naor, 2005). Our study hoped to use the technique in order to determine how many products a participant would consider before making a spending decision. It was predicted that those in the high self-regulatory fatigue condition would consider fewer choices before making their decisions than those in the low self-regulatory fatigue condition, due to the cognitive difficulties associated with making multiple decisions. The study also aimed to investigate whether participants in the high self-regulatory fatigue condition would be less likely to choose an ethically branded product.

### *Method*

#### *Participants*

All participants were undergraduates from the University of Exeter taking part in exchange for course credit. Fifty-five participants took part, all aged between 18 and 25. The experiment was based on a two-cell (self-regulatory fatigue: high vs. low) between-subjects design.



*Design and Procedure*

Participants were randomly assigned to either the high self-regulatory fatigue condition or low self-regulatory fatigue condition. The vowel task used in study one was once again utilised, with the high fatigue condition being presented with the same set of difficult additional rules. Participants were asked to engage in the task for ten minutes, before then moving on to a secretary problem type task in which they were asked to select a single chocolate bar from a list of approximately 200, 25 of which were labelled as either Fair Trade or Organic in both their title and product description

The classic secretary problem involves participants having to discard or select an option immediately, with previous choices remaining irrevocable (Babaioff, Dinitz, Gupta, Immorlica, & Talwar 2009; Freeman, 1983). However, in our study participants were allowed to revisit previous choices to make the activity more natural in terms of shopping choice. Participants were not informed about the number of different chocolate bars available. The computerised task monitored the numbers of bars each participant considered prior to selection and whether an ethically branded bar (prefixed with either the words organic or fair-trade) was selected. Participants were then asked to rate the extent to which they themselves thought of Fair Trade products and organic products as being important, along with the relative importance of other issues such as price and size of bar.

### Results

Participants' responses were extracted from the online database. The mean numbers of choices considered by participants are displayed in table 4.

*Table 4: Number of Chocolate Bars Considered by Self-regulation Condition (high vs. low self-regulatory fatigue)*

	Self-regulatory fatigue	Mean	SD	N
Number of products considered	Low	9.58	9.09	26
	High	9.27	9.66	26
Choice Certainty	Low	4.65	1.08	27
	High	4.70	1.01	27
Importance of Fair Trade	Low	4.59	1.40	27
	High	3.89	1.66	28
Importance of Organic	Low	3.82	1.75	27
	High	3.21	1.71	28
Importance of Size of bar	Low	4.15	1.70	27
	High	4.75	1.88	28
Importance of Price	Low	6.00	1.39	27
	High	6.29	0.66	28

There was no significant difference in the number of products individuals considered between the high self-regulatory fatigue ( $M=9.27$ ,  $SD=9.66$ ) and low self-regulatory fatigue ( $M=9.58$ ,  $SD=9.09$ ) conditions ( $t(50)=0.118$ ,  $p=0.91$ ), nor in the likelihood of buying either a fair trade or organic bar (with only two participants in the high ego depletion condition picking either a fair trade or organic bar and one in the low ego depletion condition – the low levels of ethical spending may have acted as a ceiling effect preventing an effect of self-regulatory fatigue from being recorded). There were no significant differences in participants' rating of the importance of chocolate being Fair trade ( $t(53)=1.64$ ,  $p=0.11$ ) or organic ( $t(53)=1.29$ ,  $p=0.20$ ) between the low and

high self-regulatory fatigue conditions, however, it should be noted that all the figures were in the predicted direction

### *Discussion*

The purpose of this study was to explore whether self-regulatory fatigue would influence the number of products a participant would consider before making a decision. It was conducted with the explicit aim of exploring whether the non-significant findings in the first study could be explained by the fact that we presented participants with a choice between a very limited number of products (3 in each product class). Considering that ego depletion can restrict an individual's ability to make complex decisions, it remains possible that simple spending decisions may be relatively unaffected by self-regulatory fatigue (Schmeichel, Vohs, & Baumeister., 2003; Baumeister et al., 1999; Hinson et al., 2003). It was predicted that those in the high self-regulatory fatigue condition would consider fewer choices before making their decisions than those in the low self-regulatory fatigue condition. However the results failed to find an effect of self-regulatory fatigue on the number of products considered by participants prior to product selection. We therefore did not find any evidence to suggest that those in a state of ego depletion found it more difficult to consider multiple alternatives than their non-depleted counterparts.

However, it could be argued that the tasks presented within the second study were actually overly simplistic. Although there were many alternatives presented in the second study, only a single product had to be selected. This meant that fewer choices were required than within a typical weekly supermarket trip. It is perhaps possible that

it is only when presented with longer shopping tasks, and with a wider range of alternative products, that participants' decisions around ethical produce might begin to be significantly affected by self-regulatory fatigue as they were in the "forest game" study reported in chapter four. It appears from the present results that self-regulatory fatigue will not affect choices in very simple contexts, even when multiple alternatives are available

An alternative explanation of the results of the present chapter relates to the manipulation of self-regulatory fatigue itself. There are currently a variety of manipulations of ego depletion, the majority of which involve the simultaneous initiation of two or more conflicting responses, including the clerical tasks (the vowel count task) used in the two studies described in this present chapter (Baumeister, et al., 1998). However, a number of other manipulations exist including the white bear task used in chapter four. For example, the mirror tracking task developed by Quinn, Brandon, and Copeland (1996) and used in studies including Fennis, Janssen and Vohs,(2009), requires participants to trace a shape with their non-dominant hand whilst only able to watch their hand in a mirror. This type of task may use very different underlying cognitive processes, yet relatively little distinction is made in the self-control literature between quite different tasks that are used to attempt to invoke states of ego depletion.

The current thrust of self-regulatory fatigue research focuses upon the *effects* of ego depletion, but less research has been concerned with trying to identify the underlying processes or mechanisms that drive such effects. At the time of writing, there has been

no systematic neuroscientific exploration of the ways in which various manipulations of self-regulatory fatigue exert their effects. We cannot be certain that all manipulations of ego depletion have the same effect upon behaviour or are actually manipulating the same underlying cognitive structures or processes. It was therefore decided that subsequent studies would adopt the most widely used manipulation of self-regulatory fatigue (the white bear paradigm used successfully in chapter four) and the technique that has been recommended by the Baumeister and Tice laboratory (the attention control task).

### *Conclusion*

The purpose of the studies described in this present chapter was to explore the effects of self-regulatory fatigue on participants' willingness to pay for ethical goods. However no significant effect was recorded. Given the substantial previous literature demonstrating a significant and substantial effect of ego depletion on choice tasks, including the results reported in chapter four of this thesis, we suggest that the non-significant findings could be partially attributable to the simplicity of the measure utilised. Ego depletion clearly does not affect the tendency to make ethical choices under all conditions. However, it remains possible that in more complex, realistic purchasing situations, the effects of self-regulatory fatigue upon ethical spending would be more pronounced. The subsequent studies set out to explore this possibility.

## **Chapter Six: Self-regulatory Fatigue and Spending Upon Ethical Products**

### *Background*

The findings from the forest game presented within chapter four demonstrated that self-regulatory fatigue could have a significant impact upon economic behaviour. Players in a state of self-regulatory fatigue were less able to sustain the central resource than their non-fatigued counterparts. Building upon these findings, chapter five explored the effects of self-regulatory fatigue on participants' willingness to pay for ethical goods. However, no significant effect of self-regulatory fatigue was recorded. Therefore clearly ego depletion does not affect the tendency to make ethical choices under all conditions. One of the many differences between the methodology of studies presented in chapter four and those of chapter five was the complexity of the situation participants were faced with. A plausible explanation for the non-significant finding of chapter five is that the measurement of consumer choice was overly simplistic and was certainly a much more straightforward choice than those involved in the forest game. It remains a possibility that in more realistic and complex contexts, self-regulatory fatigue may indeed have an effect upon ethical spending.

This chapter reports the findings of four studies that explore the hypothesis that self-regulatory fatigue would lower participants' rates of ethical spending within the context of more realistic environments. The first three of these studies used a purpose-built online supermarket simulation in order to measure the effects of ego depletion

upon shopping choices. In the fourth study, participants were asked to complete a self-report measure of self-regulatory and mental fatigue prior to going shopping in actual stores in which they were spending their own money, with their subsequent purchasing being recorded.

### *Introduction*

"I do not understand my own actions. For I do not do what I want, but I do the very thing I hate." St Paul (Romans, 7: 15)

It is widely believed that consumers' material desires have exacerbated the world's environmental crisis and have led to widespread exploitation of human labour and ethically questionable farming practices (Barnett, et al., 2005). Over the course of the last few decades, the negative externalities (costs to society of economic behaviour) surrounding consumption have been made increasingly salient to consumers (Thøgersen, 2006). In response, an increasing number of consumers are expressing a desire to adopt ethically sound consumption patterns (Thøgersen, 2005; Co-operative bank survey 2011).

Ethical consumption and investment involves favouring products that are perceived to be for the greater good, be they fair trade, energy-saving, cruelty-free, organic, recycled or produced locally. From one point of view the ethical consumer movement has been wildly successful, with the sales of ethical goods rising (Carrigan & Attalla, 2001). A longitudinal study by the Co-operative Bank showed sales of ethical goods

increased in the UK by around 12% a year between 2004 and 2007, reaching £46.7 billion in 2011. However, the sale of ethically branded goods still lags behind the sales of their non-ethical competitors in many markets (Cooperative bank survey 2011).

In order to determine the factors that drive ethical spending, psychological research has primarily focused upon consumer attitudes and behavioural intentions (Andorfer & Liebe 2012; Milfont & Duckitt, 2004). However, attitudes and behavioural intentions have proven to be very inconsistent predictors of actual behaviour. Whilst people frequently claim to be ethical consumers, their behaviours frequently stand in sharp contrast (Carrington, et al., 2010; De Pelsmacker et al., 2005; Organisation for Economic Co-operation and Development, 2004; Cowe & Williams, 2000). The discrepancy between ethical intentions and spending has been referred to as the 'ethical purchasing gap' and the 'attitude-behaviour gap' (Auger & Devinney, 2007; Cowe & Williams, 2000; Cotte & Trudel, 2009; Vermeir & Verbeke, 2006).

Producing goods with strict adherence to ethical principles frequently increases both production costs and the final retail price of the produce. The price premium associated with ethical goods is frequently used in order to explain the attitude-behaviour gap. Unfortunately, it appears that consumers are frequently unwilling to pay the premium charged for ethically branded goods (DePelsmacker et al., 2005; Fransson & Gärling, 1999; Thøgersen & Ölander, 2006). Whilst the importance of price cannot be overstated, I will argue that in addition to limited financial resources, individuals also have limited cognitive capacity, which may impinge on ethical spending, as has been



alluded to by Thøgersen (2005). Making an ethical spending decision requires the individual to consider that the particular spending decision has a moral component, estimate the potential costs and benefits both now and in the future and weigh up these options, establish the intention to act morally and then ensure that intention translates to behaviour (Street et al., 2001). Therefore, one might argue that there are a number of points in this process where ego depletion might interfere with the decision making processes. However, the focus of the argument outlined in chapter one has been that ego depletion can result in a reduced capacity to consider the wider social implications of their spending.

### *Self-regulatory fatigue and Ethical Spending*

The concept of self-regulatory fatigue was first developed by Baumeister and colleagues to explain individuals' seeming inability to resist temptation indefinitely (Baumeister et al., 1998; Baumeister et al., 2008; Baumeister & Vohs, 2007). The term self-regulation refers to the ability to constrain our undesirable urges and choose behaviour that is more appropriate to our personal long-term goals (Baumeister et al., 1998). According to the self-regulatory fatigue (ego depletion) literature, individuals frequently fail to control their behaviour because they have previously over exerted their limited capacity for self-control (Baumeister et al., 1998).

Work conducted under the banners of self-regulatory fatigue and ego depletion has suggested that self-control requires the expenditure of some form of cognitive fuel (presumed to be blood glucose) (Gailliot, 2008; Inzlicht & Gutsell, 2007). This cognitive resource is not infinite and temporarily diminishes with use. In response to

this depletion, individuals begin to limit all non-essential cognitive expenditure, including further acts of self-regulation (self-control). It is argued that individuals who engage in excessive self-control will find themselves in a fatigued state and will attempt to limit cognitive expenditure in order to prevent complete mental fatigue (Baumeister & Heatherton, 1996; Hofmann, Friese & Strack, 2009; Muraven & Baumeister, 2000). A full review of the self-regulatory fatigue literature can be found in chapter one.

Vohs and Faber (2007) have shown that engaging in self-regulatory fatiguing activities can result in impulsive economic behaviour. In their first study, participants were asked to determine the prices that they would be willing to pay for various products. The findings showed an increased willingness to pay as a result of the self-regulatory fatigue manipulation. In their second study, participants were given \$10 and could either leave with the money or spend it in the bookstore. For those with high impulsivity, self-regulatory fatigue resulted in higher purchasing in the store, which the authors argue was impulsive because it could not have been planned prior to the experiment. In their final study, participants who were fatigued displayed a preference for products that would temporally enliven mood (chocolate) as opposed to products with long-term health benefits (fruit). Vohs and Faber (2007) thus concluded that self-regulatory fatigue increases impulsive purchasing. It is our argument that ethical consumption represents the opposite of impulsive spending in many ways and if this is the case, it follows from Vohs and Faber's results that self-regulatory fatigue should reduce consumer's rates of ethical consumption. Impulsive spending is characterized by unregulated, short-term and self-serving attitudes, whilst ethical consumption is

characterized by long-term, socially-minded and self-regulated behaviours (Dittmar & Drury 2000; Gattig & Hendrickx, 2007; Joireman et al., 2004). That is not to say that ethical consumption cannot also potentially occur through an act of impulse. However it is argued here that individuals ethical purchases are *more* likely to be the result of more considered, deliberative thought processes, processes that are likely to be impaired when in a state of ego depletion.

Due to the high prices associated with ethical spending, moral purchasing can be considered as an example of both an inter-personal and inter-temporal choice, in the sense that consumers are presented with the choice between immediate, personal rewards (saving money) and long-term and socially shared rewards (e.g. environmental protection, high standard of living in developing nations, higher standards of animal welfare) (Gattig & Hendrickx, 2007; Loewenstein et al., 2003). As was argued in chapter one of the thesis, considering both the future (Atance & O'Neill, 2001; Szpunar, 2010; Suddendorf & Corballis, 1997) and others' points of view (Moore & Loewenstein, 2004) is a cognitively demanding activity. Therefore it is hypothesised that individuals in a state of self-regulatory fatigue may be likely to fall for immediate temptation and therefore less likely to engage in ethical purchasing.

### *Study 1*

The first study looks at the potential relationship between self-regulatory fatigue and ethical spending using an online supermarket simulation. The decision was made to investigate this potential relationship using an online store because it presents consumers with multiple choices within an aesthetically realistic spending situation. In

chapter five, I presented findings showing that self-regulatory fatigue did not lower willingness to pay for ethical goods in a conventional discrete choice experiment. One possible reason suggested for the lack of an effect was the lack of volume of choices within the experiment. Therefore it was decided to present participants with a shopping environment offering a level of complexity that came much closer to the complexity of real life shopping. In order to achieve this, a large-scale online supermarket featuring 1900 products was created. All prices were based upon the average prices of actual products from [www.tesco.com](http://www.tesco.com) (the UK's largest supermarket chain, with prices being taken on the 28th July 2008). Prices were matched to product range so that the organic range was based upon real life organic products. However, no real life brands were used in the store (permission was not granted by the hosting university due to copyright issues). It was predicted that self-regulatory fatigue would result in lowered spending on ethically-branded goods within the online store.

### *Methodology*

#### *Participants and Design*

All participants were first year psychology undergraduate students at the University of Exeter taking part in exchange for course credit. One hundred and one students took part in the study, all aged between 18 and 25 years. Participants were randomly assigned to either high or low self-regulatory fatigue conditions.

### *Materials and Procedure*

In a pre-experiment questionnaire (completed one week before the main part of the study), participants were asked to estimate their typical weekly spending on food. On the basis of their answers, participants were categorised as having high (above median) or low typical spending. A median split was conducted upon consumer typical spending due to the non normal distribution of typical spending amount. In the second half of the study, participants were invited to come to a computerised laboratory. After signing an informed consent form, participants were assigned to one of the two experimental conditions (high vs. low self-regulatory fatigue). In order to manipulate self-regulatory fatigue, the classic “white bear” paradigm was used (Wegner et al., 1987), the details of which are described in chapter two. Participants were left for eight minutes to engage in this task.

Participants were then asked to log into the online store. The online store featured 8 ranges of products. “Bites” range represented a standard product range, “Essential” represented the value low cost alternative and “Decadence” represented the luxury range. The various ethical ranges included organic, fair trade, locally sourced, free range and vegetarian. In order to ensure the ethical principles surrounding a purchase were clear to the participants, each product name was prefixed with the product range (so orange juice might be titled “Fair Trade Orange Juice”).

The price difference between a product and its ethical alternative was determined by

real life prices. Ethical alternatives were only made available in instances where an ethical alternative was available in [www.tesco.com](http://www.tesco.com). In total, 1900 products were available from the store. Participants were asked to go shopping for one week's worth of groceries. Participants were not given a budget for purchasing, but as noted above were asked for information regarding their typical weekly spending in the pre test questionnaire. Participants were told that no actual money would be involved and that no actual products would be purchased.

### *Results*

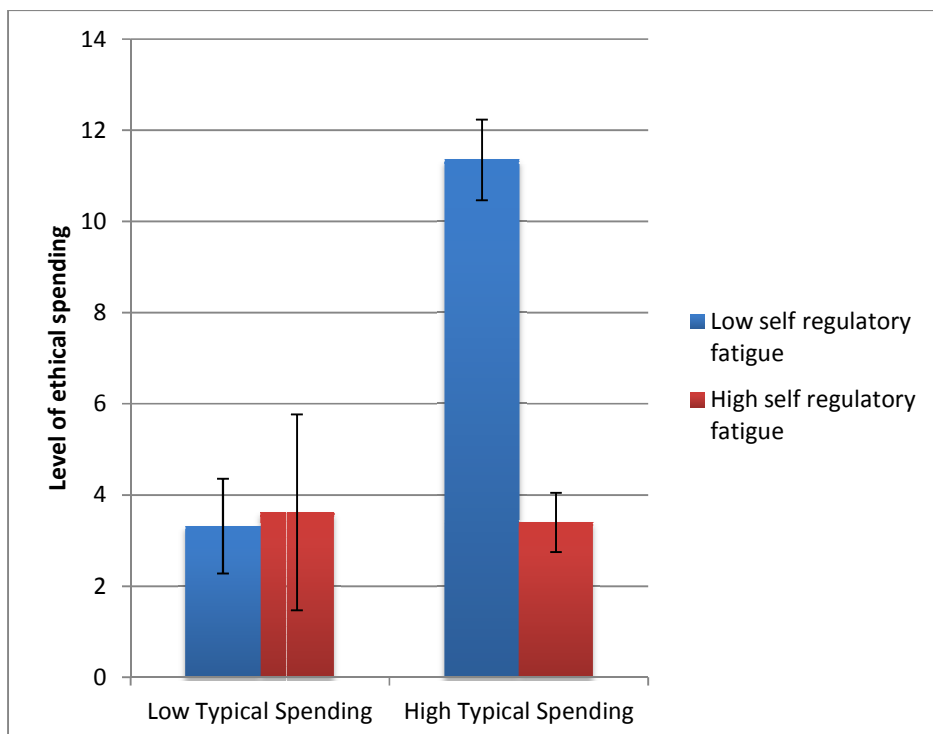
Spending on the individual fair trade, organic, vegetarian, free range and locally sourced ranges were added together to create a total ethical spending index. Table 5 shows the average ethical spend for each condition.

*Table 5:*

*Total Spending on Ethically Branded Goods by Self-regulatory Fatigue Condition.*

Self-regulatory Fatigue	Typical Spending	Total Ethical Spending	
		Mean	<i>SD</i>
Low	Low	£3.32	4.76
High	Low	£3.62	4.77
Low	High	£11.35	11.81
High	High	£3.40	2.99

A 2x2 ANOVA was conducted with self-regulatory fatigue and typical budget as independent variables and total ethical spending as the dependent variable<sup>6</sup>. Results did not show a significant main effect of self-regulatory fatigue upon ethical spending ( $F(1,97)=0.97, p=0.33$ ). However a significant self-regulatory fatigue x typical spending interaction was observed upon total ethical spending ( $F(1,97)=5.15, p=0.03$ ), as shown in Figure 3.



*Figure 3: Total Spending on Ethically Branded Goods (Fair Trade, Organic, Free range/freedom food, Locally Sourced) by Self-regulatory Fatigue and Typical Spending (error bars represent standard error)*

Contrasts revealed that for those with a high budget, self-regulatory fatigue had a significant negative effect on the level of ethical spending ( $F(1,48)= 5.65, p=0.02$ ), whereas no significant difference was observed in the case of those with a low budget,

<sup>6</sup> Due to high variance within the high budget low self-regulatory fatigue condition results were logarithmically transformed for the purpose of analysis.

( $F=1.951$ ,  $P=0.166$ ). It should be noted that there were high standard deviations recorded within the data, particularly within the low self-regulatory fatigue conditions, suggesting that spending in the high fatigue conditions was more uniform than that in the low self-regulatory fatigue conditions.

### *Discussion*

The results of the study supported our hypothesis that self-regulatory fatigue would have a negative impact upon ethical spending under some conditions. This is the first study to empirically demonstrate a link between self-regulatory fatigue and non-ethical spending, and as such is in need of further replication. However, this effect was only found for individuals with a high food budget. This could be because those who typically shop on a low budget are more highly deterred by the high price of ethical goods. This is presumably because individuals with a low budget have the lowest flexibility in terms of food choice and have established shopping habits designed to keep expenditure to a minimum. These motives of frugality may be so habitual amongst low budget shoppers that they are equally dominant regardless of level of ego depletion. Those who typically shop on a higher budget, on the other hand, may be less habitually focussed on frugality. As a result, when not in a state of ego depletion they may be more likely to take into consideration ethical dimensions of their purchase. This appears to be less the case, however, when they are in a state of ego depletion.



### *Study Two*

The purpose of this second study was threefold. Firstly, the experiment aimed to replicate the findings of the first study and confirm that self-regulatory fatigue lowers ethical spending. Secondly, the study aimed to explore whether the presence of an ethical appeal would lower the negative effects of self-regulatory fatigue, at least under some conditions. Thirdly, the study aimed to investigate whether being in a state of self-regulatory fatigue would affect the extent to which ethical spending behaviour was predicted by other variables such as those outlined in Theory of Planned Behaviour (Ajzen, 1991), in addition to ethical consumer identity and frequency of previous spending.

A large body of literature has shown a relationship between positive normative messages and socially minded behaviour (Cialdini, Kallgren, & Reno, 1991; Nolan, et al., 2008; Schwartz, 1977). Norms are an effective mechanism for cognitive cost cutting, allowing individuals to navigate the highly complex social world with minimal difficulty (see Hogg, 2006 for a review). Norms can be described as customs that help govern group behaviour without the need for prolonged discussion or negotiation. Social norms are seen as being central to coordination and order within societies (Bicchieri, 2006). To be effective, norms must be simple and reduce the costs of prolonged communication and consideration (Akerlof, 1976). Providing an appeal stressing the social importance of ethical spending might be a suitable mechanism for achieving the cognitive economies needed to limit the negative effects of self-regulatory fatigue. I explored this possibility in the current study by including a

manipulation of the extent to which participants' fellow students were currently engaging in ethical spending.

Another variable the study aimed to explore was the relationship between self-regulatory fatigue and habit, for which the frequency of previous ethical behaviour was taken as a proxy. According to Belk et al., (2005), the most important determinant of future spending is previous spending. Habitual behaviours are deeply ingrained behavioural patterns that are formed when behaviour has occurred frequently and has become automatically cued by the environment (Neal, Wood, & Quinn, 2006; Verplanken, 2006; Verplanken, Aarts, & van Knippenberg, 1997). Habitual behaviours are difficult to break once established and are locked in by situational cues (Dahlstrand & Biel, 1997; Verplanken, 2006). It is this automaticity that led us to believe that habit might have a potentially interesting relationship with self-regulatory fatigue.

Considering that self-regulatory fatigue increases automatic behaviour, it should also result in an increased tendency to repeat habitually ingrained behaviours. Therefore, if an individual has a history of ethical purchasing then this behaviour should continue in spite of self-regulatory fatigue, while if no ethical spending habits have been established then self-regulatory fatigue may result in lower frequency of ethical spending. I explore this hypothesis in the current study by taking measures of participants' historical levels of ethical spending.

Another issue the study aimed to explore was the affect of self-regulatory fatigue on the relationship between behavioural intention and actual behaviour. As previously mentioned, there is currently a discrepancy between consumers' ethical purchasing

intentions and their actual spending (Auger & Devinney, 2007; Cowe & Williams, 2000; Cotte & Trudel, 2009; Vermeir & Verbeke, 2006). Perhaps the most widely used models of behavioural intention are those based upon the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and its extension, the Theory of Planned Behaviour (TPB) (Ajzen, 1991). Common to both theories is the notion that behaviour, to some degree, is goal-oriented and the result of intention.

However, individuals may be unable to engage in goal-oriented behaviour at times of cognitive depletion, such as self-regulatory fatigue, making behavioural intention a less accurate predictor of behaviour. I investigated this possibility in the current study by measuring ethical spending behavioural intentions prior to participants going shopping in the online store and seeing how the correlation with subsequent ethical spending differed between the high and low ego depletion groups.

Finally, as an exploratory measure, I wished to explore the relationship between social identity processes and self-regulatory fatigue in the context of ethical spending. The concept of ethical or green consumers has gained increased attention within social psychological research in recent times (see Soron 2010 for an overview). According to social identity theory (SIT), individuals can hold many possible identities, which have a profound influence on their thoughts and behaviour (Tajfel, Flament, Billig & Bundy, 1971). A strong sense of social identity with one's ingroup can increase co-operation in experimental games involving ingroup members (Brewer & Kramer, 1986), and increase concern for one's local environment and the world as a whole (Carrus, Bonaiuto, & Bonnes, 2005; Pol, Moreno, Guardia, & Iniguez 2002; Uzzell, Pol, & Badenas 2002). It is therefore possible that individuals with a strong

ethical consumer identity may be better positioned to defend against the negative effects of self-regulatory fatigue. We explore this here by taking measures of participants' identification with ethical consumption.

### *Methodology*

#### *Participants and Design*

The experiment involved 80 undergraduate students from the University of Exeter. Sixty-eight female and 12 male students took part in this study, with a mean age of 20.34 years ( $SD = 5.30$ ). The experiment was based on a 2 x 2 (self-regulatory fatigue: high vs. low; ethical appeal vs. control) between-participants design. Participants were randomly assigned to each condition.

#### *Procedure*

The experiment was split into two parts. In the initial stage, participants were invited to take part in a pre-test questionnaire. The questionnaire measured the frequency of previous ethical spending behaviours (10 items,  $\alpha = 0.80$  see appendix table 12), level of identification as an ethical consumer (measure based on the scale devised by Doosje et al, 1995) and typical food spending ("how much on average do you typically spend on food from supermarkets and other shops").

The questionnaire also measured constructs constituting predictor variables in the theory of planned behaviour. Attitude towards ethical spending was measured using

five items ( $\alpha = 0.74$ ), such as “overall, ethical spending is a good thing”. Subjective norms were measured using 5 items ( $\alpha = 0.62$ ), such as “in general, other students do not purchase organic food”. Perceived behavioural control was measured using 5 items ( $\alpha = 0.50$ ), such as “I cannot afford to buy fair trade goods”. Behavioural intentions were measured using 4 items ( $\alpha = 0.70$ ), such as “when I next go food shopping I expect to buy organic produce”. These TPB items were original items, designed to include a variety of ethical concerns and suitable for undergraduate students.

In the second part of the study participants were randomly assigned to the various experimental conditions. As discussed in chapter two, self-regulatory fatigue can be manipulated with a variety of methods. However, no systematic review of the underlying strengths, weaknesses and underlying cognitive effects of these various methodologies has yet been conducted. Therefore, in order to ensure that our findings are comparable with the widest possible range of studies, it was decided to use a different manipulation of self-regulatory fatigue from that used in the previous experiment for our second study. In this study, all participants were asked to complete an attention control task by watching an attention control video (available from the Baumeister and Tice laboratories), details of which can be found in Chapter 2.

Participants were then asked to read a one-page article (see appendix Figure 11). The fictitious article outlined how the current economic climate had affected the spending of students. In the social approval condition participants were informed that students were still purchasing ethical goods and that ethical purchasing was linked with social

approval (injunctive norm appeal). Specifically, they read that “One student from the University of Exeter recently stated that “most students are opting to buy ethical goods. Buying ethically is more approved of within the student community than ever before. Students at Exeter don’t think it is acceptable to not think about the bigger picture when shopping – times are changing for the better”. A control article did not mention ethical spending, but instead focused upon foreign travel. Participants were then asked to log into the online store and shop for one week’s worth of groceries. Once again, participants were not charged for their selections, nor did they receive any actual products, and they were informed that this would be the case.

### *Results*

As in the previous studies, spending on the individual fair trade, organic, vegetarian, locally sourced and free range produce was summed to create a total ethical spending scale. Participants’ spending on ethically branded products are displayed in Table 6.

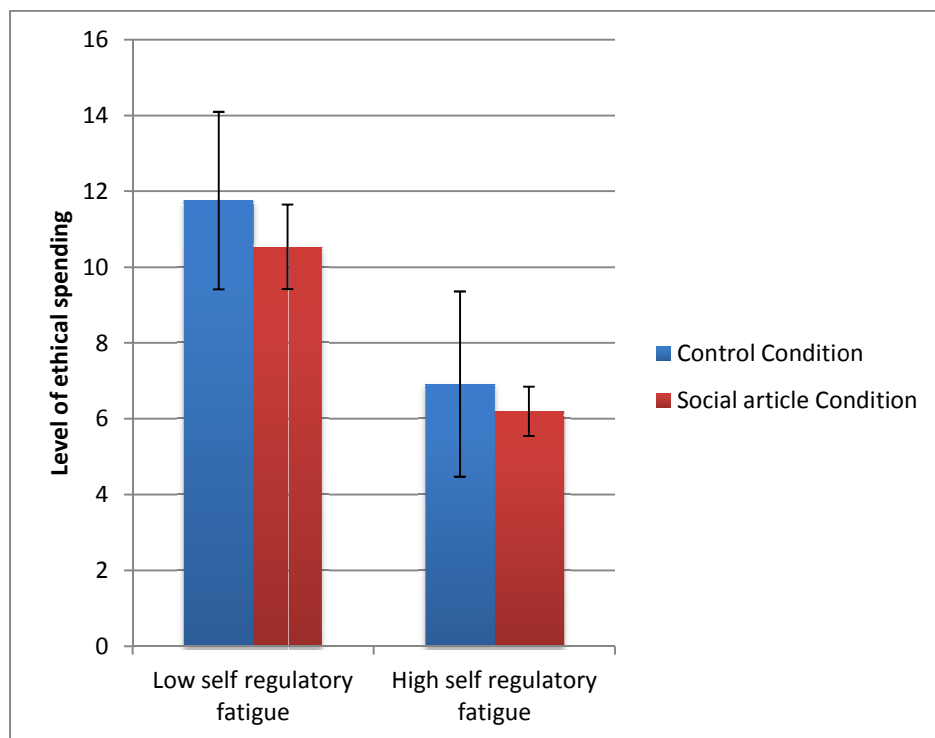
*Table 6*

*Total Spending on Ethically Branded Goods by Self-regulatory Fatigue and Article Conditions*

Self-regulatory Fatigue	Article type	Total Ethical Spending		
		Mean	<i>SD</i>	<i>N</i>
Low	Control Condition	£11.78	9.94	18
High	Control Condition	£6.92	5.35	23
Low	Social article Condition	£10.54	10.08	17
High	Social article Condition	£6.20	5.51	20

A 2 x 2 ANCOVA was conducted on rates of ethical spending, with fatigue level and article type as independent variables and typical food spending entered as a covariate. In line with predictions, there was a significant main effect of self-regulatory fatigue as shown in figure 4,  $F(1,73)=6.10, p=0.02$ , such that those in the low self-regulatory fatigue condition spent significantly more on ethical goods ( $M= £11.12 S.D. = 9.90$ ) than those in the high self-regulatory fatigue condition ( $M= £6.61 S.D.=5.36$ ).

However, contrary to predictions the type of article presented had no significant effect, with the ethical consumption article failing to raise ethical spending either as a main effect  $F(1,73) =0.24, p=0.63$ , or in interaction with self-regulatory fatigue  $F(1,75)=0.04, p=0.84$ . In contrast to the findings of the first study typical food spending did not have a significant effect upon ethical spending  $F(1,75)=1.17, p=0.28$ , nor a significant interaction with self-regulatory fatigue  $F(1,75)=0.42, p=0.52$ . It should be noted that as in the previous study there were high standard deviations within the data, particularly within the low self-regulatory fatigue conditions. This suggests that spending in the high fatigue conditions was more uniform than that in the low self-regulatory fatigue conditions.



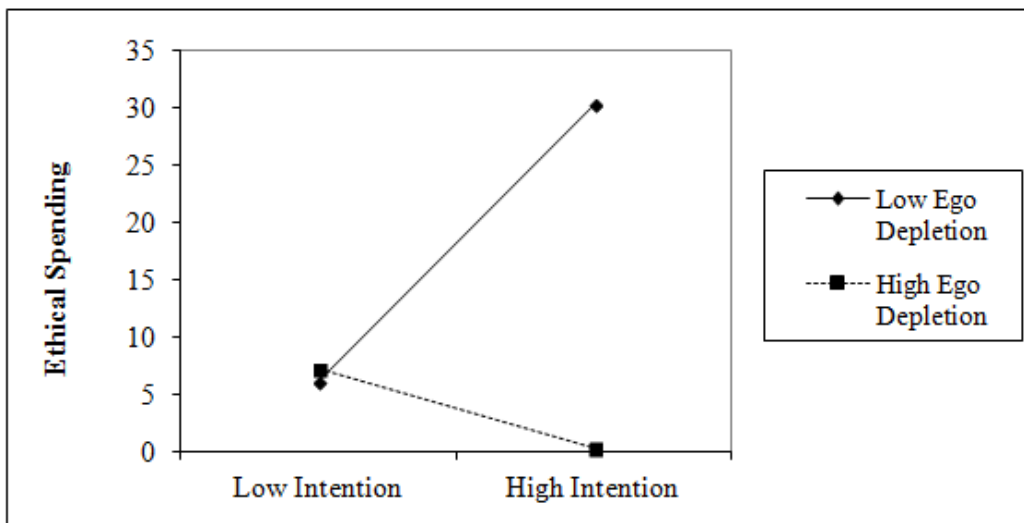
*Figure 4: Total Spending on Ethically Branded Goods (Fair Trade, Organic, Free range/freedom food, Locally Sourced) by Self-regulatory Fatigue and Typical Spending*

In order to explore the effects of self-regulatory fatigue on the relationships between ethical spending and the variables measured in the pretest questionnaire (the two directly predictive components of the theory of planned behaviour behavioural intention and perceived behavioural control, ethical consumer identity and frequency of previous ethical spending respectively) a series of regression analyses was conducted. Separate regressions were required due to high correlations between behavioural intention, ethical consumer identity and frequency of previous ethical spending, (correlation between behavioural intention and identity was .68, intention



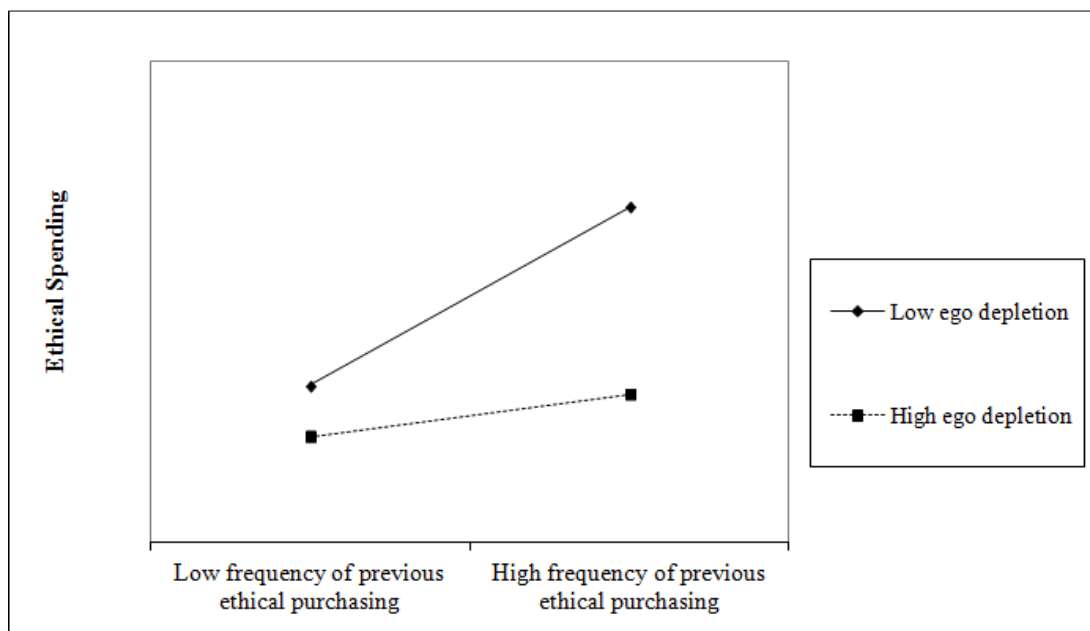
and previous ethical spending was .57 and identity and previous ethical spending was .56). In all models social vs. control article was entered as a factor.

A moderated regression analysis was conducted in order to ascertain whether the relationship between ethical purchasing intention and ethical spending was dependent upon ego depletion. The behavioural intention and self-regulatory fatigue variables were centred and multiplied together. The analysis revealed a significant interaction between self-regulatory fatigue and behavioural intention in relation to ethical spending ( $t=-3.27$ ,  $P=0.002$ ). No significant interactions were recorded between self-regulatory fatigue and frequency of previous ethical purchase ( $t=1.44$ ,  $p=0.15$ ) or ethical identity ( $t=1.497$ ,  $p=0.14$ ). Figure 5 below presents the relationship between behavioural intention and ethical spending at the high and low levels of self-regulatory fatigue. According to this simple slope analysis, when self-regulatory fatigue was low, behavioural intentions directly predicted ethical spending. However, at times of high self-regulatory fatigue, ethical purchasing intentions did not predict levels of ethical spending.



*Figure 5: Simple Slopes Analysis of the Relationship Between Ego Depletion and Behavioural Intention with Relation to Ethical Spending*

Figure 6 below presents the relationship between frequency of previous ethical spending and levels of self-regulatory fatigue. According to this simple slope analysis, frequency of previous ethical purchasing resulted in higher ethical spending in both the low ego depletion condition and the high ego depletion condition, albeit to a lower degree than in the former condition. Therefore it appears that a history of ethical spending will result in higher ethical spending even at times of self-regulatory fatigue.



*Figure 6: Simple Slopes Analysis of the Relationship Between Ego Depletion and frequency of previous ethical spending with relation to ethical spending*

### *Discussion*

The first purpose of this second study was to replicate the findings of our first study, with a different ego depletion manipulation. The results supported our initial hypothesis by again showing that self-regulatory fatigue had a negative impact on rates of ethical spending. In contrast to the findings of the first study, typical food spending did not have a significant interaction with self-regulatory fatigue. However, this may relate to the timing of the experiment. Whilst the first study was conducted at the end of an academic year, where presumably budgets were at their tightest, the second study was conducted at the beginning of the following year, when students may have been less used to managing budgets. Secondly, the study also aimed to explore whether an injunctive norm social appeal would lower the negative effects of self-regulatory

fatigue. Contrary to predictions, the appeal had no significant effect on ethical spending in either the high or low self-regulatory fatigue condition. The finding that the article had no impact on spending is at odds with the common finding of social appeals influencing consumer behaviours (Aarts, Dijksterhuis, & Custers, 2003). It is possible that participants simply did not believe the messages and may have been distrustful of the evidence presented. One potential limitation regarding the use of psychology undergraduates is the fact that they become aware of experimental manipulations and may not believe the validity of experimenter's claims.

Our third aim was to explore whether self-regulatory fatigue would impinge upon the relationship between ethical spending intentions and actual spending. In line with predictions, when self-regulatory fatigue was low, behavioural intentions directly predicted ethical spending. However, at times of high self-regulatory fatigue, ethical purchasing intentions did not translate to increased levels of ethical spending. Whilst this is merely a single finding, which is in need of replication, it does suggest that behavioural intention may be less likely to predict behaviour when participants are in a state of self-regulatory fatigue. This is consistent with the notion that ego depletion may cause participants to fall back on impulsive or habitual behaviours, rather than them making considered decisions based on behavioural intention. However within this study participants would be unable to fall back on actual behavioural habits due to the fact that no real life products featured within the store. This possibility is considered further in study four.

### *Study Three*

The purpose of this study was to provide further clarification regarding the effects of ethical appeals on individuals in a state of self-regulatory fatigue. In the previous study the provision of the social appeal article did not have any significant impact upon the level of ethical spending. This was both contrary to predictions and at odds with the common belief that social norms can have a profound influence on consumer's behaviours (Aarts, Dijksterhuis, & Custers, 2003). This may have been due to participants simply not believing the claims of the article. In order to correct for this, the current study reworked the articles presented in the second study (ensuring the articles were formatted to mirror works published in the University's student newspaper). Furthermore, in this study participants were presented with either an article stressing that ethical spending would bring social acceptance or with one stressing that individuals had a personal and moral responsibility for ethical spending.

Norms are a crucial component of Stern's (2000) value-belief- norm theory of environmentalism, which has become one of the most widely used models of environmental behaviour. Stern's model integrates the Schwartz value theory (Schwartz, 1992), individual's environmental values (Stern & Dietz, 1994), the new environmental paradigm (Dunlap & van Liere, 2008) and the norm activation theory (Schwartz, 1977). The norm activation theory has widely been used in order to explain environmentally considerate behaviour (Hunecke et al., 2001; Steg et al., 2005; Stern & Dietz, 1994; Thøgersen et al., 2003; Wiidegren, 1998). This theory argues that ethical behaviours are rooted in feelings of moral obligation. This feeling of obligation

is greatest when individuals have internalised group norms and they have become deeply engrained, with these deeply engrained beliefs being referred to as personal norms (Schwartz, 1977). Wiidegren (1998) has shown that personal norms (measured by inclination to experience guilt) resulted in a higher willingness to pay for environmentally friendly products and pro-environmental behaviour, whilst Harland, Staats, & Wilke (1999) have shown that incorporating personal norms into the theory of planned behaviour increased the predictive validity of theory with regards to predicting environmentally friendly behaviour.

Considering that personal norms are internalized, they may have a relatively automatic influence upon behaviour. Therefore one might suggest that appealing to feelings of personal beliefs or guilt may help lower the negative effects of self-regulatory fatigue on ethical behaviour. In contrast, appeals based on feelings of social approval may be less likely to exert an influence on ego depleted individuals due to them requiring the consideration of others' points of view (Moore & Loewenstein, 2004). Thus, it was hypothesized that articles stressing personal responsibility may be more effective at times of self-regulatory fatigue than are more social appeals.

### *Methodology*

#### *Participants & Design*

80 participants from the University of Exeter took part in the study. Participants had a mean age of 21 ( $SD = 1.34$ ). The experiment featured a 2x2 experimental design (ego depletion: high vs. low by appeal: social appeal vs. personal responsibility).

### *Procedure*

Participants were randomly assigned to the various experimental conditions. Half of the participants were assigned to the high self-regulatory fatigue condition and half to the low self-regulatory fatigue condition. Self-regulatory fatigue was manipulated using the same attention control video task as was used in the previous study.

As with the previous study, participants in the social approval condition were given an article suggesting that ethical purchasing was linked with social approval. “Buying ethically is more approved of within the student community than ever before”. In the personal responsibility condition, participants were given the same article but with the passage outlining social approval being replaced with one emphasizing personal responsibility “If we do not take personal responsibility for our environment and other individuals within the world then this could have dire consequences not only for sustainability but also economic sufficiency and stability across the globe.”

Participants were then asked to log into the online store and shop for one week’s worth of groceries. Participants were not charged for their selections and nor did they receive any actual products and they were informed that this would be the case. Participants were asked to complete a positive and negative affect scale (PANAS) (Watson, Clark, & Tellegen, 1988) to help rule out the possibility that any behavioural changes are not as a result of affective reaction (e.g. Wegner, et al., 1987). An online survey was then administered to measure socio demographic factors and the frequency of previous ethical purchasing.

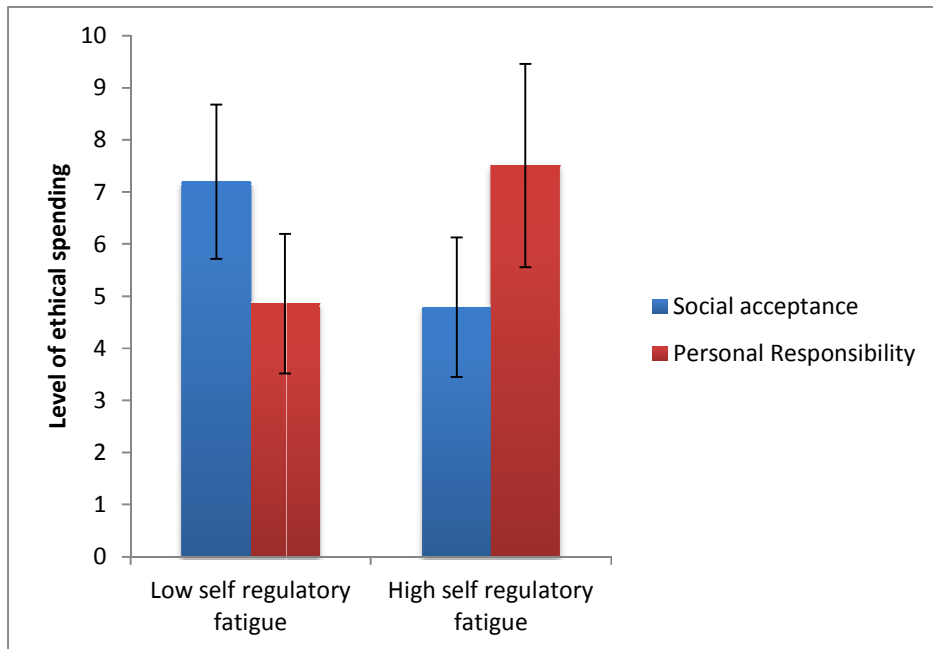
## *Results*

Spending on the individual fair trade, organic, vegetarian, free range and locally sourced ranges were added together in the same way as in previous studies to create a total ethical spending scale. The scale was logarithmically transformed for the purpose of analysis.

A 2 (self-regulatory fatigue high vs. low) x 2 (personal responsibility vs. social) ANOVA (analysis of variance) was conducted upon participants' level of ethical spending. No significant main effect of self-regulatory fatigue was recorded ( $F(1,76)=0.047, p=0.83$ ), nor of article ( $F(1,76)=0.02, p=0.89$ ). However, a marginally significant two-way interaction was observed between fatigue and appeal type ( $F(1,76)=3.84.81, p=0.05$ ). As shown in Figure 7 below, the results suggest that when an individual is in a state of self-regulatory fatigue providing an article that stresses personal responsibility led to more ethical spending ( $M = £7.51, SE = 1.95$ ) than providing an article stressing social approval ( $M = £4.79, SE = 1.34$ ), whereas when participants were not in a state of self-regulatory fatigue ethical spending was higher in the social approval condition ( $M = £7.20, SE = 1.48$ ) than the personal responsibility condition ( $M = £4.86, SE = 1.34$ ). A series of post-hoc contrasts were conducted in order to explore the interaction further. However, there were no significant differences in ethical spending as a result of the article manipulation for those in either a state of low self regulatory fatigue ( $p=0.22$ ) or high self regulatory fatigue ( $p =0.13$ ). Food budget was shown to again have a direct impact on ethical spending  $F(1,74)=7.97,$



$p=0.001$  however, as in study two, no significant interaction between budget and self-regulatory fatigue was found  $F(1,73)=0.36, P=0.55$ .



*Figure 7: Total Spending on Ethically Branded Goods (Fair Trade, Organic, Free range/freedom food, Locally Sourced) by Self-regulatory Fatigue and Article Condition*

### *Discussion*

The first purpose of this study was to replicate the findings of the first two studies. It was hypothesised that self-regulatory fatigue would have a negative impact upon ethical spending. As in the first study, there was no main effect of self-regulatory fatigue upon ethical spending but the effect appeared in interaction with other variables. In the present study this took the form of marginally significant interaction between self-regulatory fatigue and article type. Although only marginally significant the direction of the interaction suggests that, at times of high self-regulatory fatigue,

providing an article stressing personal responsibility may be more effective at raising the rate of ethical spending than an appeal based upon social acceptance, whereas when fatigue is low, a social normative appeal may be more effective in promoting ethical spending.

This result has some echoes with Balliet & Joireman's (2010) finding that individuals in a state of self-regulatory fatigue began to adopt a more self-focused perspective. It is therefore possible to suggest that fatigued individuals may be less willing or less able to consider others' points of views. In contrast, personal norms are norms which have become internalised and deeply engrained by individuals (Schwartz, 1977) and therefore may have a relatively automatic influence on behaviour that is not particularly impacted upon by being ego depleted. This finding that one may be able to limit the negative effects of self-regulatory fatigue by appealing to feelings of personal responsibility and guilt appears to be a novel finding that has not been previously demonstrated in the ego depletion literature.

#### *Study Four*

This chapter has so far presented three studies exploring the relationship between self-regulatory fatigue and ethical spending within the confines of a virtual supermarket. The online store has allowed for the study of spending behaviour in a realistic and controlled environment. Nevertheless it does have a number of limitations. Firstly, consumers did not actually use their own money and therefore did not incur any real increase in cost as a result of spending ethically. Another limitation of the supermarket was that it did not actually offer products produced by major brands (for copyright

reasons), meaning that its ability to tap into habitual purchasing patterns was somewhat limited. This second issue is of particular concern when considering self-regulatory fatigue. Cognitively speaking, there are many advantages to sticking with existing behavioural patterns as changing behaviour may take considerable self-discipline and cognitive exertion (Street et al., 2001). Therefore, self-regulation may cause individuals to repeat established behavioural patterns. In order to correct for these limitations, it was decided to monitor consumers' spending decisions in a real-life spending scenario. With this in mind the fourth study chose to look at the phenomena by looking at shopping receipts alongside self-reported levels of mental and self-regulatory fatigue.

### *Methodology*

#### *Participants and Design*

The study involved 26 participants and measured spending behaviour over the course of 190 separate shopping trips over a period of eight weeks. Initially, 40 participants began the study, but only 26 completed the full experiment. All participants were first year undergraduates taking part in exchange for course credit. Of the 26 participants, 23 were female and three male and all participants were aged between 18 and 25. The study was a repeated measure design involving participants completing a short questionnaire measuring PANAS (positive and negative affect scales) along with an original measure of self-regulation and mental fatigue immediately prior to going shopping for a series of ten shopping trips. For each shopping trip participants were

asked to keep the shopping receipt. This allowed us to measure the effects of self-regulatory and mental fatigue upon actual spending.

### *Materials and Procedure*

Participants were provided with a questionnaire booklet that was in two parts. The first part comprised a single preliminary questionnaire that they were only required to complete once at the beginning of the study. This questionnaire contained questions measuring participants' typical weekly food budget and the frequency of previous ethical purchasing ( $\alpha = 0.71$ ). The second half of the booklet featured ten pre-shopping questionnaires. Participants were asked to fill in these questionnaires prior to each shopping trip for the period of one academic term or until the booklet was completed. These pre-shopping questionnaires measured how much participants intended to spend, along with a 16-item PANAS scale (positive affect scale  $\alpha = 0.80$  and negative affect  $\alpha = 0.80$ ). The pre-shopping questionnaires also included a 13-item original measure of mental and self-regulatory fatigue (example items: "I have been very tempted to do something I shouldn't today", "I have engaged in strenuous mental activity today"). Items were selected after a pilot study revealed them to be highly correlated and in this study items had a Cronbach's alpha of 0.82). Typically, self-regulatory fatigue is treated purely as an experimental manipulation and therefore no known study has attempted to use a self-reported measure of naturally occurring fatigue. The scale was therefore specifically constructed for this study. The scale utilised was piloted in a previous study, and shortened to encourage a higher completion rate. Participants were

then asked to photocopy the receipt from the shopping trip and attach it to the questionnaires.

Once participants had completed and returned the full set of questionnaires their spending as indicated on receipts was coded. Only receipts for total food worth over £3 and with more than 2 items were recorded. Each item purchased was either classified as non-ethical or as organic, locally sourced, fair trade, free range / freedom food, British, vegetarian (meat alternative) or environmentally friendly.

### *Results*

Receipts from 190 separate shopping trips were examined and spending on items classified as ethical (free range, fair trade, organic and locally sourced) was calculated. However, the majority of shopping trips did not result in the purchase of any ethically branded products. Therefore it was decided to compare instances when ethical spending had taken place to the instances when it had not. Because shopping trips were nested within participants, a binomial (instances within participants) hierarchical linear model was utilised in order to test the relationship between self-regulatory / mental fatigue and ethical spending. Of specific interest was the influence of fatigue at the individual shopping trip level (level-1 criterion variable) and individual participant level (level-2 variable).

Analysis was conducted using the HLM student version (<http://www.ssicentral.com>).

Due to insufficient data points, the model was unable to incorporate factors apart from the fatigue measure. The results revealed that the effect of fatigue was significant at the

individual shopping trip level ( $b=3.19, p=0.02$ ). At the second level (participant level) the coefficient relating to fatigue was also significant ( $b=2.37, p=0.04$ ) indicating that the mean level of fatigue also had an effect between participants.

In order to explore the effects of all variables, two additional analyses were undertaken, one at the level of the shopping trip and the other at the level of participants. This is, in effect, an informal hierarchical approach. At the level of shopping trips, a binary logistic regression was undertaken, with each participant entered as a categorical variable. While this does not fully protect against the non-independence of the shopping trips undertaken by the same participant, it does eliminate any additive effects of individual differences between participants. The other independent variables included were self-reported fatigue (self-regulatory and mental), and PANAS (Negative and Positive mood). Outliers were removed for the purpose of analysis (casewise diagnostics were used to identify and remove responses outside of three standard deviations; in total four cases were removed). These variables had a significant effect on the likelihood of ethical purchase  $\chi^2(28) = 132.02, p=0.001$ . The analysis revealed that the fatigue scale was a significant predictor of ethical spending (see table 8). However, neither positive nor negative mood had any significant bearing on ethical spending.

Table 8

*Binary Logistic Regression - Ethically Branded Purchase Self-regulatory Fatigue and Mental Fatigue & PANAS – at Level of Shopping Trip*

	B	Wald	Sig
Participants		8.257	0.999
Fatigue – Self-regulatory and Mental	-1.241	4.914	0.027*
Negative Mood	0.231	0.126	0.723
Positive Mood	0.207	0.174	0.677

At the level of participants, a linear regression analysis was conducted (see table 9).

Participants' mean spending on ethically branded goods, levels of fatigue (self-regulatory and mental) and PANAS were calculated. Frequency of previous ethical purchase, budget, mean PANAS and mean fatigue (self-regulatory and mental) accounted for 53% of variance in ethical spending ( $F(5,18) = 4.161, p = 0.01$ ). The frequency of previous ethical purchasing ( $t = 3.235, p = 0.005$ ) was a significant predictor of ethical spending and both fatigue (self-regulatory and mental) and budget were marginally significant predictors of ethical spending.

*Table 9*

*Ethically Branded Purchase by Self-regulatory Fatigue and Mental Fatigue, Food Budget, Frequency of Previous Ethical Spending & PANAS – at Participant Level*

	B	Sig
Fatigue – Self-regulatory and Mental	-0.734	0.068
Frequency of Previous Ethical Spending	0.470	0.005
Food Budget	0.025	0.090
Negative Mood	-0.173	0.622
Positive Mood	-0.108	0.720

### *Discussion*

The results once again indicated that self-regulatory and mental fatigue had a negative impact upon ethical spending. In the hierarchal analysis fatigue (mental and self-regulatory) was a major determinant of whether individuals engaged in ethical spending. Thus, the findings represent evidence that mental or self-regulatory fatigue could have a negative impact on ethical spending within a real-life spending environment.

One limitation of the methodology of this present study is the fact that it relied on undergraduates to complete the study each and every time they went shopping. It may be unlikely that they did this every time. It is also highly possible that at times of high fatigue the participants may have been less inclined to complete the questionnaire. It should also be noted that the experiment did have a high dropout rate with 40 participants being initially recruited to the experiment and only 26 participants completing the study. However, the failure to report trips at the highest fatigue level



should, if anything, reduce the power of the study so the current estimate of the effect of fatigue might be conservative.

Another limitation is that the study relied on supermarkets providing adequate information in their receipts. Although supermarkets in the UK typically give minimal information on supermarket receipts, they do frequently identify if a product is organic, free range or fair-trade. However, I cannot guarantee that every item was sufficiently labelled. However, the results of the study are in-line with the more controlled laboratory studies and do appear to support a hypothesis that self-regulatory fatigue can reduce ethical spending behaviours in real life shopping situations.

Throughout the thesis the experiments have been careful to avoid drawing participants attention towards their current level of fatigue. Raising an individual's self-awareness can actually help limit the effects of ego depletion, and therefore may mask any effects of self-regulatory fatigue upon ethical spending (Alberts, Martijn, & Vries. 2011; Schmeichel & Vohs, 2009). Therefore the thesis has deliberately avoided using manipulation checks. The avoidance of manipulation checks is not uncommon in the field of self-regulatory fatigue for this very reason. However, in this final study, participants were asked to reflect upon their level of fatigue. Therefore the recorded effect may have been weaker than if a measurement instrument could have been devised that did not draw attention to the current level of ego depletion. Thus, it is possible that our observed effect size regarding the influence of self-regulatory fatigue on ethical spending in this final study may actually represent a conservative estimate.

### *General Discussion*

The results of the first three studies in this chapter indicate that self-regulatory fatigue does indeed have a negative effect upon the rates of ethical spending, in a relatively close approximation of a real shopping environment though the effect was only apparent under some of the conditions in studies 1 and 3. Perhaps more importantly, our final study found that this phenomenon can be partially replicated in the context of participants going about their normal everyday shopping trips. To the best of our knowledge, this is the first piece of empirical research to have established such a link. Over the course of the previous few decades, the field of consumer psychology has investigated a huge number of factors that influence consumer spending, from discount stickers to store layout, from in store music to packaging. Many of these would have occurred randomly over the course of study four. Therefore to observe a significant finding in such an environment despite all of this extraneous noise should be taken as an indication of the strength of this phenomenon.

The study of ethical spending is currently dominated by studies investigating attitudinal behavioural intention. However, study three has provided some preliminary evidence that behavioural intention may only be a significant predictor of ethical behaviour when self-control is possible. This suggests that at times of cognitive limitation, individuals may be less able to engage in goal-related behaviour. At these times, more automatic processes may be of greater importance in determining behaviour.

The findings also provided some preliminary evidence suggesting that habit may have a key role in helping consumers to defend against any negative impact of self-regulatory fatigue in relation to non-ethical spending. The analysis of study two revealed that frequency of previous ethical spending (acting as a proxy for habit), resulted in higher levels of ethical spending regardless of the level of self-regulatory fatigue. In this sense, forming positive habits may be an efficient form of long-term self-regulation. However, if we accept that holding established ethical spending patterns may help to defend shoppers against the effects of self-regulatory fatigue, then it should be noted that the negative impact of self-regulatory fatigue upon ethical spending may not impact upon ardent ethical spenders who have established ethical spending habits. Therefore, practitioners should focus upon establishing ethical spending habit. However, the potential relationship with habit leads us to a potential limitation within the research. All four studies in this chapter used undergraduate student participants. Such individuals may have been less likely to hold established spending patterns and therefore their spending behaviours may have been more influenced by self-regulatory fatigue. It is therefore possible that the magnitude of the effect may be smaller in other populations. Wider replication will be required before definitive claims can be made about how widely the findings can be generalized.

#### *Future Directions*

One limitation that applied to all four studies is that fact that these methodologies are unable to measure instances when individuals *abstained* from purchase for ethical reasons. Some of the most notable examples of ethical consumption refer to consumer

boycotts (Nestle, South African products) and in addition some of the respondents in the qualitative study of chapter three referred to these. The methods utilised in the current work would not be able to record such processes. It would therefore be of interest to explore the effects of self-regulatory fatigue on boycotting behaviour in order to see if the same pattern of findings were recorded. It would be particularly interesting to explore the effects of self-regulatory fatigue on newly established intentions to boycott products, perhaps in the wake of an ethical campaign or scandal; the current concerns about the tax arrangement of multinational companies in the UK may offer such an opportunity for more research.

Ethical spending has been comprised throughout the research of a collapsed measure that included spending on organic, fair trade, free range and vegetarian produced combined into a single scale. However, it is entirely possible that the motivations underlying each of these types of purchase may differ. For example individuals may purchase organic products not purely for ethical reasons, but because of the potential health benefits. Therefore it may be of potential benefit to explore the effects of self-regulatory fatigue on the individual types of ethical spending to determine if there any notable differences. However, spending on the individual scales was too low in the current studies in order to fully investigate this issue.

Another area it may be fruitful to explore relates to implementation intentions. The correct use of implementation intentions has been argued by a number of authors to hold the potential to increase ethical behaviour (Dholakia, Bagozzi, & Gopinath, 2007). Implementation intentions are specific plans that people make to allow their

plans to become behaviour (Dholakia et al., 2007; Gollwitzer & Sheeran, 2006). This can be as simple as “I will make a shopping list”, but can have profound influence on behaviour. Mentally rehearsing these behavioural patterns has been argued to lower the conscious control required to turn behaviour into action, and thus may be particularly useful when considering the influence of self-regulatory fatigue (Webb & Sheeran, 2003). It would be of interest for future studies to see if providing training in the effective use of implementation intentions may help restrict the negative effects of self-regulatory fatigue on ethical spending particularly within real life spending studies.

### *Conclusion*

Within this chapter self-regulatory fatigue was repeatedly shown to have a negative effect upon participants’ rates of ethical spending, at least under particular conditions. The findings thus support the hypothesis that self-regulatory fatigue can result in lower levels of ethical spending and they have begun to characterized such an affect is to be expected. Specifically self-regulatory fatigue had an effect on individuals with sufficient budgets and in situations where ethical spending patterns have not been established. Comparison with the results of chapter five also suggest that the overall complexity of the situation is also relevant, because of the different manipulations of ego depletion were used that cannot be assessed with certainty. The findings also support of the notion that ethical spending is dependent, at least to some extent, upon our available capacity for self-control. In addition, the chapter offers some tentative evidence that ethical spending intention holds lower predictive validity at times of high self-regulatory fatigue. The findings should therefore be taken as indication of the

importance of future research in this field, which will be further discussed in the final chapter of the thesis.

## **Chapter Seven: General Discussion**

The primary aim of this thesis was to explore a hypothesized relationship between self-regulatory fatigue and non-ethical spending. The research agenda was established in order to contribute to our understanding of the disparity between consumers' positive attitudes towards ethical spending and their actual shopping. Whilst one third of consumers claim to be ethical spenders, only 1-3% of goods purchased are Fair Trade certified, a discrepancy that has become widely known as the 'ethical purchasing gap' (Auger & Devinney, 2007; Cowe & Williams, 2000; Vermeir & Verbeke, 2006).

Within the literature review (chapter one), I argued that self-regulatory fatigue could be anticipated to have an influence upon consumers' rates of ethical spending, on the grounds that it would lower consumers' ability to consider the long-term impacts of their spending and to resist the impulsive temptation of cheap consumer goods, and therefore that it might partially explain the ethical purchasing gap.

The following discussion will summarize the findings presented in the four empirical chapters, and consider the theoretical limitations of the empirical work. The discussion will then integrate the empirical findings before considering future research and the ways in which the potentially negative effects of self-regulatory fatigue upon ethical spending could be limited.

.

### *Summary of empirical findings*

#### *Chapter 3: Qualitative investigation of consumers' ethical choices*

Chapter three of the thesis outlines the findings of a qualitative study that asked consumers to identify what they considered to be their most and least ethical purchases. The aim of the study was to determine which principles guide consumers' spending, and the instances where participants did not spend according to their own principles. Non-principled spending was typically justified as being a result of financial constraint or impulsive urge. Whilst I identified a number of methodological shortcomings of the qualitative investigation, the suggestion that non-ethical spending may be potentially linked with impulse was crucial in the establishment of the research agenda.

#### *Chapter 4: The Forest Game*

The findings of chapter three investigated whether self-regulation fatigue could be a potential driver of non-ethical spending, due to its known relationship with impulsive behaviour. Chapter four contains details of my second empirical study, which explicitly explored the effects of self-regulatory fatigue on economic behaviour. The study utilised an experimental game based upon Sheldon & McGregor's (2000) forest game within which players were asked to share a common resource (a forest). In each round of the game, participants were asked how much of this common resource they would like to harvest (cut down), with participants being paid for each hectare they cut down.



The results showed that groups of participants who were subjected to a manipulation inducing high levels of ego depletion (the white bear task) were less able to regulate their behaviour and sustain the shared resource than those in the low self-regulatory fatigue condition. These findings suggest that those in the high self-regulation fatigue condition were less socially-minded in their economic behaviour than their non-fatigued counterparts.

#### *Chapter 5: Willingness to Pay Studies*

Chapter five built on the findings of chapter four with a study exploring the effects of self-regulatory fatigue on participants' willingness to pay for ethical goods. No significant effects of self-regulatory fatigue were found in this study. This made it clear that self-regulatory fatigue would not impact on ethical decisions under all circumstances. The result may also suggest something interesting about self-regulatory fatigue itself. A central tenet of our hypothesis was the notion that self-regulatory fatigue would result in participants having difficulty making complex decisions. It is possible that the complexity of the choice task presented (discrete choice analysis) to participants in this study may have been insufficient for the decision to be negatively affected by self-regulation fatigue. There are numerous approaches to assessing willingness to pay, derived from different conceptual foundations (Braidert, Hahsler, & Reutterer, 2006). Our willingness to pay experiment utilised discrete choice analysis, a standard procedure for assessing willingness to pay which involves presenting respondents with alternative product profiles and simply asking them to choose the most valued (Ben-Akvia, & Boccara, 1995). No effect of ego depletion on consumers'

willingness to pay for a variety of ethical goods was observed and it is possible that this may be due to the simplicity of the measure utilised. The second study in chapter five also found no effect of ego depletion on choice behaviour and its effects on attitudinal variables were non significant, although in the expected direction. Although this second study involved multiple choices, the choices in both studies were short and simple with the potential costs and payoffs clearly illustrated. These tasks stand in stark contrast to the calculations required to play a public goods game or to go shopping in real life. Considering that ego depletion can impinge upon our working memory and our ability to make complex decisions, it may be that simple spending decisions are relatively unaffected by self-regulation fatigue (Baumeister et al. 1999; Hinson et al., 2003; Schmeichel, Vohs, & Baumeister., 2003). However, in situations with hundreds of decisions, such as a weekly shopping trip, self-regulation fatigue may have a more profound influence upon ethical spending. In order to explore this possibility, it was decided that subsequent studies should involve the use of choice paradigms that more closely mirrored the decision making of real life shopping.

There was however, another potential reason for the lack of any effect of ego depletion in the studies presented in chapter five. In our view, there is a major question mark hanging over the method of manipulation of ego depletion used. The most common protocols for depleting self control involve clerical tasks, the most famous of which involves crossing out occurrences of the letter e in an article (e.g., Baumeister, et al., 1998). This task was used for both studies in chapter five, with neither producing a significant effect. One might ask whether a clerical task like this might somehow differ from other techniques utilised to deplete self-control.

Whilst no systematic neuroscientific investigation into the effects of the various manipulations of self-regulation fatigue has been undertaken, it is possible that the vowel counting task utilised within the non significant studies differed from the white bear task utilised in chapter four. Whilst the clerical task is unpleasant and difficult to undertake, it does not involve individuals suppressing a natural inclination, a process that is central to the workings of the white bear manipulation. It was therefore decided that the subsequent studies would feature either the white bear thought suppression task or the attention control tasks recommended by the Baumeister and Tice laboratories.

Currently there are over 100 published empirical papers supporting the notion that overriding impulses or engaging in acts of self-regulation can temporarily deplete our ability to control our behaviours (Inzlicht & Schmeichel, 2012). This research focuses upon the effects of ego depletion, but less research has focused upon the underlying processes. Whilst research has explored issues such as availability of blood glucose (Masicampo & Baumeister 2008; Schmeichel et al., 2003), the working of the central executive (Heatherton & Wagner, 2011), motivation, attention (Berkman, & Ziegler 2012; Inzlicht & Schmeichel, 2012) and cognitive control (Robinson, Schmeichel, & Inzlicht, 2010), the precise workings of self-regulatory fatigue have not yet been determined.

### *Chapter 6: Online and In-store Shopping*

Chapter six presents the findings of four experiments exploring the relationship

between ethical spending and self-regulatory fatigue using more naturalistic measures of spending than used within chapter five. The first of these studies investigated the potential relationship between self-regulation fatigue (manipulated via the white bear thought suppression task) and ethical spending (measured via the use of a simulated online supermarket, or in the case of the final study, actual in-store shopping behaviour). The results indicated that, for individuals with a high food budget, self-regulatory fatigue resulted in significantly lower spending on ethical goods, while those with a low budget were not significantly affected. This is presumably because those with a low food budget have relatively little flexibility in terms of product choice and/or have established shopping habits designed to keep expenditure to a minimum.

The second study presented in chapter six was run with the aim of replicating the findings of the first study and to examine whether ethical appeals would lower the negative effects of self-regulatory fatigue upon ethical purchasing behaviour. In addition, this study aimed to explore the relationship between self-regulatory fatigue and the theory of planned behaviour and previous purchasing behaviour, with regard to their effect upon ethical spending. The empirical exploration of ethical spending has frequently utilised the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and its extension, the Theory of Planned Behaviour (TPB) (Ajzen, 1991) (see the literature review in chapter one for details). According to the TPB, attitudes towards the behaviour, subjective norms and perceived behavioural control predict behavioural intention. In turn, behavioural intention predicts actual behaviour. However, I hypothesized that at times of self-regulatory fatigue, individuals

may be less likely to act in a goal-orientated fashion and therefore behavioural intention and actual behaviour may be less highly related.

The results again showed that self-regulatory fatigue, manipulated via an attention control task, had a negative impact upon ethical spending. However, contrary to predictions, making social norms salient by presenting a supposed student newspaper article about ethical consumption had no impact upon behaviour in either the high or low self-regulatory fatigue conditions. The study did however, show that behavioural intention only predicted ethical spending at times when self-regulatory fatigue was low. When self-regulatory fatigue was high, the frequency of previous ethical purchasing was shown to be a more important determinant of ethical spending than behavioural intention, suggesting that encouraging ethical behavioural intentions is not always sufficient. Practitioners seeking to encourage ethical spending and ensure behaviour is not impinged on by ego depletion should therefore focus upon establishing ethical spending habits.

The defining feature of a habit is the fact that the behaviour is repeated so frequently it becomes automatically cued (Neal, Wood & Quinn, 2006; Verplanken, 2006; Verplanken, Aarts, & van Knippenberg, 1997; Wood, Quinn & Kashy, 2002). From the time of Katona (1975) the questions of which purchasing is habitual has been considered as an important issue in the analysis of consumer behaviour. Habit has a crucial role within self-control, with many negative habitual behaviours being characterized by a lack of self-regulation (Baumeister, 2002; Verplanken & Sato 2011). Once formed, habits require minimal willpower and can continue even in the

face of limited cognitive resources being available. At times when habit and long-term goals correspond, individuals will continue their positive behaviours whilst in a state of ego depletion. In this sense, forming positive habits is an efficient form of long-term self-regulation. However, in instances when goals and habits diverge, self-regulation will be required to prevent negative habitual behaviours. It should be noted that whether a habit is considered to be negative or positive by an external viewer is subjective. Whilst those working to promote ethical spending may be drawn to characterise non-ethical spending as a 'negative' habit, others may consider non-ethical spending as being 'positive' in the sense that it could save money for those with limited budgets.

It should be noted that I did not measure behavioural habit *per se*, but rather the frequency of previous ethical spending. According to Verplanken (2006), not all frequently repeated behaviours become habit. Thus, habit represents more than mere frequency. However, the finding that the frequency of previous ethical behaviour is a significant predictor of ethical spending, even at times of regulatory fatigue, suggests that the potential relationships between behavioural habit and self-regulatory fatigue should be explored further.

The third study in chapter six investigated the effect of self-regulatory fatigue on the effectiveness of appeals stressing the importance of ethical spending. Appeals were again manipulated through a supposed student newspaper article. Research by Balliet and Joireman, (2010) found that individuals in a state of self-regulation fatigue began to adopt a more self-focused perspective. It is therefore possible that fatigued

individual's may be unwilling or unable to consider others' points of views, and therefore appeals stressing personal responsibility may be more beneficial at times of ego depletion. The results suggested that when self-regulatory fatigue was high, providing participants with an article that stressed personal responsibility (it is individuals moral responsibility to spend ethically) was more effective than an article stressing social approval (ethical spending is socially accepted and will bring social approval) in increasing participants' ethical spending. The finding thus supports our assertion following Moore and Loewenstein, (2004), that considering others' points of view is more cognitively demanding than acting in a self-interested manner. Whilst further research into this issue may be required, the results suggest that when individuals are in a state of self-regulatory fatigue, it may be more effective to make appeals directed at personal responsibility.

The final study in chapter six explored the relationship between ego depletion and non-ethical spending by comparing shopping receipts from participants' actual everyday shopping trips with self-reported levels of mental and self-regulatory fatigue at the time of shopping. Whilst the use of a simulated online store offers a high level of ecological validity, it has a number of limitations. Firstly, the store did not involve actual purchasing, with no money or goods being involved. Secondly, the store did not offer products produced by major brands. It was therefore deemed crucial to monitor consumers' spending decisions within a real life spending scenario to confirm that self-regulation fatigue would indeed lower consumers' actual spending on ethical goods in this context.

Our final study demonstrated that self-regulatory fatigue negatively affected shoppers' ethical spending within the real world context of their everyday shopping trips. Until recently, self-regulation fatigue research has primarily been investigated in the laboratory, with little exploration within more real world contexts. Hofmann, Baumeister, Forster and Vohs (2012) recently published what they proclaimed was the first major study exploring self-regulatory fatigue in everyday life. As such, the findings of our final study, conducted prior to the publication of Hoffman et al.'s work, provides an additional, much-needed, demonstration of the effects of self-regulatory fatigue in a non-laboratory context.

#### *Integration of empirical findings*

At the conclusion of the literature review I set out three empirical research questions. The first was whether self-regulatory fatigue would result in individuals acting in a more self-serving and short-term manner. The findings of chapter four demonstrated that behaviour within a public goods game was negatively affected by self-regulation fatigue, with those in the high ego depletion condition less able to sustain the central resource. The finding supports the notion that self-regulation fatigue will result in self-serving and short-sighted economic behaviour.

The second question asked whether self-regulation fatigue would result in a reduced tendency to purchase ethically branded products. Whilst not every study nor every condition within studies yielded significant results (e.g. the non-significant findings presented within chapter five), self-regulation fatigue was shown to have a negative influence upon participants' rates of ethical spending across a number of studies. I can



therefore argue that the overall pattern of results supported the hypothesis that engaging in activities that require excessive self-control lowers subsequent levels of ethical spending. Our findings thus support our theoretical argument that ethical spending is dependent, at least to some extent, upon our available capacity for self-control. However, the results indicate that the effects of self-regulatory fatigue may only occur under certain circumstances. It is therefore important to consider what the boundary conditions for this effect might be, and whether there is any common thread linking them.

The first study in chapter six found that the effects of self-regulatory fatigue, with relation to ethical spending, may only affect those with a relatively high food budget. The behaviour of individuals with a low budget was not significantly affected by self-regulatory fatigue. As previously mentioned those with a low food budget may have little flexibility in terms of product choice. As outlined within chapter one ethical produce can have a higher price tag for a variety of reasons (e.g. minimum price guarantees for producers). In order to afford the premium for ethical goods, those with the strictest budgets may have to forgo the purchase of other goods and services. Whilst this finding was not replicated within subsequent studies it remains possible that for those with the tightest budgets will not purchase ethically, regardless of their level of self-regulatory fatigue.

Neither of the studies in chapter five yielded statistically significant ego depletion effect. If we consider the differences between the studies in which an effect of self-regulatory fatigue was recorded and those in chapter five then the potential importance

of complexity becomes apparent. The choices presented in chapter five were short, simple and did not require complex calculations. This stands in sharp contrast to the demands of playing a public goods game or to go shopping for a week's worth of products amongst thousands of products. Our conclusions, must therefore accept the possibility that the effects of self-regulatory fatigue may not occur for simple spending decisions where only a few alternatives are considered.

The third apparent constraint on the effects of ego depletion relates to behavioural habit. The majority of studies presented within the thesis did not feature products produced by major brands. The fact that major brands were not featured meant that consumers could not fall back on established spending habits. The findings of study two and four of chapter six suggest that cultivating ethical spending habits may potentially help to limit the negative effects of self-regulatory fatigue. Therefore one question whether there is there a common thread between these three limiting factors on the effects of ego depletion on ethical spending. Ego depletion only seems to affect ethical spending when it is in some sense discretionary. People who have very low budgets have no discretion to spend ethically; people with ingrained ethical spending habit have no discretion. People faced with very simple choice situations have no need to exercise discretion. The distinction between discretionary and habitual consumer behaviour goes back to Katona (1975), and it would be no surprise to find it relevant in the context of ethical consumption. Nevertheless, it would therefore be of intense interest to investigate the above caveats in more depth in order to gain a fuller understanding of the relationship between self-regulatory fatigue and ethical spending. Our results also imply that ethical spending is more cognitively demanding than non-

ethical spending, and thus support Thøgersen's (2005) assertion that cognitive capacity is a crucial component of ethical spending. This opens up many interesting implications for future research. Individuals are known to have a number of constraints upon their ability to engage in more sustainable lifestyles. Financial resources, time and knowledge are all known to limit consumers' abilities to live ethically sound lifestyles (Thøgersen, 2005). Our capacity for self-control can now also be considered a potential influence on our ability to spend ethically.

The final research aim was to explore whether self-regulatory fatigue reduces the extent to which ethical behaviour intentions predict ethical spending. The findings of the studies in chapter six confirm that behavioural intention did not predict ethical spending at times of high self-regulatory fatigue. This finding is of potential importance as at the current time the study of ethical spending is dominated by the study of consumers' attitudes, and in particular the Theory of Planned Behaviour (Andorfer & Liebe, 2012; Milfont & Duckitt, 2004). As outlined in chapter one, the driving concern of the thesis as a whole was to balance this tendency by using measures that were closer to actual spending behaviour.

Consumers' attitudes do not always mirror actual spending (Auger, Burke, Devinney & Louviere., 2003; Auger & Devinney, 2007). Whilst one third of consumers describe themselves as being ethical spenders, only 1-3% of products purchased are Fair Trade certified (Cowe & Williams, 2000). The divergence between attitude and behaviour has been referred to as the 'ethical purchasing gap' (Andorfer & Liebe, 2012; Clayton & Brook, 2005). Our findings provide one potential reason why moral intention and

behaviours do not always correspond. Therefore, I argue that forming ethical spending intentions is not always sufficient to result in ethical spending and self-regulatory fatigue may be one factor that is at least partially responsible for the ethical purchasing gap.

### *Limiting the Negative Effects of Self-regulatory Fatigue upon Ethical Spending*

The thesis has primarily focused upon establishing whether self-regulatory fatigue has a negative impact upon consumers' rates of ethical spending. Until this point, the thesis has paid relatively little attention to how to *limit* the negative effects of self-regulatory fatigue. As previously mentioned, the research agenda was established in order help explain the discrepancy between consumers' positive attitudes towards ethical spending and their actual shopping. If we assume that shoppers' stated intentions represent their actual desired behaviour, then we should consider what steps can be taken to limit the negative effects of self-regulation fatigue and to narrow the attitude behaviour gap. We will now briefly discuss the range of techniques that have been empirically demonstrated to bolster self-regulation capacity and potentially reduce the negative impact upon ethical spending.

In addition to ethical intention, our ability to plan is an important precursor to ethical behaviour (Shaw et al., 2006). Implementation intentions are pre-determined cognitive plans outlining what short-term behaviours are required in order to achieve our long-term goals (Gollwitzer & Sheeran, 2006). If individuals develop these cognitive plans then the likelihood of achieving their desired behaviours increases. Implementation intentions help individuals deal with external influences that have ordinarily deterred

them from reaching their long-term goals (e.g. if X occurs then I will do Y) (Dholakia et al., 2007; Gollwitzer et al., 2006). Mental rehearsal helps to reduce the conscious control required in order to turn intention into action and therefore may be an ideal mechanism for limiting the negative effects of self-regulation fatigue (Bagozzi & Dholakia, 1999).

Fostering intention implementations could therefore be one potential strategy used to increase consumers' tendency to engage in ethical spending at times of regulatory fatigue if that is what they wish to do (Adriaanse et al., 2011; Gollwitzer & Sheeran, 2006). When shopping, people may simply forget about their long-term goals, such as ethics, particularly when the intended behaviour is unfamiliar or not part of their existing shopping routine (Gollwitzer & Sheeran, 2006). For individuals without established ethical spending patterns, self-regulatory fatigue may result in increased rates of non-ethical spending because such consumption is not their default behavioural pattern (Gollwitzer, 1999). If we accept that people often fail to act in an ethical manner due to distraction, habit or forgetfulness (especially when fatigued), then implementation intentions may be highly beneficial in increasing ethical behaviour (Dholakia, Bagozzi, & Gopinath, 2007; Gollwitzer, 1999).

As previously mentioned, self-regulation fatigue did not affect measures of participants' willingness to pay for ethical goods. It was argued that the lack of an ego depletion effect could be due to the simplicity of the measure utilised. This suggests that steps to simplify the shopping procedure itself could be considered as a potential strand of intervention. Perhaps the most successful technique would be to remove non-

ethical choices from the shopping experience altogether. In recent years, technology has allowed shoppers to set up regular online shopping lists that they can simply 'repeat order'. Likewise, consumers can now source produce directly from ethical producers (e.g. via vegetable boxes). These kinds of systems allow consumers to avoid the shopping environment and therefore minimise the effects of temptation upon shopping choice. This would mean that ethical purchasing would represent a single-choice commitment as opposed to a continuously repeated choice.

#### *Future Research*

One limitation of our research project is the fact that we treated self-regulation solely as being a state, when it could also be considered as a trait (Nes, et al. 2011; Zabelina, Robinson & Anicha, 2006). As mentioned within the literature review (chapter one), individuals can actually increase their own capacity for self-regulation simply by frequently engaging in tasks that stretch self-control (Baumeister, Gailliot, DeWall & Oaten, 2006). There is also variability in the strategies individuals use to regulate their behaviour (Metcalf & Mischel, 1999), including engaging in activities to enliven mood, raising the level of blood glucose (via consumption of sugary products), or focusing upon times when they successfully avoided temptation (Gailliot, 2008; Masicampo & Baumeister, 2008; Job, Dweck & Walton, 2010; Schmeichel & Vohs, 2009; Tice & Bratslavsky, 2000). Therefore, there is potentially a great deal of variation both in individuals' experiences of, and their attempts to cope with, the demands of ego depletion. It would be interesting to explore these individual differences and to consider how effective these various techniques could be in reducing the negative impacts of self-regulation fatigue on ethical spending.

Up to this point the thesis has argued that self-regulatory fatigue would have a negative impact on ethical spending by limiting the capacity of individuals to consider the social and environmental impacts of their spending. However, it is possible that there is also an affective component in play, which requires empirical exploration. Whilst Baumeister and colleagues have repeatedly argued that self-regulatory fatigue is not caused by affective reactions, it is hard to believe that the frustration induced by self-control tasks does not have any influence at all upon subsequent behaviour. A PANAS scale is typically administered after a self-control task in order to control for affective responses and in the present studies is routinely showed not to affect reactions to ego depletion manipulation. However, frustration is not something that is typically measured by PANAS. Wagner and Heatherton (2013) used fMRI (functional magnetic resonance imaging) to test the effects of ego depletion on individuals as they watched emotional scenes. They found that self-regulatory fatigue resulted in increased amygdala activity in response to emotionally negative stimuli. In addition, the connectivity between the amygdala and ventromedial frontal cortex decreased, suggesting that self-regulatory fatigue is related to the same regions as emotional regulation. Therefore, it appears that self-regulation fatigue does indeed have an emotional core, which may give us insight into the drivers of ethical spending.

Recent research by Xu, Bèguea, and Bushman (2012) has explored the relationship between regulatory fatigue and guilt. Following an emotion suppression task, participants were asked to play a dictator game, after which they were asked if they would like to make a voluntary donation of money to an aid charity. The findings

showed that fatigue decreased feelings of guilt, which may reduce pro-social behaviour. According to Bray, Johns, and Kilburn (2010), non-ethical spending is frequently associated with feelings of guilt. It is possible that the anticipation of negative emotions, such as guilt, is a powerful motivator to spend in an ethical manner. Throughout the thesis, I have argued that self-regulation fatigue could prevent individuals from considering the impacts of their spending, but it is also possible that ego depletion decreases the feelings of guilt that can accompany non-ethical spending. If self-regulation fatigue lowers consumers' feelings of guilt, then this may also be a mechanism by which self-regulatory fatigue increases non-ethical spending. Further research into this area could thus provide greater insight into ethical spending and self-regulation fatigue more generally.

Chapter six of the thesis, which contains the most substantial empirical work, concentrated upon grocery shopping. This is primarily due to responses collected in the exploratory qualitative study presented within chapter three, which showed the strength of the association between principled purchasing and grocery shopping. It is however possible that different product types may be purchased in very different ways.

McDonald et al., (2009) have shown that consumers use different criteria when purchasing different product types. In some circumstances consumers may be highly motivated by underlying morality whilst in other circumstances other factors may be more important. These differences mean that even if a consumer purchases ethically in one sphere, they may not even consider the potential ethical implications of other purchases. Whilst I would like to think that our findings translate to other types of purchases, it is important to note that groceries may have different dimensions to other



product types. For instance, food is generally thought of as a relatively low value commodity and therefore may demand less thought and be more driven by impulse than the choice to buy, for example, an economical and environmentally friendly car, or solar panels. Further research on various product types would therefore be enlightening.

### *Conclusion*

Although there were some instances of findings reported in this thesis that failed to demonstrate a link between self-regulation fatigue and activities that are linked with ethical spending, the majority of our studies, and the most methodologically robust of them, were in line with our initial hypothesis and clearly demonstrated a negative relationship between ego depletion and consumers' rates of ethical spending. This result was found repeatedly, and in studies with high ecological validity. This is the first empirical research project to have established such a link.

However, the effects of ego depletion were only found in particular conditions. They appeared only for those with a high food budget, when the spending decision is sufficiently complex (with multiple choices and a large range of alternatives) and when consumers do not have engrained ethical habits. While these particular constraints require confirmation in further studies, they do suggest that the effects of self-regulatory fatigue may only affect a relatively narrow range of spending behaviours, those where consumers have and need to use some discretion over their purchases.

However, this may also be an argument for considering a more holistic approach to ethical spending grounded in economic psychology. The present results suggest that to

fully understand ethical spending researchers are required to consider the economic, habitual and social psychological factors that may be involved (such as attitudes and levels of self-regulatory fatigue). The thesis does not offer the definitive explanation of why consumers do not always purchase ethically, but it does highlight a variable that may shed some light on a complex phenomenon. I regard the research project as a success in so much as it has led to the identification of the relationship between self-regulation and ethical behaviour. This represents a promising finding, and one that provides a potential building block for future research in this area.

## References

- Aarts, H., & Dijksterhuis, A. (2000). On the automatic activation of goal-directed behavior: The case of travel habit. *Journal of Environmental Psychology*, 20, 75-82.
- Aarts, H., Dijksterhuis, A., & Custers, R. (2003). Automatic normative behavior in environments: The moderating role of conformity in activating social norms. *Social Cognition*, 21, 447-464.
- Ackerman, J.M., Goldstein, N.J., Shapiro, J.R., & Bargh, J.A. (2009). You wear me out - The vicarious depletion of self-control. *Psychological Science*, 20 (3), 326–332.
- Adams, M. & Raisborough, J. (2010). Making a difference: ethical consumption and the everyday. *The British Journal of Sociology*, 61(2), 256-274.
- Adriaanse, M. A., Gollwitzer, P. M., De Ridder, D. T. D., De Wit, J. B. F., & Kroese, F. M. (2011). Breaking habits with implementation intentions: A test of underlying processes. *Personality and Social Psychology Bulletin*, 37(4), 502-513.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50 (2), 179–211.

- Ajzen, I, Brown, T.C., & Carvajal, F. (2004). Explaining the discrepancy between intentions and actions: The case of hypothetical bias in contingent valuation? *Personality and Social Psychology Bulletin*, 30, 1108-1121.
- Akerlof, George A. (1976). "The Economics of Caste and of the Rat Race and Other Woeful Tales," *The Quarterly Journal of Economics*, 90(4): 599–617
- Alba, J., Lynch, J. J., G, Weitz, B., Janiszewski, C., J, Lutz, R., Sawyer, A., et al. (1997). Interactive home shopping: Consumer, retailer, and manufacturer incentives to participate in electronic marketplaces. *Journal of Marketing*, 61 (3), 38 - 53.
- Alberts, H.J.E.M, Martijn, C., Greb, J., Merckelbach, H., & de Vries NK. (2007). Carrying on or giving in: The role of automatic processes in overcoming ego depletion. *British Journal of Social Psychology*, 46 (2), 383–399.
- Ames, D. L., Jenkins, A. C., Banaji, M. R., & Mitchell, J. P. (2008). Taking another person's perspective increases self-referential neural processing. *Psychological Science*, 19 (7), 642-644.
- Andorfer, V.A, & Liebe, U (2012). Research on Fair Trade Consumption—A Review. *Journal of Business Ethics*. 106:415–435

- Andreoni, J. 1989. Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy* 97(6), December, 1447-58.
- Andreoni, J. 1990. Impure Altruism and Donations to Public Goods: A Theory of Warm- Glow Giving. *Economic Journal* 100(401), June, 464-77.
- Atance, C.M., & O'Neill, D.K. (2001). Episodic future thinking. *Trends in Cognitive Sciences*, 5 (12), 533-539.
- Arvola, A., Vassallo, M., Dean, M., Lampila, P., Saba, A., Lähteenmäki, L., & Shepherd, R. (2008). Predicting intentions to purchase organic food: The role of affective and moral attitudes in the Theory of Planned Behaviour. *Appetite*, 50(2), 443-454.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40, 471-499.
- Auger, P., Burke, P., Devinney, T.M., & Louviere. J.L. (2003). What will consumers pay for social product features? *Journal of Business Ethics*, 42 (3), 281-304.
- Auger, P., & Devinney, T. M. (2007). Do what consumers say matter? The misalignment of preferences with unconstrained ethical intentions. *Journal of Business Ethics*, 76 (4), 361-383.

- Arvola, A, Vassallo, M, Dean, M, Lampila, P, Saba, A, Lähteenmäki, L and Shepherd, R (2008) Predicting intentions to purchase organic food: The role of affective and moral attitudes in the theory of planned behaviour. *Appetite* 50: 443-454.
- Babaioff, M., Immorlica, N. Kempe, D. Kleinberg, R (2007). A knapsack secretary problem with applications. *Lecture Notes in Computer Science*, 4627. 16-18
- Babaioff., M., Dinitz, N., Gupta., A. & Immorlica (2002). Secretary problems: weights and discounts. SODA '09 Proceedings of the twentieth Annual ACM-SIAM Symposium on Discrete Algorithms
- Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social Psychology Quarterly*, 55(2), 178-204.
- Balliet, D., & Joireman, J. (2010). Ego depletion reduces proselves' concern with the well-being of others. *Group Processes and Intergroup Relations*, 14, 227-239.
- Bamberg, S., Ajzen, I., & Schmidt, P. (2003). Choice of travel mode in the theory of planned behavior: The roles of past behavior, habit, and reasoned action. *Basic and applied social psychology*, 25(3), 175-187.

- Bamberg, S., & Schmidt, P. (2001). Theory-Driven Subgroup-Specific Evaluation of an Intervention to Reduce Private Car Use<sup>1</sup>. *Journal of Applied Social Psychology, 31*(6), 1300-1329.
- Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of environmental psychology, 27*(1), 14-25.
- Barnett, C., Clarke, N., Cloke, P., and Malpass, A. (2005). The political ethics of consumerism. *Consumer Policy Review 15*(2), 45-51.
- Barwise, P. (1995). Good empirical generalizations. *Marketing Science, 14*(3), 29-35.
- Basu, A.K., & Hicks, R.L (2008). Label performance and the willingness to pay for Fair Trade coffee: a cross national perspective. *International Journal of Consumer Studies. 32*(5) 470-478
- Bateson, M., Nettle, D., & Roberts, G. (2006). Cues of being watched enhance cooperation in a real-world setting. *Biology letters, 2*(3), 412-414.
- Baumeister, R.F. (2002). Reflections and reviews yielding to temptation: Self-control failure, impulsive purchasing, and consumer behavior. *Journal of Consumer Research, 28* (4), 670-676.

- Baumeister, R.F., Bratslavsky, E., Muraven, M., & Tice, D.M. (1998). Ego depletion: Is the active self a limited resource? *Journal of Personality and Social Psychology*, 74(5), 1252-1265.
- Baumeister, R.F., & Exline, J.J. (1999). Virtue, personality and social relations: Self control as the moral muscle. *Journal of Personality*, 67(6), 1165-1194.
- Baumeister, R. F., Gailliot, M.T., DeWall, C. N., & Oaten, M. (2006). Self-regulation and personality: How interventions increase regulatory success, and how depletion moderates the effects of traits on behavior. *Journal of Personality*, 74, 1773-1801.
- Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7(1), 1-15.
- Baumeister, R.F., Sparks, E.A., Stillman, T.F., & Vohs, K.D., (2008). Free will in consumer behavior: Self-control, ego depletion, and choice. *Journal of Consumer Psychology*. 18(1), 4-13.
- Baumeister, R.F. & Vohs. K.D. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass*, 1, 1-16.



- Belk, R.W., (1975). The Objective Situation As A Determinant of Consumer Behavior", *Advances in Consumer Research Volume 02*, 427-438.
- Belk, R.W. (1988). Possessions and the extended self. *Journal of Consumer Research*, 15 (2), 139-168.
- Belk, R., Devinney, T., Eckhardt, G. M. (2005). Consumer Ethics Across Cultures. *Consumption Markets and. Culture*, 8(3), 275-289.
- Ben-Akiva, M. & Boccara, B. (1995). Discrete choice models with latent choice sets. *International Journal of Research in Marketing* 12 (1), 9-24.
- Berkman, E. T., & Miller-Ziegler, J. (2012). IMAGING DEPLETION.
- Berry, H., & McEachern, M. (2005). Informing ethical consumers.
- Blend, J. R., & Van Ravenswaay, E. O. (1999). Measuring consumer demand for ecolabeled apples. *American Journal of Agricultural Economics*, 81(5), 1072-1077.
- Bicchieri, C. (2002) Covenants without swords: Group identity, norms, and communication in social dilemmas. *Rationality and Society* 14(2), 192-228.

- Biel, A., & Thøgersen, J. (2007). Activation of Social Norms in Social Dilemmas: A Review of the Evidence and Reflections on the Implications for Environmental Behaviour. *Journal of Economic Psychology*, 28(1), 93-112.
- Bogers, R. P., Brug, J., Van Assema, P., & Dagnelie, P. C. (2004). Explaining fruit and vegetable consumption: the theory of planned behaviour and misconception of personal intake levels. *Appetite*, 42(2), 157-166.
- Boyd, C. (2012). The Nestlé Infant Formula Controversy and a Strange Web of Subsequent Business Scandals. *Journal of business ethics*, 106(3), 283-293.
- Bray, J., Johns, N., & Kilburn, D. (2011). An exploratory study into the factors impeding ethical consumption. *Journal of Business ethics*, 98(4), 597-608.
- Breidert, C., Hahsler, M., & Reutterer, T. (2006). A review of Methods for Measuring Willingness to Pay. *Innovative Marketing*, 2(4) 8-32
- Brewer, M. B., & Kramer, R. M. (1986). Choice behavior in social dilemmas: Effects of social identity, group size, and decision framing. *Journal of personality and social psychology*, 50(3), 543.

- Bryant, R. L., & Goodman, M. K. (2004). Consuming narratives: the political ecology of 'alternative' consumption. *Transactions of the Institute of British Geographers*, 29(3), 344-366.
- Buchbinder, N., Naor, N, J (2005). Online Primal-Dual Algorithms for Covering and Packing Problems. *Lecture Notes in Computer Science*. 3669, 689-701
- Cailleba P. et Castéran H. (2010), "Do Ethical Values work? A Quantitative Study on the impact of Fair Trade Coffee on Consumer Behavior", *Journal of Business Ethics*, vol. 97, issue 4, p.613-628.
- Cappelletti, D., Güth, W., & Ploner, M. (2008). *Being of two minds: an ultimatum experiment investigating affective processes* (No. 2008, 048). Jena economic research papers.
- Carrigan, M., & Attalla, A. (2001). The myth of the ethical consumer – Do ethics matter in purchase behaviour? *Journal of Consumer Marketing*, 18 (7), 560 - 578.
- Carrigan, M., & De Pelsmacker, P. (2009). Will ethical consumers sustain their values in the global credit crunch?. *International Marketing Review*, 26(6), 674-687.

- Carrigan, M; Szmigin, I; & Wright, J. (2004). Shopping for a better world? An interpretive study of the potential for ethical consumption within the older market. *Journal of Consumer Marketing*, 21(6), 401 – 417.
- Carrington, Michal J., Benjamin A. Neville, & Gregory J. Whitwell (2010). Why ethical consumer's don't walk their talk: Towards a framework for understanding the gap between the ethical purchase intentions and actual buying behaviour of ethically minded consumers. *Journal of Business Ethics*, 97(1), 139-158.
- Carrus, G., Bonaiuto, M., & Bonnes, M. (2005). Environmental concern, regional identity, and support for protected areas in Italy. *Environment and Behavior*, 37(2), 237-257.
- Chan, N., & Kotchen, M. J. (2012). *A Generalized Impure Public Good and Linear Characteristics Model of Green Consumption*. Working paper, Yale University.
- Chartrand, T.L., Huber, J., Shiv, B., & Tanner, R.J. (2008). Nonconscious goals and consumer choice. *Journal of Consumer Research*, 35, 189-201.
- Chatzidakis, A., Hibbert, S., & Smith, A. P. (2007). Why people don't take their concerns about fair trade to the supermarket: The role of neutralisation. *Journal of Business Ethics*, 74(1), 89-100.

- Chaniotakis, I. E., Lympelopoulou, C., & Soureli, M. (2012). The role of consumer pessimism in the intention to buy organic fruits and vegetables. In *Sustainable agriculture and food production: adaptations to a changing social, economic and institutional environment, 11th biannual conference of the Hellenic Association of Agricultural Economists, Thessaloniki, Greece, 26-27 November 2010*. (pp. 301-313). Hellenic Association of Agricultural Economists.
- Cialdini, R.B. (1995). *A full-cycle approach to social psychology. The social psychologists: Research adventures*. New York, NY, England: McGraw-Hill Book Company.
- Cialdini, R. B. (2003). Crafting normative messages to protect the environment. *Current Directions in Psychological Science*, 12, 105-109.
- Cialdini, R. B., Kallgren, C. A., & Reno, R. R. (1991). A focus theory of normative conduct: A theoretical refinement and reevaluation of the role of norms in human behavior. *Advances in Experimental Social Psychology*, 24, 201-234.
- Clark, C. F., Kotchen, M. J., & Moore, M. R. (2003). Internal and external influences on pro-environmental behavior: participation in a green electricity program. *Journal of Environmental Psychology*, 23(3), 237-246.

- Clayton, S., & Brook, A. (2005). Can psychology help save the world? A model for conservation psychology. *Analyses of Social Issues and Public Policy*, 5(1), 87-102.
- Connolly, J., & Shaw, D. (2006). Identifying fair trade in consumption choice. *Journal of strategic marketing*, 14(4), 353-368.
- Cooper, J., & Loomis, J (1992). Sensitivity of willingness-to-pay estimates to bid design in dichotomous choice contingent valuation models. *Land Economics*, 68 (2), 211-224
- Cornes, R., & Sandler, T. (1994). The comparative static properties of the impure public good model. *Journal of Public Economics*, 54(3), 403-421.
- Cotte, J. and Trudel, R. (2009), "Socially Conscious Consumerism – A systematic review of the body of knowledge", *Network for Business Sustainability Knowledge Project Series*, accessed at [http://www.nbs.net/Docs/NBS\\_Consumerism\\_2009.pdf](http://www.nbs.net/Docs/NBS_Consumerism_2009.pdf)
- Cowe, R., & Williams, S. (2000). Who are the ethical consumers. *Co-operative Bank, Manchester*.
- Craig-Lees, M. & Hill, C. (2002) Understanding voluntary simplifiers. *Psychology and Marketing*, 19, 187–210.

- Crane, A., Matten, D., & Moon, J. (2004). Stakeholders as citizens? Rethinking rights, participation, and democracy. *Journal of Business Ethics*, 53(1), 107-122.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy?. *American Psychologist; American Psychologist*, 54(10), 821.
- Dahlstrand, U., & Biel, A. (1997). Pro-environmental habits: Propensity levels in behavioural change. *Journal of Applied Social Psychology*, 27, 588-601.
- Darby, K., Battle, M.T., (2008). Decomposing local: a conjoint analysis of locally produced foods. *American Journal of Agricultural Economics*. 90,(2). 476-486.
- Davis, M. H., Soderlund, T., Coles, J., Gadol, E., Kute, M., Myers, M., et al. (2004). Cognitions associated with attempts to empathize: How do we imagine the perspective of another? *Society for Personality and Social Psychology*, 30 (12), 1625-1635.
- Defra (2008) <http://randd.defra.gov.uk>
- De Groot, J., & Steg, L. (2007). General beliefs and the theory of planned behavior: The role of environmental concerns in the TPB. *Journal of Applied Social*

*Psychology*, 37(8), 1817-1836.

De Pelsmacker, P., Driesen, L., & Glenn, R. (2005). Do consumers care about ethics? Willingness to pay for fair-trade coffee. *Journal of Consumer Affairs*, 39 (2), 363-385.

De Pelsmacker, P., Janssens, W., Sterckx, E., & Mielants, C. (2006). Fair-trade beliefs, attitudes and buying behaviour of Belgian consumers. *International Journal of Nonprofit and Voluntary Sector Marketing*, 11(2), 125-138.

De Pelsmacker, P. & Janssens, W (2007). A Model for Fair Trade Buying Behaviour: The Role of Perceived Quantity and Quality of Information and of Product-Specific Attitudes. *Journal of Business Ethics* 75(4):361 - 380.

Dholakia, U. M., Bagozzi, R. P., & Gopinath, M. (2007). How formulating implementation plans and remembering past actions facilitate the enactment of effortful decisions. *Journal of Behavioral Decision Making*, 20(4), 343-364.

Díaz, F. J. M., Pleite, F. M. C., Paz, J. M. M., & García, P. G. (2012). Consumer knowledge, consumption, and willingness to pay for organic tomatoes. *British Food Journal*, 114(3), 318-334.



- Dickinson, R. A., & Carsky, L. (2005). The consumer as economic voter. In R. Harrison, T. Newholm, & D. Shaw (Eds.), *The ethical consumer* (pp. 25–36). London: Sage.
- Diener, E., Suh, E. M., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological bulletin*, *125*(2), 276.
- Dijksterhuis, A., Bos, M.W., Nordgren, L.F., & van Baaren, R.B. (2006). Making choices without deliberation. *Science*, *312*, 1472.
- Dittmar, H., & Drury, J. (2000). Self-Image – Is it in the Bag? A qualitative comparison between “ordinary” and “excessive” consumers. *Journal of Economic Psychology*, *21*(2), 109-142.
- Doosje, B., Ellemers, N., & Spears, R. (1995). Perceived intragroup variability as a function of group status and identification. *Journal of Experimental Social Psychology*, *31*, 410-436.
- Dreezens, E., Martijn, C., Tenbült, P., Kok, G., & De Vries, N. K. (2005). Food and values: an examination of values underlying attitudes toward genetically modified-and organically grown food products. *Appetite*, *44*(1), 115-122.

- Dunlap, R. E., & Van Liere, K. D. (2008). The "New Environmental Paradigm". *The journal of environmental education*, 40(1), 19-28.
- Ebert, J. E. J. (2001). The role of cognitive resources in the valuation of near and far future events. *Acta Psychologica*, 108, 155-171.
- Edminson, A., C., & McMamanus, S., E. (2007). Methodological fit in management field research. *Academy of Management Journal*, 32 (4), 1155 - 1179.
- Eighmey, J. (1997). Profiling user responses to commercial web sites. *Journal of Advertising Research*, 37 (3), 59-66.
- Engelman, R., Halweil, B., & Nierenberg, D. (2002). Rethinking population, improving lives. *State of the world*, 127-148.
- Falguera, V., Aliguer, N., & Falguera, M. (2012). An integrated approach to current trends in food consumption: Moving toward functional and organic products?. *Food Control*, 26(2), 274-281.
- Fehr., E. & Gächter, S. (2000). Cooperation and punishment in public goods experiments. *American Economic Review*, 90 (4), 980 – 994.
- Fennis, B. M., Janssen, L., & Vohs, K. D. (2009). Acts of benevolence: A limited-resource account of compliance with charitable requests. *Journal of Consumer*

*Research*, 35, 906-924.

Ferguson, T.S. (1989). Who solved the secretary problem? *Statistical Science* 4(3), 282-296

Fillion, L., & Arazi, S. (2002). Does organic food taste better? A claim substantiation approach. *Nutrition & Food Science*, 32(4), 153-157.

Fischer, P., Greitemeyer, T., & Frey, D. (2007). Ego depletion and positive illusions: Does the construction of positivity require regulatory resources? *Personality and Social Psychology Bulletin*, 33(9), 1306-1321.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, MA: Addison-Wesley.

Follows, S. B., & Jobber, D. (2000). Environmentally responsible purchase behaviour: a test of a consumer model. *European journal of Marketing*, 34(5/6), 723-746.

Fotopoulos, C. & Krystallis, A. (2002). Organic Product Avoidance: Reasons for Rejection and Potential Buyers' Identification in a Countrywide Survey. *British Food Journal*, 104(9):730-765.

- Fransson, N., & Gärling, T. (1999). Environmental concern: Conceptual definitions, measurement methods and research findings. *Journal of Environmental Psychology*, 19(4), 369-382.
- Freeman, N., & Muraven, M. (2010). Don't interrupt me! Task interruption depletes the self's limited resources. *Motivation and Emotion*, 34 (3), 230-241.
- Freestone, O.M., & McGoldrick, P.J. (2008). Motivations of the Ethical Consumer. *Journal of Business Ethics*, 79: 445–467.
- Freud, S. (1926). *The ego and the id*. Honolulu, HI: Hogarth Press.
- Fukukawa, K. (2003). A Theoretical Review of Business and Consumer Ethics Research: Normative and Descriptive Approaches. *The Marketing Review*, 3: 381-401.
- Gailliot, M.T., (2008) Unlocking the Energy Dynamics of Executive Functioning: Linking Executive Functioning to Brain Glycogen. *Perspectives on Psychological Science*, 3 (4), 245-263.
- Gärling, T., Fujii, S., Gärling, A., & Jakobsson, C. (2003). Moderating effects of social value orientation on determinants of proenvironmental behavior intention. *Journal of Environmental Psychology*, 23(1), 1-9.

Gatersleben, B., Steg, L., & Vlek, C. (2002). The measurement and determinants of environmentally significant consumer behavior. *Environment and Behaviour*, 34 (3), 335-362.

Gattig, A., & Hendrickx, L. (2007). Judgmental discounting and environmental risk perception: Dimensional similarities, domain differences, and implications for sustainability. *Journal of Social Issues*, 63(1), 21-39.

Gibbon, J., & Sliwa, M. (2012) "Critical perspectives on Fair Trade: an introduction", critical perspectives on international business, Vol. 8 Iss: 4, pp.272 - 276

Gilbert, D.T., Pelham, B.W., & Krull, D.S. (1988). On cognitive busyness: When person perceivers meet persons perceived. *Journal of Personality and Social Psychology*, 54 (5), 733-740.

Gjesme, T., (1983). On the concept of future time orientation: Consideration of some functions' and measurements' implications. *International Journal of Psychology*, 18, 443-461.

Glazer, A. Konrad, K. (1996) A Signaling Explanation for Charity. *American Economic Review*, 86 (4), 1019-1028.

- Gollwitzer, P. M. (1999). Implementation intentions: Strong effects of simple plans. *American Psychologist*, 54, 493-503.
- Gollwitzer, P. M., & Sheeran, P. (2006). Implementation intentions and goal achievement: A meta-analysis of effects and processes. *Advances in Experimental Social Psychology*, 38, 69-119.
- Gordijn, E. H., Hindriks, I., Koomen, W., Dijksterhuis, A., & Knippenberg, A. (2004). Consequences of stereotype suppression and internal suppression motivation: A self-regulation approach. *Personality and Social Psychology Bulletin*, 30 (2), 212-224.
- Grabner-Kraeuter, S. (2002). The role of consumers' trust in online-shopping. *Journal of Business Ethics*, 39(1-2), 43-50.
- Haaijer, R & Wedel M (2001). Habit persistence in time series models of discrete choice. *Marketing Letters* 12(1) 25-35
- Hardin, G. (1968) The Tragedy of the Commons, *Science*, 162, 1243-1248.
- Hagger, M.S., Wood, C., Stiff, C., Chatzisarantis, N.L.D., (2010). Ego depletion and the strength model of self-control. A meta analysis. *Psychological Bulletin*, 136 (4), 495-525.

- Harland, P., Staats, H., & Wilke, H. A. (1999). Explaining Proenvironmental Intention and Behavior by Personal Norms and the Theory of Planned Behavior1. *Journal of Applied Social Psychology, 29*(12), 2505-2528.
- Harper, G.C. & Makatouni, A. (2002) Consumer perception of organic food production and farm animal welfare. *British Food Journal, 104*, 287-299.
- Häubl, G., & Trifts, V. (2000). Consumer decision making in online shopping environments: The effects of interactive decision aids. *Marketing Science, 19* (1) 4-21.
- Hauser, J. R., & Rao, V. R. (2004). Conjoint analysis, related modeling, and applications. *Advances in Marketing Research: Progress and Prospects*, 141-68.
- Heatherton, T.F., & Wagner, D.D., (2011). Cognitive Neuroscience of self regulation failure. *Trends in Cognitive Science. 15* (3), 132-139.
- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of environmental education, 18*(2), 1-8.
- Hinson, J., M., Jameson, T., L., & Whitney, P. (2003). Impulsive decision making and working memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 29* (2), 298-306.

- Hoek, J., Roling, N., & Holdsworth, D. (2012). Ethical claims and labelling: An analysis of consumers' beliefs and choice behaviours. *Journal of Marketing Management*, (ahead-of-print), 1-21.
- Hofmann, W., Friese, M., & Strack, F. (2009). Impulse and self-control from a dual-systems perspective. *Perspectives on Psychological Science*, 4 (2), 162-176.
- Hofmann, W., Baumeister, R. F., Foerster, G., & Vohs, K. D. (2012). Everyday temptations: An experience sampling study of desire, conflict, and self-control. *Journal of Personality and Social Psychology*, 102, 1318-1335.
- Hofmann, W., Schmeichel, B. J., & Baddeley, A. D. (2012). Executive functions and self-regulation. *Trends in cognitive sciences*, 16(3), 174-180.
- Holländer, H. (1990) A Social Exchange Approach to Voluntary Cooperation. *American Economic Review*. 80 (5), 1157-1167.
- Hogg, M.A., & Reid, S.A. (2006) Social Identity, Self-Categorization, and the Communication of Group Norms. *Communication Theory* 16 (1), 7-30.
- Honkanen, P., Verplanken, B., & Ottar Olsen, S. (2005). Intention to consume seafood – the importance of habit. *Appetite*, 45 (2), 161-168.



- Honkanen, P., Verplanken, B., & Ottar Olsen, S. (2006). Ethical values and motives driving organic food choice. *Journal of Consumer Behaviour*, 5 (5), 420.
- Huffman, C., Ratneshwar, S., & Mick, D. G. (2000). Consumer goal structures and goal determination processes. *The why of consumption: Contemporary perspectives on consumer motives, goals and desires*, 1-35.
- Huang, M.H. (2000). Information load: Its relationship to online exploratory and shopping behavior. *International Journal of Information Management*, 20 (5), 337-347.
- Hunecke, M., Blöbaum, A., Matthies, E., & Höger, R. (2001). Responsibility and environment ecological norm orientation and external factors in the domain of travel mode choice behavior. *Environment and Behavior*, 33(6), 830-852.
- Gollwitzer, P. M. (1999). Implementation intentions: strong effects of simple plans. *American Psychologist*, 54(7), 493.
- Inzlicht, M., & Gutsell, J. (2007). Running on empty neural signals for self-control failure. *Psychological Science*, 18 (11), 933-937.
- Inzlicht, M., & Schmeichel, B. J. (2012). What is ego depletion? Toward a mechanistic revision of the resource model of self-control. *Perspectives on Psychological Science*, 7(5), 450-463.

Ji, M.F., & Wood, W. (2007). Purchase and Consumption Habits: Not Necessarily

What You Intend. *Journal of Consumer Psychology*, 17(4), 261–276

Job, V., Dweck, C. S., & Walton, G. M. (2010). Ego depletion--is it all in your head?

Implicit theories about willpower affect self-regulation. *Psychological Science*

21(11), 1686-1693.

Joireman, J.A, Balliet, D., Sprott, D., Spangenberg, E., & Schultz, J. (2008).

Consideration of future consequences, ego-depletion, and self-control: Support for distinguishing between cfc-immediate and cfc-future sub-scales. *Personality and Individual Differences*, 45 (1), 15-21.

Joireman, J.A., Sprott, D.E., & Spangenberg, E.R. (2005). Fiscal responsibility and

the consideration of future consequences. *Personality and Individual Differences*, 39 (6), 1159–1168.

Joireman, J.A, Van Lange, P.A.M, & Van Vugt., M, (2004). Who cares about the

environmental impact of cars? Those with an eye toward the future. *Environment and Behavior*, 36 (2), 187-206.

Louviere, J.J, Woodworth, G , (1983). Design and analysis of simulated consumer

choice or allocation experiments: an approach based on aggregate data *Journal of marketing research*, 20(4) 350-367

Kaiser, F. G., Hubner, G., & Bogner, F. X. (2005). Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior. *Journal of Applied Social Psychology, 35*, 2150-2170.

Kaiser, F.G., Wolfing S. & Fuhrer U. (1999). Environmental attitude and ecological behavior. *Journal of Environmental Psychology, 19*(1):1-19.

Kasser, T., & Ryan, R.M. (1996). Further examining the American dream: Well-being correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 281-288.

Katona, G. (1975). *Psychological economics*. New York: Oxford University Press

Kidwell, B., & Jewell, R. D. (2003). An examination of perceived behavioral control: internal and external influences on intention. *Psychology and Marketing, 20*(7), 625-642.

Know, K., & Lee, J. (2003). Concerns about payment security of internet purchases: A perspective on current on-line shoppers. *Clothing and Textiles Research Journal, 21* (4), 174-184.

Krier, J. M. (2008). Fair Trade 2007: new facts and figures from an ongoing success story. *A report on Fair Trade in, 33*.

- Krystallis, A., G., & Chrysosoidis, G. (2005). Consumers' willingness to pay for organic food: Factors that affect it and variation per organic product type. *British Food Journal*, 107
- Kurz, T., Linden, M., Sheehy, N. (2007) Attitudinal and community influences on participation in new curbside recycling initiatives in Northern Ireland. *Environmental Behaviour*, 39 (3), 367-391.
- Kuzmiak, D. T. (1991). The American environmental movement. *Geographical Journal*, 265-278.
- Lea, S.E.G., Webley, P., & Levine.R.M., (1993) The economic psychology of consumer debt. *Journal of Economic Psychology*, 14, 85-119.
- Lea, S.E.G., Webley, P., & Walker. C.M. (1995) Psychological factors in consumer debt: Money management, economic socialization, and credit use. *Journal of Economic Psychology*, 16, 681-701.
- Lieberman, M., D. (2007). Social cognitive neuroscience: A review of core processes. *The Annual Review of Psychology*, 58, 259-289.
- Lindenberg, S. & Steg, L. (2007). Normative, gain and hedonic goal frames guiding environmental behavior. *Journal of Social Issues*. 65(1), 117-137.

- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, 65 (3), 272–292.
- Loewenstein, G., Read, D., & Baumeister, R. (2003). Time and decision: Economic and psychological perspectives on intertemporal choice. Russell Sage Foundation.
- Loureiro, M. L., & Lotade, J. (2005). Do fair trade and eco-labels in coffee wake up the consumer conscience?. *Ecological Economics*, 53(1), 129-138.
- Loureiro, M.L., McCluskey.L.J., & Mittelhammer.R.C (2002). Will Consumers Pay a Premium for Eco-labeled Apples? *Journal of Consumer Affairs* 36(2). 203-219
- Louviere, J.J (1988) Conjoint analysis modelling of stated preferences: a review of theory, methods, recent developments and external validity. *Journal of transport economics and policy*
- Louviere. J.J., & Woodworth. G. (1983). Design and analysis of simulated consumer choice or allocation experiments: an approach based on aggregate data *Journal of Marketing Research* Vol. 20, No. 4 (Nov., 1983), pp. 350-367

- Lynch, J. G. (1999). Theory and external validity. *Journal of the Academy of Marketing Science*, 27 (3), 367-376.
- Maignan, I Ferrell, O.C. (2004). Corporate social responsibility and marketing: an integrative framework. *Journal of the Academy of Marketing Science*. 32(1), 3-19
- Masicampo, E. J., & Baumeister, R. F. (2008). Toward a physiology of dual-process reasoning and judgment: Lemonade, willpower, and expensive rule-based analysis *Psychological Science*, 193 (3), 255-260.
- McCluskey, J. J., & Loureiro, M. L. (2005). Reputation and production standards. *Journal of Agricultural and Resource Economics*, 1-11.
- McDevitt, R., Giapponi, C., & Tromley, C. (2007). A model of ethical decision making: The integration of process and content. *Journal of Business Ethics*,73(2), 219-229.
- McDonald, S., Oates, C., Thyne, M., Alevizou,P. & McMorland, L.A. (2009). Comparing sustainable consumption patterns across product sectors. *International Journal of Consumer Studies*, 32(2), 137-145
- Metcalfe, J., & Mischel, W. (1999). A hot / cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106 (1), 1-19.

- Milfont, T.L., & Duckitt, D. (2004). The structure of environmental attitudes: A first- and second-order confirmatory factor analysis. *Journal of Environmental Psychology*, 24 (3), 289–303.
- Milfont, T.L., & Gouveia, V.V. (2006). Time perspective and values: An exploratory study of their relations to environmental attitudes. *Journal of Environmental Psychology*, 26 (1), 72-82.
- Monsell, S. (2003). Task switching. *Trends in Cognitive Science*, 7(3), 134-140.
- Moon, W., Florkowski, W.J., Brückner, B., I. & Schonhof, I (2002). *Willingness to pay for environmental practices: implications for eco-labelling*. Vol 78 (1) 88-102
- Moore, D.A., & Loewenstein, G. (2004). Self-interest, automaticity, and the psychology of conflict of interest. *Social Justice Research*, 17 (2), 189-202.
- Mortensen, C.R., & Cialdini, R.B. (2009). Full-cycle social psychology for theory and application. *Social and Personality Psychology Compass*, 4 (1), 53-63.
- Morwitz, V.G., Steckel, J. & Gupta, A. (2007). When do Purchase Intentions Predict Sales? *International Journal of Forecasting*, 23 (3), 347-364.

- Muraven, M., & Baumeister, R.F. (2000). Self-regulation and depletion of limited resources: Does self-control resemble a muscle? *Psychological Bulletin*, 126(2), 247-259.
- Muraven, M., Collins, R. L., & Nienhaus, K. (2002). Self control and alcohol restraint: An initial application of the self control strength model. *Psychology of addictive behaviours*, 16, 113-120
- Muraven, M., Shmueli, D., & Burkley, E. (2006). Conserving self-control strength. *Journal of Personality and Social Psychology*, 91 (3), 524–537.
- Muraven, M., & Slessareva, E. (2003). Mechanisms of self-control failure: Motivation and limited resources. *Personality and Social Psychology Bulletin*, 29(7), 894-906.
- Nagle., T.T.,& Holden, R.K (2002). *The Strategy and Tactics of Pricing*, Prentice Hall Marketing Series
- Neal, D., T, Wood, W., & Quinn, J. M. (2006). Habits a repeat performance. *Current Directions in Psychological Science*, 15(4), 198-202.
- Nes, L.S., Carlson, C.R., Crofford, L.J., de Leeuw. R. & Segerstrom, S.C., (2011). Individual differences and self-regulatory fatigue: optimism, conscientiousness, and self-consciousness. *Personality and Individual Differences*, 50(4). 475-480.



- Newholm, T. (2005). Case studying ethical consumers' projects and strategies. *The Ethical Consumer, London: SAGE Publications Ltd*, 107-24.
- Newholm, T., & Shaw, D. (2007). Studying the ethical consumer: A review of research studying the ethics of consumption. *Journal of Consumer Behaviour*, 6, 253–270.
- Nijssen, E.J. and S.P. Douglas (2008). Consumer World-Mindedness, Social-Mindedness and Store Image, *Journal of International Marketing*, 16 (3): 84-107.
- Nolan, J.M., Schultz, P.W., Cialdini, R.B., Goldstein, N.J., & Griskevicius, V. (2008). Normative social influence is underdetected. *Personality and Social Psychology Bulletin*, 34 (7), 913-923.
- Noorman, K. J., & Uiterkamp, T. S. (1998). *Green Households?: Domestic Consumers, Environment, and Sustainability*. Earthscan/James & James.
- Nordlund, A. M., & Garvill, J. (2002). Value structures behind pro-environmental behavior. *Environment and Behavior*, 34, 740-756
- Oishi, S., Diener, E. F., Lucas, R. E., & Suh, E. M. (1999). Cross-cultural variations in predictors of life satisfaction: Perspectives from needs and values. *Personality*

*and social psychology bulletin*, 25(8), 980-990.

Olson, M., & Olson, M. (1965). *The logic of collective action: public goods and the theory of groups* (Vol. 124). Harvard University Press.

Ozcaglar-Toulouse, N., Shiu, E., & Shaw, D. (2006). In search of fair trade: ethical consumer decision making in France. *International Journal of Consumer Studies*, 30(5), 502-514.

Paxton, A (1994). The Food Miles Report: The dangers of long-distance food transport. SAFE Alliance, London, UK.  
<http://www.sustainweb.org/publications/?id=191>

Page, G., & Fearn, H. (2005). Corporate reputation: what do consumers really care about?. *Journal of Advertising Research- New York-*, 45(3), 305.

Pretty, J. N., Ball, A. S., Lang, T., & Morison, J. I. (2005). Farm costs and food miles: An assessment of the full cost of the UK weekly food basket. *Food Policy*, 30(1), 1-19.

Pocheptsova, A., Amir, O., Dhar, R., & Baumeister, R. F. (2009). Deciding without resources: Psychological depletion and choice in context. *Journal of Marketing Research*, 46(3), 344-355.

Pol, E., Moreno, E., & Guàrdia, J. (2002). Identity, Quality of Life, and Sustainability in an Urban Suburb of Barcelona Adjustment to the City-Identity-Sustainability Network Structural Model. *Environment and behavior*, 34(1), 67-80.

Quinn, E. P., Brandon, T. H., Copeland, A. L. (1996). Is task persistence related to smoking and substance abuse? The application of learned industriousness theory to addictive behaviours. *Experimental and Clinical Psychopharmacology*, 4, 186-190.

Raynolds, L. T. (2009). Mainstreaming fair trade coffee: from partnership to traceability. *World Development*, 37(6), 1083-1093.

Raynolds, L. T. (2000). Re-embedding global agriculture: The international organic and fair trade movements. *Agriculture and human values*, 17(3), 297-309.

Raynolds, L. T., Murray, D., & Leigh Taylor, P. (2004). Fair trade coffee: building producer capacity via global networks. *Journal of International Development*, 16(8), 1109-1121.

Rivers, N, & Jaccard, M (2005). Combining top-down and bottom-up approaches to energy-economy modeling using discrete choice methods. *The Energy Journal*, 26 (1), 83-106

- Robinson, M.D., Schmeichel, B.J., & Inzlicht, M (2010). A cognitive control perspective of self-control strength and its depletion. *Social and Personality Psychology Compass* 4 (3), 189-200.
- Roch. S.G., Lane.J.A.S., Samuelson.C.D., Allison.S.T. & Dent. J.L (2000). Cognitive Load and the Equality Heuristic: A Two-Stage Model of Resource Overconsumption in Small Groups. *Organizational Behavior and Human Decision Processes* 83(2), 185-212
- Roe, B., Teisl., M.F., Levy. A , Russell., M (2001). US consumers' willingness to pay for green electricity. *Energy Policy.*, 29 (11),.917-925.
- Roosen, J., Fox., JA., Hennessy.,D.A.,& Schreiber., A. (1998). Consumers' valuation of insecticide use restrictions: an application to apples. *Journal of Agricultural and Economics Association* 23(2) 367-384
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55 (1), 68-78.
- Sandler.T. & Cornes.R. (1994) The comparative static properties of the impure public good model. *Journal of Public Economics*. Volume 83, Issue 2, November 2000, Pages 185–212

- Sammer, K. & Wüstenhagen, R (2006). The influence of eco-labelling on consumer behaviour—Results of a discrete choice analysis for washing machines. *Business Strategy and the Environment*, 15(3), 185-199.
- Schmeichel BJ, & Vohs., K.D (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of Personality and Social Psychology*, 96 (4), 770-782.
- Schmeichel, B.J., Vohs, K.D, & Baumeister. R.F. (2003). Intellectual performance and ego depletion: Role of the self in logical reasoning and other information processing. *Journal of Personality and Social Psychology*, 85(1), 33–46.
- Schmuck, P. & Vlek, C. (2003). Psychologists can do much more to support sustainable development. *European Psychologist*, 8, 66-78.
- Schultz, P.W., Nolan, J.M., Cialdini, R.B., Goldstein, N.J. & Griskevicius. V. (2007). The constructive, destructive and reconstructive power of social norms. *Psychological Science*, 18 (5), 429- 434.
- Schwartz, S.H. (1977). Normative Influences on Altruism. *Advances in Experimental Social Psychology*, 10, 221-279.
- Seeley, E. A., & Gardner, W. L. (2003). The “selfless” and self-regulation: The role of chronic other orientation in averting self-regulatory depletion. *Self and*

*Identity*, 2 (2) 103-117.

Shaw, D. (2007) Consumer voters in imagined communities. *International Journal of Sociology and Social Policy*, 27 (3/4). pp. 135-1

Shaw, D., Grehan, E., Shiu, E., Hassan, L. & Thomson, J. (2005). An exploration of the values in ethical consumer decision making. *Journal of Consumer Behaviour*, 4, 185–200.

Shaw, D., & Newholm, T. (2002). Voluntary simplicity and the ethics of consumption. *Psychology & Marketing*, 19(2), 167-185.

Shaw, D., & Shiu, E. (2002). An assessment of ethical obligation and self-identity in ethical consumer decision-making: a structural equation modelling approach. *International Journal of Consumer Studies*, 26(4), 286-293.

Shaw, D. & Shiu, E. (2003). Ethics in consumer choice: A multivariate modelling approach. *European Journal of Marketing*, 37 (10), 1485-1498.

Shaw, D., Shiu, E. and Clarke, I., (2000). The Contribution of Ethical Obligation and Self-identity to the Theory of Planned Behaviour: An Exploration of Ethical Consumers. *Journal of Marketing Management*, 16 (8), 879-894.

Sheeran, P (2002). Intention-behavior relations: A conceptual and empirical review.

*European Review of Social Psychology*, 12, 1-36.

Sheldon, K.M., & McGregor, H.A. (2000). Extrinsic value orientation and "the

tragedy of the commons". *Journal of Personality*, 68(2), 383-411.

Smith, J.R. & Louis, W.R. (2008). Do as we say and as we do: the interplay of

descriptive and injunctive group norms in the attitude-behaviour

relationship. *British Journal of Social Psychology*, 47, 647-666.

Smith, J.R., & McSweeney, A. (2007). Charitable Giving: The Effectiveness of a

Revised Theory of Planned Behavior Model in Predicting Donating Intentions

and Behavior. *Journal of Community & Applied Social Psychology*, 17, 363 –

386.

Soron, D. (2010). Sustainability, self-identity and the sociology of consumption.

*Sustainable Development*, 18, 172–181.

Sparks, P., & Shepherd, R. (1992). Self-Identity and the Theory of Planned Behavior:

Assesing the Role of Identification with " Green Consumerism". *Social Psychology*

*Quarterly*, 388-399.

Steg, L. (2003). Motives and behaviour in social dilemmas relevant to the

environment. *Human Decision Making and Environmental Perception*.

Understanding and Assisting Human Decision Making in Real-Life Settings, pp. 83-102.

Steg, L. (2005). Car use: lust and must. Instrumental, symbolic and affective motives for car use. *Transportation Research Part A: Policy and Practice*, 39(2), 147-162.

Steg, L., Dreijerink, L., Abrahamse, W., (2005). Factors influencing the acceptability of energy policies: A test of VBN theory. *Journal of Environmental Psychology*, 25, 415-425.

Stern, P. C. (2000). Psychology, sustainability, and the science of human-environment interactions. *American Psychologist*, 55, 523–530.

Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues*, 50(3), 65–84.

Stern, P. C., Dietz, T., Ruttan, V. W., Socolow, R. H., & Sweeney, J. L. (1997). Consumption as a problem for environmental science. *Environmentally significant consumption: Research directions*, 1-11.

Stern, P. C., Kalof, L., Dietz, T., & Guagnano, G. A. (1995). Values, Beliefs, and Proenvironmental Action: Attitude Formation Toward Emergent Attitude Objects. *Journal of Applied Social Psychology*, 25(18), 1611-1636.



- Strack, F., Werth, L., & Deutsch, R. (2006). Reflective and impulsive determinants of consumer behavior. *Journal of Consumer Psychology*, 16(3), 205-216.
- Street, M.D, Douglas, S.W, Geiger, S.W., & Martinko. M.J, (2001). The impact of cognitive expenditure on the ethical decision-making process: The cognitive elaboration model. *Organizational Behavior and Human Decision Processes*, 86(2), 256–277.
- Suddendorf, T., & Corballis, M. (1997). Mental time travel and the evolution of the human mind. *Genetic, Social & General Psychology Monographs*, 123 (2), 133-167.
- Szmigin I, Carrigan M and McEachern M, (2009). The conscious consumer: taking a flexible approach to ethical behaviour', *International Journal of Consumer Studies*, 33(2), 224-231.
- Szpunar, K. K (2010). Episodic future thought: An emerging concept. *Perspectives on Psychological Science*, 5, (2) 142-162.
- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behaviour. In S. Worchel & W. G. Austin (Eds.), *Psychology of intergroup relations* (pp. 7–24). Chicago, IL: Nelson-Hall.

- Tangney, J. P., Baumeister, R. F., & Boone, A. L. (2004). High self-control predicts good adjustment, less pathology, better grades, and interpersonal success. *Journal of Personality, 72* (2), 271-324.
- Tarkiainen, A. & Sundqvist, S. 2005. Subjective norms, attitudes and intentions of Finnish consumers in buying organic food. *British Food Journal, Vol. 107* No. (11), pp. (808- 822)
- Thøgersen, J. (2005). How may consumer policy empower consumers for sustainable lifestyles? *Journal of Consumer Policy, 28* (2), 143 -177.
- Thøgersen, J. (2006). Media attention and the market for 'green' consumer products. *Business-Strategy-and-the-Environment., 15*(3), 145-156.
- Thøgersen, J., & Ölander, F. (2006). The dynamic interaction of personal norms and environment-friendly buying behavior: A panel study. *Journal of Applied Social Psychology, 36*(7), 1758–1780.
- Tice, D.M., & Bratslavsky, E. (2000). Giving in to feel good: The place of emotion regulation in the context of general self-control. *Psychological Inquiry, 11* (3), 149-159.
- Trudel, R., & Cotte, J. (2008). Does being ethical pay?. *The Wall Street Journal, 12*, R1.

- Trudel, R., & Cotte, J. (2009). Does it pay to be good. *MIT Sloan Management Review*, 50(2), 61-68.
- Tsakiridou, E., Boutsouki, C., Zotos, Y., & Mattas, K. (2008). Attitudes and behaviour towards organic products: an exploratory study. *International Journal of Retail & Distribution Management*, 36(2), 158-175.
- Tyler, J.M., & Burns, K.C. (2008) After depletion: The replenishment of the self's regulatory resources. *Self and Identity*, 7(3), 305-321.
- Uusitalo, O., & Oksanen, R. (2004). Ethical consumerism: a view from Finland. *International Journal of Consumer Studies*, 28(3), 214-221.
- Uzzell, D., Pol, E., & Badenas, D. (2002). Place Identification, Social Cohesion, and Environmental Sustainability. *Environment and Behavior*, 34(1), 26-53.
- Van Dellen, M. R., & Hoyle, R. H. (2010). Regulatory accessibility and social influences on state self-control. *Personality and Social Psychology Bulletin*, 36(2), 251-263.

- Van Vugt, M., De Cremer, D., & Janssen, D. P. (2007). Gender Differences in Cooperation and Competition The Male-Warrior Hypothesis. *Psychological Science, 18*(1), 19-23.
- Varul, M. Z. (2009). Ethical selving in cultural contexts: Fairtrade consumption as an everyday ethical practice in the UK and Germany. *International Journal of Consumer Studies, 33*, 183–189.
- Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: exploring the consumer “attitude–behavioral intention” gap. *Journal of Agricultural and Environmental Ethics, 19*(2), 169-194.
- Vermeir, I. & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics 64*(3): 542-553.
- Verplanken, B. (2006). Beyond frequency: Habit as mental construct. *British Journal of Social Psychology, 45*, 639-656.
- Verplanken, B., Aarts, H., & van Knippenberg, A. (1997). *Habit, information acquisition, and the process of making travel mode choices. European Journal of Social Psychology, 27*, 539-560.

- Verplanken B, Aarts H, van Knippenberg A, Moonen A. (1998) *Habit versus planned behaviour: a field experiment. British Journal of Social Psychology*.1):111-28.
- Verplanken, B., & Sato, A. (2011). The psychology of impulse buying: An integrative self-regulation approach. *Journal of Consumer Policy*, 34, 197-210.
- Vickrey. W. (1961). Counterspeculation, auctions, and competitive sealed tenders. *The Journal of Finance*. 16(1) 8-37
- Vijayasathya, L. R. (2002). Product characteristics and internet shopping intentions. *Internet Research*, 12(5), 411-426.
- Vitell, S. J. (2003). Consumer ethics research: Review, synthesis and suggestions for the future. *Journal of Business Ethics*, 43(1), 33-47.
- Vlek, C., & Gideon, K. (1992). Behavioral decision theory and environmental risk management: Assessment and resolution of four 'survival' dilemmas. *Acta Psychologica*, 80 (1-3), 249-278.
- Vohs, K.D., & Faber. R.J. (2007). Spent resources: Self-regulatory resource availability affect impulse buying. *Journal of Consumer Research*, 33, 537-547.
- Vohs, K.D., & Heatherton, T.F. (2000). Self-regulatory failure: A resource-depletion approach. *Psychological Science*, 11(3), 249-254.

- Vohs, K.D., Glass, B.D., Maddox, T.W., & Markman, A.B (2011). Ego depletion is not just fatigue. Evidence from a total sleep deprivation experiment. *Social Psychological and Personality Science* 2 (2) 166 -173.
- Wagner, D. D. and Heatherton, T. F. (2013). Self-regulatory depletion increases emotional reactivity in the amygdala. *Social Cognitive and Affective Neuroscience*, 8, 410-417
- Watson, D., Clark, L.A. & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect. The PANAS Scales. *Journal of Personality and Social Psychology*. 47, 1063-1070.
- Webb, T.L., Sheeran, P (2003). Can implementation intentions help to overcome ego-depletion? *Journal of Experimental Social Psychology*, 39 (3), 279-286.
- Wegner, D.M. (1997). When the antidote is the poison: Ironic mental control processes. *Psychological Science*, 8 (3), 148-150.
- Wegner, D.M., Schneider, D.J., Carter, S., & White, T. (1987). Paradoxical effects of thought suppression. *Journal of Personality and Social Psychology*, 53(1), 5-13.
- Wegner, D. M., & Erber, R. (1992). The hyperaccessibility of suppressed thoughts. *Journal of Personality and Social Psychology*, 63, 903-912.

- Wertenbroch, K Skiera., B (2002). Measuring consumers' willingness to pay at the point of purchase. *Journal of Marketing Research*. 39(2), 228-241.
- Wiidegren.O., (1998) The New Environmental Paradigm and Personal Norms  
*Environment and Behavior* 30 1 75-100.
- Winer, R., S. (1999). Experimentation in the 21st century: The importance of external validity. *Journal of the Academy of Marketing Science*, 27 (3), 349-359.
- Winter, D; & Cava, M. (2006) The Psycho-Ecology of Armed Conflict. *Journal of Social Issues*, 62 (1), 19-40.
- Wittink, D.R., Vriens, M., & Burhenne. W (1994). Commercial use of conjoint analysis in Europe: Results and critical reflections. *International Journal of Research in Marketing*. 11(1),41-52.
- Wood, W., Quinn, J. M., & Kashy, D. (2002). Habits in everyday life: The thought and feel of action. *Journal of Personality and Social Psychology*, 83, 1281–1297.
- Xu, H., Bègue, L., & Bushman, B. J. (2012). Too fatigued to care: Ego depletion, guilt, and prosocial behavior. *Journal of Experimental Social Psychology*.

Yang, B., & Lester, D. (2004). Attitudes toward buying online. *Cyber Psychology & Behavior*, 7 (1), 85-91.

Zabelina, D., L, Robinson, M., D, & Anicha, C., L. (2007). The psychological tradeoffs of self-control: A multi-method investigation. *Personality and Individual Differences*, 43 (3), 463–473.

Zimbardo, P.G., & Boyd, J.N. (1999). Putting time in perspective. A valid, reliable individual-difference metric. *Journal of Personality and Social Psychology*, 77, 1271-1288.



## Appendix

### Manipulations of Self-regulatory Fatigue

*Figure 8: The White Bear Manipulation of Self-regulatory Fatigue*

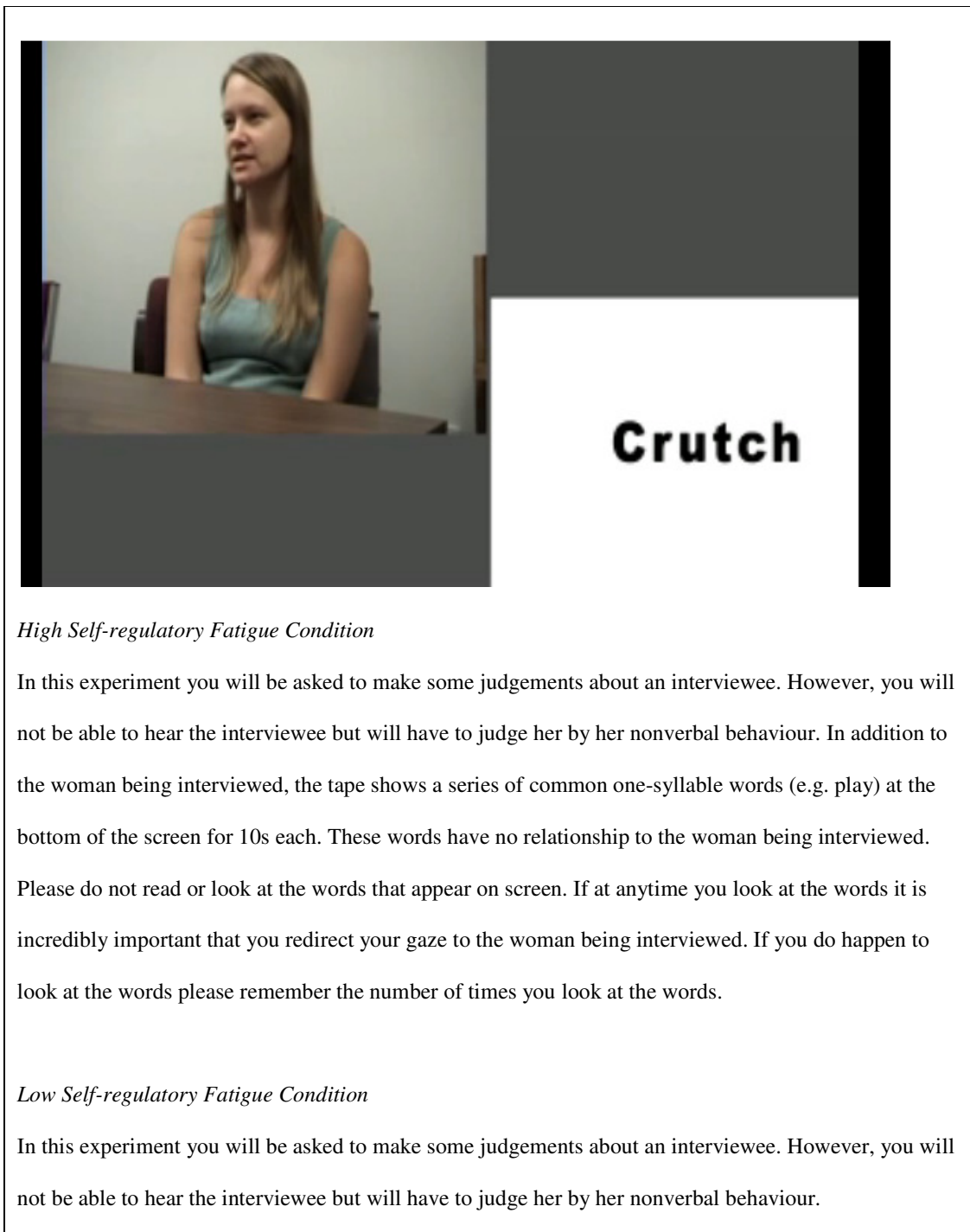
*High Self-regulatory Fatigue Condition*

In order to see whether free association influences your ability to make economic decisions, we would like you to note down as many associated words as you can which relate to the word zoo. Imagine you are taking a trip around a zoo and make note of everything you pass along the way. It is very important that at no time do you think about a white bear. If you do think about the white bear (which may well happen several times), please mark an X on the questionnaire behind the last word you wrote down. Please remember that it is very important to report every instance in which you think about the white bear.

*Low Self-regulatory Fatigue Condition*

In order to see whether free association influences your ability to make economic decisions, we would like you to note down as many associated words as you can which relate to the word zoo. Imagine you are taking a trip around a zoo and make note of everything you pass along the way.

*Figure 9: Attention Control Video Manipulation of Self-regulatory Fatigue*



*Table10: Self Report Measure of Mental and Self-regulatory Fatigue*

	Strongly Agree		Neither Strongly Agree or Disagree			Strongly Disagree	
I am feeling mentally fatigued	1	2	3	4	5	6	7
I have engaged in strenuous mental activity today	1	2	3	4	5	6	7
I am having trouble concentrating	1	2	3	4	5	6	7
I would describe my day as being stressful	1	2	3	4	5	6	7
I feel easily distracted	1	2	3	4	5	6	7
I have felt tempted to do thing I shouldn't today	1	2	3	4	5	6	7
I have successfully managed to resist temptation today	1	2	3	4	5	6	7
I am tempted to buy myself something nice as a treat	1	2	3	4	5	6	7
I feel my will power is low	1	2	3	4	5	6	7
I have had to do many things I didn't want to do today	1	2	3	4	5	6	7
I currently feel tempted to buy myself a treat	1	2	3	4	5	6	7
I feel like I could resist any form of temptation	1	2	3	4	5	6	7
I really don't feel like doing anything difficult	1	2	3	4	5	6	7

*Figure 10: Vowel Count Manipulation of Self-regulatory Fatigue*

*High Self-regulatory Fatigue Condition*

This first task is a measure of attention. You will now be presented with a written extract. Please cross off the every occurrence of the letter “e”. Please keep a running total of the number of “e”s you cross off in your mind. Please do not count an “e” if it occurs next to another vowel (a,e,i,o,u). However, please ignore this rule and count the “e” if the word has either four or seven letters.

For example if the word was “fete” you would cross out the “e” as it does not appear next to another vowel. If the word was “feats” you would not cross out the “e” as it appears next to a vowel. However, if the word was “feat” you should count the “e” as this is a four letter word. It is very important that you perform this task to the best of your ability and record how many vowels you have counted – and which line you have gotten up to. You have 10mins to complete this task.

*Low Self-regulatory Fatigue Condition*

This first task is a measure of attention. You will now be presented with a written extract. Please cross off the every occurrence of the letter “e”. Please keep a running total of the number of “e”s you cross off in your mind. It is very important that you perform this task to the best of your ability and record how many vowels you have counted – and which line you have gotten up to. You have 10mins to complete this task.

## Article Manipulations

*Figure 11: Article presented in Chapter Six Study Two*

### ***The Credit Crunch and Student Spending***

The following article was written by a student at the University of Exeter. The era of spend, spend, spend has come to an end. Britain's shoppers are finally starting to cut back on their expenditure and have put away their credit cards. A slew of economic and retailing figures suggest that students are amongst those who are feeling the pinch most. With debts looming it comes as no surprise that student spending has changed. However, you may be shocked to hear the extent of the changes. An independent university life survey suggests that students are cutting back on nights out in favour of nights at home. It has been reported that Exeter's clubs have seen a 15% drop in the amount of students going through their doors on a typical evening. On the high street is the sight of a student with bags full of designer goods has become increasingly rare. *Followed by either...*

#### *Ethical Spending Condition*

However, students are not cutting back in every area. According to market research tighter purse strings has not dented student's enthusiasm for all things green. Students are filling shopping baskets with organic, fair trade, free range and locally sourced goods. One student from the University of Exeter recently stated that "most students are opting to buy ethical goods. Buying ethically is more approved of within the student community than ever before. Student's at Exeter don't think it is acceptable not to think about the bigger picture when shopping".

#### *Control Condition*

However, students are not cutting back in every area. According to market research tighter purse strings has not dented student's enthusiasm for foreign travel. Be it in search of culture, adventure or simply sunnier climates. One student from the University of Exeter recently stated that "most students are still planning foreign travel. You only have one life so you need to expand your horizons and enjoy it".

*Figure 12: Article presented in Chapter Six Study Three*

An article written by a student at the University of Exeter:

### The Credit Crunch and Individual Spending

The era of spend, spend, spend is coming to an end. Britain's shoppers, who for years have been racking up debt on credit cards and home loans with abandon, are finally starting to cut back on their expenditure. Nearly one in six adults in the UK realises they have to cut spending because of the crunch, research by comparison site MoneyExpert.com has revealed. It is not just more extravagant expenses, such as holidays or a new car that are being dropped. Many plan to reduce spending on basics such as the weekly food shopping bill as prices soar.

However, professional money experts are telling us not to bury our heads in the sand. Anyone who has money worries should stand back, reflect and take steps in getting through this financial crisis and take responsibility for a sustainable future.

It is suggested that one way in which we as individuals can not only help ourselves, but help others around us in this critical time is to buy sustainable goods which can benefit us and others in need.

By spending money on ethical products when shopping (e.g. fair-trade, organic and locally sourced goods) will create more opportunities for our country and other countries to develop and overcome this economic crisis. We as individuals are responsible for the sustainable development of communities and by buying ethical goods will encourage the economy to develop and flourish, in the mean time helping those around us in need.

#### *Personal responsibility section*

Many campaigners for the consumption of ethical goods suggest that it is the individual's responsibility to help the wider community and help both the environment and other countries across the world and therefore buy ethical goods.

If we do not take personal responsibility for our environment and other individuals within the world then this could have dire consequences not only for sustainability but also economic sufficiency and stability across the globe. If each of us as individuals play a part within the world of ethical spending then we could see a brighter and more sustainable future across the globe.

This economic downfall can be overcome, but it is up to each of us individually to spend our money wisely so we as communities can grow stronger as a result of this credit crunch crisis.

#### *Social acceptance section*

The Ethical Consumerism Report, which acts as a barometer of ethical spending in the UK, shows that in 2008 UK student consumers spent a total of £9.8 billion in line with their ethical and environmental values, an increase of 15 per cent on the previous year.

One student from the University of Exeter recently stated that 'more students are opting for the ethical choice when purchasing goods, ethical choice is both beneficial for the student themselves and the wider community. Buying ethically is more approved of within the student community than ever before – times are changing for the better'.

A recent poll put the University of Exeter at the top of student ethical spenders, this was judged upon amount of ethical products bought (including organic and fair-trade goods) and attitudes towards ethical spending.

## Original Scales

**Table 11: Items from Time Perspective Scale**

	Strongly Agree			Neither Strongly Agree or Disagree			Strongly Disagree
At the present time....							
I can only think about the present	1	2	3	4	5	6	7
I have a clear picture of my long term goals	1	2	3	4	5	6	7
A year seems like a long time away	1	2	3	4	5	6	7
I would be prepared to sacrifice my current happiness for my future wellbeing	1	2	3	4	5	6	7
I know what I need to do in order to be successful in the future	1	2	3	4	5	6	7
I feel the future can take care of itself	1	2	3	4	5	6	7
The future seems vague and uncertain	1	2	3	4	5	6	7

**Table 12: Items from Frequency of Previous Ethical Spending**

	Strongly disagree			Strongly Agree			
<b>Attitudes towards ethical spending</b>							
Overall ethical spending is a good thing	1	2	3	4	5	6	7
The purchase of organic produce is something I support	1	2	3	4	5	6	7
Buying locally produced food does not help in the fight against climate change	1	2	3	4	5	6	7
If I purchase fair trade goods, I will feel that I am doing something positive	1	2	3	4	5	6	7
Buying organic foods is better for the environment	1	2	3	4	5	6	7
<b>Ethical spending behavioral intention</b>							
When I next go food shopping I expect to buy organic produce	1	2	3	4	5	6	7
It is extremely likely that I will purchase fair trade goods next time I go food shopping	1	2	3	4	5	6	7
It is unlikely that I will buy meat which is not free range/freedom food next time I go shopping	1	2	3	4	5	6	7
When I go shopping next I am unlikely to purchase ethically branded products.	1	2	3	4	5	6	7
<b>Perceived behavioral control</b>							
If I wanted to purchase more ethically I would easily be able to change my behaviour	1	2	3	4	5	6	7
Whether I purchase ethically or not is entirely up to me	1	2	3	4	5	6	7
I cannot afford to be more ethical in my purchasing	1	2	3	4	5	6	7
I have limited choice over the products I purchase	1	2	3	4	5	6	7
I cannot afford to buy fair trade goods	1	2	3	4	5	6	7
<b>Subjective norms</b>							
People think that I should be more ethical in my purchasing	1	2	3	4	5	6	7
In general other students do not purchase organic food	1	2	3	4	5	6	7
My friends would expect me to purchase fair trade goods	1	2	3	4	5	6	7
If I bought battery chicken my friends would look down on me	1	2	3	4	5	6	7
Other students would disapprove at my non ethical spending	1	2	3	4	5	6	7



*Table 13: Items from Frequency of Previous Ethical Spending*

	Never				Every time I buy	I never buy this type of product
Organic fruit and vegetables	1	2	3	4	5	6
Fair trade fruit and vegetables	1	2	3	4	5	6
Free range eggs	1	2	3	4	5	6
Dolphin friendly tuna	1	2	3	4	5	6
Ethical cosmetics e.g. toiletries not tested on animals	1	2	3	4	5	6
Environmentally friendly cleaning products	1	2	3	4	5	6
Recycled toilet paper	1	2	3	4	5	6
Free range chicken / eggs	1	2	3	4	5	6
Organic meat	1	2	3	4	5	6
Freedom food meat	1	2	3	4	5	6

### *Measures of Ethical Spending*

*Figure 13: Screen Shots taken from the Forest Game Experiment*

Forest game

In this game you will play the owner of a timber company. You will be playing against 3 timber companies who all work within the same 200 hectares forest. Every year each company can cut down between 0 and 10 hectares of trees. Every round (which represents one year) you will be asked how many trees you wish to cut down.

Thus, in a given year up to 40 hectares of the forest can be cut down. Every year the forest naturally regenerates at a rate of approximately 10%. For example if at the end of a round 80 trees were left - 8 trees would naturally regenerate. This would mean in the next round 88 trees would be in the forest. The game will last up to 25 years or until zero trees are left.

Every hectare of trees you cut down is worth one ticket in a prize draw. In short the more trees you cut down the more likely you are to win a prize. We are interested in how people behave in these situations. There are no right answers here; different people resolve such dilemmas in different ways.

please note, for the game to continue, 4 players must take part. please click continue to proceed

number of current player(s) : 1

---

200 hectares are left  
you have currently cut down 0 hectares

-----

how many hectares do you wish to cut down next year?

please type a response between 1 and 10

Figure 14: Screen Shots taken from the Online Shopping Experiments

**Categories**


- Drinks->
- Fresh Food->**
- Bakery & Cakes->**
- Bread Loaf
- Cakes
- Croissants & Crumpets
- Desserts
- Donuts, Muffins, Cookies
- Rolls, Bagels & Wraps
- Dairy, Eggs & Cheese->
- Fresh Fruit->
- Fresh Meals,
- Pizza&Pasta->
- Meat, Fish & Poultry->
- Vegetables, Salads, Dips and San->
- Veggie Alternatives
- Frozen Food->
- Kitchen Cupboard->

**Manufacturers**


Please Select

What's New?


## Categories




Bread Loaf




Cakes




Croissants & Crumpets



Desserts



Donuts, Muffins, Cookies



Rolls, Bagels & Wraps

---


**Categories**

- Drinks->
- Fresh Food->**
- Bakery & Cakes->**
- Bread Loaf
- Cakes
- Croissants & Crumpets
- Desserts
- Donuts, Muffins, Cookies**
- Rolls, Bagels & Wraps
- Dairy, Eggs & Cheese->
- Fresh Fruit->
- Fresh Meals,
- Pizza&Pasta->
- Meat, Fish & Poultry->
- Vegetables, Salads, Dips and San->
- Veggie Alternatives
- Frozen Food->
- Kitchen Cupboard->

**Manufacturers**

Please Select

## Let's See What We Have Here



Displaying 1 to 8 (of 8 products)

Manufacturer	Product Name+	Price	Buy Now
Bites	Apple Jam Filled Doughnuts (10)	£1.30	<input type="button" value="Buy Now"/>
Bites	Blueberry Muffins (4)	£1.60	<input type="button" value="Buy Now"/>
Bites	Chocolate Chip Cookies 200g	£1.40	<input type="button" value="Buy Now"/>
Bites	Chocolate Chip Muffins (4)	£1.60	<input type="button" value="Buy Now"/>
Bites	Chocolate Filled Doughnuts (10)	£1.30	<input type="button" value="Buy Now"/>
Bites	Iced Doughnuts (5)	£1.35	<input type="button" value="Buy Now"/>
Bites	Ring Doughnuts (10)	£1.30	<input type="button" value="Buy Now"/>
Bites	Strawberry Jam Filled Doughnut (10)	£1.30	<input type="button" value="Buy Now"/>

Result Pages: **1**

**Shopping Car**

0 items

**Bestsellers**

01. Chocolate ( Cookies 20
02. Chocolate ( Muffins (4)
03. Iced Dough (5)
04. Blueberry Muffins (4)
05. Ring Dough (10)
06. Strawberry Filled Doug (10)
07. Chocolate f Doughnuts
08. Apple Jam Doughnuts

Figure 15: Brands Featured in the Online Store

 <p>Our largest product range This range combines quality and affordable pricing</p>	 <p>Decadence represents not only the best of Bites but food at its finest. Decadence aims to put the world's finest ingredients on your dining table</p>
 <p>Cutting costs not corners. The Essential collection is our value range which is low on cost but high on flavour.</p>	 <p>Our Fair Trade products provide you with both quality products and a clear conscience. Our Fair Trade range guarantees that our producers will be paid a higher wage.</p>
 <p>Straight from the soil to your plate. Food the way nature intended.</p>	 <p>The Local Farm Network</p> <p>Bites works with farmers from around the four corners of the UK. The Fresh Farmer Network badge assures you that your food is local, fresh and tasty</p>
 <p>Because you choose to give up meat not flavour. The Veggie Alternative aims to provide a genuine alternative to meat dishes.</p>	 <p><b>WILD ABOUT FISH</b></p> <p>Wild about Fish lands you the finest line caught fish in the world.</p>

Figure 16: Online Store Schematic

Drinks	Fresh Food	Frozen Food	Kitchen Cupboard
<i>Beer, Cider, Alco pops</i>	<i>Bakery &amp; Cakes</i>	<i>Frozen Chips, Veg and Yorkshire Puddings</i>	<i>Biscuits, Crisps &amp; Sweets</i>
Alco pops Bitters & Ales Cider Lagers	Bread Loaf Cakes Croissants & Crumpets Desserts Donuts, Muffins, Cookies Rolls, Bagels & Wraps	No subcategories	Biscuits Chewing Gum and Mint Chocolate & Sweets Crisps, Crackers, Snacks
<i>Hot Drinks</i>	<i>Bakery &amp; Cakes</i>	<i>Frozen Desserts</i>	<i>Tins, Packets &amp; Jars</i>
Coffee - Filter & Ground Coffee - Instant Coffee - Whiteners Fruit Tea Hot Chocolate Malts Tea	Butter & Margarine Cheese - Cheddar Cheese - Continental Cheese - Spreads & Snacks Cream Eggs Milk Yoghurts	Frozen Cakes & Gateaux Ice Cream	Jam, Honey & Spreads Ketchup & Sauces Pasta, Rice & Noodles Pickles, Olives, Peppers Soup Tinned Beans & Pasta Tinned Fish Tinned Fruit Tinned Meat & Pies Tinned Tomatoes & Veg
<i>Soft Drinks</i>	<i>Fresh Fruit</i>	<i>Frozen Meat/Fish/Poultry</i>	<i>Cooking Ingredients</i>
Fizzy Drinks Fizzy Drinks- Cans Fruit Juice & Smoothies Water	Apples Bananas Berries & Currants Citrus - Oranges Dried Fruit & Nuts Exotic Fruit Grapes Melons Pears	Frozen Burger, Sausages & Pies Frozen Fish & Seafood Frozen Poultry Frozen Mince	Cooking Sauces Flour & Suet Gravy, Stock & Stuffing Home Baking Oils Salt, Herbs & Spices Sugar Taco and Wraps
<i>Spirits</i>	<i>Pizza &amp; Pasta</i>	<i>Frozen Ready Meals</i>	<i>Tins, Packets &amp; Jars</i>
Brandy Gin Rum Vodka Whisky	Fresh Pasta Pizzas & Garlic Bread Ready Meals	Frozen Pies & Pasties Frozen Ready Meals	
<i>Wine</i>	<i>Meat, Fish &amp; Poultry</i>	<i>Veggie Alternatives</i>	<i>Breakfast Cereals</i>
Champagne & Sparkling Port Red Wine Rose Wine White Wine	Bacon Beef Chicken Cooked Meats & Pate Fish & Seafood Lamb Pork Sausages, Meatballs, Haggis Turkey Other	No sub categories	Cereal Cereal Bars
	<i>Vegetables, Salads, Dips and Veggie Meals</i>		
	Dressings & Dips Garlic & Onions Herbs Potatoes Root Vegetables Salads Sandwich Fillings Stir Fry Packs & Sauces Tomatoes Other Vegetables Veggie Meals		

## Additional Statistical Analysis

Table 15: Intrinsic and Extrinsic Values by Experimental Condition

		Low Ego Depletion			High Ego Depletion			T
		N	Mean	SD	N	Mean	SD	
Money	<i>Importance</i>	20	3.83	0.44	20	3.90	0.61	t(38)=0.395, p=0.695
	<i>Likelihood</i>	20	3.29	0.54	20	3.34	0.59	t(38)=0.281, p=0.781
Appearance	<i>Importance</i>	20	3.49	0.63	20	3.45	0.72	t(38)=0.187, p=0.853
	<i>Likelihood</i>	20	3.03	0.54	20	2.83	0.78	t(38)=0.943, p=0.352
Popularity	<i>Importance</i>	20	3.93	0.61	20	4.02	0.66	t(38)=0.415, p=0.681
	<i>Likelihood</i>	20	3.38	0.63	20	3.27	0.53	t(38)=0.613, p=0.543
Conformity	<i>Importance</i>	20	3.89	0.42	20	3.86	0.43	t(38)=0.094, p=0.926
	<i>Likelihood</i>	20	3.39	0.42	20	3.34	0.59	t(38)=0.309, p=0.759
Self Affirmation	<i>Importance</i>	20	3.86	0.38	20	3.96	0.44	t(38)=0.771, p=0.446
	<i>Likelihood</i>	20	3.39	0.49	20	3.33	0.53	t(38)=0.542, p=0.603
Affection	<i>Importance</i>	20	3.38	0.49	20	3.44	0.53	t(38)=0.372, p=0.712
	<i>Likelihood</i>	20	3.29	0.41	20	3.03	0.57	t(38)=1.658, p=0.105
Sense of Community	<i>Importance</i>	20	3.88	0.54	20	3.88	0.55	t(38)=0.001, p=0.999
	<i>Likelihood</i>	20	3.18	0.55	20	3.18	0.65	t(38)=0.001, p=0.999
Health	<i>Importance</i>	20	4.25	0.31	20	4.33	0.42	t(38)=0.637, p=0.528
	<i>Likelihood</i>	20	3.81	0.41	20	3.60	0.48	t(38)=1.497, p=0.143
Religion	<i>Importance</i>	20	3.38	0.63	20	3.05	0.68	t(38)=0.863, p=0.394
	<i>Likelihood</i>	20	3.09	0.69	20	3.55	0.66	t(38)=0.174, p=0.864
Hedonic Pleasure	<i>Importance</i>	20	3.45	0.69	20	3.58	0.53	t(38)=0.683, p=0.499
	<i>Likelihood</i>	20	3.18	0.54	20	3.20	0.60	t(38)=0.093, p=0.926
Safety	<i>Importance</i>	20	4.26	0.32	20	4.44	0.39	t(38)=1.558, p=0.128
	<i>Likelihood</i>	20	3.66	0.42	20	3.43	0.48	t(38)=1.671, p=0.103



