

CRANFIELD UNIVERSITY

DMYTRO MOISIEIEV

UNMAKE UP YOUR MIND: WHY SOME REVERSIBLE
DECISIONS LEAD TO MORE CHOICE SATISFACTION THAN
OTHERS

SCHOOL OF MANAGEMENT
PhD in Leadership and Management

PhD
Academic Year: 2017 - 2018

Supervisor: Dr Radu Dimitriu
Associate Supervisor: Dr Rodrigo Guesalaga
July 2018

CRANFIELD UNIVERSITY

SCHOOL OF MANAGEMENT
PhD in Leadership and Management

PhD

Academic Year 2017 - 2018

DMYTRO MOISIEIEV

Unmake up your mind: why some reversible decisions lead to more
choice satisfaction than others

Supervisor: Dr Radu Dimitriu
Associate Supervisor: Dr Rodrigo Guesalaga
July 2018

This thesis is submitted in partial fulfilment of the requirements for
the degree of Doctor of Philosophy

© Cranfield University 2018. All rights reserved. No part of this
publication may be reproduced without the written permission of the
copyright owner.

ABSTRACT

Consumers can often make reversible decisions, e.g. make purchases where items can be returned for exchanges or refunds or where purchases can be cancelled. Having the option to reverse a purchase decision (decision reversibility) has been linked to lower choice satisfaction, prompting scholars to think that being able to return goods for a refund or to cancel a purchase should make consumers less satisfied with their purchases. In this thesis I qualify this notion. I refine the construct of reversible decisions, showing that there are two distinct kinds of them: when consumers have an option to remake a choice (exchange the chosen item for a non-chosen one) and when consumers have an option to unmake a choice (cancel an order or return items for a refund). I conduct four experiments that show that consumers who can unmake a choice are more satisfied with it than those who can remake it. I thus refine the link between reversible decisions and choice satisfaction and recommend that retailers do not adopt exchange-only return policies. I explain the mediating mechanism for this effect: the extent of post-choice comparison between the chosen and foregone alternatives that is higher in decisions where a choice can be remade, rather than unmade. I also show that the effect of the different decision reversibility options (unmake choice vs remake choice) on choice satisfaction is stronger for neurotic consumers. Cognitively depleting consumers or prompting them to seek variety in their choices removes the effect of decision reversibility options on choice satisfaction, suggesting some ways in which retailers can contain consumers' dissatisfaction with exchange-only return policies.

Keywords:

Decision reversibility, decision satisfaction, return policies, cancellations, comparative thinking

ACKNOWLEDGEMENTS

Many PhD students at Cranfield told me that they needed an extra push in their PhD journey. In my case, the push for me was my own anxiety. I would not be able to handle it without the people around me who were there to listen and to put up with me. This may not have been easy. I am extremely lucky to be surrounded by such people.

First of all, I am gigantically grateful to my wonderful PhD Supervisor Dr Radu-Mihai Dimitriu. Radu, if not for you I would have ragequit this about five times. Thank you for tolerating me, hard as it may have been. Thank you for your unconditional support, good humour and trust. Also, thank you for making me take a consumer behaviour course at London Business School. It shaped my PhD in a way I was not expecting.

In this regard, I need to thank Dr Simona Botti, for inspiring me to pursue my PhD topic. Simona is a teacher and a researcher I look up to, both because of her unorthodox and passionate way of explaining the minutes of experimental design and her no-nonsense, critical approach to research ideas.

Naturally, I am very grateful to my PhD review panel: Prof Simon Knox, Dr Rodrigo Guesalaga and Michael Bernon for their wisdom, support and treating me nicely. I want to single out Prof Shailendra Pratap Jain for his expertise and easy-going support. I have never expected someone with such a big profile in consumer behaviour to be so down-to-earth and nice. Thank you, Shelly, for running my Study 4 (and another one). I am also grateful to PhD students at the University of Washington who made my Study 4 happen: Olga Martin and Anupama Makund. I am grateful to all anonymous participants in all my studies. I was also lucky to benefit from feedback from the attendants of Cranfield Marketing Retreats.

On a slightly different note, I appreciate the help of people who made me distract myself from the PhD when things were not going well. Above all, I am grateful to Dr Debarpita Bardhan-Correia and the wonderful staff at the University of Buckingham for being a joy to work with.

I do not know where in this PhD journey I would be without my friends. Dr Yiarayong Klangboonkrong (Té), thank you for grounding me and being there when I was spinning out of control. Dr Shelly Chapman and Dr Morgan Chambers, thank you for encouraging me when I needed it. Daria Chudakova, Dimitrios Gaitanelis and Dr Roberta D'Aurelio, I cannot express how much your standing by me when I needed it means to me. I know I was too much at times. You are amazing and I am extremely lucky to have you in my lives.

Finally, I would like to finish my acknowledgements by thanking my parents Inna and Vladimir, my sister Evgenia and my cousin Anna for always being there when I needed them. You were steady as rocks when I was shaking. I am sorry if I made you suffer with me, especially last August when everything seemed so dark. I wish I could return your kindness one day.

TABLE OF CONTENTS

ABSTRACT	i
ACKNOWLEDGEMENTS.....	iii
LIST OF FIGURES.....	ix
LIST OF TABLES	xi
LIST OF ABBREVIATIONS.....	xii
1 INTRODUCTION.....	1
1.1 Research background.....	1
1.1.1 Importance of return policies.....	2
1.1.2 Reversible decisions and satisfaction.....	3
1.2 Personal motivation	5
1.3 Research problem and question	5
1.4 Research aim and objectives.....	6
1.5 Summary of research design	7
1.6 Summary of main findings	9
1.7 Summary of research contributions	10
1.7.1 Contributions to theory	10
1.7.2 Contributions to practice.....	11
1.8 Dissemination of research	12
1.9 Thesis structure	13
2 LITERATURE REVIEW	15
2.1 Introduction	15
2.2 Reversible decisions: product returns, order cancellations.....	17
2.3 The link between reversible decisions and choice satisfaction	23
2.3.1 The construct of choice satisfaction	23
2.3.2 The consequences of decision reversibility to choice satisfaction....	27
2.3.3 Operationalisation of decision reversibility in existing studies	30
2.3.4 The options to unmake and to remake a choice.....	32
2.3.5 Research question	33
2.4 Comparative thinking and choice satisfaction	34
2.4.1 Choice overload and choice satisfaction	36
2.4.2 Comparative thinking and counterfactual thinking.....	37
2.5 The option to unmake a choice: a no-choice option.....	40
2.5.1 Cognitive depletion and post-choice comparisons	42
2.6 Maximisation tendency, reversibility and choice satisfaction	44
2.7 Variety-seeking, reversibility and choice satisfaction	48
2.8 Neuroticism, reversibility and choice satisfaction	52
2.9 Summary of research hypotheses and conceptual model	57
2.10 Alternative explanations for the hypothesised effects	60
3 RESEARCH PHILOSOPHY AND METHODOLOGY	63
3.1 Introduction	63

3.2	Research philosophy and the field of consumer behaviour.....	63
3.3	Ontological assumptions.....	68
3.4	Epistemological assumptions.....	71
3.5	Research strategy.....	72
3.6	Research methodology.....	74
3.7	Limitations of research paradigm, strategy, methodology.....	75
3.8	Summary of research philosophy.....	77
4	DATA COLLECTION.....	79
4.1	Introduction.....	79
4.2	Overview of the studies.....	79
4.2.1	Overview of design and procedures in all studies.....	81
4.2.2	Overview of sampling approach in all studies.....	86
4.2.3	Overview of data analysis in all studies.....	89
4.3	Study 0: pre-test.....	92
4.3.1	Study 0: Design and procedures.....	92
4.4	Study 1: reversibility options and choice satisfaction.....	98
4.4.1	Study 1: Design and procedures.....	99
4.5	Study 2: cognitive depletion, reversibility options and choice satisfaction.....	101
4.5.1	Study 2: Design and procedures.....	102
4.6	Study 3: variety-seeking, reversibility options and choice satisfaction..	106
4.6.1	Study 3: Design and procedures.....	107
4.7	Study 4: maximisation, neuroticism, decision reversibility and choice satisfaction.....	111
4.7.1	Study 4: Design and procedures.....	112
4.8	Validity considerations.....	116
4.9	Summary of data collection.....	120
5	FINDINGS.....	121
5.1	Introduction.....	121
5.2	Study 0: pre-test.....	121
5.2.1	Reliability of measures.....	121
5.2.2	Manipulation check.....	122
5.2.3	Choice satisfaction.....	122
5.2.4	Post-choice comparison and mediation.....	123
5.2.5	Influence of covariates.....	124
5.2.6	Summary of results, Study 0.....	124
5.3	Study 1: reversibility options and choice satisfaction.....	125
5.3.1	Reliability of measures.....	125
5.3.2	Manipulation check.....	125
5.3.3	Choice satisfaction.....	126
5.3.4	Post-choice comparison and mediation.....	127
5.3.5	Influence of covariates.....	128

5.3.6 Summary of results, Study 1	128
5.4 Study 2: cognitive depletion, reversibility options and choice satisfaction.....	129
5.4.1 Reliability of measures	129
5.4.2 Manipulation check.....	129
5.4.3 Choice satisfaction	130
5.4.4 Post-choice comparison and mediation.....	130
5.4.5 Influence of covariates	133
5.4.6 Summary of results, Study 2	134
5.5 Study 3: variety-seeking, reversibility options and choice satisfaction ..	135
5.5.1 Reliability of measures	135
5.5.2 Manipulation check.....	136
5.5.3 Choice satisfaction	136
5.5.4 Perceived monetary commitment and choice satisfaction.....	137
5.5.5 Influence of covariates	138
5.5.6 Summary of results, Study 3	139
5.6 Study 4: maximisation, neuroticism, decision reversibility and choice satisfaction.....	139
5.6.1 Reliability of measures	139
5.6.2 Manipulation check.....	140
5.6.3 Choice satisfaction	142
5.6.4 Perceived monetary commitment and choice satisfaction.....	145
5.6.5 Influence of covariates	147
5.6.6 Summary of results, Study 4	148
5.7 Summary of all findings.....	149
6 DISCUSSION	153
6.1 Introduction	153
6.2 The effect of decision reversibility options on choice satisfaction	153
6.3 Mediation by extent of post-choice comparison	155
6.4 Moderation by cognitive depletion	157
6.5 Moderation by variety-seeking motivation.....	158
6.6 Moderation by neuroticism.....	159
6.7 Non-moderation by maximising mind-set.....	160
6.8 Other findings	162
6.8.1 Perceived reversibility	162
6.8.2 Alternative explanations for observed results.....	163
6.8.3 Covariates and choice satisfaction.....	164
6.9 Summary of discussion.....	164
7 CONCLUSIONS AND FURTHER RESEARCH.....	167
7.1 Introduction	167
7.2 Contributions to theory.....	167
7.2.1 Theoretical novelty	167

7.2.2 Qualifying previous findings	169
7.2.3 New moderators of the main effect	170
7.2.4 Summary of contributions to theory	172
7.3 Implications for marketing practice.....	173
7.3.1 Making changes to return and cancellation policies	173
7.3.2 Using neuroticism in managing returns	174
7.3.3 Controlling the effects of exchange-only policies	175
7.4 Research limitations.....	176
7.4.1 Limitations due to research paradigm and research question	176
7.4.2 Limitations due to sampling approach	177
7.4.3 Limitations due to research design.....	178
7.4.4 Limitations due to data analysis approach	184
7.5 Further research	184
7.6 Summary of conclusions.....	189
7.7 Personal statement.....	189
REFERENCES.....	191
APPENDICES	221
Appendix A Stimuli used in book choice task, Studies 0 and 1	222
Appendix B Stimuli used in board game choice task, Studies 2-4	224
Appendix C Custom syntax for main effects contrasts, Study 2.....	225
Appendix D Custom syntax for simple effects contrasts, Study 2	226
Appendix E Custom syntax for simple effects contrasts, Study 3	227
Appendix F An example of a full experiment, Study 3	228

LIST OF FIGURES

Figure 2-1 Map of the literature areas reviewed	15
Figure 2-2 Conceptual model with research hypotheses.....	59
Figure 3-1 Scope of consumer behaviour field	64
Figure 3-2 Three overarching ontologies.....	69
Figure 4-1 Process flow of the experiment, Studies 0 and 1	93
Figure 4-2 Landing page, Studies 0 and 1	93
Figure 4-3 Experimental scenario, Studies 0 and 1	93
Figure 4-4 Choice question, Studies 0 and 1	94
Figure 4-5 Remake choice condition, Studies 0 and 1	95
Figure 4-6 Irreversible decision condition, Studies 0 and 1	95
Figure 4-7 Choice satisfaction measurement, Studies 0 and 1	95
Figure 4-8 Extent of post-choice comparison measurement, Studies 0 and 1 ..	96
Figure 4-9 Manipulation check, Study 0	97
Figure 4-10 Chance to exercise the option to remake a choice, Studies 0 and 1	97
Figure 4-11 Covariate and demographic questions, Studies 0 and 1	98
Figure 4-12 Unmake choice condition, Study 1	99
Figure 4-13 Manipulation check, Study 1	100
Figure 4-14 Chance to exercise the option to unmake a choice, Study 1	101
Figure 4-15 Process flow of the experiment, Study 2	102
Figure 4-16 No cognitive depletion condition, Study 2	104
Figure 4-17 Cognitive depletion condition, Study 2	104
Figure 4-18 Process flow of the experiment, Study 3	107
Figure 4-19 Variety-seeking condition, Study 3	108
Figure 4-20 No variety-seeking condition, Study 3	109
Figure 4-21 Monetary commitment measurement, Studies 3 and 4	111
Figure 4-22 Process flow of the experiment, Study 4	113
Figure 4-23 Maximising mind-set condition, Study 4	113

Figure 4-24 Non-maximising mind-set condition, Study 4	114
Figure 4-25 Neuroticism measurement, Study 4	115
Figure 5-1 Decision reversibility and choice satisfaction, Study 0	122
Figure 5-2 Conceptual diagram of the mediation, Study 0	123
Figure 5-3 Decision reversibility and choice satisfaction, Study 1	126
Figure 5-4 Conceptual diagram of the mediation, Study 1	127
Figure 5-5 Conceptual diagram of the moderated mediation, Study 2	132
Figure 5-6 Choice satisfaction across the experimental conditions, Study 3..	137
Figure 5-7 Interaction effect of decision reversibility and neuroticism, Study 4	143
Figure 5-8 Choice satisfaction with median-split neuroticism, Study 4	145
Figure 5-9 Updated conceptual model	152
Figure 7-1 Theoretical novelty in conceptual model	167
Figure 7-2 Further potential moderators across the scope of consumer behaviour.....	186

LIST OF TABLES

Table 1-1 Overview of experimental manipulations in all studies	8
Table 1-2 Overview of statistical tests for hypothesis testing in all studies.....	8
Table 2-1 Overview of studies linking return policies and product evaluations. .	20
Table 2-2 Operationalisation of choice satisfaction in reversible decision research.....	24
Table 2-3 Summary of consequences of decision reversibility in extant research	28
Table 2-4 Operationalisation of decision reversibility in extant research	31
Table 2-5 Summary of research hypotheses.....	58
Table 3-1 Categories of inquiry in consumer behaviour	66
Table 3-2 Logic of the four research strategies	72
Table 4-1 Location and dates of empirical studies	81
Table 4-2 Experimental conditions, Study 2	102
Table 5-1 Reliability of measures, Study 0	121
Table 5-2 Influence of covariates on choice satisfaction, Study 0	124
Table 5-3 Reliability of measures, Study 1	125
Table 5-4 Influence of covariates on choice satisfaction, Study 1	128
Table 5-5 Reliability of measures, Study 2	129
Table 5-6 Influence of covariates on choice satisfaction, Study 2	133
Table 5-7 Reliability of measures, Study 3	135
Table 5-8 Influence of covariates on choice satisfaction, Study 3	139
Table 5-9 Reliability of measures, Study 4	140
Table 5-10 Results of the manipulation check, Study 4.....	141
Table 5-11 Choice satisfaction analysis, Study 4	142
Table 5-12 Moderated mediation with perceived monetary commitment, Study 4	147
Table 5-13 Influence of covariates on choice satisfaction, Study 4	147
Table 5-14 Results of hypothesis testing.....	151

LIST OF ABBREVIATIONS

ANOVA	Analysis of variance
ANCOVA	Analysis of covariance
CI	Confidence interval
HIT	Human Intelligence Task
JCP	Journal of Consumer Psychology
JCR	Journal of Consumer Research
M	Mean
MBG	Money-back guarantee
MTurk	Amazon Mechanical Turk
OLS	Ordinary least squares
SCP	Society for Consumer Psychology
SPSS	IBM Statistical Package for the Social Sciences
SD	Standard deviation
UK	United Kingdom
US	United States of America

1 INTRODUCTION

In this chapter I will give an overview of the research that was conducted for this thesis. I will briefly summarise the research background, my motivation for doing this research, the research question, the aim and objectives of the research, research design, results and main contributions of the research. I will outline where this research has been and will be disseminated, before summarising the structure of this thesis.

1.1 Research background

Consumers' lives are rife with choices. A well-established cognitive view of consumer choices posits that consumers aggregate the information to make a choice, evaluate the choice alternatives, complete their purchase and consumption ensues (Bettman, 1979). Consumers may be dissatisfied with the outcome of their choice upon consumption. Therefore, choices involve a degree of uncertainty and can produce unpredictable, even unpleasant consequences. However, this view does not address the notion that the process of choosing itself may prove taxing, causing consumers to be dissatisfied with their decisions (choices) even before actually experiencing the outcomes of their choices (Botti and Iyengar, 2004).

Moreover, having made the choice may not always lead to having made up one's mind once and for all. Consumers may sometimes revisit the set of alternatives and continue the process of the alternatives evaluation after having made the choice, which decreases customers' satisfaction with the outcome of their choices (Gu, Botti and Faro, 2013).

Yet, some retailers conspicuously allow customers to make exchanges and receive refunds after a purchase has been made, potentially introducing difficulty to a purchase decision. Some retailers, such as Amazon, the largest online retailer in the UK, or Asos, the largest online-only clothing retailer in the UK (Mintel, 2014), even give their customers a chance to cancel their order before it has been processed, presumably in order to salvage any costs they would bear should the customer decide to return the goods. These retailers who

give their customers a chance to exchange their purchased item for another one, return it for a refund or cancel their order make their customers' purchase decisions reversible. A decision is called reversible if it can be changed after it has been made. The opposite – an irreversible decision – is permanent (Anderson, 2003; Lowe and Steiner, 1968).

In this thesis, I will study how giving consumers different options to reverse a purchase decision (that involves choice) influences their satisfaction with such a choice. Before I explain this link, it is necessary to explore why this may be an important subject to study. I will do so by focusing on the problem of unwanted product returns in retail.

1.1.1 Importance of return policies

Product returns in retail are regulated by retailers' return policies. Retail return policies (hereinafter return policies) are a competitive tool (Davis, Gerstner and Hagerty, 1995; King and Dennis, 2003) that gives customers a chance to delay the purchasing decision for the period in which they are allowed to return the goods (Suwelack, Hogueve and Hoyer, 2011).

Regulating the returns process is a serious issue for retailers. First, customers may exploit liberal return policy terms to commit fraud, i.e. purchase goods with the intention to return them later (Harris, 2010), a phenomenon known as deshopping (Schmidt *et al.*, 1999) and essentially a crime (Zabriskie, 1972) which in some cases may account for 50% of all returns, e.g. for apparel retailers (King, Dennis and McHendry, 2007). Note that return rates of over 20% are often enough to completely wipe out retailer profits (Janakiraman, Syrdal and Freling, 2016b).

Furthermore, some returns that retailers have to process may be simply unnecessary, even if they are legal. Retailers provoke unnecessary returns with their overly lenient return policies (King, Dennis and Wright, 2008). In their attempt to induce purchase and repurchase with their return policies (Davis, Gerstner and Hagerty, 1995), retailers inadvertently impose difficulties on their reverse supply chains and suffer potential financial losses (Heiman, McWilliams

and Zilberman, 2001; Foscht *et al.*, 2013). Therefore, many retailers choose to restrict their return policies in order to prevent unnecessary and illegal returns (Janakiraman, Syrdal and Freling, 2016b). For example, such retailers may accept returns for an exchange (or store credit) only.

Product returns cost US companies over \$100 billion a year (Lee, 2015) and this figure is rising. Still, retailers offer consumers options to reverse a purchase decision (decision reversibility) via their return policies in an attempt to reduce consumers' perceived purchase risk (Mitchell and Nygaard, 1999), signal the high quality of merchandise to consumers (Kirmani and Rao, 2000) and generate extra sales (Janakiraman, Syrdal and Freling, 2016a). At the same time, they may be concerned with restricting their return policies and seeing how this affects this bottom line (Janakiraman, Syrdal and Freling, 2016b). Retailers spend millions to learn how customers make purchase decisions and how they can be influenced (Puccinelli *et al.*, 2009). What they do not seem to know is whether different decision reversibility options that retailers can offer to consumers change how satisfied these consumers become with their purchases. Satisfaction is a strong predictor of future shopping intentions (Ha, Muthaly and Akamavi, 2010) and retailers should know if the decision reversibility options that they offer influence consumers' satisfaction with their purchases.

1.1.2 Reversible decisions and satisfaction

Interestingly, recent findings in the field of experimental psychology claim that retailers' efforts to appease customers with offering them decision reversibility backfire: even though consumers prefer making reversible decisions (Gilbert and Ebert, 2002), decision reversibility makes consumers less satisfied with their choices (Bullens *et al.*, 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). Extant research on reversible decisions thus claims that a chance to return a product to a store or cancel an order should make consumers less satisfied with the item they chose (Bullens *et al.*, 2013; Bullens, van Harreveld and Förster, 2011).

However, the literature on return policies and money-back guarantees (MBGs) paints a different picture. A number of studies (Bonifield, Cole and Schultz, 2010; Wood, 2001) have found that return policies can act as signals of product quality. Consumers who are offered an option to return an item for a refund, as opposed to those who are not offered such an option, even believe that their chosen item is higher in quality after they make a choice (Wood, 2001). Additionally, return policy literature shows that decision reversibility can reduce consumer regret if the items are returned after all (Bower and Maxham, 2012). These findings suggest that decision reversibility should not actually be decreasing choice satisfaction, which is in opposition to the findings of reversible decision theorists.

One may be tempted to think that decision reversibility cannot both be increasing and decreasing consumers' satisfaction. In this thesis, however, I show that it can: it is the different decision reversibility options that consumers have that define how satisfied consumers will feel about their choices. As I theorise in **2.3.4**, there are two different decision reversibility options:

1. when consumers can remake a choice, i.e. choose another item that they did not choose (exchange their chosen item for a non-chosen one);
2. when consumers can unmake a choice, i.e. cancel their order altogether or return their chosen item for a refund.

In this thesis, I show that these two options do not have the same effect on consumer satisfaction with their choices. Having the option to unmake a choice makes consumers more satisfied in general than having the option to remake a choice. I will explain why this is so in the literature review.

Further, the aforementioned decision reversibility literature mainly focuses on studying how having the first decision reversibility option (i.e. the option to remake a choice) influences choice satisfaction, as I will show in **2.3.3**. The abovementioned return policy and MBG literature does not study how these policies influence consumer satisfaction but still focuses on the effects of the second decision reversibility option on various consumer outcomes. These two

different research streams thus study two different types of decision reversibility options. For this reason, their findings are inconsistent.

1.2 Personal motivation

I started this project by making an observation of my own behaviour. As I was looking at a check out screen on Asos that informed me that I had an hour to cancel my purchase, I was contemplating whether I really needed the pair of chinos that I bought. I then recalled the paper by Bullens et al. (2011), thinking whether I should be feeling less satisfied about my purchase now. I realised that I was not thinking about making another choice of chinos. I asked my friends and they confirmed the same notion: they were not thinking about the foregone alternatives if they could unmake their choices.

I was thus motivated to find out whether I was wrong by not focusing on the foregone options when I had a chance to cancel my order or whether the literature that I read was wrong in predicting how I would act. In this thesis, I show that the latter is more likely to be true. Ultimately, I wanted to know the truth about how consumers who can unmake their choices would feel about their purchases. As a researcher, I wanted to contribute to consumer theory by finding out this truth.

I followed my observation of my own behaviour with a literature review, focusing on the inconsistencies between the reversible decisions and return policies literatures. I thus came up with the idea to split reversible decisions into those that can be remade and those that can be unmade and to base my research on studying whether these two kinds of reversible decisions affect decision (choice) satisfaction similarly.

1.3 Research problem and question

Therefore, the research problem for this thesis was to investigate whether having the option to unmake a choice results in the same level of choice satisfaction as having the option to remake a choice. Based on this problem, I conducted a review of the literature on how these two options can affect choice

satisfaction (and why). Following the literature review, I came up with a research question in **2.3.5**. Namely, the research question is:

How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers' choice satisfaction?

This question is important for retailers who need to decide whether to offer order cancellations, accept returns for a refund or only to accept returns for an exchange. Since the decision whether or not to restrict returns and cancellations affects retailer margins (Harris, 2008), and since satisfaction is a major indicator of further repurchase behaviours (Martin et al., 2008), this question should be answered. This question signifies that there is a gap in knowledge of the influence of reversible decisions on choice satisfaction. Extant theories that study post-decision processes in the context of reversible decisions, such as the theory of cognitive dissonance (Festinger, 1957) and signalling theory (Kirmani and Rao, 2000) are not sufficient to answer this question. Answering the research question will contribute to filling in this gap.

1.4 Research aim and objectives

The aim of research undertaken in this thesis was to answer the research question, i.e. to determine how having the option to unmake a choice affects choice satisfaction, compared to having the option to remake a choice. In the literature review, I will hypothesise what the answer to the research question should be based on the extant theory. The research objectives will focus on answering the research question in more depth.

Broadly, the research objectives are as follows:

- to establish whether there is an overall difference in choice satisfaction when consumers have an option to unmake, rather than to remake a choice;
- to determine why such a difference may occur (what mediates the effect of the two decision reversibility options on choice satisfaction);

- to investigate which factors affect (moderate) the difference in choice satisfaction between consumers who have an option to unmake a choice and consumers who have an option to remake a choice.

These objectives will be met by testing the research hypotheses that I come up with in the literature review. The full list of research hypotheses can be found in **Table 2-5**. All the research hypotheses can be incorporated into one conceptual model that shows the effect of decision reversibility options on choice satisfaction and the factors that drive it and change it. The conceptual model that I will test in this research is featured in **Figure 2-2**.

1.5 Summary of research design

This research takes on a paradigm of scientific realism. Scientific realism assumes that there is a single, objective reality that is mostly measurable and that knowledge about this reality is generated by scientific inquiry that aims to approximate reality as closely as possible (Cacioppo, Semin and Berntson, 2004). Scientific realism is rooted in empirical observation but allows for using non-observable constructs to explain reality. It is a dominant research paradigm in the field of consumer behaviour (Lynch et al., 2012), hence I selected it as the topic of my research is in the field of consumer behaviour.

I take a deductive approach to research, formulating research hypotheses based on an in-depth analysis of current literature. I then test these hypotheses empirically by conducting four experimental studies and one experimental pre-test. The studies I conduct in this thesis all involve between-subjects experimental designs:

- Study 0 (pre-test) is a single-factor experiment with two experimental groups;
- Study 1 is a single-factor experiment with three experimental groups;
- Study 2 is a 3x2 full factorial experiment;
- Study 3 is a 2x2 full factorial experiment;
- Study 4 is a hybrid experiment with two manipulated factors (2x2) and one measured (continuous) independent variable.

Table 1-1 gives a brief overview of experimental manipulations in all the studies. All the details of experimental design will be discussed in **Chapter 4** (Data Collection).

Table 1-1 Overview of experimental manipulations in all studies

Study	Manipulated factor	Levels
0	Decision reversibility options	2: irreversible decision; remake choice
1	Decision reversibility options	3: irreversible decision; remake choice; unmake choice
2	Decision reversibility options	3: irreversible decision; remake choice; unmake choice
	Cognitive depletion	2: present (depletion); absent (no depletion)
3	Decision reversibility options	2: remake choice; unmake choice
	Variety-seeking motivation	2: present (variety-seeking); absent (no variety-seeking)
4	Decision reversibility options	2: remake choice; unmake choice
	Mind-set prime	2: no maximising; maximising
	Neuroticism (measured)	Measured on a continuous scale

Participants for Studies 0-3 were recruited on Amazon Mechanical Turk crowdsourcing platform. These studies were thus done online. Participants for Study 4 were recruited from a pool of Marketing students at the University of Washington. This Study was done in a behaviour laboratory at the University of Washington in Seattle, US.

The data collected from experiments were analysed in IBM SPSS Statistics software package. To test the experimental hypotheses, I ran a variety of statistical tests, as shown in **Table 1-2**.

Table 1-2 Overview of statistical tests for hypothesis testing in all studies

Study	Tests used for hypotheses
0	ANOVA; Bias-corrected bootstrapped simple mediation test
1	ANOVA with planned contrasts; Bias-corrected bootstrapped simple mediation test
2	ANOVA with planned contrasts; Bias-corrected bootstrapped moderated mediation test
3	ANOVA with planned contrasts
4	Multiple linear regression with spotlight analyses; Floodlight analysis (Spiller et al., 2013); ANOVA with planned contrasts

I also test for the influence of various covariates (variables that may affect the dependent variable without an experimenter's intent) using ANCOVA in Studies 0-3 and ANCOVA and multiple linear regression in Study 4. Additionally, I check that participants correctly perceived the decision reversibility options that they were faced with, using ANOVA in Studies 0-3 and a multiple linear regression in Study 4.

1.6 Summary of main findings

Firstly, in all studies I find that consumers perceive the decisions where they have the options to unmake and to remake a choice as equally reversible. The core finding is that consumers are more satisfied with their choices if they can be unmade, rather than remade. In Study 1 I show that this effect occurs because having an option to remake a choice induces consumers to make post-choice comparisons between their chosen and non-chosen alternatives, while having the option to unmake a choice does not. These comparisons alert consumers to a loss of attractive attributes in non-chosen alternatives, which decreases choice satisfaction (Gu, Botti and Faro, 2013).

I also show that the extent of post-choice comparison due to having the option to remake, rather than to unmake a choice is different only when consumers are not cognitively depleted, but not when they are cognitively depleted. There is a moderated mediation of the effect of these two decision reversibility options on choice satisfaction, via the extent of post-choice comparison, at different levels of cognitive depletion, as I show in Study 2.

Further, in Study 3 I show that the effect of decision reversibility options on choice satisfaction only occurs when consumers do not seek variety in choices. In Study 4, I show that the effect of the option to unmake, rather than remake a choice, on choice satisfaction is stronger for neurotic consumers, rather than emotionally stable consumers. Neurotic consumers react to having the option to remake a choice more negatively than less neurotic (more emotionally stable) consumers. I do not find an effect of maximising (striving to make the best choices) or non-maximising mind-sets on choice satisfaction. Overall, I find support for five out of six experimental hypotheses outlined in **Table 2-5**.

All these findings hold controlling for covariates, such as participants' involvement in a product category, their age and gender. In Studies 3 and 4 I also rule out the alternative explanation that having an option to unmake a choice increases choice satisfaction compared to having an option to remake it because consumers understand that the former option gives them more freedom to spend their money elsewhere and does not tie up their money with a specific retailer.

1.7 Summary of research contributions

1.7.1 Contributions to theory

The focus of this research was on making theoretical contributions to the literature on reversible decisions (Bullens et al., 2013, 2014; Bullens, van Harreveld and Förster, 2011; Bullens and van Harreveld, 2016; Frey, 1981; Frey et al., 1984; Frey and Rosch, 1984; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012; Shiner, 2015).

Firstly, I refine the construct of reversible decisions, showing that they are two kinds of them: decisions where a choice can be remade and decisions where a choice can be unmade. They are perceived as equally reversible by consumers. They are, however, qualitatively different.

I show that they do not affect choice satisfaction similarly. Having the option to unmake a choice results in higher choice satisfaction than having the option to remake it. Thus, I show that the findings of previous decision reversibility theorists that reversible decisions decrease choice satisfaction (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) are limited and problematic. I offer a new theoretical account for why the options to unmake and to remake a choice affect choice satisfaction differently: this is due to the process of post-choice comparison that is different when consumers have an option to remake, rather than unmake a choice.

I then identify boundary conditions for when the aforementioned effect of decision reversibility options on choice satisfaction occurs: when consumers are not cognitively depleted and when they do not seek variety in choices. Further, I

make new links between theoretical constructs: neuroticism, reversible decisions and choice satisfaction.

Overall, I shift beliefs about the construct of reversible decisions, its link to choice satisfaction, introduce a theoretically novel mediator (extent of post-choice comparison) and moderators (variety-seeking motivation, cognitive depletion and neuroticism), most of which play a major part in current consumer theory. This contribution is primarily to the study of post-choice processes in consumer behaviour (both decision reversibility and choice satisfaction, with reference to the theory of cognitive dissonance), but also to the theory of personality (Big Five personality's neuroticism changes reactions to post-choice comparisons), the theory of ego depletion (how it affects post-choice comparisons and satisfaction) and the theory of consumer motivation (how variety-seeking motivation affects satisfaction with reversible decisions).

1.7.2 Contributions to practice

I also make some contributions to managerial practice. Firstly, I show that more lenient return and cancellation policies (those that allow returns for a refund/order cancellations, over returning items for an exchange, as discussed in **2.2**) should bring on more positive consumer reactions. In the light of this, some retailers may consider making their return and cancellation policies more lenient to make their customers more satisfied. For example, Sports Direct International (a major UK sports retailer) may wish to reconsider its practice of offering store credit or exchanges only on in-store purchases.

Secondly, I show that retailers with exchange-only policies may wish to consider somewhat cognitively depleting their customers, e.g. by slightly increasing the temperature in the store or at check-out, up to a level of maximum 25° Celsius (Cheema and Patrick, 2012) or prompting them to seek variety, e.g. by giving them a spicy snack to eat (Mukherjee, Kramer and Kulow, 2017). This would prevent consumers from being dissatisfied with exchange-only return policies.

Finally, the findings of this thesis can be useful to retailers who consider psychographic segmentation of their customers. If these retailers could identify

neurotic customers, they should more actively communicate the fact that these customers can unmake their choices. These retailers should also make sure that they do not remind neurotic customers about a chance to remake a choice, as this decreases their choice satisfaction. Non-neurotic customers, on the contrary, do not need to be informed that they can unmake their choices. Therefore, retailers may alter the presentation of different return and cancellation conditions to different customers based on their level of neuroticism.

Overall, the findings of this research project are applicable to both bricks-and-mortar and online retailers. While online and offline shopping may differ in terms of how choices are made, there is no reason to expect the process of post-choice evaluation of one's choice to be different between online and offline purchases. I further address this notion in **7.4.3**.

1.8 Dissemination of research

This research was accepted in poster sessions in in the world-leading peer-reviewed conferences in consumer behaviour (Society for Consumer Psychology) and general marketing (American Marketing Association and European Marketing Academy). The details are as follows:

Moisieiev, D. and Dimitriu, R. (2018) 'Disentangling reversibility: Why some reversible purchase decisions leave consumers more satisfied than others', *European Marketing Academy Conference*, Glasgow, UK.

Moisieiev, D. and Dimitriu, R. (2018) 'Reversibility and variety: Reversible decisions vary, interact with variety seeking in affecting choice satisfaction', *American Marketing Association Winter Conference*, New Orleans, LA, US.

Moisieiev, D. and Dimitriu, R. (2018) 'Unmake up your mind: Why some reversible decisions impact satisfaction more positively than others', *Society for Consumer Psychology Conference*, Dallas, TX, US.

I also presented this research at several Doctoral Colloquiums at Cranfield University and at Camp Riverside Theory Construction Workshop at USN, Drammen, Norway in June 2016.

The journal article entitled 'Unmake up your mind: Why some reversible decisions lead to more satisfaction than others', co-authored by Moisieiev, D., Dimitriu, R. and Jain, S.P. is being prepared for submission to *Journal of Retailing* in early 2019.

1.9 Thesis structure

This thesis is comprised of nine chapters. Their content is as follows.

Chapter 1. In this chapter I gave a concise overview of the research project. I presented the research background, my motivation for doing this research and summarised the research question, the aim and objectives of the research, research design, results, main contributions of the research and where it has been and will be disseminated.

Chapter 2. In this chapter I review the literature on reversible decisions and choice satisfaction. I comment on the gap in knowledge of how reversible decisions affect choice satisfaction and I propose the research question to fill in this gap. I synthesise the findings from the extant research on decision reversibility and come up with research hypotheses to be tested empirically. I also present the conceptual model of the influence of decision reversibility options on consumer choice satisfaction.

Chapter 3. In this chapter I review the research philosophy behind this research project. I explain why I have chosen the paradigm of scientific realism for this research, given the constraints posed on approaches to scientific enquiry by the field of consumer behaviour and the research question.

Chapter 4. In this chapter I describe how data was collected and analysed in order to answer the research question. I provide a brief overview of general issues related to research design, research procedures, sampling of participants and data analysis that are common across all the studies in this

thesis. I then describe the data collection procedures in detail for each study and finish the chapter by assessing the validity of the chosen approach to data collection.

Chapter 5. In this chapter I report the results of five experimental studies (including the pre-test) conducted in this thesis. I report the results of each study one-by-one and at the end of the chapter I summarise the results of all hypotheses tests.

Chapter 6. In this chapter I interpret the findings of experimental studies featured in this thesis. I also relate these findings to extant literature on reversible decisions.

Chapter 7. In this chapter I explain the theoretical and substantive contributions of the research conducted for this thesis and discuss the limitations of this research. Further, I suggest new avenues for further research into decision reversibility and its influence on consumer satisfaction.

2 LITERATURE REVIEW

2.1 Introduction

In this chapter, I will review the extant literature on reversible decisions and choice satisfaction. I will make apparent the gap in current knowledge of how reversible decisions affect choice satisfaction and present a research question to fill this gap. I will then review the literature that can aid in answering this question and generate research hypotheses that will enable me to answer the research question. The chapter ends with a conceptual model of the hypothesised relationship between reversible decisions and choice satisfaction and the discussion of alternative explanations for such a relationship that need to be ruled out.

Figure 2-1 summarises the key literature areas to be reviewed in this chapter.

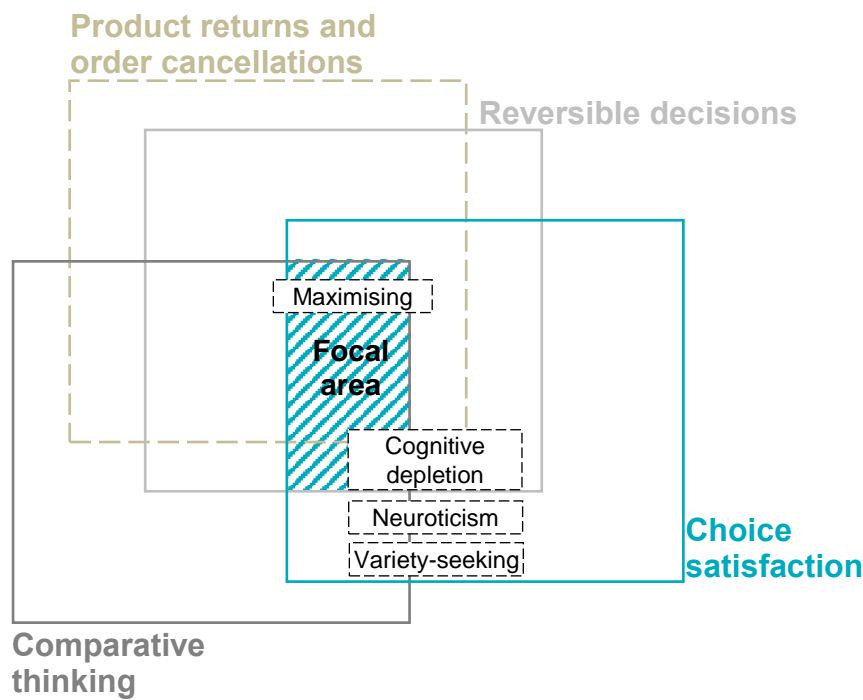


Figure 2-1 Map of the literature areas reviewed

It should be noted that the process of identifying the relevant literature areas was not linear. For example, the reversible decisions literature, as will be shown below, acknowledges that product returns and order cancellations are examples of reversible decisions but does not differentiate between different return policy

terms. The literature on product returns and order cancellations does not refer to them as reversible decisions and makes no links between them and choice satisfaction.

Furthermore, the literature area of comparative thinking was discovered whilst studying the potential effects of reversible decisions on choice satisfaction. Comparative thinking goes beyond decision reversibility, however. Accordingly, while reversible decisions, product returns and order cancellations, comparative thinking and choice satisfaction will all be briefly reviewed, the focal area of interest for this literature review will be the interaction of the literatures on reversible decisions, comparative thinking and choice satisfaction. Returns and cancellations will be acknowledged as specific cases of reversible decisions.

Furthermore, while reading the literature on comparative thinking and choice satisfaction I was able to find some variables that may affect how reversible decisions influence choice satisfaction. The literature on variety-seeking and consumer neuroticism was snowballed from a limited number of studies that linked comparative thinking and choice satisfaction and the literature on maximising and cognitive depletion was snowballed from sources that linked comparative thinking, choice satisfaction and reversible decisions. Snowballing technique, i.e. following up on the references in the literature sources already reviewed (Greenhalgh and Peacock, 2005), allowed to increase the scope of the review and set boundaries for the expected relationship between reversible decisions and choice satisfaction. Therefore, the literature on cognitive depletion, maximising, variety-seeking and neuroticism in their relation to choice satisfaction and comparative thinking will also be reviewed.

2.2 Reversible decisions: product returns, order cancellations

“A decision is reversible if its outcome can be altered after the fact; irreversible decisions are permanent” (Anderson, 2003, p.151). Reversible decisions are therefore tentative (Frey and Rosch, 1984). When making a reversible decision, customers can revisit the initial decision later to change their initial choice, either by making a new choice, or by remedying the failures of the initial choice. Reversible decisions are therefore tentative (Frey and Rosch, 1984). Changeable decision (Gilbert and Ebert, 2002) is another term for a reversible decision. An opportunity to reverse an initial decision (decision reversibility) makes such a decision reversible.

Hafner, White and Handley (2012) emphasise the perception of changeability, potentially implying that customers should feel they can exercise control over changing the outcome of a reversible decision. In other words, decision reversibility requires agency: if a consumer made a choice and that choice was later changed by another actor unbeknownst to the consumer or against their will, such a decision should not be considered reversible.

People prefer making reversible decisions because they expect these decisions to give them extra freedom (Gilbert and Ebert, 2002). People react with disappointment, anger and regret when they sense that their decision freedom is threatened (Brehm, 1966). People can make reversible decisions in all domains of life. For example, choosing a person to date on a dating website can be reversed by choosing someone else later (D’Angelo and Toma, 2017). As evidenced in the introduction, modern consumers’ lives are also rife with reversible decisions. In particular, the most common type of a reversible decision that consumers can make is purchasing a product that can later be returned to a retailer for an exchange or a refund. An opportunity to return items to retailers was deemed to render a purchase decision reversible ever since the seminal works on decision reversibility (Frey, 1981; Lowe and Steiner, 1968).

The opportunity to return items to retailers is studied by the return policy literature. Retail return policies regulate the process of return of goods

purchased by customers. From the extant literature, it appears that return policies typically contain clauses regarding the following:

- the time to return an item or return deadline (Janakiraman, Syrdal and Freling, 2016a);
- the effort needed to elicit a return, for example, keeping sales tags and original packaging or filling out return forms or proving that the item is defective (Heiman, McWilliams and Zilberman, 2001);
- the costs of returns, for example, restocking fees or costs of shipping items back to retailers (Janakiraman and Ordóñez, 2012);
- the form of compensation received, or return policy coverage, e.g. full refund or exchange or store credit (Bonifield, Cole and Schultz, 2010).

The last clause, or dimension of return policies is known as return policies' exchange leniency: allowing customers to return items for a full refund is assumed to be more lenient than allowing exchanges or store credit (Janakiraman, Syrdal and Freling, 2016a). It will be the focus of this thesis as I will show later in **2.3.4** that different levels of exchange leniency correspond to different types of reversible decisions.

A sizeable portion of the literature also focused on a specific example of return policies, known as money-back guarantees (MBGs). Initially, a MBG was conceived of as "a policy in which the retailer publicly agrees to refund the full purchase price to a customer for any reason, even if the product adequately fulfils its implicit or explicit performance claims" (Davis, Gerstner and Hagerty, 1995, p.8). However, recently researchers have extended this definition to include varying forms of compensation, any potential fees and varying time to return items to retailers (Heiman et al., 2002; Posselt, Gerstner and Radic, 2008), effectively erasing the difference between guaranteeing customers their money back no-questions-asked and the most restrictive of return policies imposed by retailers. Additionally, return policies have been referred to as "post-purchase guarantee policies" (D'Astous and Guèvremont, 2008).

It should be made clear that return policies need not be the same for a retailer's whole product range. Indeed, some early recommendations based on

mathematical modelling advised retailers only to offer returns of products when customers were uncertain about the products' future performance, varied greatly in pre-purchase product evaluations and when the cost of handling returns was low (Heiman et al., 2002). Risk or uncertainty reduction is often listed as a reason for offering returns (Heiman, McWilliams and Zilberman, 2001; Suwelack, Hogreve and Hoyer, 2011), which in turn is posited to increase customers' expected purchase utility (Anderson, Hansen and Simester, 2009).

An essential point is that return policies promise (warrant) retail customers a chance to return to pre-purchase status quo should they be dissatisfied with the product they have purchased. In this light, return policies differ from product warranties and service guarantees. Return policies allow for a buyer to subjectively measure their satisfaction with a product, whilst warranties only apply to specific situations and will often result in an attempt to fix the product via a repair or a modification (Owen, 2004). However, return policies or MBGs only extend to the product that has been purchased. Service guarantees, in contrast, warrant a satisfactory service delivery and a reimbursement of the cost of service should this delivery fail. Therefore, return policies differ from service guarantees in what they warrant to customers (Hogreve and Gremler, 2008).

As shown further in **Table 2-1**, academic researchers have inspected the influence of retailers' leniency in all these clauses, or return policy terms, conditions or dimensions, as well as allowing or not allowing returns altogether, on some variables related to consumer satisfaction.

As can be evidenced from the table, the present empirical research on the effects of return policies on purchase evaluation is somewhat scattered in its findings and is of limited relevance to explaining the link between decision reversibility (return policy exchange leniency) and decision (choice) satisfaction. Only the study by d'Astous and Guèvremont (2008) manipulates the different levels of exchange leniency, although it does not make consumers make a choice, thus preventing it from measuring choice satisfaction.

Table 2-1 Overview of studies linking return policies and product evaluations

Authors	Manipulations	Outcome variable	Summary of results
Bonifield, Cole and Schultz (2010)	Return policies restricted on costs, effort and coverage dimensions or not	Perceived overall quality	Lenient return policies increased perceived overall quality (composite of service quality, product quality and depth of assortment) and repurchase intentions (post-purchase). Quality and repurchase intentions were measured after purchase, return policy manipulated as composite of costs/ effort/ coverage
Bower and Maxham (2012)	Fee/ free returns (monetary leniency)	Consumer regret after returning a product	Free returns decreased customer regret after a product is returned, compared with returns for a fee
d'Astous and Guèvremont (2008)	Exchange leniency (exchanges only or refunds allowed) and time leniency	Retailer image Perceived product quality	More time to return items and opportunity of refund positively influence retailer image, over exchanges only. Terms of return policy do not impact perceived product quality. Participants did not make any choices, only rating the perceived quality and retailer image
Kim and Wansink (2012)	Returns accepted or not (overall policy leniency)	Post-purchase product evaluation	Restrictive returns increase post-purchase product evaluation (composite of satisfaction, overall attitude and product quality) if no recommendations are given, but reduce it if recommendations are given
Suwelack, Hogreve and Hoyer (2011)	Money-back guarantees: offered or not offered	Anticipated regret and liking for an item before purchase	Opportunity to return items reduces anticipated regret before purchase and increases liking; both significantly influence willingness to pay (WTP) and liking influences purchase intentions
Suwelack and Krafft (2012)	Money-back guarantees: present or not present	Pre-purchase (expected) product quality Liking	MBGs signal pre-purchase product quality and also increase liking (emotional value) for the offer
Tsiros and Mittal (2000)	Returns accepted or not (overall policy leniency)	Post-purchase regret	Those who could return the product for a refund felt higher regret only when they knew the outcomes of alternative choices, those who could not return it felt higher regret in general
Wood (2001)	Returns of sale items allowed not allowed (overall and monetary leniency)	Perceived product quality: before and after a purchase	The chosen alternative was believed to be higher quality under lenient returns policy before purchase. Higher evaluation of the quality of the chosen alternative under lenient return policy persisted after receipt

The rest of the studies link various dimensions of return policies with regret experienced after a return (Bower and Maxham, 2012), after a purchase when a return hasn't been made (Tsiros and Mittal, 2000), or before a purchase when regret is only anticipated (Suwelack, Hogueve and Hoyer, 2011).

Some studies focus on perceived product quality, or its expected performance on product attributes (Moorthy and Srinivasan, 1995), both after a purchase (D'Astous and Guèvremont, 2008; Wood, 2001) and before a purchase (Suwelack and Krafft, 2012; Wood, 2001). Both consumer regret (Zeelenberg, van Dijk and Manstead, 2000) and product quality are related to consumer satisfaction (Bornemann and Homburg, 2011) but are nonetheless separate constructs and not choice satisfaction as such. Some studies construct their own measures of post-purchase evaluations (Bonifield, Cole and Schultz, 2010; Kim and Wansink, 2012) that may be related to choice satisfaction. The study by Kim and Wansink (2012) is particularly interesting as it shows that irreversible decisions can result in higher product evaluation than reversible decisions, which is consistent with many findings from the decision reversibility literature (Bullens et al., 2013; Bullens, van Harreveld and Förster, 2011; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012), albeit Kim and Wansink (2012) do not study choice satisfaction directly nor do they manipulate the exchange leniency of return policies. In the light of these findings, I conclude that the evidence to link return policy exchange leniency, or decision reversibility in broader terms, and choice satisfaction is largely limited and inconsequential.

On the other hand, cancellation policy regulates how customers can cancel their order without receiving it. Although order cancellations are offered by a large number of global retailers in an attempt to manage the distribution of products and information (Anitsal, Anitsal and Girard, 2011), I was unable to retrieve a clear definition of order cancellations. I believe product order cancellations can be somewhat compared to service order cancellations, i.e. when customers cancel the delivery of the service before it occurs, such as returning a ticket for a performance before attending one (Xie and Gerstner, 2007). Therefore, order

cancellations should also be completed before the delivery (dispatch) of the order, which is consistent with Amazon UK's cancellation policy (Amazon UK). The option to cancel a purchase decision is seldom mentioned as something that makes a decision reversible (Bullens et al., 2013), which is most likely due to very limited research on product cancellations to begin with. Still, it does make a decision reversible, just as the option to return items to a retailer for an exchange or a refund.

In online purchases, both order cancellations and returns are the means for customers to execute their right to withdraw from the service contracts, granted in the EU by the *European Directive 2011/83/EU* (European Parliament. Council of the European Union, 2011) and in the UK by the *Consumer Contracts (Information, Cancellation and Additional Charges) Regulations (2013)*. The latter recognises returns for a refund as a case of contract cancellations. These contract cancellations can be initiated at any point in time, even before the goods are shipped to consumers, which essentially means that returns for a refund are no different from a cancellation option, apart from having to send the items back to a retailer. Thus, granting customers the right to cancel their order or return the items they ordered to a retailer for an exchange or a refund makes their purchase decisions reversible.

2.3 The link between reversible decisions and choice satisfaction

As this thesis will focus on the link between decision reversibility (having an option to reverse a decision) and choice satisfaction, it is best to briefly explain the construct of choice satisfaction, even though it is used ubiquitously in consumer behaviour literature.

2.3.1 The construct of choice satisfaction

Evidently, choice satisfaction refers to one's satisfaction with their choice. None of the articles that study the link between decision reversibility and choice satisfaction define choice satisfaction. I will take a view that choice satisfaction is an instance of consumer satisfaction resulting from choice – therefore, in order to define it, I will first define consumer satisfaction.

Giese and Cote (2000) note the absence of consensus on the definition of consumer satisfaction in their review of literature about the construct and suggest that a bespoke definition of consumer satisfaction should be used by researchers as to best answer their research questions. They identify several dimensions on which the definitions of consumer satisfaction differ:

- Satisfaction as an evaluative process (little consistency between definitions) or as a response (result) of an evaluative process;
- Nature of response: cognitive, affective or conative (behavioural);
- Focus of evaluation (such as a shopping experience, product, retail personnel etc.);
- Time of onset: before purchase (anticipated), without purchase, after purchase but before consumption, during consumption, after consumption.

In this thesis, I conceptualise choice satisfaction as consumer satisfaction with the focus in evaluating one's choice. With regards to other dimensions, the definition of consumer satisfaction as a "postchoice evaluative judgment concerning a specific purchase selection" (Westbrook and Oliver, 1991, p.84) appears to most closely describe how decision reversibility theorists

conceptualise satisfaction. Note that such a definition does not limit the evaluative reaction to affective only, as Westbrook and Oliver (1991) demonstrate that some non-affective satisfaction (purely cognitive/conative) is experienced by some shoppers. They also reason that consumer satisfaction differs from attitude in that it is not a persistent evaluation of the whole class of objects such as brand or product, but of an individual purchase decision.

I will therefore refer to choice satisfaction as a post-choice evaluative judgment concerning a purchase from a choice assortment. Choice satisfaction is therefore a result of the evaluation process, not the process itself. Whilst such definition accommodates both satisfaction with the outcome of choice and with the process of choosing (Reutskaja and Hogarth, 2009), the focus of present research will be on the former. This definition of choice satisfaction limits the time when it can be measured to the period immediately following the purchase through to well after consumption. **Table 2-2** summarises how choice satisfaction has been operationalised in literature on decision reversibility and when in the decision-making process it was measured.

Table 2-2 Operationalisation of choice satisfaction in reversible decision research

Source	How satisfaction is operationalised	When choice satisfaction is measured
Bullens et al. (2014)	Positive evaluation of the decision (includes certainty)	Post-choice, pre-consumption
Bullens et al. (2013)	Overall evaluation of the chosen option	Post-choice, pre-experience (non-purchase tasks)
Gilbert and Ebert (2002)	Liking for the chosen alternative	Post-choice: 15 minutes after choice and two, four and nine days after choice (no consumption)
Hafner, White and Handley (2012)	Evaluation of the decision and the intent to make it differently if given the chance	Post-choice, post-consumption (a task with a chosen item)
Shiner (2015)	Overall evaluation of the chosen item (opposite of regret)	Post-choice: 15 minutes after choice (no consumption)

It is evident that generally choice satisfaction is operationalised as an overall evaluation of the obtained alternative or the decision itself (including one's certainty about having made a right decision); sometimes, however, conative

elements are used. Focusing on the satisfaction with the obtained outcome is therefore generally in concert with previous studies on decision reversibility.

Less consensus exists about when choice satisfaction is measured. Note, however, that studies that allowed the participants to consume the chosen option or begin interacting with it enabled their participants to experience the performance of the chosen option and potentially make comparisons against some implicit standard, in line with once popular expectation disconfirmation paradigm of consumer satisfaction (Yi, 1990). Since the outcome is not actually experienced in most studies listed in **Table 2-2**, no such comparison to prior expectations, norms or other standard is expected; instead the evaluative judgment about the obtained alternative is made based on its attractiveness. It is therefore viable to measure satisfaction prior to consumption of the chosen alternative.

It is important to understand the role of expectations in choice satisfaction. While researchers often conceptualise satisfaction as disconfirming consumer's expectations (Day, 1984; Fornell, 1992; Oliver, 1981; Tse and Wilton, 1988), expectations may be difficult to determine or irrelevant in a particular consumption context (Peterson and Wilson, 1992), which makes the expectation disconfirmation paradigm unnecessarily limiting in determining choice satisfaction. Meeting and exceeding expectations may therefore not be the only determinant of satisfaction.

Still, expectations about the performance of the foregone options in the choice task may have an impact on choice satisfaction, at least when the service fails to meet the expectations (Taylor, 1997). Furthermore, performance of the foregone alternative may become a reference point for assessing the obtained outcome, creating situations such as when winners in gambles are perceived to be less satisfied than losers (Boles and Messick, 1995). Regret or elation that result from comparisons to the foregone alternatives can therefore be a part of one's satisfaction with their decision.

Regret is defined as *“the emotion that we experience when realizing or imagining that our current situation would have been better, if only we had*

decided differently. It is a backward looking emotion signalling an unfavourable evaluation of a decision. It is an unpleasant feeling, coupled with a clear sense of self-blame concerning its causes and strong wishes to undo the current situation.”

(Zeelenberg and Pieters, 2007, p.3)

Early conceptualisations of regret defined it as a sense of loss in the decision where the value of the obtained outcome differs from the value that could have been obtained from the rejected alternative (Bell, 1982). This difference in value assumes that the chosen alternative's performance is compared to the best performing non-chosen alternative. Regret could also be negative, i.e. elation when the choice results in a positive difference in value between chosen and non-chosen assets. Regret theory claimed that regret could be anticipated by the decision-maker before the decision (Loomes and Sugden, 1982). More recent research proposes that the “utility” of the chosen option should be compared to the aggregate utility of the forgone options, even if they seem suboptimal (Sagi and Friedland, 2007). Regret is a sense of self-blame. Personal agency in decision making is important to regret (Zeelenberg, van Dijk and Manstead, 2000). Earlier attempts to argue to the contrary (Connolly, Ordóñez and Coughlan, 1997) have now been discredited.

Regret is a very common, widespread emotion, pertaining choices in the whole life domains (Roese and Summerville, 2005). It is a cognitive emotion. It requires thinking. Regret relies on making comparisons between the present situation and one that could have been achieved with the help of foregone choice alternatives (real or unknown) (Zeelenberg and Pieters, 2007). Such comparisons are termed counterfactuals. Kahneman and Tversky (1982) defined counterfactuals as unrealized alternative versions of a factual event and counterfactual thinking as the mental activity of recruiting counterfactuals. Counterfactuals always have a false antecedent in the sense that they compare the current situation to what could have happened but did not. Counterfactual thinking can be understood as “If only...” thinking (Roese, 1997).

Importantly for the present research, Tsiros (1998) proves that disconfirmation of the expectation and regret are orthogonal (independent) constructs and that both are integral parts of the overall evaluation of the obtained outcome. Interestingly, Tsiros (1998) still conceptualises satisfaction as disconfirmation (thanking a reviewer of his paper for this 'helpful' clarification) and not an overall evaluation of the outcome which he sees as a different measure.

This calls into question the adequacy of disconfirmation paradigm for studying consumer behaviour in choice tasks. Indeed, Inman, Dyer and Jia (1997) propose a model of choice satisfaction (which they see as overall happiness with the decision) that includes three elements: initial expectations about the chosen option, assessment of performance of the chosen option against the expectations (the emotion of disappointment if expectations are not met or rejoicing if they are exceeded) and assessment of its performance against the performance of the non-chosen option (the counterfactual emotions of regret and elation). Taylor (1997) also proposes the model of satisfaction that includes regret over options not chosen.

In the light of this, before the chosen option is consumed, no comparison of the option's performance to any standard can be made, for lack of performance, whilst choice satisfaction can still be measured (Giese and Cote, 2000) and overall evaluation of the chosen alternative can still be made. Simultaneously, regret may be a component in overall choice satisfaction but should not be used interchangeably with it. After the chosen option is consumed, its performance against expectations can be assessed.

2.3.2 The consequences of decision reversibility to choice satisfaction

Research on the consequences of decision reversibility to date is limited but growing. **Table 2-3** summarises the extant research findings on this topic. Please note that the findings of Shiner (2015) will be discussed in section **2.6**.

Early research efforts focused on how decision reversibility influences information search (Frey, 1981; Frey and Rosch, 1984), finding that after

reversible decisions consumers are more likely to search for information that was dissonant from (or inconsistent with) their attitudes.

Table 2-3 Summary of consequences of decision reversibility in extant research

Authors	Consequences of reversible, over irreversible decisions
Bullens, van Harreveld and Förster (2011)	Increased accessibility of decision-related constructs in people's working memory. Reduced working memory capacity. Increased decision regret
Bullens et al. (2014)	Strengthened prevention focus (rather than promotion focus) in goal attainment. Decreased choice satisfaction
Bullens et al. (2013)	Increased accessibility of negative aspects of chosen and positive aspects of foregone alternatives. Decreased choice satisfaction
Frey (1981)	Decreased preference for decision-supporting information
Frey and Rosch (1984)	Decreased preference for decision-supporting information only when searching for new information
Frey et al. (1984)	Decreased spreading of alternatives with time
Gilbert and Ebert (2002)	Decreased liking for chosen alternative Decreased preference for chosen alternative
Hafner, White and Handley (2012)	Decreased choice satisfaction ('revealed') under no cognitive load. Increased number of counterfactual thoughts under no cognitive load
Shiner (2015)	Increase in choice satisfaction for maximisers Decrease in choice satisfaction for satisficers

The term dissonant from these early studies of reversible decisions is borrowed from the theory of cognitive dissonance that stipulates that after a choice people experience a state of unease because the attractive attributes of non-chosen items are no longer accessible to them and are therefore dissonant (inconsistent) with the attractiveness of the chosen option (Festinger, 1957). People then reduce this dissonance, for example by searching for information consistent (consonant) with the attractiveness of the chosen option or by increasing their evaluation of their chosen option's attractiveness and decreasing the evaluation of the non-chosen option's attractiveness (Brehm, 1956; Brehm and Cohen, 1959). Such an increase in the desirability of the chosen option and the simultaneous decrease in the desirability of the non-chosen option is referred to as spreading of alternatives (Festinger, 1964).

More recent findings on the consequences of reversible decisions show that decision reversibility can lead to negative decision outcomes: lower liking for the chosen item (Gilbert and Ebert, 2002), lower choice satisfaction (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) and higher post-decision regret (Bullens, van Harreveld and Förster, 2011). Several explanations for these effects were proposed. Firstly, consumers who have an option to reverse a purchase decision perceive such a decision as incomplete (Bullens and van Harreveld, 2016). Bullens, van Harreveld and Förster (2011) show that consumers tasked with shopping for a music player identify choice-related words (e.g. music) faster after a reversible choice than after an irreversible one, suggesting that in a reversible choice constructs related to choice remain accessible in people's working memory after the initial choice has been made.

As people keep thinking about their choice, they start comparing their chosen alternative to foregone ones (Gu, Botti and Faro, 2013) and start imagining having made a different, better choice (Hafner, White and Handley, 2012). Comparative thinking (making post-choice comparisons between the chosen and foregone options) alerts consumers to the desirable characteristics of foregone options and the undesirable characteristics of the chosen option (Hsee et al., 1999). Indeed, when people can change their initial choice after having made it they focus on the undesirable characteristics of their chosen item and the desirable characteristics of the non-chosen alternative, reducing the spread in the attractiveness of chosen and non-chosen alternatives (Bullens et al., 2013; Frey et al., 1984). Gilbert and Ebert (2002) propose that reversible decisions prevent people from activating their psychological immune system that protects them from negative emotional consequences of their choice outcomes (Gilbert and Ebert, 2002). In other words, an option to reverse a choice prevents spreading of alternatives that normally occurs in irreversible decisions and normally increases decision satisfaction (Festinger, 1957).

I will review post-choice comparative thinking in greater depth in section **2.4**, but at this stage it is important to note that while there is general consensus in the

decision reversibility literature that reversible decisions lead to more negative evaluation of decisions, this may contradict the findings from the return policy literature. As reviewed in the previous section, although the return policy literature does not fully cover all types of reversible decisions when it comes to exchange leniency, in general allowing returns for a full refund (reversible decision) leads to more positive post-decision evaluations. Clearly, reversible decisions cannot be simultaneously beneficial and harmful to the evaluation of one's decision (choice). I will attempt to resolve this inconsistency by focusing on how decision reversibility was operationalized in the extant research and to what kinds of reversible decisions can its results be generalized.

2.3.3 Operationalisation of decision reversibility in existing studies

The extant research that links decision reversibility with decision outcomes (Bullens et al., 2013, 2014; Bullens, van Harreveld and Förster, 2011; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) involves different choice set sizes, different product categories and choice scenarios but has one striking commonality between all the studies: the way decision reversibility is operationalised. In all of the aforementioned studies, as well as in the studies that link decision reversibility and post-choice information search (Frey, 1981; Frey and Rosch, 1984) decision reversibility is operationalized as the opportunity to change the initial choice. That is, in these studies the chosen alternative can be relinquished and another alternative selected. Please refer to **Table 2-4** for the operationalization of decision reversibility in the studies of reversible decisions.

Such operationalisation of decision reversibility is problematic for two reasons. Firstly, the studies' ecological validity, or the degree to which such operationalisation describes the real-world shopping situations (Brewer and Crano, 2014), can be called into question. As the literature on return policies shows, consumers often have a chance to return the items they have purchased for a refund, not only exchange them for something else (Janakiraman, Syrdal and Freling, 2016a). This notion is largely ignored by all

the decision reversibility studies, which study reversible decisions as an opportunity to exchange one item for another only.

Table 2-4 Operationalisation of decision reversibility in extant research

Authors	Studies	Manipulation of choice	Manipulation of reversibility
Bullens, van Harreveld and Förster (2011)	1, 2	Enter a lottery for either an iPod or a DVD player	Option to change initial choice (enter a different lottery)
Bullens et al. (2014)	1, 3	Choose the best-suited job applicant (out of four) for a job	Option to change initial choice (choose a different job applicant)
	2	Choose an exotic animal to buy out of two	Option to change initial choice (choose a different animal)
	4	Same as in Bullens, van Harreveld and Förster (2011)	
	5	Choose the best wristwatch out of eight	Option to change initial choice (choose a different wristwatch)
Bullens et al. (2013)	1	Choose one video to watch out of two	Option to change initial choice (choose a different video) before watching videos
	2	Choose a combination of pleasant and unpleasant tasks to do out of two	Option to change initial choice (choose different tasks) before starting on the tasks
Frey (1981)	1	Choose one of two books	Option to exchange chosen book for a non-chosen one
Frey and Rosch (1984)	1	Choose to extend a worker's contract or not	Option to change initial choice (extend contract or not)
Frey et al. (1984)	1	Same as in Frey (1981)	
Gilbert and Ebert (2002)	1	Choose a photo to keep out of two	Option to exchange chosen photo for a non-chosen one
	2a, 2b	Choose an art poster to keep out of two	Option to exchange chosen poster for a non-chosen one
Hafner, White and Handley (2012)	2	Choose a drawing implement out of ten	Option to change initial choice (choose a different implement)
Shiner (2015)	1, 2	Choose an art poster to keep out of two	Option to exchange chosen poster for a non-chosen one

Furthermore, most of the extant research on decision reversibility also lists an opportunity to cancel contracts (Bullens et al., 2013) and return goods for a refund (Bullens et al., 2013, 2014; Bullens, van Harreveld and Förster, 2011; Gilbert and Ebert, 2002) as cases of reversible decisions. This suggests that an option to cancel an order or to return items for a refund should affect choice satisfaction similarly to an option to exchange one alternative for another. For example, based on Gilbert and Ebert's (2002) findings, Epstude and Roese (2008) conclude that when a shirt cannot be returned to a retailer for a refund

(which is not how Gilbert and Ebert manipulated decision reversibility) consumers will be more satisfied with their decisions than if it can be returned. As I will show in this thesis, the assumption that the opportunity to cancel one's contract with a retailer brings on the same consequences as the opportunity to exchange one item from a choice set for the other is false. The former opportunity is qualitatively different from the latter. The extant decision reversibility literature thus overgeneralises its findings, which is a prominent 'sin' in consumer behaviour research, to be avoided and corrected (Pham, 2013).

2.3.4 The options to unmake and to remake a choice

The current operationalisation of decision reversibility by reversible decision theorists introduces another choice between the choice alternatives that can be made by consumers who have already made a choice. In other words, it gives consumers an *option to remake a choice*. Consumers who have this option keep comparing their chosen and non-chosen alternatives after the initial choice, which decreases their choice satisfaction (Bullens et al., 2013).

On the other hand, a consumer who is free to cancel her online order of a laptop, cancel her vacation to Italy or return a shirt to a clothing retailer and get her money back still has a chance to alter her purchase decision. Her purchase decision is still reversible. She needs not, however, think about other laptops or shirts she could have bought but did not or other holiday destinations she could have gone to but did not. She does not need to remake her choice. Instead, having an opportunity to cancel one's contract with a retailer (by cancelling the order or returning items for a refund) means having *an option to unmake a choice*, as the result of taking such an option leaves a consumer in the status quo that she was in before making a choice, i.e. with her money back but without the purchased good or service. In fact, an opportunity to return to pre-choice status quo is recognised as one of the ways to avoid making a choice that is used to regulate negative choice-related affect (Luce, 1998). In terms of return policy leniency, the option to return items for a refund or to cancel a contract with a retailer and receive money back (to unmake a choice) is more

exchange-lenient than the option to return an item for an exchange, or to remake a choice (Janakiraman, Syrdal and Freling, 2016a).

Accordingly, the decision reversibility theorists (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) only study how *the option to remake a choice* affects choice satisfaction. Contrary to this, return policy scholars (Bower and Maxham, 2012; Kim and Wansink, 2012; Suwelack, Hogreve and Hoyer, 2011) study *how the option to unmake a choice* affects various pre- and post-decision outcomes.

2.3.5 Research question

Neither research on reversible decisions nor on return policies can answer the following question:

How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers' choice satisfaction?

This question signifies that there is a gap in knowledge of the influence of reversible decisions on choice satisfaction. I will thus attempt to fill in this gap by answering the research question. In order to do so, it is necessary to deeply examine the mechanism through which decision reversibility (taking into account that the extant research focused on the option to remake a choice only, as shown in **Table 2-4**) was proven to decrease choice satisfaction.

2.4 Comparative thinking and choice satisfaction

When making a choice from a choice set, consumers may process the choice alternatives one-by-one, engaging in separate evaluation of alternatives, or simultaneously, engaging in joint evaluation of alternatives (Hsee et al., 1999; Hsee and Leclerc, 1998). The former has also been referred to as processing alternatives by brand (Bettman and Park, 1980).

When consumers process their alternatives simultaneously or jointly, they will engage in comparative thinking: they will make attribute-level comparisons between choice alternatives (Hsee and Leclerc, 1998). Comparative thinking may simplify the choice process and make it more efficient (both with respect to time to reach a decision and the cognitive processing capacity that is still available after a choice), as it helps consumers utilise less information in making a choice, especially if the choice alternatives would otherwise be difficult to evaluate in isolation (Mussweiler and Epstude, 2009).

However, comparative thinking may change which options are chosen and which product attributes are taken into account (Hsee et al., 1999). It may also introduce choice conflict when different choice options have uniquely attractive attributes that are not present in other choice options (Tversky and Simonson, 1993). If a consumer were to make a specific choice of an alternative, comparisons would alert them to a loss of utility because foregone alternatives may be superior on some attributes to the chosen one, as well as to a gain in utility because the chosen alternative may be superior to foregone alternatives on other attributes (Shafir, Simonson and Tversky, 1993).

These gains and losses stemming from relative disadvantages and advantages of one option over the others do not have equal value in determining the subjective value of choice options (Tversky and Kahneman, 1991). In line with the prospect theory, losses loom larger than gains (Kahneman and Tversky, 1979). What this means is that when choice alternatives have meaningful relatively superior and inferior features making comparisons between the alternatives will make all of them appear less attractive (Brenner, Rottenstreich and Sood, 1999). Consumers will also prefer to pay less for any choice

alternative if it is compared with other alternatives, in contrast to it being evaluated on its own, in isolation from other alternatives (Hsee and Leclerc, 1998). This suggests that consumers will be less satisfied with their choice if that choice involved between-options comparisons prior to making a choice. Note, however, that this effect is not observed if consumers imagine there being a better alternative to select when performing isolated evaluation of a choice alternative (Mogilner, Shiv and Iyengar, 2013).

Furthermore, comparative thinking is detrimental to choice satisfaction if it is performed after a choice. Gu, Botti and Faro (2013) demonstrate that if consumers are made to compare their chosen alternative to foregone alternatives after a choice, they will be less satisfied with their choice. This is again due to the fact that the relative inferiority of the chosen option to foregone options on some attributes is given more importance in establishing one's satisfaction with their chosen option than the relative superiority of it to foregone options on other attributes. Moreover, after a choice consumers strive for consistency in their preferences and will no longer engage in between-option comparisons unless they are made to do so, as this will make the choice appear more difficult (Svenson, 2006).

It should also be noted that comparative thinking can activate comparative mind-set, i.e. making comparisons between two objects can trigger consumers to make comparisons between other objects in a completely different domain (Xu and Wyer, 2007). For example, comparing wild animals either on their overall attractiveness or on specific physical attributes makes consumers more likely to compare computers on relevant attributes, because the procedures related to comparisons persist and are readily accessible in people's memories after comparisons were made (Xu and Wyer, 2008).

As evidenced above, a chance to remake a choice introduces consumers to post-choice comparative thinking: consumers focus on the negatives in their chosen alternative and the positives in the foregone alternatives (Bullens et al., 2013) and choice-related concepts are more accessible to them (Bullens, van Harreveld and Förster, 2011). Therefore, having an option to remake a choice

may be detrimental to choice satisfaction (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) because it triggers post-choice comparisons between the chosen and non-chosen alternatives.

2.4.1 Choice overload and choice satisfaction

Making comparisons between choice options may be a daunting process for consumers, especially if the number of such options is large and consumers do not come in with strong a priori preferences before making a choice (Chernev, 2003). Being exposed to a large assortment creates choice overload, or overchoice, where a choice becomes difficult to make due to the large number of alternatives to evaluate before making a choice (Chernev, Böckenholt and Goodman, 2015).

For example, consumers who are exposed to extensive choice assortments (24 or 30 items to choose from), compared to less extensive assortments (6 items or less), are significantly less likely to buy anything at all, which is due to decisions involving large assortments being seen as more difficult and more frustrating (Iyengar and Lepper, 2000). An alternative explanation for the existence of choice overload when consumers have to make a choice from a large assortment is that they may feel time pressure when making a choice from an extensive assortment, believing that due to the time pressure they could not evaluate all choice options to a necessary degree and choose the best one (Haynes, 2009; Inbar, Botti and Hanko, 2011).

Choice overload has several consequences for consumer behaviour. Firstly, it can trigger consumers to defer making a choice, both due to the difficulty of establishing the preference and due to the perceived time pressure (Greenleaf and Lehmann, 1995). Secondly, consumers are less satisfied with choices that involve extensive assortments (Botti and Iyengar, 2004; Iyengar and Lepper, 2000) and feel more post-choice regret from such choices (Inbar, Botti and Hanko, 2011).

It should be noted, however, that the generalisability of the choice overload phenomenon to real consumer shopping situations has been put under question

as a recent meta-analysis of literature on choice overload found a very weak main effect and multitudes of situational moderators of choice overload (Scheibehenne, Greifeneder and Todd, 2010).

Notwithstanding, Hafner, White and Handley (2012) show that when consumers are not under cognitive load, they will think more about remaking a choice and will be less satisfied with choices from large assortments (twenty-two items) compared to choice from small assortments (six items). Please note that the potential interactive effect of cognitive load and decision reversibility on choice satisfaction will be reviewed in **2.5.1**.

Furthermore, when decisions are perceived as unfinished, choice overload when making a choice makes consumers more likely to engage in post-choice comparisons between choice alternatives and therefore be less satisfied with their choices (Gu, Botti and Faro, 2013). Gu, Botti and Faro's studies demonstrate that the effects of post-choice comparative thinking on choice satisfaction are more noticeable when a choice is made out of an extensive assortment (twenty-four, rather than six items). This suggests that the effect of comparative thinking on choice satisfaction will be easier to detect in choices from large assortments. Given the problematic nature of choice overload findings in general (Gao and Simonson, 2016; Scheibehenne, Greifeneder and Todd, 2010), I have decided against comparing the influence of different decision reversibility options on choice satisfaction under different assortment sizes, focusing solely on choices from large assortments.

2.4.2 Comparative thinking and counterfactual thinking

In order to explain how different decision reversibility options may affect choice satisfaction, it is necessary to differentiate comparative thinking from counterfactual thinking.

As evidenced above in **2.3.1**, counterfactual thinking is past-oriented and refers to thinking about what might have been, or alternatives to the past events (Epstude and Roese, 2008; Roese and Epstude, 2017). Counterfactuals are alternative versions of the same event that did not happen (Roese, 1997).

Upward counterfactuals are better alternatives to the current event and downward counterfactuals are worse alternatives to the current event (Markman et al., 1993).

Counterfactual thinking is based on comparison, but on a specific kind of comparison: counterfactual comparison that contrasts mentally simulated imaginary outcomes with the actual obtained outcome (Roese and Epstude, 2017). It is therefore a very specific form of comparison that differs from attribute-level comparisons between choice options.

Hafner, White and Handley (2012) demonstrate that after a choice both counterfactual thinking (i.e. thinking about what would have happened if a consumer chose something else) and comparative thinking (i.e. thinking about how some choice alternatives may be superior to others) may be present and that they are different thoughts. In line with this, counterfactual mind-set, i.e. the tendency to consider alternatives to events after having engaged in prior counterfactual comparison (Galinsky, Moskowitz and Skurnik, 2000; Nestler and von Collani, 2008) is different from comparative mind-set, i.e. the tendency to compare objects to each other after having engaged in prior comparisons (Ma and Roese, 2014; Xu and Wyer, 2008).

This differentiation is important in theorising what kind of thoughts consumers may have when faced with reversible decisions. As demonstrated by Hafner, White and Handley (2012), the opportunity to remake a choice triggers both counterfactual and comparative thinking. The opportunity to unmake a choice may still generate some counterfactual thinking (Kim and Wansink, 2012), for example, whether a consumer would be better off not having bought a suit. There is, however, no reason to believe that the option to unmake a choice should trigger the same amount of between-alternative comparisons after a choice as the option to remake a choice. Firstly, unlike the latter, the former does not remind consumers of foregone choice options and thus should not activate choice-related constructs in consumers' memory. Secondly, comparisons between options are difficult when options have non-alignable properties, i.e. if they differ on completely distinct attributes (Mussweiler and

Epstude, 2009). Therefore, making comparisons between the chosen alternative and another choice alternative that could be chosen should be easier for consumers than making comparisons between the chosen alternative and the status quo where the choice has not been made.

The next section will review how the opportunity not to make a choice at all may affect choice satisfaction and why it is similar to the opportunity to unmake a choice. I will then arrive at a hypothesis that having an option to unmake a choice should not affect choice satisfaction similarly to having an option to remake it.

2.5 The option to unmake a choice: a no-choice option

Reactance theory posits that committing to making a choice restricts a consumer's freedom to reject the selected alternative or to select a rejected one, thereby generating an aversive post-choice experience (Brehm, 1966). Indeed, choice can produce conflict and discomfort (cognitive dissonance) because one has to relinquish the attractive features of the foregone alternatives and accept the unattractive features of the chosen one (Festinger, 1964).

This therefore implies that decision conflict can be resolved by not committing to a choice. Indeed, choice deferral, or preference for a no-choice option (Dhar, 1997) can be used to regulate negative affect that stems from having to make a choice (Dhar and Simonson, 2003). A no-choice option gives consumers an opportunity not to choose any of the choice alternatives (Dhar, 1996).

The similarity between being given the option not to choose (e.g., not buy anything from a store and visit a different one) and being given the option to cancel a purchase or return it for a refund after a choice is transparent. Having the opportunity to cancel one's contract with a retailer (by cancelling the order or returning items for a refund), i.e. to unmake a choice, leaves a consumer in the status quo that they were in before making a choice, i.e. with their money back but without the purchased good or service. So does choosing not to choose. Therefore, the option to unmake a choice can be seen as a specific case of a no-choice option: the one that can only be exercised after the initial choice. Several scholars (Dhar and Nowlis, 2004; Dhar and Simonson, 2003) have studied such an option, although their research does not focus on choice satisfaction, but rather on what choice alternatives are chosen and on whether the choice is unmade, after all.

If the option to unmake a choice can be seen as a specific instance of a no-choice option, it would be useful to investigate how having a no-choice option may influence comparative thinking.

Having a no-choice option encourages the shift of consumer focus from comparing the alternatives to each other on attributes (comparing between alternatives) to comparing alternatives one-by-one to some desirability threshold, or evaluating them in isolation (Parker and Schrift, 2011). Therefore, the mere presence of a no-choice option in a choice makes consumers more likely to engage in alternative-based processing and not to make comparisons between the choice alternatives. Interestingly, the decision not to take a no-choice option before making a choice negates choice overload (Gao and Simonson, 2016). The mere presence of a no-choice option thus inhibits comparative thinking.

Furthermore, the resulting evaluative judgment about an alternative's attractiveness (utility) when a no-choice option is present is qualitatively different from comparative between-alternative judgments (White, Hoffrage and Reisen, 2015). In fact, the reason for deferring a choice may be that no choice options are attractive enough (that is, measure high enough against the utility threshold) or, alternatively, that there is too much uncertainty about the outcomes that would ensue from choosing one alternative over the others, necessitating plentiful and difficult comparisons (Dhar, 1997). Comparative thinking, or focusing on the alternatives' relative advantages and disadvantages increases decision uncertainty, resulting in confusion (Dhar, 1996).

Moreover, simply offering people the option not to make a difficult choice (for example, to select a predefined status-quo option) decreases the negative pre-outcome affect (Luce, 1998), hinting at a potential similar effect for an option not to choose at all. Finally, taking the option to unmake a choice and reverting to the status quo represents a qualitatively different outcome than choosing another choice alternative. When choice options are non-comparable consumers are more likely to evaluate them individually instead of making attribute-level comparisons (Bettman, Luce and Payne, 1998; Johnson, 1984). Therefore, having a no-choice option should produce less comparative thinking than having an option to remake a choice.

Accordingly, if consumers have a no-choice option before a choice, they are less likely to make between-alternatives comparisons and may feel less negative affect in a choice. It is therefore logical to assume that having a no-choice option after a choice, too, may not trigger post-choice comparisons. Therefore, having an option to unmake a choice should not trigger as much post-choice comparisons between choice alternatives as having an option to remake a choice. Instead, consumers who can unmake their choices should assess their chosen alternative on its own, in isolation from foregone choice alternatives. Given that post-choice comparative thinking decreases choice satisfaction compared to isolated evaluation of a chosen alternative (Gu, Botti and Faro, 2013), I hypothesise the following:

H₁. Compared to having the option to remake a choice, having the option to unmake a choice will result in higher consumer satisfaction with their choices.

H₂. The increase in choice satisfaction due to having an option to unmake, rather than to remake a choice, will be mediated by the extent of consumers' post-choice comparison between their chosen and non-chosen alternatives.

2.5.1 Cognitive depletion and post-choice comparisons

As having an option to remake a choice makes consumers keep thinking about their choice after it has been made, it draws on consumers' working memory (Bullens, van Harreveld and Förster, 2011). Concepts related to making a choice remain in consumers' working memory after a choice if it can be remade.

Working memory is a psychological system for temporarily holding information that is available to be processed (Baddeley, 2012). Working memory is limited in its capacity, which is the primary bottleneck in people's information processing ability (Miller, 1956). When working memory capacity is utilized, such a process is termed cognitive load (Sweller, 1988, 1994) or cognitive depletion (Shiv and Fedorikhin, 1999; Sokolova and Krishna, 2016). Ego-depletion is a broader term that includes both the cognitive load (cognitive depletion) and the limited resource of self-control (Vosgerau et al., 2008).

In a choice, cognitive depletion may occur due to the difficulty of a choice itself, but may be unrelated to it, imposed on consumers externally (Nordstrom, Williams and LeBreton, 1996). For example, if the words describing a colour are themselves written in a different colour, people will need to use their working memory's cognitive processing resources in order to decode the name of the colour the words are written in (Stroop, 1935). Similarly, warmer temperatures in retail environments may cause depletion of cognitive processing capacity, causing lower cognitive performance (Cheema and Patrick, 2012). Externally imposed cognitive depletion inhibits learning and extensive problem solving (Hazan-Liran and Miller, 2017).

Since having an option to remake a choice generates comparisons between the chosen and non-chosen items, it draws on consumers' cognitive processing capacity, creating cognitive load (Hafner, White and Handley, 2012).

Furthermore, attribute-level comparisons between options require a substantial degree of cognitive processing capacity and will be more difficult to make if this capacity was depleted (Pocheptsova et al., 2009). This suggests that since people's cognitive processing resources are limited (Sweller, 1988), externally depleting consumers' cognitive capacity may prevent them from making post-choice comparisons between their chosen and foregone alternatives. Cognitive depletion should therefore affect consumers who have an option to remake a choice, preventing them from making post-choice comparisons between choice options, but not those who are able to unmake a choice, as they do not need to invest their cognitive capacity into making such comparisons. Therefore, I hypothesise the following:

H₃. Cognitively depleting consumers will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.

2.6 Maximisation tendency, reversibility and choice satisfaction

Some consumers are predisposed to making extensive post-choice comparisons and becoming less satisfied with their choices. In particular, the tendency to maximise in one's decisions can significantly predict regret-proneness and lower choice satisfaction in isolation from socially-induced envy that is also often exhibited by people who are prone to feeling regret (Zeelenberg and Pieters, 2007).

People who have a tendency to maximise the outcome they receive through choice (maximisers) try to always choose the best option. Selecting something that is simply "good enough" and satisfies some basic desirability criteria is not enough for them, whilst it is for satisficers (Schwartz et al., 2002). The maximisation tendency (chronic search for the best alternative) has been found to be positively correlated with some personality traits such as neuroticism and openness to experience, yet over and above the Big Five personality traits maximisation tendency is a strong predictor of experienced regret in life and lower life satisfaction (Purvis, Howell and Iyer, 2011). Interestingly, in a choice maximisers seem to try to maximise their gains on all product attributes, resulting in them often choosing compromise options (Mao, 2016). They seem to want the best of everything, all at the same time.

Maximisers, compared to satisficers, do make better-quality decisions. For example, graduates who looked for a job earned about 20% more at the start of the jobs they found if they were maximisers, compared to satisficers, but were less satisfied with their jobs than satisficers were and experienced more negative affect during the search process than satisficers (Iyengar, Wells and Schwartz, 2006). In fact, maximisers invest more resources into making a choice. They search for and evaluate more alternatives and are still less satisfied with their choices, even compared to maximisers who chose from an externally limited assortment (Dar-Nimrod et al., 2009).

Schwartz et al. (2002) created a scale for measuring maximisation, with maximisation loading on three factors, subsequently dubbed search for alternatives (higher number of alternatives considered per decision for

maximisers), decision difficulty (decisions perceived as more difficult by maximisers) and high standards held by maximisers (Nenkov et al., 2008). Numerous attempts to tweak the scale have been made in literature (Diab, Gillespie and Highhouse, 2008; Richardson et al., 2014; Weinhardt et al., 2012), yet the underlying link between maximisation and lower satisfaction or higher regret is generally acknowledged.

This is due to the fact that maximisers make more comparisons between choice options before a purchase, more social comparisons after a purchase and engage in more extensive post-purchase comparative thinking (Schwartz et al., 2002). Even when choosing between two equally attractive options, maximisers activate more comparisons between the chosen and the foregone options whilst having roughly the same number of thoughts as non-maximisers (Ma and Roese, 2014). It should be noted that Ma and Roese underline the difference between satisficing – an extreme low end of maximisation tendency scale – and non-maximising, i.e. any position on this scale that is not approaching extreme maximisation.

They also prove that maximising can be induced in customers as a mind-set, or a combination of persistent cognitive processes that are active during a task. They prove that even tasks not related to consumption can prime maximisation in people. In particular, they posit that the goal of “getting the best” (even in a context unrelated to purchase) drives maximisers to make extensive comparisons between choice alternatives. Therefore, it is reasonable to expect that maximising mindset will persist in a number of tasks, even after an initial choice has been made. In fact, mere increases in choice set size in a sequence of choices can put consumers in a maximising mind-set, which then makes them perform more extensive information search in a decision and makes them less satisfied with their choices (Levav, Reinholtz and Lin, 2012).

After a choice has been made, maximisers are less likely to feel psychologically committed to it (Sparks, Ehrlinger and Eibach, 2012). Sparks, Ehrlinger and Eibach show that maximisers prefer making reversible decisions (only the ones that can be remade were studied, however) over irreversible ones, compared to

satisficers, and that maximisers are less likely to spread alternatives after a choice, because they do not feel committed to one single option. As a result, maximisers become less satisfied with their choices as they do not increase the evaluation of their chosen alternative following a choice.

These findings are corroborated by Shiner (2015), who shows that maximisers prefer making reversible decisions (operationalised as being able to remake a choice) and are further more satisfied with making a reversible decision compared to an irreversible one, unlike satisficers. Shiner does not test an explanation for this effect, however, relying on the content of the thoughts produced by study participants in the reversible condition, who preferred it because they desired choices, freedom and ability to change their minds. This does not explain why maximisers should be more satisfied with reversible decisions. A plausible explanation would be that a chance to remake a choice matches maximisers' natural predisposition for post-choice comparative thinking, meaning that for them comparisons between the chosen and foregone options are less undesirable.

If such an explanation were to be accepted, it begs the question how maximisers would react to being able to unmake a choice. On the one hand, such an option to reverse a decision presents maximisers with extra freedom not to commit to a decision, which matches their internal chronic predisposition for avoiding choice commitment (Sparks, Ehrlinger and Eibach, 2012). On the other hand, an option to unmake a choice should not produce post-choice comparisons between the chosen and foregone options. The differential effect of maximising versus non-maximising tendency on satisfaction with choices involving different decision reversibility options is thus difficult to predict. It rests upon the degree to which maximisers react to post-choice comparisons between options less negatively than non-maximisers. If maximisers react to such comparisons positively, this should reverse the hypothesised effect of decision reversibility options on choice satisfaction, making maximisers more satisfied with their choices than non-maximisers. If maximisers react to such

comparisons negatively still (or neutrally), the effect of reversibility options on choice satisfaction should be attenuated, but not reversed.

There is, to the best of my knowledge, no current literary evidence to suggest that post-choice comparisons may bring on positive reactions by decision makers, especially given that maximisers engage in these comparisons voluntarily in irreversible decisions and are negatively affected by them (Ma and Roese, 2014). Given this, I expect that those who are in the maximising mind-set will simply be less affected by a chance to remake a decision, i.e. for them post-choice comparisons between the chosen and non-chosen options will be less undesirable than for non-maximisers. Accordingly:

H₄. Maximising mind-set will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.

An alternative explanation for this hypothesised effect may be that the isolated evaluation of the attractiveness of the chosen option that should normally be induced by the option to cancel a purchase or return it for a refund is irrelevant for selecting the best out of choice alternatives. As it is not relevant to the goal of choosing the best, it should be disregarded (Locke and Latham, 2002) by maximisers. Thus, they should be equally satisfied when making a decision that involves a chance to unmake a choice and one that involves a chance to remake a choice.

2.7 Variety-seeking, reversibility and choice satisfaction

As hypothesized above in 2.3, post-choice comparisons between the chosen and non-chosen alternatives signal to consumers that they may not have selected the best option. Comparisons make consumers think that their chosen option may not be superior to foregone alternatives, which lowers their choice satisfaction. In most conditions, such comparisons will exert a negative influence on choice satisfaction. Could these comparisons exert less negative influence on choice satisfaction?

There may be one shopping motivation that can make post-choice comparisons less unfavourable to consumers: variety-seeking. Variety-seeking behaviour refers to the tendency of an individual to switch away from a last-consumed item to another alternative (Givon, 1984; Kahn, Kalwani and Morrison, 1986). In a choice context, this would entail choosing a different option from a choice set other than the one chosen before. Variety-seeking behaviour can be displayed in sequential choices, i.e. making a choice and then a different choice, or in a simultaneous choice, i.e. picking two (or more) different alternatives to consume in just one decision (Simonson, 1990; Wu and Kao, 2011). Variety-seeking behaviour is motivated behaviour. The motivation for seeking variety can be derived, e.g. when someone compels a consumer to seek variety (Chuang et al., 2013); but it can also be direct, intrinsic, a motivation in itself (McAlister and Pessemier, 1982). In other words, sometimes consumers have a drive to seek variety in their choices, for example to select and consume a number of competing brands (Faison, 1977).

Reasons for seeking variety are multifold: intrapersonal, e.g. satiation with a certain brand (Inman, 2001), curiosity and need for stimulation (Raju, 1980), uncertainty about future preferences and external factors, such as price promotions (Ratner, Kahn and Kahneman, 1999). Variety-seeking motivation may be a response to environmental factors. For example, narrow aisles in a store prompt consumers to seek more variety in their choices (Levav and Zhu, 2009). Furthermore, while variety-seeking motivation in a shopping context can be a personality variable, i.e. there are chronic variety-seekers (Raju, 1980;

Rohm and Swaminathan, 2004) displaying the variety-seeking tendency, the motivation to seek variety can be implicitly primed in consumers. Therefore, consumers can be made to seek variety. This can be achieved, for example, by showing them sets of different, varied geometrical shapes rather than sets of the same geometrical shape cloned a number of times (Maimaran and Wheeler, 2008). Maimaran and Wheeler (2008) suggest that consumers are able to extract the concept of variety from a varied array of shapes and that the accessibility of this construct will make consumers more likely to seek variety in choices. Furthermore, when consumers are primed with concepts related to repetition (e.g. boredom) they see their previous choice of an alternative as satiation of their need, not as an execution of a stable preference that they have, and therefore are more likely to seek variety in subsequent choice as they seem more satiated with the one have they already made (Fishbach, Ratner and Zhang, 2011). This again shows an internal drive for variety that explains why consumers may make different sequential choices from the same choice set (Ratner, Kahn and Kahneman, 1999).

Variety-seeking behaviour should not be confused with impulse buying, or an urge to buy something immediately (Rook, 1987). Similarly to impulse buying, variety-seeking can be seen as a low-effort, feelings-based behaviour that is stimulated by consumer hedonism (Punj, 2011). However, variety-seeking need not be unplanned and refers to switching from one brand or alternative to another, which can be pre-planned. The tendency to seek variety is somewhat correlated with the tendency for impulsive buying, but these tendencies ultimately map on different personality variables and should thus be viewed as separate (Olsen et al., 2016).

Consumers may seek variety because no single option is ideal on all the desired attributes or because choosing a number of different alternatives will allow them to balance the desired attributes in order to maximize the consumption utility (Farquhar and Rao, 1976). When a variety-seeker consumes a specific product, they are less attracted to the specific features of that product (Lattin and McAlister, 1985). Further, when consumers seek

variety, they may select suboptimal alternatives that do not best match their preferences (Ratner, Kahn and Kahneman, 1999). Variety-seekers do not attempt to select their most preferred item on every single choice (maximize the utility or enjoyment locally) nor do they try to optimize all their choices as a whole to best fit their preferences (maximize the utility or enjoyment globally), instead they want to choose differently seemingly for its own sake (Kahn, Ratner and Kahneman, 1997). Consumers may seek variety even when one choice alternative is clearly superior on all attributes to all the other alternatives (Read and Loewenstein, 1995). This flies in the face of earlier conceptualizations of variety-seeking as an attempt to maximize one's utility (Bawa, 1990).

After a choice, most consumers desire consistency in their preferences, which is why they perform the spreading of alternatives (Festinger, 1964). Similarly to Festinger's theory of cognitive dissonance, self-perception theory suggests that people learn their stable preferences from observing themselves making certain choices (Bem, 1967). In contrast to this, variety-seekers may not desire consistency in sequential choices. The findings of Fishbach, Ratner and Zhang (2011) show that when consumers are primed to think of consistency of preferences, they are less likely to engage in variety-seeking. Indeed, variety-seekers do not exhibit behavioural consistency, choosing a different item, nor do they take into account whether they are selecting their most preferred option, which makes them select inferior options (Kahn, Ratner and Kahneman, 1997; Ratner, Kahn and Kahneman, 1999).

For this reason, variety-seekers should not to be negatively influenced by post-choice comparisons between choice alternatives. They should be indifferent to these comparisons. As variety-seekers are interested in making a different choice to the one they have already made, the positive aspects of foregone alternatives (the ones they could still choose from) will remain salient to such a choice. As variety-seekers do not attempt to choose and keep only one best option every time, the attractiveness of foregone alternatives should bear no influence on their evaluation of their already chosen alternative. Variety-seekers

will thus not try to spread the alternatives, i.e. to increase the evaluation of their chosen alternative. Therefore, having an option to remake a choice but not to unmake a choice should no longer prevent them from spreading the alternatives, because they would not spread the alternatives anyway. As a result, the extent of post-choice comparison between alternatives that is increased by the option to remake, but not to unmake a choice, should bear no influence on choice satisfaction of consumers who are motivated to seek variety. In other words:

H₅. Variety-seeking motivation will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.

Note that, to my knowledge, no attempts to link variety-seeking motivation and decision reversibility have been made, even though the former may change the way the latter affects consumer choice satisfaction.

2.8 Neuroticism, reversibility and choice satisfaction

One personality variable that may influence how consumers react to having the options to unmake and to remake a choice is consumer neuroticism. Neuroticism is a tendency to experience negative affect in day-to-day situations. Neurotic people are more likely to worry, feel angry, anxious, fearful or frustrated in day-to-day lives. Neurotic people are more prone to envy, jealousy, feelings of guilt and depression (Thompson, 2008). Neuroticism is diametrically opposed to emotional stability, meaning that emotionally stable individuals will be very low on neuroticism. The link between neuroticism and the experienced negative affect is strong and robust (Watson, Clark and Tellegen, 1988). Neurotic people are less satisfied with their lives in general (Costa and McCrae, 1980), mostly because of the tendency to be depressed (Schimmack et al., 2004).

While emotions such as anger, fear, jealousy and anxiety that are part of neuroticism may be limited to a specific situation, neuroticism is a global personality trait. Trait theory posits that this means that neuroticism represents a repeating, habitual pattern of people's feelings, thought and behaviour (Costa and McCrae, 1998). Neuroticism or emotional (in)stability are a part of the widely used Big Five personality traits, or Five-Factor Model of personality (Costa and McCrae, 1992; Goldberg, 1990). In the Big Five model, neuroticism is comprised of the following facets: anxiety, angry hostility (tendency to lash out in anger), depression, self-consciousness, impulsiveness and vulnerability (being overwhelmed by difficult circumstances) (Costa and McCrae, 1992).

People high in neuroticism have lower tolerance for stress and aversive external stimuli (Eysenck, 1967). Highly neurotic people experience more stress in their daily lives and appraise the same events more negatively than people low in neuroticism (Bolger and Zuckerman, 1995; Gunthert, Cohen and Armeli, 1999). Furthermore, highly neurotic people also anticipate more negative emotional reactions to the future events, even when such events are expected to be pleasant (Hoerger and Quirk, 2010).

Neuroimaging studies show that neurotic individuals have a stable negative bias in processing information (both in attention and perception of information) and recalling it from memory (Ormel et al., 2013). Neurotic individuals also use ineffective coping strategies for regulating the negative affect of events (Servaas et al., 2013).

Moreover, neuroticism as a measured personality trait affects how people make decisions. Highly neurotic individuals tend to be chronically indecisive, postponing making a decision (Germeijs and Verschueren, 2011). For example, neurotic people find it harder to commit to choosing a career (Meyer and Winer, 1993; Shafer, 2000). Highly neurotic individuals may procrastinate on important tasks because they are more task aversive, i.e. they enjoy performing the tasks less than people lower in neuroticism (Watson, 2001).

Naturally, since neuroticism is a personality trait, people high in neuroticism exhibit the tendency to procrastinate and avoid making a decision even for small, relatively trivial decisions, such as simple shopping tasks, although to a lesser degree than for major decisions such as choosing one's career (Milgram and Tenne, 2000). In Milgram and Tenne's studies participants' neuroticism positively and moderately ($r > .4$) correlated with time they took to make a decision and with how much tension they felt when making a decision.

Additionally, there is evidence that in simple reaction-time tasks where subjects are required, for example, to press a correct key upon seeing a stimulus neurotic individuals take more time to begin movement in order to press a key (Larson and Saccuzzo, 1986). While the overall reaction time in Larson and Saccuzzo's study was not related to participants' neuroticism, delaying the initial movement may signify that people high in neuroticism prefer accuracy over speed in making simple decisions, which in the end can help them achieve a lower number of response errors, as it did in the study.

Accordingly, neurotic individuals appear to favour accuracy in decisions over the decision speed, expect to feel more negative emotions in relation to future events (which may include their decisions) and have a tendency to postpone making decisions. Based on this, it is likely that neurotic individuals will

appreciate the option to unmake a choice (to defer making a decision) after a choice has been made. Indeed, Luce (1998) shows that avoiding making a decision or reverting to status quo is a strategy employed by consumers who try to cope with or minimize negative emotions. Therefore, the opportunity to unmake a choice and return to a status quo (same as not making a decision) may be seen as more viable by consumers who are more neurotic.

Neuroticism as a personality trait also affects how people evaluate the decisions they have made. Highly neurotic consumers are less satisfied with their purchases, because they experience more negative consumption-based emotions following their purchases than consumers lower in neuroticism. This in turn negatively affects consumers' repurchase intentions, likelihood to recommend a product and increases consumers' likelihood to complain about the product (Mooradian and Olver, 1997).

More evidence on how neuroticism affects the post-choice evaluation of alternatives comes from recent research in neuropsychology. Neurotic people are more likely to spread the alternatives following a choice, meaning that they increase the evaluation of their chosen and decrease their evaluation of non-chosen alternative (Festinger, 1957). This is because of higher activation of the N2 component of EEG, "an electrophysiological index of conflict monitoring by the anterior cingulate cortex which has been related to interindividual differences in sensitivity towards response conflict" (Hügelschäfer and Alós-Ferrer, 2014, p.45). In other words, neurotic consumers are more sensitive to the choice conflict – the fact that foregone options retain their attractive attributes after a choice and a chosen option may be inferior to foregone options on some of the attributes.

Consumers high in neuroticism may thus be more susceptible to post-choice comparisons between the chosen and non-chosen alternatives. It follows naturally that in the event that the choice conflict was reintroduced and spreading of alternatives inhibited, as is done when a choice can be remade (Bullens et al., 2013; Bullens, van Harreveld and Förster, 2011; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012), neurotic consumers would be

more sensitive to this. Since preventing the spreading of alternatives generates decreased choice satisfaction and since neurotic consumers experience more negative affect and lower post-decision satisfaction in general than non-neurotic consumers, they can be expected to be less satisfied with their choice if they are given the opportunity to remake it.

On the other hand, an opportunity to unmake a choice gives consumers a chance to return to status quo, which neurotic consumers may find more appealing than non-neurotic consumers. Thus, neurotic consumers should be less satisfied with their choices if they can be remade, rather than unmade, than non-neurotic consumers:

H₆. Consumers high in neuroticism will have a higher difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.

Note that, to my knowledge, no attempts to link consumer neuroticism and decision reversibility have been made, even though the former may change the way the latter affects consumer choice satisfaction and even though Shiner (2015) noticed that maximization tendency, which does change the effect of decision reversibility on choice satisfaction, is sometimes correlated with neuroticism.

Because of this, a distinction should be made here between neuroticism and chronic maximization tendency. Although maximisers may be more neurotic (Purvis, Howell and Iyer, 2011; Schwartz et al., 2002), this is because the original maximization tendency scale developed by Schwartz et al. (2002) included items that overstressed the affective component of maximization tendency. As such, maximisers seek to always select the absolute best option. They exhibit more tendency to examine more alternatives before a choice and to compare alternatives amongst themselves more extensively before and after a choice (Ma and Roese, 2014). This definition, however, does not require them to be emotionally volatile, to see the choice in more negative light and to expect worse outcome of the choice, as neurotic people do. Therefore, the constructs

of maximization tendency (in its pure form) and neuroticism should be viewed separately.

Indeed, the original maximization tendency scale by Schwartz et al. (2002) has been proven to load on several factors, meaning that it is not unidimensional (Diab, Gillespie and Highhouse, 2008). There have been several successful attempts to construct a scale for measuring the maximization tendency that resulted in the scale being unrelated to consumers' neuroticism while still preserving the original link between maximization and the propensity to feel regret (Diab, Gillespie and Highhouse, 2008; Nenkov et al., 2008; Weinhardt et al., 2012). Furthermore, while maximisation tendency as measured by Schwartz et al. (2002) is linked to a larger decrease in choice satisfaction following negative feedback about one's choice, this is entirely explained by the 'decision difficulty' component of maximisation, i.e. the tendency to see choices as difficult, and not the other two components of maximisation tendency (Kim and Miller, 2017).

Reconciling these findings, it appears that the decision difficulty component of maximising is the one that will most likely explain why maximising produces lower life satisfaction scores. It should also be noted that neurotic individuals also perceive their decisions as more difficult (Steel, 2007). Therefore, the correlation between maximisation tendency and neuroticism might be because the former includes the decision difficulty component in its measure, which is related to the latter. If maximisation was measured or manipulated stressing only the high standards (getting the best) and extensive search components of maximisation tendency scale (as will be done later in this thesis), neuroticism should be unrelated to it. In such a case, it is better to consider neuroticism independent of maximization tendency, as I will do in this thesis.

2.9 Summary of research hypotheses and conceptual model

As stated in 2.3.5, in this thesis I will attempt to answer the following research question:

How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers' choice satisfaction?

Based on the literature reviewed above, I hypothesise that having an option to unmake a choice should increase choice satisfaction compared to having an option to remake a choice. This is because the former option, unlike the latter, does not trigger post-choice comparisons between the chosen and foregone alternatives (comparative thinking). Therefore, the effect hypothesised in H₁ should be mediated by the extent of post-choice comparative thinking (H₂). I also hypothesise that the effect covered in H₁ will be attenuated when post-choice comparisons between alternatives cannot be made due to consumers' depletion of available cognitive processing capacity (H₃) and that it will be attenuated when such comparisons will not lead to depreciation of the attractiveness of the chosen alternative because of consumers' maximising mind-set (H₄) and variety-seeking motivation (H₅). Finally, I hypothesise that the effect expected in H₁ will be amplified by consumers' trait neuroticism (H₆).

Table 2-5 summarises the research hypotheses generated through the literature review. Accordingly, in this thesis I will inspect the main effect of having the options to unmake, as opposed to remake a choice, on choice satisfaction, a mediator for this effect and four potential moderators for this effect. I will look at the maximising mind-set (Ma and Roese, 2014) and variety-seeking motivation (Maimaran and Wheeler, 2008) as situational variables, although both the maximising tendency (Schwartz et al., 2002) and chronic variety seeking (Raju, 1980) can be seen as personality variables, too. In general, however, personality traits may have lower predictive power than associated situation states (Endler and Hunt, 1968) and therefore I believe manipulating the maximising mind-set and variety-seeking motivation, rather than simply measuring them, to be a more robust approach to testing H₄ and H₅, respectively.

Table 2-5 Summary of research hypotheses

#	Hypothesis	Type of hypothesis	Location in thesis	Main theory
H ₁	Compared to having the option to remake a choice, having the option to unmake a choice will result in higher consumer satisfaction with their choices	Main effect	2.5	Cognitive dissonance
H ₂	The increase in choice satisfaction due to having an option to unmake, rather than to remake a choice, will be mediated by the extent of consumers' post-choice comparison between their chosen and non-chosen alternatives	Mediation	2.5	Consumer choice processes: comparative thinking
H ₃	Cognitively depleting consumers will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice	Moderation	2.5.1	Ego depletion
H ₄	Maximising mind-set will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice	Moderation	2.6	Consumer personality: maximisation tendency
H ₅	Variety-seeking motivation will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice	Moderation	2.7	Consumer motivation: variety seeking
H ₆	Consumers high in neuroticism will have a higher difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice	Moderation	2.8	Big Five personality theory

On the contrary, I intend to inspect the effect of neuroticism as a personality trait, i.e. a relatively stable neurobiological structure (Depue and Collins, 1999), rather than a temporary situation-induced state of neuroticism. Firstly, this is due to the findings from neuropsychology linking the different levels of activation of specific brain areas in neurotic individuals, compared to less neurotic individuals (Ormel et al., 2013; Servaas et al., 2013). Secondly, inducing state neuroticism or its component state anxiety (Beckmann et al., 2013) may prove difficult and may cause additional concerns regarding the ethics of research inquiry. Measuring trait neuroticism should not generate these concerns.

Figure 2-2 summarises the conceptual model to be tested in the present thesis.

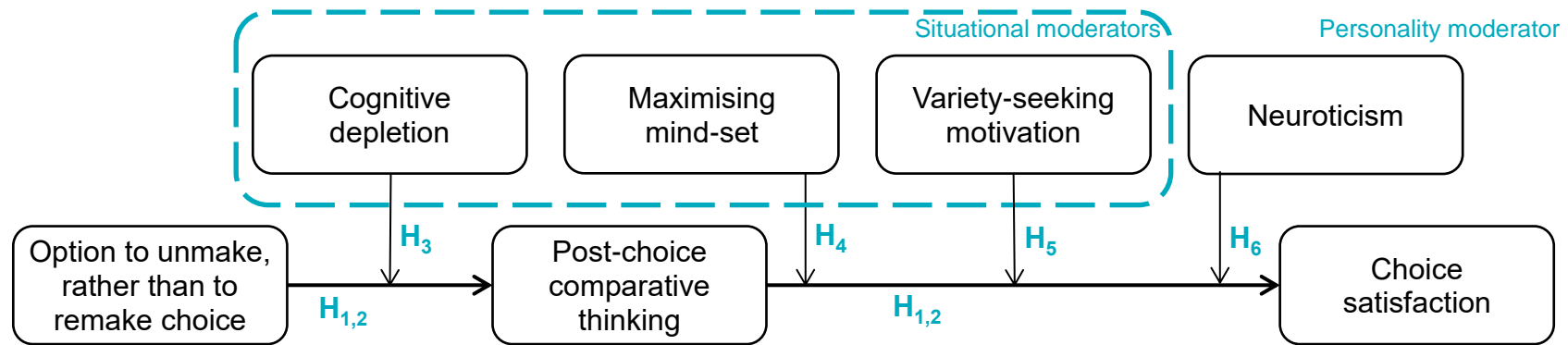


Figure 2-2 Conceptual model with research hypotheses

2.10 Alternative explanations for the hypothesised effects

Several alternative explanations for the hypothesised effect of different decision reversibility options on choice satisfaction (**see H₁**) can be considered. Firstly, a consumer who can unmake their choice is free to subsequently choose any of the foregone options (remake a choice) or perform further information choice and choose something else instead. As such, it could be argued that having the chance to unmake a choice might result in higher perceived choice than having the chance to remake it.

Perceived choice is the degree of choice that an individual believes themselves to have in a given situation (Harvey and Johnston, 1973; Lewis and Blanchard, 1971). Sometimes perceived choice is referred to as perceived decision freedom (Walton et al., 1979) or perceived choice freedom (Chernev, Böckenholt and Goodman, 2015). Perceived choice is negatively related to reactance (Lewis and Blanchard, 1971), or a negative emotional reaction to the situation when one's freedoms are perceived to be restricted (Brehm, 1966). For this reason, it is plausible that the higher degree of perceived choice may lead to more choice satisfaction.

Furthermore, choice may increase perceived control over events, even if they cannot be controlled (Langer, 1975). Feelings of perceived control due to perceived choice may make consumers evaluate their service encounters more positively (Hui and Bateson, 1991). Perceived control includes three components: behavioural control, i.e. the ability to apply actions to change the situation, cognitive control, i.e. the ability to interpret the events in a specific manner and decisional control, i.e. having a choice to take alternative courses of action (Averill, 1973).

It appears very likely that having a chance to unmake a choice, rather than remake it, will make consumers feel more decisional control (and overall perceived control) over their purchase decision. However, so would having a chance to remake a choice, compared to making an irreversible decision. Yet, an increase in perceived control or perceived choice stemming from having a chance to remake a choice did not increase choice satisfaction from such a

choice compared to an irreversible choice in extant research; on the contrary, the ability to remake a choice decreased consumers' choice satisfaction compared to an irreversible choice (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). Therefore, the explanation that perceived choice or perceived control drive the effect of having different reversibility options on choice satisfaction is unlikely to be true. Still, to address this notion I will ask the study participants how reversible they believe their decisions to be (to what extent they believe they can change the decision outcomes) and see if this difference in perceived decision reversibility is significant and, if so, whether it can explain the effect hypothesised in H₁.

Secondly, when consumers can remake a choice, they will make a choice from items sold by the retailer they have made the purchase from. When they can unmake a choice, they are free to choose the items from this retailer or any other retailer they may wish to purchase from (or not to purchase from the same category again). Therefore, consumers who have a chance to remake a choice have made a monetary commitment to a specific retailer, whereas those who have a chance to unmake it have not. The former should produce reactance (Brehm, 1966), compared to the latter, thus potentially decreasing satisfaction.

This commitment may be similar to the pain of payment, or an unpleasant feeling of parting with one's money (Prelec and Loewenstein, 1998). Interestingly, feeling pain of payment seems to make consumers more emotionally attached to their chosen product and to value it more highly (Shah et al., 2016). As it is not clear how exactly having made the monetary commitment to a specific retailer that is present in choices that can be remade, but not unmade will influence choice satisfaction, I will attempt to measure it in two of the studies and check whether it had influence on choice satisfaction.

Finally, consumers may infer how fairly they are treated by the retailer from the terms of returning and cancelling one's purchases. Specifically, consumers believe free returns to be fairer compared to returns for a fee, more so if they attribute the need to return items to a retailer's mistake and not to their own mistake (Bower and Maxham, 2012). Money-back guarantees are also believed

to be fairer than not accepting returns at all (Suwelack, Hogueve and Hoyer, 2011). The concept of retailer fairness is grounded in equity theory that measures the distribution of costs (contributions) and benefits (rewards) in a relationship (Adams, 1963). The individual compares the outcomes they obtain and their contribution to their own internal standard to arrive at the judgment of fairness (Carrell and Dittrich, 1978). Further studies on perceived fairness identified that apart from the ratio of benefits to contributions (distributive justice), there is also procedural justice, i.e. fairness in resolving conflicts and allocating resources (Tyler and Degoey, 1995) and interactional justice, i.e. fairness in how information is exchanged between parties (Bies and Shapiro, 1987). Together these kinds of justice form the overall perception of fairness in a specific relationship or an exchange (transaction). Customer satisfaction in a retail transaction is positively related to the perception of these kinds of justice (Mattila and Cranage, 2005; Smith, Bolton and Wagner, 1999). It can be assumed, therefore, that customers may perceive being given the option to unmake a choice as fairer than being given the option to remake a choice.

However, the link between perceived justice and return policies' exchange leniency cannot explain why the ability to remake a choice decreases choice satisfaction (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). Being able to exchange an item for another one is less restrictive than not being able to do so and should be perceived as fairer (Bower and Maxham, 2012), yet the increase in perceived justice in this case also corresponds to the decrease in outcome satisfaction. Therefore, it is unlikely that perceived justice can also explain the relationship hypothesised in H₁.

Naturally, there may also exist some moderators for the hypothesised effects that were not accounted for. It is not possible to account for all such variables at once. Within the confines of this thesis, however, I believe that the proposed explanation for why (and when) being able to unmake a choice leads to more choice satisfaction than being able to remake it should be tested. This therefore concludes the literature review. I will now briefly discuss the research philosophy behind this research project.

3 RESEARCH PHILOSOPHY AND METHODOLOGY

3.1 Introduction

In this chapter I will review the research philosophy behind this research project. I will explain why I have chosen certain research philosophy, given the constraints of the field of consumer behaviour, the research question posed and the benefits and drawbacks of different research philosophies. Specifically, I will justify my choice of research ontology, epistemology, research strategy and general methodology. I will also reflect on the limitations of the chosen research philosophy and methodological approach. The detailed description of the methods used for the data collection and analysis will then ensue in the following chapter.

3.2 Research philosophy and the field of consumer behaviour

Before selecting the method for doing research, a researcher should inspect their assumptions about ontology, i.e. the nature of reality and humans in it and epistemology, i.e. the nature and purpose of knowledge (Cunliffe, 2011; Morgan and Smircich, 1980). In other words, a researcher should be clear on their assumptions about what is possible to know about reality and how this can be known (epistemology) and about what reality is, to begin with (ontology) (Partington, 2002). Clarifying these assumptions should enable the researcher to select the appropriate research method (Easterby-Smith, Thorpe and Jackson, 2008).

It is important to note, however, that this thesis, a research enquiry in itself, should be positioned within the relevant field of knowledge and adopt the ontology, epistemology and methodology that are appropriate in this field.

Marketing in general mostly adopts positivist, or logical empiricist epistemology (Arndt, 1985). Positivism postulates that evidence is only what can be observed and that the basis for creating proper knowledge is repeated empirical observation of the reality that is governed by unified, logical rules (Rousseau, Manning and Denyer, 2008). This is not the only epistemology that can be adopted but this is the one that is adopted most often by marketing researchers.

Further, marketing is largely a quantitative field that requires a reliable, “hard” data that can be quantified (expressed in numbers) and replicated (Deshpande, 1983).

The current thesis is not about marketing in general, however, but about consumer behaviour. Consumer behaviour is a subfield of marketing, although it repeatedly claims to be interdisciplinary (Inman et al., 2018; MacInnis and Folkes, 2010). It borrows a lot from psychology, as well. Consumer behaviour is “the study of the acquisition, consumption, and disposal of marketplace products, services, and experiences by people operating in a consumer role” (MacInnis and Folkes, 2010, p.905). For an updated overview of the scope of consumer behaviour field please consult **Figure 3-1** (Pham, 2013, p.414).

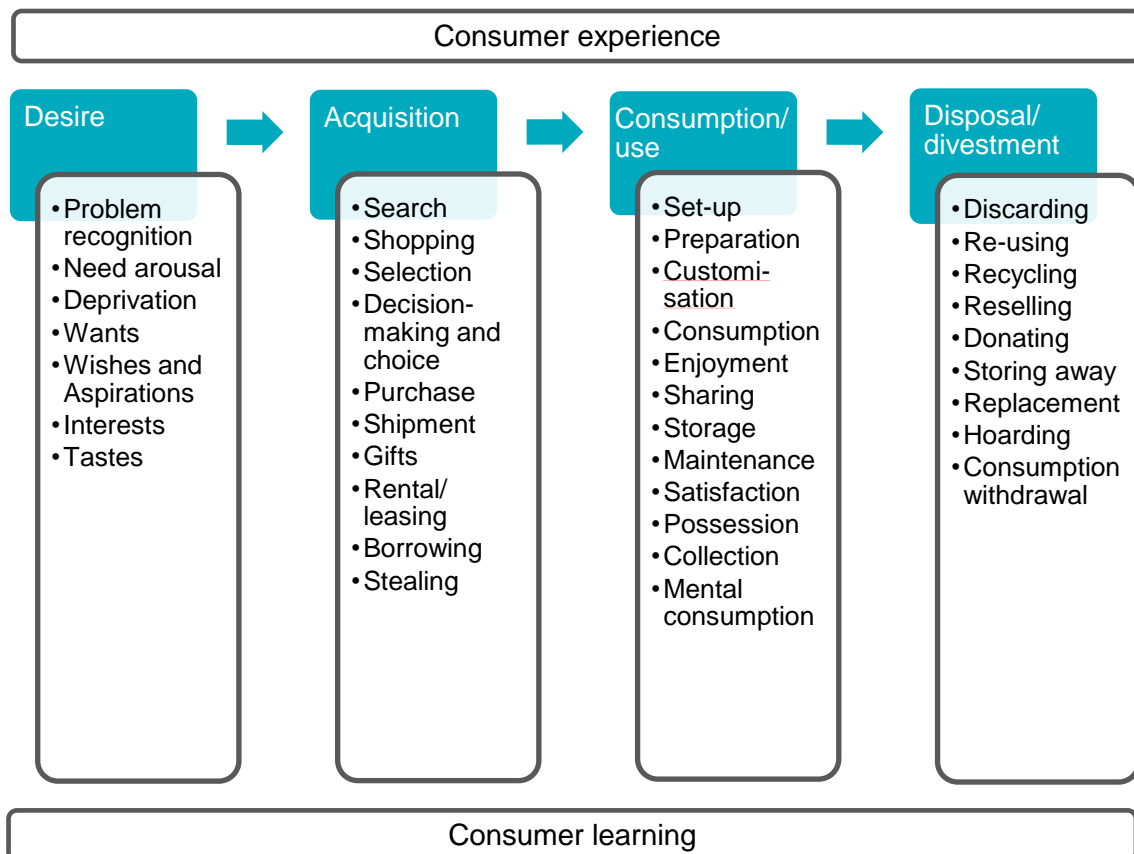


Figure 3-1 Scope of consumer behaviour field

Although this figure may not map the whole scope of all the findings ever published (or forthcoming) in the field of consumer behaviour, it is easy to see that the research question posed in this thesis falls firmly within this field. In

particular, I aim to study how satisfaction, which is in the use/ consumption stage of customer journey, but may also be measured pre-consumption (cf. Kirkebøen and Teigen, 2011) is influenced by decision reversibility options, or options to dispose of (or replace) the product, which is normally the next step after consumption (or instead of it). I also refer to comparative thinking, which is a process that underlies the choice process and no-choice options, which also are known to influence how choices are made (both in the acquisition stage). To make a choice of the research philosophy and methodology it is therefore useful to explore if the field of consumer behaviour is dominated by any particular research philosophy and methodology.

Research in consumer behaviour is clearly dominated by the objectivist (realist) ontology that studies reality as objective, tangible and single (Murray and Ozanne, 1991). Most research in consumer behaviour adopts a psychological orientation aimed at studying the existing social behaviour (Leong, 1989). Furthermore, positivist epistemology was stated to dominate consumer behaviour research (Lutz, 1989), just as it dominates marketing in general. It should be noted that positivism is referred to as a paradigm (Blaikie, 2008; Lutz, 1989) and epistemology (Cunliffe, 2011; Morgan and Smircich, 1980; Rousseau, Manning and Denyer, 2008) or sometimes both by the same author (Easterby-Smith, Thorpe and Jackson, 2008). A paradigm is a set of ontological and epistemological assumptions, as well as recommended methods of knowledge creation and basic concepts and theories (Blaikie, 2008).

More recent reviews of the field claim that consumer behaviour research moved on to scientific realist paradigm (Lynch et al., 2012), a successor to positivism that accepts that a part of reality is not observable and that theoretical knowledge about these unobservable parts of reality (such as quarks or schemata, for example) can still be amassed (Cacioppo, Semin and Berntson, 2004).

The field of consumer behaviour research is quite restrictive in the types of scientific enquiry that it accepts. Blaikie (2008) refers to these types of enquiry as research strategies, i.e. a combination of procedures to form new

knowledge. Lynch et al. (2012) call them ‘categories of inquiry’ to model how research in consumer behaviour tries to broaden the scientific knowledge about consumers. They are listed in **Table 3-1** (Lynch et al., 2012, p.475).

Table 3-1 Categories of inquiry in consumer behaviour

Intended contribution	Concepts first: Deduction	Findings first: Non-deduction
To theoretical domain	Conceptual contributions via deduction	Conceptual contribution via non-deductive routes
To substantive domain	Substantive contribution via deduction: <ul style="list-style-type: none"> • Explaining substantive phenomena using theoretical constructs • Theory-based interventions to influence substantive systems 	Non-deductive substantive contributions

Most consumer behaviour research follows a hypothetico-deductive approach, where theory is used to formulate hypotheses to be tested (falsified) with empirical data (Calder and Phillips, 1981). Other approaches, for example, inductive research strategies that start with data first (Blaikie, 2008) are featured significantly less in consumer behaviour research (Lynch et al., 2012). Furthermore, instead of studying real-life substantive phenomena in their complexity consumer behaviour research mostly focuses on contributions to theoretical domains, trying to establish construct-to-construct links that often have a tenuous relationship to substantive, real-life consumer phenomena and behaviours (Lynch et al., 2012; Pham, 2013). In the quest for scientific rigour, most consumer behaviour research stresses the psychological process that drives the link between two theoretical constructs. These constructs are somewhat related to real-life consumer behaviour (Pham, 2013; Wertenbroch, 2015).

Moreover, the field of consumer behaviour is quite restrictive in accepted research methodologies (Pham, 2013), although promises to include multiple paradigms in the field are made (Inman et al., 2018; Mukhopadhyay, Raghuram and Wheeler, 2018). Interestingly, Inman et al., the editors of the Journal of Consumer Research (JCR), one of the two leading journals in consumer

behaviour, published by Association for Consumer Research, one of the two leading professional bodies studying consumer behaviour (Pham, 2013) acknowledge that the typical JCR paper may be quite formulaic, requiring a threshold number of experiments and mediation, moderation and moderated mediation (Peracchio, Luce and McGill, 2014).

The editors of the Journal of Consumer Psychology (JCP), the other leading journal in consumer behaviour, published by the Society for Consumer Psychology (SCP), the other leading body researching consumer behaviour, claim that they will “welcome all papers relevant to consumer psychology, irrespective of their paradigm and choice of method” (Mukhopadhyay, Raghurir and Wheeler, 2018, p.1). Somewhat ironically, then, the very same issue of JCP where this promise is made is comprised (by my calculations) mostly of the articles that use purely experimental methodology (55% of all articles in the issue, averaging 4 experiments per article, including field experiments); predominantly of the articles that include at least one experiment in the research design (82% of all articles) and exclusively of the articles that use quantitative research methods (100% of all articles), apart from the editorial. At the moment, the diversity in methods is therefore limited to experiments (78% of all reported studies in all the articles in the issue), surveys (20% of all reported studies) and the quantitative analysis of secondary data (2%).

Of course, this is only one issue of the journal, but combined with previous criticisms of the field’s overrelying on experiments in general (Lynch et al., 2012), personal anecdotes of a member of editorial board for JCR who claimed that the journal is 80% experiments, 20% consumer culture theory and my personal struggle to recall one research project presented at the most recent SCP conference (2018, Dallas) that did not include multiple experiments (granted, I could not attend all the presentations) one can assume that the field very much favours experimental research over other research methods. Interestingly, the same editorial mentioned above makes it clear how the quality of theoretical contributions will be established: “if the primary purpose of the paper is to develop theory, we will not require authors to conduct and report a

field study. Rather, the focus should be on comprehensive literature reviews, deep theorizing, and experiments that test this theory as rigorously as possible” (Mukhopadhyay, Raghubir and Wheeler, 2018, p.2). It thus appears that experiments are the best way to rigorously test theory.

At this point, it is clear that the choices in research ontology, epistemology, strategy and methods are no longer only about how best to answer the research question. They are also about how to relate the research project to quite a restrictive (and prescriptive, if Muhopadhyay, Radhubir and Wheeler are to be followed) domain of knowledge. Therefore, following this brief analysis of what is truly accepted in the leading consumer behaviour journals, I perceive two options to choose from:

1) boldly defy the decades-long research tradition that clearly dominates the consumer behaviour field and try to do research that is not experimental (at least partially), or not within the scientific realism paradigm, or not objectivist;

2) accept the status quo, hoping to emulate the pinnacle of consumer behaviour research as it is seen now (and likely to be seen in the future) and perhaps hoping to minimise the negative affect from making this difficult choice (Luce, 1998).

I admire the bold but since this is my first foray into large-scale consumer behaviour research I opt to select the latter. The ontological, epistemological assumptions and, to a large degree, methodological approach to research that is shared by most consumer behaviour articles can therefore be seen as a requirement.

3.3 Ontological assumptions

As stated above, consumer behaviour research predominantly follows objectivist ontology that assumes the existence of measurable objective reality independently of researchers’ interaction with it (Murray and Ozanne, 1991). My research will thus follow objectivist ontology. The alternatives to objectivism are subjectivism that assumes that reality is a projection of human imagination, i.e.

that the world does not exist in isolation from our perception or construction of it (Morgan and Smircich, 1980) and intersubjectivism that stipulates that people jointly construct a sense of reality (community) and that people should be always seen in relation to others (Cunliffe, 2011). Please consult **Figure 3-2** (Cunliffe, 2011, p.654) for an overview of overarching ontologies.

	<i>Intersubjectivism</i>	<i>Subjectivism</i>	<i>Objectivism</i>
Relationality — the nature of relationships.	Interrelationships emerging & shifting in a dialectical interplay between ourselves, others & our surroundings. Experienced differently by different people. <i>Intersubjectivity.</i>	Relationships contextualized between people & their surroundings. People are reflexively embedded in their social world, influenced by and influencing discursive practices, interpretive procedures etc. <i>Interactions.</i> <i>Intertextuality</i>	Relationships between entities in a pre-existing society, between network mechanisms & system/information processes, cognitive & behavioral elements. Or relationships between discourses (when treated as objects). <i>Inter-network/objects/discourses.</i>
Durability — of society, meanings, knowledge etc., across time & space.	Social experience and meanings as ephemeral, fleeting moments. Although some common 'sense' of social & linguistic practices play through our interactions.	Social realities, meanings, discourses, knowledge are contextual: constructed yet experienced as objective and relatively stable. Perceived, interpreted & enacted in similar ways but open to change.	Enduring social structures (e.g., class), institutionalized rules, norms, practices, appropriate behaviors, and traits, etc. Discourses and networks have relative stability but are subject to resistance and change.
Meanings — what & where meaning is located.	Indeterminate. Neither fully in nor fully out of our control. Language is metaphorical & imaginative. Meanings in the moment between people.	Shared meanings immanent to the 'artful practices of everyday life', to discourses and texts. Negotiated & specific to time & place.	Common meaning situated in words, structures, roles, words, behaviors. Transcend time & space. Language is literal.
Historicity — concept of time & progress.	We are inherently embedded & embodied in historical, cultural & linguistic communities. Time experienced in the present — in living conversations with others.	Time & place are subjectively experienced. Progress as a situated human accomplishment — potentially iterative, ruptured or hegemonic.	Time experienced sequentially & universally. Progress is linear, recursive, or emerging over time.
Mediation — the place of the researcher in the research.	<i>Reflexive hermeneutic.</i> Research as a dialectical interplay between research participants. Focuses on experiences <i>between</i> people. Embodied & embedded researcher.	<i>Double hermeneutic.</i> Researcher embedded in the world, shaped by & shapes experiences & accounts, mediates meanings of actors. Experience <i>in</i> the world. Researcher as outsider or insider.	<i>Single hermeneutic.</i> Knowledge & researcher are separate from the world. Researcher observes, discovers facts & develops predictive theories. Experience <i>of</i> the world. Detached, sometimes critical researcher.

Figure 3-2 Three overarching ontologies

More specifically, objectivism is a broad term that relates to various realist ontologies. Shallow realism, or naïve realism, or empirical realism or actualism views reality as a concrete external structure (external to one's psyche) that is governed by natural or social laws (Blaikie, 2008). It can be adequately represented by sensations, i.e. empirically verified (Losch, 2009) and this provides knowledge, the validity of which is certain (Hammersley, 1990).

Within realism, there are also several alternatives to naïve realism:

- conceptual realism that states that rational thought and not actual experience helps discover the rules behind the operation of reality;

- cautious realism that questions that human senses and the interpretation of reality based on them can accurately represent reality, even if it exists and is external to a researcher (Blaikie, 2008);
- depth realism that assumes that reality has three levels: empirical (experiences), actual, where the power of objects and structures is actualised and real, where objects and structures exist (Bhaskar, 2008). This is the ontology adopted by critical realist paradigm (Losch, 2009);
- subtle realism that assumes that reality is external and concrete but that knowledge of it is rooted in assumptions and purposes. Thus, its validity cannot be known with certainty (Hammersley, 1990).

Finally, the paradigm of scientific realism builds on the naïve realism's idea of universal laws of single external reality (Cacioppo, Semin and Berntson, 2004) and adopts realist (objectivist) ontology. Scientific realism assumes that theory goes beyond what can simply be observed and that reality also includes non-observable entities such as mental representations and social cognitions, which exist independently from a researcher even if they cannot be proven to exist (Thagard, 2002). This is because theory suggests their existence. Essentially, scientific realism assumes that what theory predicts to be true is true, until proven otherwise. It posits that theory is the abstraction that exists in the conceptual domain, while scientific operationalisations and data exist in the empirical domain and support theory. As science develops new methods of enquiry they may be able to capture the 'unobservable' entities in reality (Cacioppo, Semin and Berntson, 2004).

In this research I do not plan to empirically observe all the entities I study (e.g. comparative thinking), although their existence has been hinted at before (Hafner, White and Handley, 2012). Thus, in this research I adopt realist ontology in line with the scientific realism paradigm. It is the most commonly featured ontology in psychology (Cacioppo, Semin and Berntson, 2004) and should thus be of value to consumer behaviour.

3.4 Epistemological assumptions

As I subscribe to the scientific realist paradigm that dominates psychology and consumer behaviour (Lynch et al., 2012), in this research I accept the epistemological assumptions of scientific realism, namely that scientific theories make genuine, existential, true (or false and thus rejectable) claims that approximate one external reality that exists independently of one's mind. The success of a theory lies in the degree to which it approximates reality (Leplin, 1992), or how well it explains observable phenomena (Cacioppo, Semin and Berntson, 2004). The notion that scientific theories approximate reality and their phenomenological success in explaining what cannot be observed must gain ontological support (these unobservable objects exist) is referred to as 'no-miracle argument' (Ghins, 2017). Scientific realist epistemology promotes theoretical specification, differentiation of theories, competition between theories that explain the same construct or links between constructs and parsimony in theoretical explanation (Cacioppo, Semin and Berntson, 2004).

Scientific realism should not be equated with critical realism. The latter assumes a specific structure of reality where underlying mechanisms are unobservable in the empirical domain and focuses on uncovering these underlying powers that drive the social world. The former states that science's understanding of reality is true and accurate (and based on observation mostly), but also that science can uncover some elements of reality that are not observable, at least at the moment (Cacioppo, Semin and Berntson, 2004; Chernoff, 2007).

Scientific realist epistemology is largely similar to positivism in that it requires researcher independence, reductionism, operationalisation, generalisation and aims to prove causality (Easterby-Smith, Thorpe and Jackson, 2008) with the help of experiments that underpin the scientific method (Cacioppo, Semin and Berntson, 2004). However, positivism takes on a logical empiricist epistemology, assuming that knowledge is only created through measured, quantified observations that follow the rules of formal logic (Rousseau, Manning and Denyer, 2008). Scientific realism assumes that what exists cannot always be tested by senses, or is at least temporally not testable empirically. In

psychology, positivism lead to developments in behaviourism (studying only the observable behaviours), while scientific realism proceeded with the development of cognitive psychology, for cognitions are not always observable (Shames, 1990).

Further, as in my research question I aim to establish the causal link between reversibility options and choice satisfaction, both positivist and scientific realist epistemologies may be appropriate; but as I assume that consumers make more or fewer post-choice comparisons after a choice, which is difficult to precisely verify empirically, scientific realism appears to better fit the research question of the two epistemological approaches.

3.5 Research strategy

Research strategies formulate logic for generating new knowledge. **Table 3-2** (Blaikie, 2008, p.8) summarises the research strategies used in social sciences.

Table 3-2 Logic of the four research strategies

	Deductive	Inductive	Retroductive	Abductive
Aim	Test theories, eliminate false ones and corroborate true ones	Establish universal generalisations to be explain data patterns	Discover underlying mechanisms to explain observed regularities	Describe and understand social life in terms of social actors' motives and understanding
Start	Identify a regularity to be explained	Accumulate observations	Document and model a regularity	Discover everyday lay concepts, meanings and motives
	Construct a theory and deduce hypotheses	Produce generalisations	Construct a hypothetical model of a mechanism	Produce a technical account from lay accounts
Finish	Test hypotheses empirically to confirm/ refute theory	Use generalisations to explain further observations	Find the real mechanism by observation and/ or experiment	Develop a theory and test it iteratively

This research will follow a deductive research strategy. In the literature review I generated the set of hypotheses to be tested (see **Table 2-5**) and the primary research will focus on falsifying these hypotheses. From statistically testing the hypotheses I will then infer that the results of hypotheses tests generalise to a

certain population, i.e. that they will remain true outside of the context of specific studies. Essentially, this step is inductive in nature as the observations and explanation of them are used to infer a general rule.

Still, the research strategy of testing hypotheses generated through theory is called deduction. Deductive reasoning is assessed on the grounds of universal logical coherence of arguments, transparency and coherence of premises, explanations and conclusions. Theory testing in deductive research is assessed on the transparency of the link between theory and hypotheses and on the explanatory coherence in linking theory, hypotheses and evidence (Mantere and Ketokivi, 2013).

Regarding Lynch et al.'s (2012) categories of inquiry (see **Table 3-1**) in this thesis I will perform deductive research with primary contribution to conceptual domain. Although reversible decisions are embodied in retailers' return and cancellation policies, I will study an operationalisation of them and not the actual policies. Lynch et al. (2012) make the following recommendations for assessing deductive research with contributions to theoretical domain:

- shifting beliefs about construct-to-construct links;
- importance of new beliefs to theory of consumers even if they are not novel in other domains, e.g. overturning prior theoretical accounts of influential findings in consumer behaviour or having deep and broad explanatory power for consumer behaviour;
- theoretical novelty, e.g. introducing a new moderator or mediator important for consumer theory;
- whether the whole pattern of results (and not just some of its parts) can be explained by a more compelling and equal or more parsimonious explanation.

I aim to refine the construct of reversible decisions, re-examine the current links between reversible decisions and choice satisfaction, explain why the links need to be updated (the mechanism behind the influence of different decision reversibility options on satisfaction, i.e. comparative thinking) and rule out some alternative explanations for the hypothesised relationship. Although the

hypothesised mediating mechanism is not new (even if it has not been used by studies of reversible decisions, however, and only by Gu, Botti and Faro (2013) in studying decisions that are perceived to be incomplete but are not actually reversible), two of the proposed moderators such as variety-seeking motivation and consumer neuroticism have not been studied in relation to decision reversibility. Consumer neuroticism specifically is interesting as the interplay of consumer personality and decision reversibility has only been studied by Shiner (2015) and as the Big Five personality traits that include neuroticism are perhaps the most influential theory of personality (Costa and McCrae, 1992; Thompson, 2008). I therefore aim to meet all the criteria for assessing deductive theoretical research in consumer behaviour listed above.

3.6 Research methodology

I will conduct quantitative research in this thesis. Not only does it better allow to test specific predefined hypotheses (Saunders, Lewis and Thornhill, 2016), as shown above the field of consumer behaviour research is overwhelmingly comprised of quantitative findings. Quantitative research codes, counts and quantifies phenomena in the effort to meaningfully represent concepts and is grounded in mathematics and statistics, whereas the alternative qualitative research uses words and texts as meaningful representation of concepts and has a literary and humanistic focus (Gephart, 2004). While qualitative research often allows to uncover deep meanings that people assign to concepts, quantitative research is more easily verifiable and more consistent with the notion of scientific rigour (Saunders, Lewis and Thornhill, 2016).

Further, as the research question seeks to establish causation (decision reversibility influences choice satisfaction), the research will use experimental method. Experiments allow to exert control over participants' exposure to stimuli and to isolate the relationship of interest amongst the plethora of other influences on consumer satisfaction and is thus the best way to establish causation (Mitchell and Jolley, 2013). Alternative quantitative techniques, such as surveys, do not directly test causal relations. Further, experiments were chosen since the recent editors of JCP recommend experiments for their rigour

in testing theory (Mukhopadhyay, Raghurir and Wheeler, 2018) and since consumer behaviour research is largely experimental in nature.

The research will involve multiple experiments conducted online (using Amazon Mechanical Turk or MTurk crowdsourcing platform) and in behavioural laboratories. This is a common practice in consumer behaviour research (Goodman and Paolacci, 2017). Conducting multiple experiments is an unstated requirement that researchers in consumer behaviour often face, given the field's preoccupation with psychological processes that drive consumer behaviour (Inman et al., 2018).

I will review issues concerning sampling of respondents, design of experimental procedures, measurement of variables and concerns for validity of the data in the next chapter. Before proceeding to it, it is worth reflecting on the limitations of the chosen research paradigm, research strategy and methodology.

3.7 Limitations of research paradigm, strategy, methodology

Scientific realism can be criticised on three major premises:

- the existence of a single reality. Relativist (subjectivist) view is that reality does not exist beyond what is socially constructed, although relativism on its own may ignore phenomena from the natural world that it cannot explain (Rousseau, Manning and Denyer, 2008);
- that the unobservable phenomena and processes exist. The alternative view, i.e. constructive empiricism states that the unobservable should be used in theory only to the extent that it can explain the observable reality and that on its own the unobservable need not be true or exist (van Fraassen, 1980);
- underdetermination: the same data should not be explained by multiple theories that are mutually incompatible (Cacioppo, Semin and Berntson, 2004). Scientific realism aims to select the best theory amongst those that explain the same phenomenon, i.e. the one with the highest predictive power. This may result in overreliance on the 'best' theory and

forgoing the less developed, more innovative theories. It may thus impede scientific discovery.

Still, scientific realism emphasises theoretical speculation, critical argument and scientific rigour and is thus widely accepted in consumer behaviour research (Lynch et al., 2012).

Quantitative research strategy may not fully capture the complexity of some consumer behaviour phenomena (Saunders, Lewis and Thornhill, 2016), hence, for example, it may not account for consumers' individual understanding of satisfaction. Further, overreliance on statistical significance, the level of which (normally 5%) is arbitrary may produce spurious results that will not be replicated in repeated research (Ioannidis, 2005). Further, these false positives will often be accepted as basis for further theory, creating a vicious cycle of false research findings (Simmons, Nelson and Simonsohn, 2011). Replication of results is supposed to ease the problem of false positives but cannot solve it completely.

Moreover, experiments in particular mostly try to maximise internal validity (whether the causal relationship truly exists), relying on homogeneous samples of university students (Wells, 1993) or paid volunteers, e.g. on MTurk (Goodman and Paolacci, 2017). Additionally, experiments construct an artificial reality, purposefully ignoring many variables that may influence consumer behaviour. Sampling and the artificial nature of experimental studies lower external validity (generalisability of the findings), i.e. in which contexts will the results hold true (Lynch, 1982).

Conducting field experiments alongside laboratory or online experiments may help increase external validity (Gneezy, 2017; Morales, Amir and Lee, 2017). Alternatively, using scanner data is supposed to enhance the external validity of experimental research (Winer, 1999).

A different approach to external validity is formulated by Lynch (1999), who proposes that background factors that are not manipulated in the experiment, such as the physical setting or participants' demographics, should be

investigated in further research as moderators, as long as it is possible to generate theory about their influence on the effects studied in an experiment. Otherwise claims of low external validity can be rejected as it is the onus of those who make these claims to make theoretical arguments as to why background variables may impede generalisability of the results of a certain experiment (Lynch, 1999).

I subscribe to Lynch's view. After having conducted the studies, I will suggest some potential factors that may promote higher external validity of the findings, however, I will leave theorising about them to those willing to conduct further research on the link between decision reversibility and consumer satisfaction.

3.8 Summary of research philosophy

For this research, I adopt the paradigm of scientific realism. I assume that the reality is single, objective and mostly measurable. The knowledge about this reality is generated by science, social science in the case of this thesis. I admit that this view is limiting but would like to draw your attention to its dominance in the field of consumer behaviour as the reason for my choosing it. In the next chapter I will discuss the issues of data collection using experimental studies and present the design of the studies that I ran for this thesis.

4 DATA COLLECTION

4.1 Introduction

This chapter will describe how data was collected and analysed in order to answer the research question and test the research hypotheses outlined in **Table 2-5**. I will first summarise the studies conducted in order to test hypotheses, then provide a brief overview of general issues related to research design, research procedures, participant sampling and data analysis that are common across all the studies reported in this thesis. Following this, for each study specifically I will describe the sample of respondents, the experimental design and data collection procedures employed. I will finish this chapter by discussing the validity concerns for the data collected, before moving on to reporting the results of data analysis.

4.2 Overview of the studies

The empirical investigation conducted in this thesis attempted to answer the research question:

How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers' choice satisfaction?

In order to answer this research question, six research hypotheses were identified (please see **Table 2-5**). The six research hypotheses incorporated the proposed main effect (difference in choice satisfaction between having an option to unmake and to remake a choice, H₁), the mediator for this effect (extent of comparative thinking, or post-choice comparisons between the chosen and foregone alternatives, H₂) and four moderators for this effect (cognitive depletion, H₃, maximisation tendency, H₄, variety-seeking motivation, H₅ and neuroticism, H₆).

I tested these hypotheses in four experimental studies. In Study 1 I established whether there is a difference in choice satisfaction between having the options to unmake and to remake a choice and the possible mediating mechanism for such an effect (extent of post-choice comparison between the chosen and non-

chosen alternatives), testing H₁ and H₂. In Study 2 I observed whether there is an indirect effect of different decision reversibility options on choice satisfaction via the extent of post-choice comparison, focusing on whether the effect specified in H₁ occurs if consumers' cognitive processing capacity is depleted beforehand, as this may prevent them from making post-choice comparisons (H₃).

In Study 3 I tested another boundary condition for the aforementioned effect: whether consumers who are motivated to seek variety in their choices would still be less satisfied with their choices if such choices could be remade, rather than unmade (H₅). In Study 4 I tested whether maximisation tendency had an influence on the expected difference in consumers' satisfaction with choices that could be unmade, rather than remade (H₄). In addition, in Study 4 I tested whether neurotic consumers were more receptive to the negative consequences of being able to remake a choice, rather than to unmake it (H₆), which may moderate the effect specified in H₁.

Before conducting Study 1, I performed a pre-test to identify whether the proposed experimental stimuli were understood correctly by participants. This pre-test was in essence another experimental study (Study 0) that aimed to replicate previous literature findings that having an option to remake a choice, rather than not having such an option (i.e. making an irreversible decision) makes consumers less satisfied with their purchases (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). In Study 0 I also tested whether the extent of comparative thinking can explain the differences in choice satisfaction between making an irreversible decision and a decision where a choice can be remade. This study is referred to as Study 0 or pre-test, since I do not believe it to have theoretical novelty (apart from testing comparative thinking as a mediating mechanism) and since it does not address the research question, which compares the effects of the options to unmake and to remake choices on choice satisfaction.

Table 4-1 shows when and where the studies were conducted. Evidently, most studies were conducted online but Study 4 was conducted in a behavioural laboratory in the University of Washington in Seattle, Washington, US.

Table 4-1 Location and dates of empirical studies

Study	Location	Month of data collection
0 (pre-test)	Amazon Mechanical Turk (online)	March 2016
1		March 2016
2		April 2017
3		August 2017
4	University of Washington, Seattle, US	October 2017

Studies 0-4 have some commonalities in how the data was collected and where the respondents were sourced from. These will be discussed further.

4.2.1 Overview of design and procedures in all studies

Studies 0-4 all employed the experimental research method. Experiments are a form of scientific enquiry that tests the influence of one or several variables (causes) on other outcome variable or a set of them (effects). Experiments are the only research method to directly test a causal relationship (Saunders, Lewis and Thornhill, 2016), usually by manipulating the cause (independent) variable to test its influence on the effect (dependent) variable. Another term for manipulation is treatment and different experimental conditions produced by manipulations may be termed treatment conditions or levels of treatment (Keppel, 1991). Causation is established if the cause temporally precedes the effect and there is a correlation between them and if the hypothesised relationship is non-spurious, i.e. it is not due to the covariance of both the independent (cause) and dependent (effect) variables with some other variable, a confound (Shadish, 2002).

In all the studies 0-4 I will employ a between-subjects experimental design, which means that each participant will be randomly assigned to one and only one experimental (treatment) condition (Mitchell and Jolley, 2013). Such a design is simpler to interpret, allows to use more advanced statistical tools than, for example, within-subjects designs where participants are exposed to several

levels of treatment and prevents participants from guessing experimental hypotheses as they do not know what the treatment conditions are, apart from the one that they are in. Further, randomisation of participant assignment to treatment conditions allows to control for systematic differences in other variables that are not the cause but may still affect the outcome, or covariates (Keppel, 1991). Moreover, covariates may be measured during an experiment (Shadish, 2002). For example, in Studies 0-4 I measured participants' age and gender as covariates to rule out that they affect consumer satisfaction stemming from making reversible decisions of different kinds.

All the studies reported in this thesis use post-test only design. Firstly, on my observation this design is very common in modern consumer behaviour and psychology research. An alternative would be a pre-test post-test design, where choice satisfaction is measured before any experimental manipulations and then again after these manipulations. However, measuring choice satisfaction and then manipulating the independent variable and measuring satisfaction again may make it easier for participants to guess experimental hypotheses (Mitchell and Jolley, 2013). Therefore, satisfaction will be measured after all experimental manipulations and only once in each study.

In all the Studies I manipulate decision reversibility. This manipulation is as follows: first, participants make a choice of a product from a choice set in order to buy it. Then, they receive a message that: 1) their order is complete but they still have a chance to select another item from a choice set until the end of the study (remake choice condition, Studies 0-4) or 2) their order is complete but they still have a chance to cancel their order until the end of the study (unmake choice condition, Studies 1-4) or 3) their order is complete (irreversible decision condition, Studies 0-2). Such a manipulation of decision reversibility is very similar to the ones used previously in reversible decisions literature (cf. Bullens et al., 2014; Shiner, 2015), although, as shown in **Table 2-4**, the reversible decisions literature to date has not studied the option to unmake a choice (and thus has not included condition 2) from present research) at all.

All participants thus made choices from certain choice sets. In Studies 0 and 1 they chose from a set of 24 Amazon Bestseller books (all included in top 50 bestselling books on Amazon.com in March 2016) and in Studies 2-4 they chose from a set of 16 board games, also found on Amazon.com. These product categories are quite similar to the ones used before in reversible decisions literature: art posters (Gilbert and Ebert, 2002; Shiner, 2015), drawing implements (Hafner, White and Handley, 2012) and portable music players (Bullens, van Harreveld and Förster, 2011) in that they are durable (not consumed after one use) and can be easily exchanged for another product within the same category. Further, buying books and board games online is a plausible scenario, hence using these product categories in research increased the experiments' realism or ecological validity (Winer, 1999). Naturally, books and board games are significantly less expensive than music players which may lower participants' involvement in the experiment. For this reason, Study 0 was conducted to pre-test the experimental stimuli.

In each study the choice set was kept identical for all participants. This enabled participants to keep relatively stable preferences and made comparisons between options easier (Bettman, Luce and Payne, 1998; Hsee and Leclerc, 1998). Further, if participants were randomly assigned to the remake choice condition, in each study they could make another choice of a book or board game, respectively, from the same choice set that their first choice.

In all the studies the same dependent variable was used: choice satisfaction and it was operationalised in the same way in all the studies. Namely, I asked participants to rate 1) how satisfied they were with their choice of a book or a board game; 2) how good or bad they felt about the book (board game) choice that they made, on a Likert-type scale ranging from 1 (very dissatisfied/ very bad) to 7 (very satisfied/ very good, respectively). Only the two extremes on the scales were labelled. These measures were adapted from Sparks, Ehrlinger and Eibach (2012). The measurement of choice satisfaction was kept constant between the studies to ensure that the results of each consecutive study replicate previous results.

I used two questions to measure choice satisfaction to account for any semantic differences in how participants understand choice satisfaction and to control for random participant error in order to improve the internal consistency or reliability (Mitchell and Jolley, 2013) of the choice satisfaction scale. I combined the answers to the above two questions into one choice satisfaction variable by taking their average, but I also checked whether there was a strong correlation (Pearson's $r > .7$) between them.

I relied on participants' self-reports of their choice satisfaction. This may be problematic as this may introduce bias due to social desirability and different interpretation of the question's wording by participants (Schwarz, 1999). However, the questions about satisfaction are easy to interpret, do not involve a sensitive subject and therefore should not urge participants to give socially desirable responses. Further, similar measures of satisfaction were successfully and extensively used in prior research on decision reversibility (Bullens et al., 2014; Gilbert and Ebert, 2002) and incomplete purchase decisions (Gu, Botti and Faro, 2013).

I used 7-item Likert-type scales to measure the dependent variable. It is easy to interpret, allows for a neutral response (4) and allows for a variety of statistical analyses by treating results as continuous data (Mitchell and Jolley, 2013). Likert-type scales are ubiquitous in marketing research (Jacoby and Matell, 1971). Generally, the number of items on the scale should be high enough to reflect different degrees of satisfaction (Mitchell and Jolley, 2013). I settled on a 7-item Likert-type scale used widely in previous research (Bullens et al., 2013, 2014; Bullens, van Harreveld and Förster, 2011; Gu, Botti and Faro, 2013, *inter alia*).

Further, in each study I assured that participants correctly interpreted the manipulation of decision reversibility. I thus performed the manipulation check of decision reversibility (Bullens et al., 2014). Immediately prior to giving participants a chance to exercise reversibility, I asked them to rate their agreement with two statements: "I feel I have a chance to change my book (board game) order" and "I feel my book (board game) order can be altered" on

a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Only the two extremes on the scales were labelled. I constructed the measures of perceived decision reversibility myself based on Gilbert and Ebert's (2002) term 'changeable decisions' and using thesaurus for finding a synonym to the word 'change' (alter). Again, I checked (and will report in the Data Analysis chapter) whether the two items were reliable. I expected participants in the unmake choice and remake choice conditions to perceive their decisions as equally reversible, but more reversible than the decisions of participants in the irreversible decision condition. I will report whether it is the case in each study.

I also measured covariates: how interested participants were in shopping for books (board games, respectively) and how relevant shopping for books (board games) was to them, measured on a Likert-type scale ranging from 1 (not at all) to 7 (very much). Additionally, covariates included participants' age in full years (which they entered) and gender (selected out of two options: male and female). To preserve participants' sense of anonymity, the answers to demographic questions were not forced and participants were able to skip them, which none of them did in any of the studies.

I performed all the experiments in Studies 0-4 on Qualtrics. Therefore, participants in all studies thought that they were answering a survey about books (board games) and answered this 'survey' on personal computers. I asked the MTurk participants to use personal computers and not other devices (e.g. smartphones) for participating in each 'survey', although whether they obliged could not be verified.

I obtained participants' consent to conduct the studies by informing them that their participation was voluntary and that they could withdraw from the studies at any time. I assured them that their data was stored and processed in full confidence and that they could not be identified in any way through their responses, which is true. This was done before the start of each study. Naturally, ethical approval for this research was obtained from Cranfield University for Studies 0-3. For Study 4, an exemption from ethical approval was

obtained from the University of Washington. None of the studies involved potentially harmful manipulations or sensitive data.

4.2.2 Overview of sampling approach in all studies

As shown in **Table 4-1**, participants for Study 4 were recruited from a pool of University of Washington marketing students, making it a ‘classic’ laboratory study with student subjects that are very common in consumer behaviour research (Pham, 2013). Participants for Studies 0-3 were recruited on Amazon Mechanical Turk (MTurk). Mturk is an online crowdsourcing platform where participants (“workers”) are recruited to perform tasks (Human Intelligence Tasks or HITs) for “requesters” in exchange for money (Berinsky, Huber and Lenz, 2012).

Workers can choose whether to participate in a certain HIT or not. When a HIT is complete, the requester decides whether to approve it or reject it (in which case the worker does not obtain payment). Researchers who conduct studies on MTurk can filter who completes HITs based on specific criteria, e.g. political affiliation, and only workers who meet these criteria will be able to see and participate in requested HITs (Paolacci, Chandler and Ipeirotis, 2010). In Studies 1-3 I only filtered the respondents based on two criteria: workers’ prior overall approval rate, to filter out malignant workers who are known to provide bad data (Buhrmester, Kwang and Gosling, 2011) and their residence in the United States of America to establish a sense of homogeneity in responses.

Experiments can be conducted on MTurk using the built-in survey template or by directing participants to an external webpage (Paolacci, Chandler and Ipeirotis, 2010). I opted for the latter: the data was collected using Qualtrics software and MTurk participants were redirected to a landing page (specific for each study) that was designed in Qualtrics.

Mturk has become a very popular medium for collecting quantitative data in consumer behaviour. For example, 43% of all behavioural studies in volume 42 of *Journal of Consumer Research* (June 2015 – April 2016) were conducted on Mturk (Goodman and Paolacci, 2017). Some articles published in the leading

consumer behaviour journals are now comprised solely of experiments with subjects sourced on MTurk (e.g. Kupor, Liu and Amir, 2018; Zemack-Rugar, Moore and Fitzsimons, 2017). MTurk is used for its convenience – data collection can be completed in a matter of hours – and relatively low cost, compared to student and non-student samples (Berinsky, Huber and Lenz, 2012; Goodman and Paolacci, 2017).

There are reports that MTurk workers earn as little as \$1.66 per hour (Paolacci, Chandler and Ipeirotis, 2010). I paid participants \$0.50 for a 5-minute study, on average (Studies 0 and 1) and \$1.00 for a 10-minute study, on average (Studies 2 and 3). Therefore, in order to treat participants fairly I paid them about \$6.00 per hour on average, which is higher than what most MTurk workers earn. Note, however, that there is no correlation between per-hour pay and data quality on MTurk (Buhrmester, Kwang and Gosling, 2011; Goodman and Paolacci, 2017). Per-hour pay only positively correlates with the ease of recruiting participants (Buhrmester, Kwang and Gosling, 2011).

MTurk is not only a convenient and cheap way to collect data, it is more representative of the general US population than most student samples (Berinsky, Huber and Lenz, 2012) and is generally more diverse in terms of income and employment status than student samples (Goodman and Paolacci, 2017). MTurk samples normally produce the same or slightly better effect sizes than student samples (Goodman and Paolacci, 2017; Paolacci, Chandler and Ipeirotis, 2010). Results of MTurk studies are at least as reliable as results of studies done on student samples if the findings were retested in a different population (Berinsky, Huber and Lenz, 2012). MTurk workers are less likely than students to cross-talk (Paolacci, Chandler and Ipeirotis, 2010), i.e. to discuss the purpose of an experiment between themselves (Edlund et al., 2009), although they do discuss how interesting specific HITs are and how well they pay (Chandler, Mueller and Paolacci, 2014). Further, MTurk workers may not even know that they are involved in an experiment (Paolacci, Chandler and Ipeirotis, 2010), which prevents them from producing demand effects, i.e. trying to satisfy researcher in giving them the expected responses to questions (Orne,

1962). I obscured the true purpose of Studies 0-3 from participants and they were not aware that they were participating in an experiment. Participants in Study 4, not recruited on MTurk, knew that they were involved in an experiment but did not know its purpose.

Given MTurk's advantages, there are still some concerns about the quality of data obtained through this platform. Participants on MTurk are sometimes distracted (Goodman, Cryder and Cheema, 2013) and may participate in multiple experiments, becoming non-naïve about the purpose of research (Chandler, Mueller and Paolacci, 2014). Workers' being distracted is not a significant issue considering the generally high quality of MTurk data. I addressed the issue of non-naivety in Study 1 by not allowing workers who participated in Study 0 to enter Study 1. I used the same study link for both studies and enabled the 'Prevent ballot box stuffing' option in Qualtrics. Workers who completed Study 0 would see Study 1 as completed and would not be able to proceed with it and to claim compensation for it. I did this because Studies 0 and 1 were both performed in March 2016 and involved practically identical designs. I did not do the similar procedures for other studies as they were more spread apart in time and involved different manipulations, lowering the chance for demand effects.

Additionally, MTurk workers differ from the general US population on some personality variables. They are more introverted than the population in general and than student samples in particular (Goodman, Cryder and Cheema, 2013), report lower life satisfaction and higher social anxiety (Shapiro, Chandler and Mueller, 2013) and, most alarmingly, may be more neurotic than the US population and student samples in general (Goodman and Paolacci, 2017). For this reason, I resorted to laboratory studies with university students in Study 4, in which I measure neuroticism. Doing so would allow me to make better inferences to the US population from the University of Washington student sample than from an MTurk sample. Of course, I acknowledge the fact that students are not like the US population in general as they are progressing to obtaining a higher education level than the US population in general (Pham,

2013). Overall, I think that combining MTurk and student samples was a good combination for relatively quick collection of data to produce relatively robust results.

Regarding the sample size, I collected enough responses to satisfy the requirement of having at least 20 respondents per experimental condition in order to detect the causal relationship (Simmons, Nelson and Simonsohn, 2011). In studies 0-3 I collected on average 29.5 responses per experimental condition. Additionally, Study 4 included a measured independent variable and two manipulated independent variables (four conditions overall) and was done with 168 students which should also satisfy the aforementioned requirement.

4.2.3 Overview of data analysis in all studies

All the data were collected on Qualtrics and analysed in IBM SPSS Statistics software package. I will give more detailed description of the analytical tools used in the Findings chapter of this thesis (5) and here I will describe the general principles and stages of data analysis in each study. I analysed the data for each study individually, one-by-one.

First, I established the reliability (internal consistency) of the scales used to measure choice satisfaction (2 items) in all studies, perceived decision reversibility (2 items) in all studies, the extent of post-choice comparison (2 items) in Studies 0-2 and perceived monetary commitment to the retailer (2 items) in Studies 3 and 4. In order to do this, I calculated Pearson correlations between the two items used to measure the same construct. I then calculated a variable that represented an average score of respective 2 items (e.g. choice satisfaction) if the correlation was strong ($r > 0.7$) and significant. I will discuss the approach to reporting results if this was not the case in the Findings chapter (5) of the thesis. Further, for the neuroticism scale (8 items) in Study 4 I calculated internal consistency using Cronbach's α . An α of 0.7 or more is considered acceptable (Field, 2013) and I took an average of the eight neuroticism items as this was the case in Study 4.

Second, in each study I performed the manipulation check to establish the success of the decision reversibility manipulation. Namely, in Studies 0-3 I ran an analysis of variance (ANOVA) with perceived decision reversibility as an outcome variable and the experimental manipulations as independent variables. ANOVA compares means across groups and tries to find out whether they differ from each other at a certain level of significance, which is normally assumed to be 5% or marginal significance – 10% (Keppel, 1991). I hoped that in each study there would be a significant main effect of decision reversibility conditions on perceived decision reversibility and no other significant main effects or interaction effects. An interaction is an influence of one factor (decision reversibility options) on the outcome variable (perceived decision reversibility) at different levels of other variables, i.e. cognitive depletion in Study 2 and variety-seeking motivation in Study 3 (Mitchell and Jolley, 2013).

Following this, if I tested for a significant main effect of decision reversibility options on perceived decision reversibility in Studies 1 and 2 I calculated main effect contrasts, i.e. made comparisons of perceived decision reversibility across different decision reversibility options (Weinberg and Abramowitz, 2002). These contrasts were pre-planned (planned contrasts or comparisons): I expected the irreversible decision to be perceived as less reversible than both the decisions involving the option to unmake a choice (contrast 1) and the option to remake a choice (contrast 2). I also expected participants to perceive the options to unmake and to remake a choice to be equally reversible (contrast 3). In Studies 0 and 3 there was no need for planned contrasts as the main effect represents the difference in perceived reversibility between the two decision reversibility conditions in these studies.

In Study 4 I ran an ordinary least squares (OLS) multiple linear regression with perceived decision reversibility as an outcome variable. The experimental conditions (decision reversibility conditions, maximising mind-set and neuroticism) and their two-way and three-way interactions were entered as predictors in the model. A multiple linear regression tests a linear correlation

between one dependent variable and multiple independent variables and the OLS approach is the one most commonly used in social sciences (Field, 2013).

Third, I performed an ANOVA of the experimental manipulations on choice satisfaction to establish the main and interaction effects in Studies 0-3. I then ran planned simple main effect contrasts if the interaction term was significant (Iacobucci, 2001), which was the case in Study 3. Simple main effect contrasts compare the mean values of outcome variable, i.e. choice satisfaction across experimental conditions ranging on one variable, i.e. decision reversibility at different levels of another variable, i.e. variety-seeking motivation (Cohen, 2013). In Study 4 I ran a multiple regression instead. The approach to analysing data in Study 4 will be covered in more detail in **5.6**.

Fourth, I ran an analysis of covariance (ANCOVA) to rule out the influence of covariates on choice satisfaction. An ANCOVA is an ANOVA with covariates also entered in the model (Field, 2013). I included how interested and relevant shopping for books (board games) was to a participant and their age and gender as covariates. I will report whether any of these had any influence on choice satisfaction in all the studies. In Studies 3 and 4 I also included monetary commitment to retailer as a covariate.

Next, in Studies 0-2 I ran an ANOVA of experimental conditions on the extent of post-purchase comparison and the ensuing planned simple contrasts between the unmake choice and remake choice conditions at different levels of cognitive depletion in Study 2.

Finally, I performed mediation analysis in Studies 0 and 1. This analysis allows to establish whether the effect of an independent variable on the dependent variable is driven by the mediator variable (Preacher and Hayes, 2004). I followed the recommendation of Zhao, Lynch and Chen (2010) to run this analysis using bias-corrected bootstrapping technique with 5,000 resamples. I used choice satisfaction as the outcome variable, decision reversibility options as the independent variable and the extent of post-choice comparison as the mediator. In Study 2 I ran a moderated mediation analysis that tests whether the indirect (mediation) effect of an independent variable on the dependent

variable through the mediator depends on the level of moderator variable (Preacher, Rucker and Hayes, 2007). I used choice satisfaction as the outcome variable, decision reversibility options as the independent variable, the extent of post-choice comparison as the mediator and cognitive depletion as the moderator. I will explain these analyses in detail in the Findings chapter (5) of the thesis. I will now describe the samples, design and procedures for each individual study.

4.3 Study 0: pre-test

The goal of Study 0 was to check whether the experimental stimuli and variable measurements would allow to replicate the previous literature findings on decision reversibility, namely that giving consumers an option to change their selection (remake choice) lowered choice satisfaction, compared to a decision that could not be changed (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). Additionally, in this study I also checked whether the extent of post-choice comparison would mediate the effect of having an option to remake a choice, rather than an irreversible decision, on choice satisfaction.

Sixty Amazon Mechanical Turk workers (40% male, aged 21-65, mean of 39.12, median of 35.5) completed this 5-minute study in exchange for \$0.50. The participants were invited to complete this study based on their place of residence (the US) and prior approval HIT approval rate (99%) and were admitted to the study on the first-come basis.

4.3.1 Study 0: Design and procedures

Study 0 used a single-factor (decision reversibility options: remake choice, irreversible decision) between-subjects experimental design. The study was run on Qualtrics (www.qualtrics.com). **Figure 4-1** shows the process flow of the experiment in Study 0.

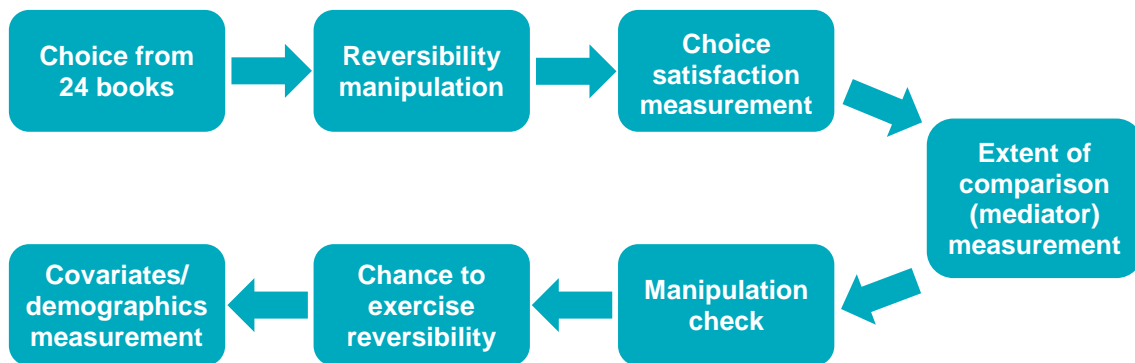


Figure 4-1 Process flow of the experiment, Studies 0 and 1

Before starting their participation in the experiment, subjects gave their consent on MTurk by clicking the study link and were redirected to a Qualtrics landing page informing them about the study, as shown in **Figure 4-2**.

Shopping for books.

This survey should take you 5 minutes to complete and should be taken on a laptop or desktop computer.

All the information from this survey will be treated in confidence and anonymously. You may withdraw from this survey at any time.

Please read every page carefully and answer all the questions in this survey. Thank you in advance for your time and help! Please click the arrow below to start.



Figure 4-2 Landing page, Studies 0 and 1

On the next page, participants were entered into the experimental scenario. They were informed that they were supposed to choose a book to buy they preferred the most from those sold by an online retailer (**Figure 4-3**).

Imagine that you're browsing an online retailer's website in order to buy a book to read.

On the next screen you'll see a list of books sold by this retailer. For each book, there is the title, the author's name, book cover and a short description.

Please buy a book that you like the most. Please choose your preferred book carefully.

Figure 4-3 Experimental scenario, Studies 0 and 1

On the page following the experimental scenario, participants made a choice of a book out of 24 choice alternatives. The stimuli were comprised of book titles, authors, cover art and brief phrases describing the books. All the books were in the top 50 of Amazon Bestseller List in March 2016. Please refer to **Appendix A** for the overview of the stimuli used in the choice task.

All the books were shown to participants on the same page and in the same order. **Figure 4-4** shows the choice question, which was shown to participants on the same page, under the list of books.

I would like to buy:

1. Pride and Prejudice	2. In Cold Blood	3. The Grapes of Wrath	4. The Selfish Gene
5. Lolita	6. Noughts & Crosses	7. The Book Thief	8. Hitchhiker's Guide to the Galaxy
9. To Kill a Mockingbird	10. A Brief History of Time	11. The Great Gatsby	12. Wuthering Heights
13. Bad Science	14. The Secret History	15. Norwegian Wood	16. American Gods
17. Boy in the Striped Pyjamas	18. Catch 22	19. Long Walk to Freedom	20. The Man who Mistook His Wife for a Hat
21. Never Let Me Go	22. Freakonomics	23. Rebecca	24. Great Expectations

Figure 4-4 Choice question, Studies 0 and 1

After a participant made their choice, they were randomly assigned to one of the two experimental conditions. This was done using the 'randomization' function in Qualtrics. Therefore, on the next page they saw a message informing them that 1) if they changed their mind, they would be able to select a different book

by the end of the study (remake choice condition, **Figure 4-5**) or 2) their book will be with them soon (irreversible decision condition, **Figure 4-6**).

Thank you!

If you change your mind, you'll be able to select a different book by the end of the survey.

Figure 4-5 Remake choice condition, Studies 0 and 1

Thank you!

Your book will be with you soon.

Figure 4-6 Irreversible decision condition, Studies 0 and 1

On the next page the dependent variable (choice satisfaction) was measured. Participants were asked two questions: “How satisfied are you with the book choice that you made?” and “How good or bad do you feel about the book choice that you made?”, adapted from Sparks, Ehrlinger and Eibach (2012).

The answers to these questions were measured on Likert-type scales ranging from 1 (very dissatisfied/ very bad) to 7 (very satisfied/ very good), respectively, as shown in **Figure 4-7**.

For each question, please indicate how you feel at the moment.

How satisfied are you with the book choice that you made?

1. Very dissatisfied	2.	3.	4.	5.	6.	7. Very satisfied
----------------------	----	----	----	----	----	-------------------

How good or bad do you feel about the book choice that you made?

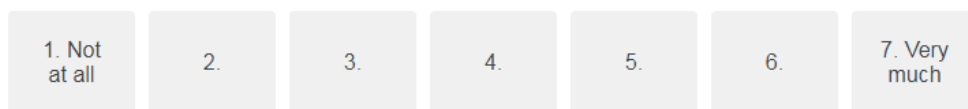
1. Very bad	2.	3.	4.	5.	6.	7. Very good
-------------	----	----	----	----	----	--------------

Figure 4-7 Choice satisfaction measurement, Studies 0 and 1

On the next page participants were asked to report the extent to which they thought they engaged in post-choice comparison between their chosen and non-chosen alternatives (Gu, Botti and Faro, 2013): “After selecting the book, how much did you keep thinking about the other books you could have chosen?” and “After selecting the book, how much did you keep comparing your chosen book to the other books you could have chosen?”, both measured on a 7-point Likert-type scale ranging from 1 (not at all) to 7 (very much), as shown in **Figure 4-8**. I measured the mediator after the dependent variable to prevent participants from guessing the experimental hypotheses.

Please indicate what you did after selecting the book.

After selecting the book, how much did you keep thinking about the other books you could have chosen?



After selecting the book, how much did you keep comparing your chosen book to the other books you could have chosen?

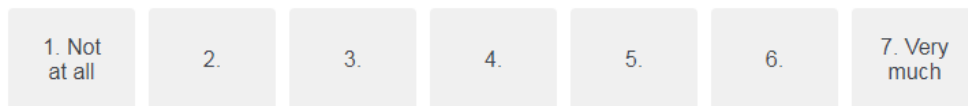


Figure 4-8 Extent of post-choice comparison measurement, Studies 0 and 1

A reversibility manipulation check (cf., Bullens et al., 2014) was performed on the next page. Participants rated their agreement with two statements: “I feel I have a chance to change my book choice” and “I feel my book choice can be altered” on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), as shown in **Figure 4-9**.

Please rate the following statements about your choice of the book.

I feel I have a chance to change my book choice.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

I feel my book choice can be altered.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

Figure 4-9 Manipulation check, Study 0

Next, participants exposed to reversible decisions could choose between keeping their book and selecting a different book (remaking a choice), as shown in **Figure 4-10**. If they opted to select a different book, they made a second choice from the same choice set used earlier in the study (**Appendix A**). This was done to increase the study's realism. Participants in the irreversible decision condition were simply asked to proceed to the next page instead.

If you'd like to select a different book, this is your chance

Keep my current book	Select a different book
----------------------	-------------------------

Figure 4-10 Chance to exercise the option to remake a choice, Studies 0 and 1

Finally, participants reported their interest in shopping for books, personal relevance of shopping for books to them and their gender and age, as shown in **Figure 4-11**. Subsequently, participants were thanked for their work.

Finally, please rate the following statements about yourself:

I am really interested in shopping for books.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

Shopping for books is something I might personally do.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

I am

Male	Female
------	--------

My age in years is

Figure 4-11 Covariate and demographic questions, Studies 0 and 1

4.4 Study 1: reversibility options and choice satisfaction

Study 1 aimed to establish the main effect of having the option to unmake, rather than to remake a choice, on choice satisfaction. Additionally, in Study 1 I also aimed to prove that this effect is caused by differences in post-choice comparative thinking.

Eighty-seven Amazon Mechanical Turk workers (48% male, aged 20-66, median of 34) completed this 5-minute study in exchange for \$0.50. The participants were invited to complete this study based on their country of residence (the US) and prior approval HIT approval rate (99%) and were admitted to the study on the first-come basis. Workers who took part in Study 0 were disinvited from Study 1.

4.4.1 Study 1: Design and procedures

Study 1 used a one-factor (decision reversibility options: remake choice, unmake choice, irreversible decision) between-subjects design. Study 1 largely employed the same design as Study 0. The process flow from Study 0 applies to Study 1 (please see **Figure 4-1**).

Participants first gave their consent on MTurk and then were directed to a Qualtrics landing page (**Figure 4-2**). They were then introduced to experimental scenario, which again was shopping for books online (**Figure 4-3**) and proceeded to making a choice out of the same 24 books to buy. The same stimuli as in Study 0 were used and in exactly the same way (**Appendix A**).

Following this, participants were randomly assigned to one of the three decision reversibility conditions: 1) remake choice, 2) unmake choice or 3) irreversible decision. As in Study 0, a message appeared on the page that followed a choice indicating that 1) if participants changed their mind, they would be able to select a different book by the end of the study, or 2) if they changed their mind, they would be able to cancel their order of the book by the end of the study, or 3) they were not given such options, respectively. The unmake choice condition was not featured in Study 0. It is shown in **Figure 4-12**.

Thank you!

If you change your mind, you'll be able to cancel your order of the book by the end of the survey.

Figure 4-12 Unmake choice condition, Study 1

Following this, participants were asked to rate their choice satisfaction, using the same questions as in Study 0: “How satisfied are you with the book choice that you made?” and “How good or bad do you feel about the book choice that you made?”, measured on a 7-point Likert-type scale, also as in Study 0. Subsequently, participants were asked to report the extent to which they thought they engaged in post-choice comparison between their chosen and non-chosen alternatives by answering the same questions as in Study 0: “After selecting the book, how much did you keep thinking about the other books you

could have chosen?” and “After selecting the book, how much did you keep comparing your chosen book to the other books you could have chosen?”.

On the next page the manipulation check was performed. Participants rated their agreement with two statements: “I feel I have a chance to change my book order” and “I feel my book order can be altered”, on a 7-point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Note that the wording of these questions was somewhat changed compared to Study 0: now participants rated whether their order, not choice, could be changed, as the option to unmake a choice doesn’t change a choice, it negates it. As will be shown in the Findings chapter (5.3.2), this change did not affect the reported success of manipulation at all. **Figure 4-13** demonstrates the manipulation check questions as seen by Study 1 participants.

Please rate the following statements about your choice of the book.

I feel I have a chance to change my book order.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

I feel my book order can be altered.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

Figure 4-13 Manipulation check, Study 1

Next, participants exposed to reversible decisions could choose between keeping their book or cancelling their order (unmake choice condition), or between keeping their book and selecting a different book (remake choice condition). The former choice was not featured in Study 0. **Figure 4-14** shows how participants saw this option in Qualtrics.

If you'd like to cancel your book order, this is your chance



Figure 4-14 Chance to exercise the option to unmake a choice, Study 1

If participants in the remake choice condition opted to select a different book, they made a second choice from the same choice set used in Studies 0 and 1. Finally, participants reported their interest in shopping for books, personal relevance of shopping for books to them and their gender and age, also as in Study 0.

After the same product category was used in two consecutive studies, I decided to change the product category in which participants made a choice. Therefore, Study 2 featured a new experimental manipulation: cognitive depletion and a new product category to choose from, which made the study questions slightly different.

4.5 Study 2: cognitive depletion, reversibility options and choice satisfaction

Study 2 tested whether cognitively depleting participants could remove the differential effect of reversibility options to unmake and to remake a choice on choice satisfaction. In particular, I expected that when consumers were cognitively depleted, they would be unable to make extensive comparisons between the chosen and non-chosen alternatives. As these comparisons are triggered by having an opportunity to remake a choice, preventing consumers from making them should make them no less satisfied than consumers who can unmake their choice. I thus expected that the extent of post-choice comparisons would mediate the relationship between having the option to unmake (rather than remake a choice) when consumers were not cognitively depleted, but not when consumers were cognitively depleted as for them there should be no difference in the extent of comparison between having the options to unmake and to remake a choice.

One-hundred and seventy seven Amazon Mechanical Turk workers (61% male, aged 19-85, mean of 34.92, median of 32) completed this 10-minute study in exchange for \$1. The participants were invited to complete this study based on their country of residence (the US) and prior approval HIT approval rate (99%) and were admitted to the study on the first-come basis. As the study was conducted significantly later than Study 1 (over a year later), I did not screen participants for taking part in previous studies.

4.5.1 Study 2: Design and procedures

Study 2 used a 3 (decision reversibility options: remake choice, unmake choice, irreversible decision) x 2 (cognitive depletion: present (depletion), absent (no depletion)) full factorial experimental design. Therefore, there were six experimental conditions (as shown in **Table 4-2**). Each participant would be randomly assigned to only one of them.

Since Study 2 introduced a new manipulation (cognitive depletion), compared to Studies 0 and 1 its process flow has changed, too. It is shown in **Figure 4-15**.

Table 4-2 Experimental conditions, Study 2

Reversibility condition	Cognitive depletion manipulation:	
	No cognitive depletion	Cognitive depletion
Unmake choice	Condition 1: unmake choice, no cognitive depletion	Condition 2: unmake choice and cognitive depletion
Remake choice	Condition 3: remake choice, no cognitive depletion	Condition 4: remake choice and cognitive depletion
Irreversible decision	Condition 5: irreversible decision, no cognitive depletion	Condition 6: irreversible decision and cognitive depletion

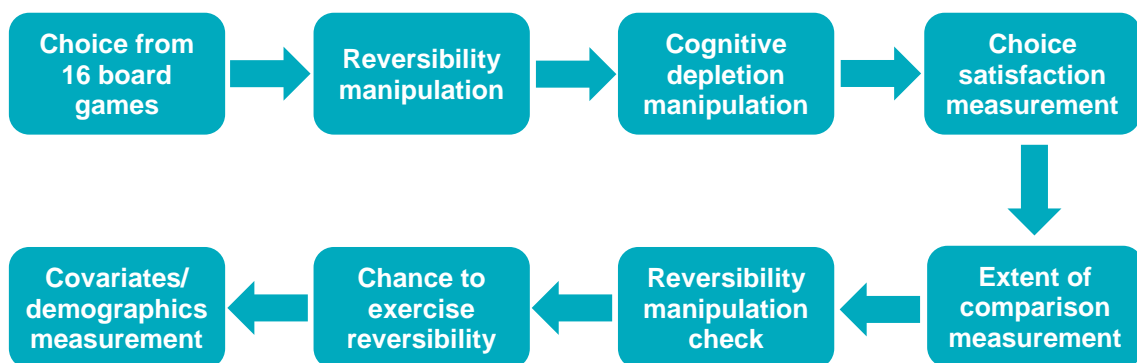


Figure 4-15 Process flow of the experiment, Study 2

As in Studies 0 and 1, participants first gave their consent on MTurk and then were directed to a Qualtrics landing page. They were then introduced to the experimental scenario, which in Study 2 was shopping for board games online. The scenario was similar to that used in Studies 0 and 1 but with the board games, and not books, as a focal product category. Participants were supposed to select a board game to buy to play with their family or friends. They then proceeded to making a choice out of the 16 board games (**Appendix B**), found for this study on Amazon.com. The stimuli were comprised of a title, a picture and a short description of each board game. As in Studies 0 and 1, the board games were all shown to participants in the same order and on the same webpage. The question asking participants to choose a board game was shown just below the board games.

Following this, participants were randomly assigned to one of the three decision reversibility conditions: 1) remake choice, 2) unmake choice or 3) irreversible decision. As in Study 1, a message appeared on the page that followed a choice indicating that 1) if participants changed their mind, they would be able to select a different board game by the end of the study (remake choice), or 2) if they changed their mind, they would be able to cancel their order of the board game by the end of the study (unmake choice), or 3) they were not given such options (irreversible decision). The manipulation of decision reversibility was the same as in Study 1 in all respects but for the product category.

Immediately after this, participants underwent the cognitive depletion manipulation. It followed decision reversibility and did not precede it because after realising that their decision is reversible consumers in the remake choice condition could start comparing their chosen alternative to non-chosen ones. I adapted the cognitive depletion manipulation from Study 4 by Sokolova and Krishna (2016).

Participants were informed that they would see some words written in different colours. The words that they saw also represented colours and would be written in a colour that either matched the meaning of the word (no depletion condition,

as shown in **Figure 4-16**) or in a colour that did not match the meaning of the word (depletion condition, as shown in **Figure 4-17**).

Next, you will see a number of words written in different colors. **Please select the corresponding color in which each word is written.**

BLUE

Which color is the word above written in?

RED	BLUE
YELLOW	PURPLE
GREEN	OTHER
<input type="text"/>	

Figure 4-16 No cognitive depletion condition, Study 2

Next, you will see a number of words written in different colors. **Please select the corresponding color in which each word is written.**

BLUE

Which color is the word above written in?

RED	BLUE
YELLOW	PURPLE
GREEN	OTHER
<input type="text"/>	

Figure 4-17 Cognitive depletion condition, Study 2

For example, the word BLUE would be written in blue colour (no depletion condition) or in green colour (depletion condition) and participants were asked to correctly pick the word that identified which colour the word BLUE was written in (BLUE and GREEN, respectively). To increase the strength of the cognitive depletion manipulation, I performed this procedure six times with different words and colours, but always in the same order for all participants in a respective condition. This is a well-known manipulation of cognitive depletion as deciphering the correct colour in such a task uses up people's cognitive processing capacity (Stroop, 1935).

Immediately following this, participants were asked to rate their choice satisfaction. I used the same questions as in Studies 0 and 1 in all respects but the product category in which participants made a choice, namely: "How satisfied are you with the board game choice that you made?" and "How good or bad do you feel about the board game choice that you made?". Choice satisfaction was measured on a 7-point Likert-type scale ranging from 1 (very dissatisfied/ very bad) to 7 (very satisfied/ very good), respectively, as in Studies 0 and 1.

Subsequently, participants were asked to report the extent to which they thought they had engaged in post-choice comparison between their chosen and non-chosen alternatives. They answered the same questions as in Studies 0 and 1 but corrected for the product category.

On the next page the manipulation check was performed in the same way as in Study 1, corrected for the product category. Next, participants exposed to reversible decisions could choose between keeping their board game or cancelling their order (unmake choice condition), or between keeping their board game and selecting a different board game (remake choice condition). If participants in the remake choice condition opted to select a different board game, they made a second choice from the same choice set used earlier in the study. Finally, participants reported their interest in shopping for board games, personal relevance of shopping for board games to them and their gender and age, all measured in the same way as in Studies 0 and 1.

In Studies 0-2 I measured the extent of post-choice comparison between the chosen and non-chosen alternatives as a proposed mediator in the link between decision reversibility options and choice satisfaction. In the following two studies I focus on the instances when post-choice comparative thinking that stems from having an option to remake, rather than to unmake a choice is more or less harmful to choice satisfaction. This influence on choice satisfaction is due to a different degree of undesirability of post-choice comparisons to variety-seekers and non-variety seekers (Study 3) and to neurotic and non-neurotic individuals (Study 4). Since the influence of comparative thinking to choice satisfaction is not related to the amount of comparative thinking in these two studies, no mediation tests were run in Studies 3 and 4.

4.6 Study 3: variety-seeking, reversibility options and choice satisfaction

In most purchases, post-choice comparative thinking is undesirable as it prevents consumers from maintaining consistency in their evaluations that normally leads to higher choice satisfaction (Bullens et al., 2013; Festinger, 1964). This study will focus on the instances when this is not the case. When consumers are made to seek variety in their choices, they should not aim to preserve consistency of their preferences. Therefore, variety-seekers will spread the alternatives less. As having an option to remake a choice prevents spreading of alternatives because of post-choice comparisons, it should decrease choice satisfaction compared to having an option to unmake a choice under no variety-seeking motivation (when consumers seek consistency in their choices), but not under variety-seeking motivation. Study 3 also ruled out an explanation that effects observed in Studies 1 and 2 were because consumers who can unmake a choice are then free to spend their money elsewhere as their money are no longer tied up in a contract with a specific retailer.

One-hundred and nineteen Amazon Mechanical Turk workers (51% male, aged 20-64, mean of 34.49, median of 31) completed this 10-minute study in exchange for \$1. The participants were invited to complete this study based on their country of residence (the US) and prior approval HIT approval rate (99%)

and were admitted to the study on the first-come basis. As the study took a significant amount of time after Study 2 (four months), I did not screen participants for taking part in previous studies.

4.6.1 Study 3: Design and procedures

Study 3 used a 2 (decision reversibility options: remake choice, unmake choice) x 2 (variety-seeking motivation: present (variety-seeking), absent (no variety-seeking)) full factorial experimental design. There were four experimental conditions and each participant would be randomly assigned to one of them. **Figure 4-18** gives an overview of the experiment performed in Study 3.

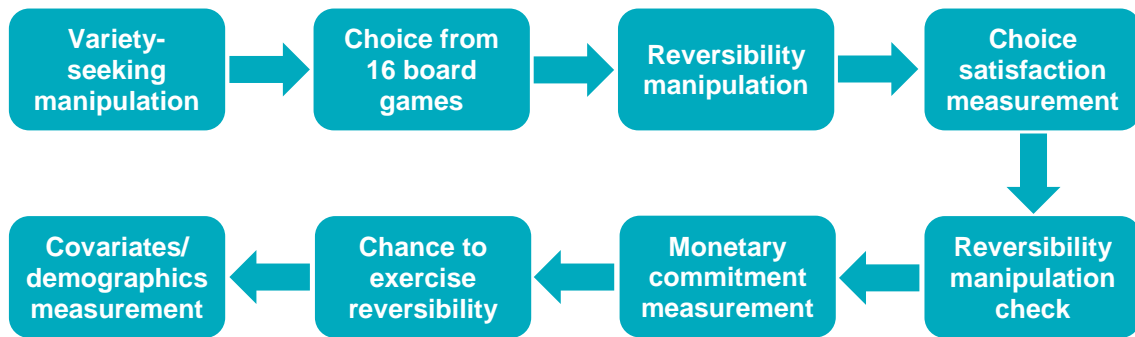
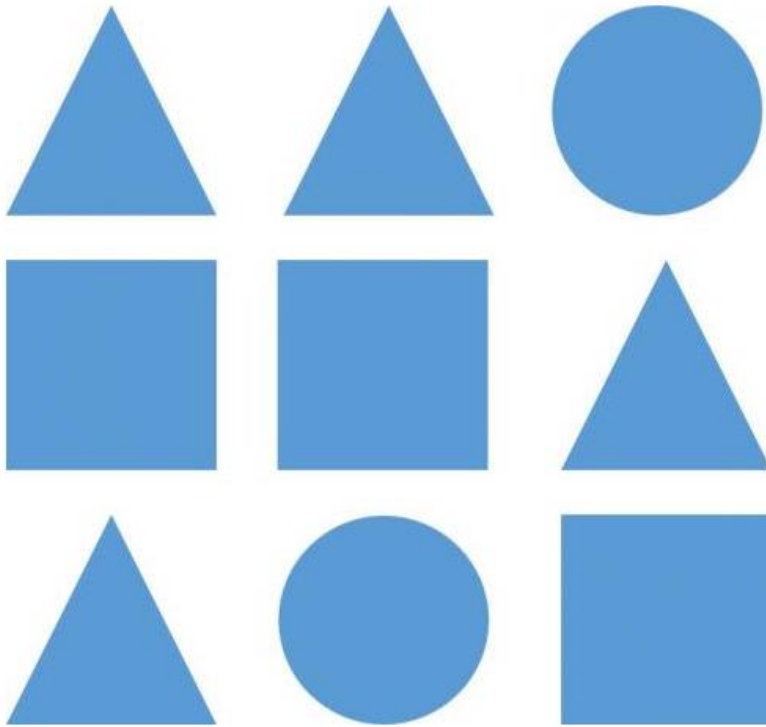


Figure 4-18 Process flow of the experiment, Study 3

Participants first gave their consent on MTurk and were redirected to the same landing page as in Study 2. On the next page, they were informed that they would need to carefully look at some pictures and answer some questions about them.

On the next page, the variety-seeking manipulation was performed. The manipulation was adapted from Studies 1 and 4a by Maimaran and Wheeler (2008). A participant was randomly assigned to a variety-seeking or no variety-seeking condition. They then saw an array of nine geometrical shapes, all of the same colour and height (diameter). This array consisted either of a number of triangles, squares and circles (variety-seeking condition, as shown in **Figure 4-19**) or of nine circles only (no variety-seeking condition, as shown in **Figure 4-20**).



How many of these shapes do you see in the picture above?

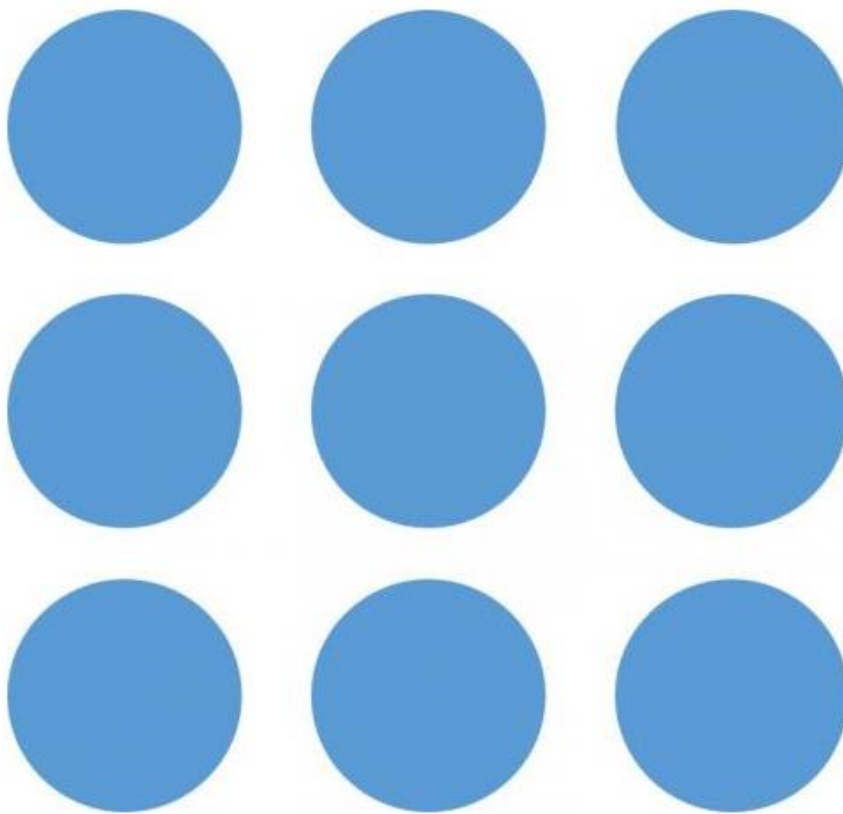
Triangles

Circles

Squares

Figure 4-19 Variety-seeking condition, Study 3

Participants were also asked to count how many triangles, circles and squares they saw in a picture (in the variety-seeking condition) or how many circles they saw in the picture (in the no variety-seeking condition). This procedure was performed two times, with a slightly different array of shapes shown in the variety-seeking condition. At the end of the manipulation, I asked participants a single question open-ended question: “Which shapes did you see in the last two pictures?”, expecting them to list a variety (or non-variety) of shapes, respectively.



How many circles do you see in the picture above?

Figure 4-20 No variety-seeking condition, Study 3

According to Maimaran and Wheeler (2008), when consumers recognise the abstract concepts of variety (or consistency) in arrays of simple geometrical forms, they are more likely to be motivated to seek variety (or seek consistency) in their subsequent choices. Further, variety-seeking motivation persists after a specific choice is made (Ratner, Kahn and Kahneman, 1999). This means that variety-seeking (non-variety seeking) motivation should be present when consumers are informed of reversibility options.

On the next page participants were introduced to the same experimental scenario as in Study 2, asking them to choose a board game out of sixteen. On the next page, they made a choice of a board game (**Appendix B**).

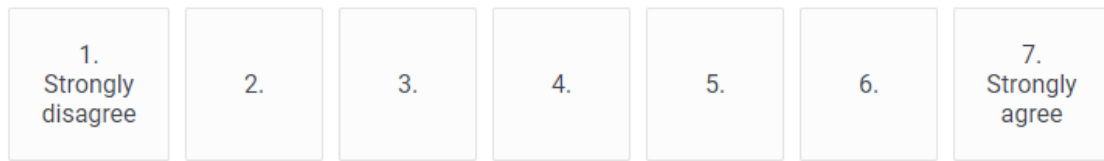
Following this, participants were randomly assigned to a remake choice or an unmake choice condition. As in Study 2, a message appeared thanking participants and telling them that 1) if they changed their mind, they would be able to select a different board game by the end of the study (remake choice), or 2) if they changed their mind, they would be able to cancel their order of the board game by the end of the study (unmake choice).

Following this, participants were asked the same choice satisfaction questions as in Study 2, namely: “How satisfied are you with the board game choice that you made?” and “How good or bad do you feel about the board game choice that you made?”, measured as in Study 2. On the next page the manipulation check was performed in exactly the same way as in Study 2.

On the page following the manipulation check, participants answered how much monetary commitment to a specific retailer they perceived in their decision, as shown in **Figure 4-21**. Participants rated their agreement with the following two statements: “With such a purchase, I would feel my money is committed to buying a product from this specific retailer” and “With such a purchase, I would feel I can still spend my money elsewhere if I choose to” (reverse coded) on a 1-7 Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

Next, participants could choose between keeping their board game or cancelling their order (unmake choice condition), or between keeping their board game and selecting a different board game (remake choice condition). If participants in the remake choice condition opted to select a different board game, they made a second choice from the same choice set used earlier in the study. Finally, participants reported their interest in shopping for board games, personal relevance of shopping for board games to them and their gender and age, all measured in the same way as in Study 2.

With such a purchase, I would feel my money is committed to buying a product from this specific retailer.



With such a purchase, I would feel I can still spend my money elsewhere if I choose to.

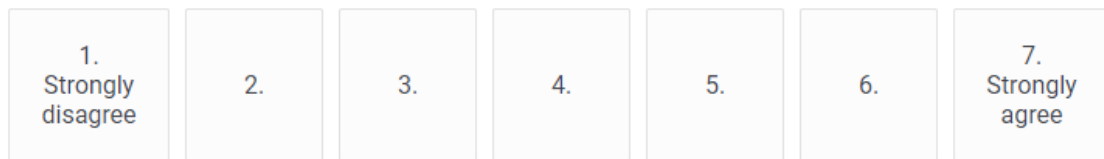


Figure 4-21 Monetary commitment measurement, Studies 3 and 4

Study 3 was done to illustrate a case when post-choice comparative thinking due to being able to remake (but not unmake) choices does not exude negative influence on choice satisfaction. Study 4 will also show when this influence is more or less negative, depending on consumers' personality.

4.7 Study 4: maximisation, neuroticism, decision reversibility and choice satisfaction

Study 4 aimed to show when the effect of decision reversibility options on choice satisfaction is amplified and diluted. Neurotic consumers are more susceptible to choice conflict (Hügelschäfer and Alós-Ferrer, 2014), i.e. to the attractive features of foregone alternatives over a chosen one. As having an option to remake a choice makes consumers compare their chosen alternative to foregone alternatives, neurotic consumers should react more negatively to such comparisons and should be less satisfied with choices that can be remade, rather than unmade, than non-neurotic consumers.

Furthermore, Study 4 attempted to link consumers' maximising mind-set and their choice satisfaction with decisions involving the decision reversibility options to unmake and remake a choice. Therefore, in Study 4 I inspected how neuroticism and maximising mind-set influence consumer satisfaction with

different kinds of reversible decisions. Study 4 (as Study 3) also ruled out an explanation that effects observed before occurred because consumers who could unmake a choice would then be free to spend their money elsewhere as their money would no longer be tied up in a contract with a specific retailer.

For this study, 168 marketing students (46% male, aged 18-48, mean of 20.73, median of 20) from a subject pool at the University of Washington were recruited. They received course credit for participating in this 15-minute study. The study was a part of a series of different studies in consumer behaviour. The order in which participants took the studies in the series varied every day of data collection, but not for participants who took it on the same day. I designed the study and analysed the data myself but did not collect the data first-hand. Data collection was managed by the behavioural laboratory assistant at the University of Washington. As Studies 0-3, Study 4 was fully done in Qualtrics, but now on computers in the controlled environment of the behavioural laboratory of the University of Washington.

4.7.1 Study 4: Design and procedures

Study 4 took on a hybrid experimental design (Mitchell and Jolley, 2013). Two independent variables were manipulated: decision reversibility options (unmake choice, remake choice) and participant mind-set prime (maximising, non-maximising), forming four conditions to which participants were randomly allocated. One independent variable (neuroticism) was only measured and not manipulated directly. **Figure 4-22** summarises the process flow of Study 4.

Participants gave their consent when they started the experimental session in the laboratory. Study 4 began with the same landing page as Studies 2 and 3. After this, participants were introduced to the priming scenario that stated the following: "Before you start the board game survey, we'd like to know some things about you. On the next few pages you'll see some questions about yourself. Please answer them truthfully." After this, participants were randomly assigned to a maximising or non-maximising mind-set condition.

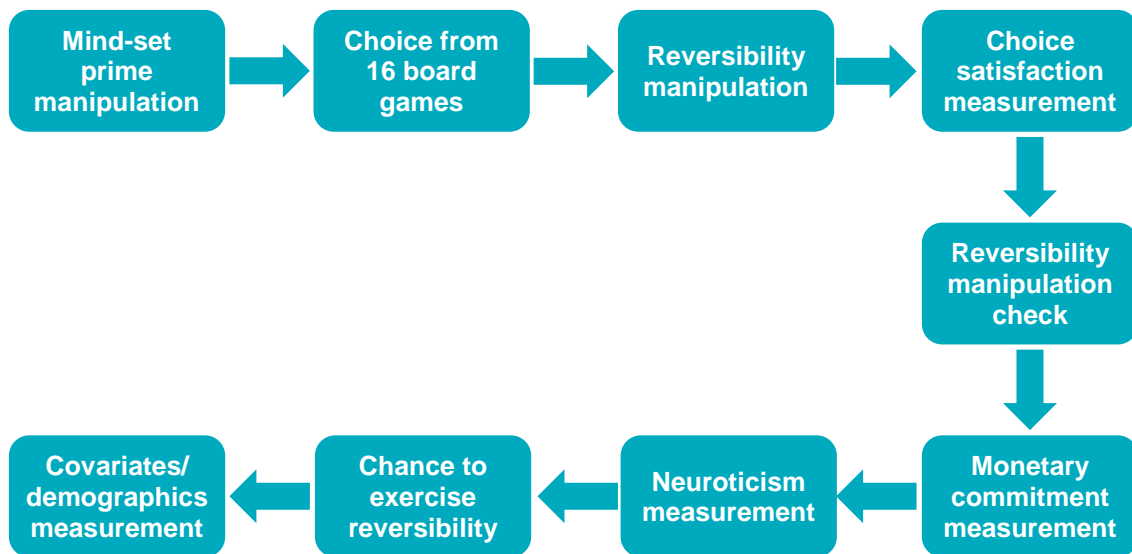


Figure 4-22 Process flow of the experiment, Study 4

On the next three pages, participants answered six open-ended questions about themselves. In the maximising mind-set condition they were asked what clothing they liked the best, what they considered to be the best place to live, whom they thought to be the best writer, whom they thought to be the best singer, what they thought to be the best gift for a friend and what was their highest standard for themselves. Participants saw two questions per page, always presented in the exact same order. **Figure 4-23** shows the first page of the maximising mind-set manipulation.

What clothing brand do you like the best?

Where do you think is the best place to live?

Figure 4-23 Maximising mind-set condition, Study 4

In the non-maximising mind-set condition participants were asked what clothing brand they were wearing at the moment, what kind of place they lived in, if they had sent any e-mails on that day, whose music they were listening to around the time of the study, to recall a gift they bought for a friend and what their

major/speciality was. Again, participants saw two questions per page, always presented in the exact same order. **Figure 4-24** shows the first page of the maximising mind-set manipulation.

What clothing brand are you wearing now?

What kind of a place do you live in?

Figure 4-24 Non-maximising mind-set condition, Study 4

A very similar manipulation of maximising/ non-maximising mind-set was successful before in Study 1a performed by Ma and Roesse (2014). Listing the best objects, places or people makes consumers think about high standards and optimal choices and thus makes them more likely to maximise in subsequent choices, but simply listing objects, places and people (that are not the best) does not. Out of the twelve questions asked in the maximising and non-maximising mind-set conditions altogether, eleven were borrowed from Study 1a by Ma and Roesse (2014). I added only the question “What kind of place do you live in?” in the non-maximising condition.

On the next page participants were introduced to the same experimental scenario as in Studies 2 and 3, asking them to choose a board game out of sixteen. On the next page, they made a choice of a board game (**Appendix B**).

Following this, participants were randomly assigned to a remake choice or an unmake choice condition. As in Studies 2 and 3, a message appeared thanking participants and telling them that 1) if they changed their mind, they would be able to select a different board game by the end of the study (remake choice), or 2) if they changed their mind, they would be able to cancel their order of the board game by the end of the study (unmake choice).

Following this, participants were asked the exact same choice satisfaction questions as in Studies 2 and 3. On the next page the manipulation check was

performed in exactly the same way as in Studies 2 and 3. Following the manipulation check, on the next page participants were asked about the level of monetary commitment to the retailer they perceived in their purchase in exactly the same way as in Study 3 (**Figure 4-21**).

Following this, participants' neuroticism level was measured using the eight items on the International English Mini-Markers for the Big Five personality traits that capture neuroticism (Thompson, 2008). This scale has been successfully applied to studying consumer behaviour, in particular impulse buying (Thompson and Prendergast, 2015).

More specifically, participants were asked to rate the extent to which they agreed that the words anxious, jealous, moody, emotional, envious; and unanxious, unworried and unenvious (reverse-coded) described them, on Likert-type scales ranging from 1 (strongly disagree) to 7 (strongly agree). The first five items from the scale were shown to participants on a single page (as demonstrated in **Figure 4-25**) and the reverse-coded items were shown on the next page.

Please indicate to what extent you agree that the following statements describe you

I am:

	1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
Anxious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jealous	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Moody	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Envious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Figure 4-25 Neuroticism measurement, Study 4

Next, participants could choose between keeping their board game or cancelling their order (unmake choice condition), or between keeping their board game and selecting a different board game (remake choice condition). If

participants in the remake choice condition opted to select a different board game, they made a second choice from the same choice set used earlier in the study. Finally, participants reported their interest in shopping for board games, personal relevance of shopping for board games to them and their gender and age, all measured in the same way as in Studies 2 and 3.

Accordingly, data was collected in five experimental studies (one of which, Study 0, was a pre-test). I will now briefly discuss whether such method of scientific enquiry can be considered valid.

4.8 Validity considerations

Validity is the approximate truth of a knowledge claim (Shadish, 2002). Recall that the scientific realist paradigm determines the success of theories by their ability to accurately reflect reality (Cacioppo, Semin and Berntson, 2004). Therefore, in order to claim theoretical contributions it is necessary to establish the validity of research.

A common approach to analysing validity of a research inquiry is to look at its statistical conclusion validity, construct validity, internal validity and external validity (Cook and Campbell, 1979). Statistical conclusion validity concerns two related issues: whether the expected cause and effect covary and how strongly they covary (Shadish, 2002).

I use the appropriate statistical tests to establish the hypothesised relationship between different options to reverse a decision and choice satisfaction. In the next chapter I will report the relevant statistics (results of tests), including the confidence level for these results. I also use previously verified measures of choice satisfaction (Sparks, Ehrlinger and Eibach, 2012), post-choice comparative thinking (Gu, Botti and Faro, 2013) and neuroticism (Thompson, 2008), which minimises measurement error, and use the established manipulation of decision reversibility (cf. Bullens et al., 2014; Shiner, 2015), in so far as it studied the chance to remake a choice and irreversible decisions. These measures are free from researcher bias and social desirability. I also use a well-known manipulation of cognitive depletion – Stroop task (Stroop, 1935)

and borrow the manipulations of variety-seeking motivation (Maimaran and Wheeler, 2008) and maximising mind-set (Ma and Roese, 2014) from high-quality (if academic journal rankings are to be believed) previous research. Thus, the measures I use in statistical tests and the treatments are reliable and based on previous research. Further, in line with recommendations by Shadish (2002), in order to increase statistical conclusion validity I measure covariates and test whether they affect choice satisfaction and use sample sizes appropriate for given experimental designs (Simmons, Nelson and Simonsohn, 2011). This enables me to predict whether choice satisfaction and decision reversibility covary and if so, by how much. Therefore, there should not be any additional concerns regarding statistical conclusion validity.

Construct validity concerns the correct explication of constructs and operationalisation of them (Cook and Campbell, 1979). Again, my understanding and operationalisation of choice satisfaction, decision reversibility, post-choice comparative thinking, variety-seeking motivation, neuroticism and maximising mind-set is based on previous research. I do, however, refine the construct of reversible decisions, taking into account the instances where decisions can be unmade, thus reaching higher construct validity than in previous studies. In general, construct validity encompasses convergent validity (whether similar measures assess the same construct) and discriminant validity (whether different measures do not assess the same construct).

I achieve high convergent validity by using multiple related items to measure choice satisfaction, extent of post-choice comparison and neuroticism and by checking whether these items are internally consistent. I also perform manipulation checks of decision reversibility. Discriminant validity is achieved theoretically: I explain the qualitative differences in different reversible decisions (unmake vs remake choice) and explain why comparative, and not counterfactual thinking should mediate the effect hypothesised in H₁.

Internal validity refers to whether the relationship between two constructs is truly causal, i.e. if cause precedes effect, whether they covary (statistical conclusion

validity) and whether they do not both covary with another variable, or a confound (Shadish, 2002). The temporal precedence of cause over effect is generally unambiguous in all studies: in Studies 0-4 all manipulations always precede the measurement of choice satisfaction. All manipulations but cognitive depletion precede choice itself.

Further, the extent of post-choice comparison is moderated in Study 2 by cognitive depletion, which was also done before measuring choice satisfaction. Given that it was proven before that post-choice comparisons affect choice satisfaction and not otherwise (Gu, Botti and Faro, 2013) and that the decision reversibility manipulation preceded the measurement and moderation of the extent of post-choice comparison in Studies 0-2, the temporal sequence of reversibility-comparisons-satisfaction is also clear. The only potential issue is whether neuroticism caused changes in choice satisfaction and not otherwise, since neuroticism is not manipulated but only measured in Study 4. A carryover effect from assessing one's choice satisfaction to reporting one's neuroticism in Study 4 is not impossible; however, theoretical accounts that neuroticism lowers life satisfaction (Costa and McCrae, 1980) point to one-sided relationship from neuroticism to satisfaction measures in general. Therefore, internal validity should be acceptable in this respect.

The absence of a confound was ensured by randomly assigning participants to experimental conditions in all the studies and by disguising the true purpose of studies from participants. However, history, or events unrelated to the purpose of experiment that occur in its duration (Shadish, 2002) could not be ruled out for Studies 0-3. These studies were conducted on MTurk and MTurk workers may sometimes be distracted in studies (Chandler, Mueller and Paolacci, 2014). Still, the effect of history on the results of Studies 0-3 should not be systemic due to random assignment of participants to experimental conditions.

Additionally, I tried to rule out an alternative explanation (that freedom to spend money elsewhere drives the hypothesised effects) in Studies 3 and 4. I also tried to rule out several other explanations, such as the variance in choice freedom or perceived fairness of different choice reversibility conditions drives

the hypothesised effects, by measuring perceived decision reversibility. Further, these alternative explanations should not be able to explain any moderation effects by variety-seeking motivation and cognitive depletion as neither of these are unrelated to the actual reversibility conditions at all and neither of these should change judgments about perceived choice or fairness. Thus, I estimate the internal validity of all studies to be high.

External validity (generalisability) is the extent to which the causal relationship holds across different treatments, settings, outcomes and persons (Shadish, 2002). I tried to increase the ecological validity (realism) of experimental treatments, e.g. using two different product categories in which people normally shop online, to the degree that it was possible. However, the choice and purchase were entirely artificial and may not reflect the complexity of consumers' real purchases, e.g. between-category choices. Further, retailers' cancellation and return policies may become known to consumers at any stage of their purchase journey (or remain unknown at all) and this is not reflected in experimental treatments. Consumers are also unlikely to encounter the manipulations of cognitive depletion and variety-seeking motivation in real shopping situations in exactly the same way as they were performed in Studies 2 and 3.

Moreover, laboratory and online experiments create an entirely artificial setting in which the causal relationship is studied. Real shopping decisions involve a variety of different inputs, e.g. sensory, that could not be modelled in an experiment. For example, temperature in a store may influence cognitive processing capacity (Cheema and Patrick, 2012) and it is not clear whether this would change the results of Studies 0-4 in any way if they were performed in the field instead.

It is difficult to assess whether the experimental results would be different if a different measure of choice satisfaction was used. For example, Hafner, White and Handley (2012) measured 'revealed satisfaction', or whether consumers actually kept the items they could exchange. Given that their findings converge with the findings of the studies where satisfaction was measured on Likert-type

scales (Bullens et al., 2014; Gilbert and Ebert, 2002), external validity of the outcomes should be satisfactory.

Nonetheless, the largest issue regarding the external validity of Studies 0-4 is the use of MTurk and student samples. Neither MTurk nor student participants accurately represent the US population (Paolacci, Chandler and Ipeirotis, 2010), which was reviewed in **4.2.2**. Naturally, the US population may vary from the UK population or from the population of any other country in the world.

Overall, the external validity of Studies 0-4 is admittedly low, as is often the case with experiments (Saunders, Lewis and Thornhill, 2016). I would, however, like to refer the reader to Lynch's (1999) views on external validity, namely that any criticism of the external validity of experiments should be followed up by theoretical explication of potential moderators of the effects demonstrated in a particular experiment. I thus invite such theoretical accounts as the theory on the outcomes of reversible decisions, especially those that can be unmade, is underdeveloped. The overall validity of Studies 0-4 is thus deemed acceptable.

4.9 Summary of data collection

In order to test the research hypotheses, I collected empirical data by conducting five experimental studies (including the pre-test) with Amazon Mechanical Turk and student participants. In this chapter I reviewed the commonalities in data collection between all studies and samples and detailed data collection procedures for each individual study. These procedures allow for high internal validity and external validity that is acceptable for experimental research. I will now proceed to analysing the results of these studies.

5 FINDINGS

5.1 Introduction

In this chapter I will report the results of five experimental studies (including the pre-test) conducted for this thesis. I will report the results for each study one-by-one. For each study, I will first report the reliability of multi-item measures of the same construct in the study, followed by the results of the manipulation check, followed by the results of the hypotheses tests (main effects, interactions and contrasts, then mediation or moderated mediation tests). Next, I will report the analysis of covariation. I will then summarise the results of each study. At the end of the chapter I will summarise the results of all hypotheses tests, before proceeding with discussion of these results.

5.2 Study 0: pre-test

5.2.1 Reliability of measures

All the multi-item scales used in Study 0 were highly reliable. As seen in **Table 5-1**, for each of the constructs the two items used to measure it were significantly ($p < .001$ for all measures), positively (Pearson's $r > 0$ for all measures) and strongly ($r > .7$ for all measures) correlated.

Table 5-1 Reliability of measures, Study 0

Measure	# of questions	Test	<i>r</i>	<i>p</i> -value
Perceived reversibility	2	Pearson's correlation	.78	<.001
Extent of post-choice comparison			.89	<.001
Choice satisfaction			.88	<.001

Therefore, for each participant I calculated the average of responses to two decision reversibility questions and named this scale 'perceived decision reversibility'. I also calculated the average of responses to two extent of post-choice comparison questions and named scale 'extent of post-choice comparison' and the average of responses to two choice satisfaction questions and named this scale 'choice satisfaction'. The perceived decision reversibility, extent of post-choice comparison and choice satisfaction scales were thus used in further analyses.

5.2.2 Manipulation check

I performed an ANOVA of decision reversibility options (irreversible decision vs remake choice) on perceived decision reversibility. This was a manipulation check of decision reversibility. It should be noted that since Study 0 had only two conditions, an independent samples t-test could have been used to conduct such analysis; however, a t-test is a specific case of ANOVA for testing the differences across two groups only and it should produce the same results as ANOVA (Field, 2013).

In this an all further analyses in Study 0 irreversible decision condition was coded as 0 and remake choice condition as 1. As expected, perceived decision reversibility was higher in the remake choice ($M_{remake} = 5.02$, $SD = 1.71$) condition than in the irreversible decision condition ($M_{irrev.} = 2.37$, $SD = 1.53$, $F(1, 58) = 40.01$, $p < .001$). The manipulation of decision reversibility was thus considered successful.

5.2.3 Choice satisfaction

I ran an ANOVA of decision reversibility options (irreversible decision vs remake choice) on choice satisfaction. In line with previous literature findings (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012), participants who had an option to remake a choice ($M_{remake} = 5.85$, $SD = 1.27$) were significantly less satisfied with their choice than participants who made an irreversible decision ($M_{irrev.} = 6.43$, $SD = .68$, $F(1, 58) = 4.94$, $p = .03$). The results of this test and the manipulation check can be seen in **Figure 5-1**.

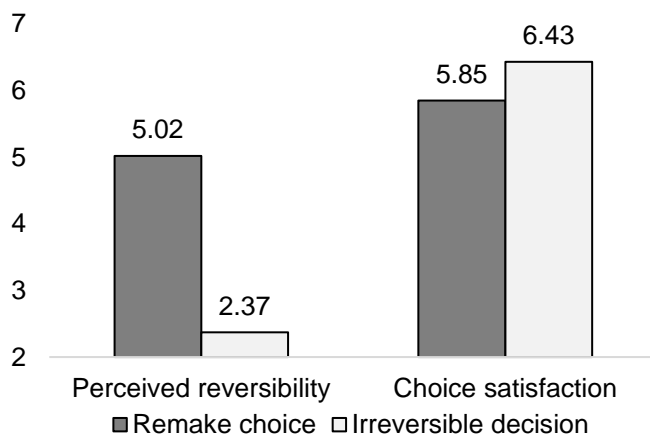


Figure 5-1 Decision reversibility and choice satisfaction, Study 0

5.2.4 Post-choice comparison and mediation

I ran an ANOVA of decision reversibility options (irreversible decision vs remake choice) on the extent of post-choice comparison between chosen and non-chosen alternatives. As expected, participants who had an option to remake a choice ($M_{remake} = 2.85$, $SD = 1.74$) made more comparisons between their chosen and foregone alternatives after their choice than participants who made an irreversible decision ($M_{irrev.} = 2.12$, $SD = 1.16$), $F(1, 58) = 3.67$, $p = .06$. This difference was marginally significant.

To test whether the influence of decision reversibility options on choice satisfaction was driven by the extent of post-choice comparison, I ran a simple mediation analysis. I used model 4 in Process macro for SPSS (Hayes, 2013) to do this analysis. Its results and the conceptual model for this analysis are shown in **Figure 5-2**.

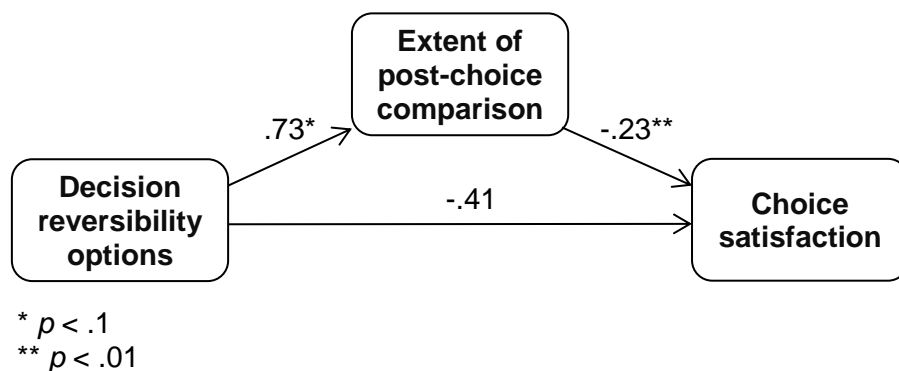


Figure 5-2 Conceptual diagram of the mediation, Study 0

The mediation test with 5,000 bias-corrected bootstrap resamples showed that the effect of decision reversibility options (remake choice vs irreversible decision) on choice satisfaction was mediated by the extent of post-choice comparison between alternatives (indirect effect $\beta = -.17$, 95% confidence interval (CI): [-.62, -.01]). Note that only the indirect effect has to be significant to confirm a mediation and that its significance is established by the fact that the confidence interval for this indirect effect does not contain zero (Zhao, Lynch and Chen, 2010). Additionally, since the direct effect of decision reversibility options on choice satisfaction was not significant ($\beta = -.41$, $t = -1.61$, $p > .11$), the extent of post-choice comparison fully mediated (Preacher and Hayes,

2004) the relationship between having the option to remake a choice, compared to not having one, on choice satisfaction.

5.2.5 Influence of covariates

I ran an ANCOVA of decision reversibility options on choice satisfaction with the interest in shopping for books, personal relevance of shopping for books, gender and age as covariates. The link between covariates and choice satisfaction is shown in **Table 5-2**.

Table 5-2 Influence of covariates on choice satisfaction, Study 0

Covariate	F-statistic	p-value
Interest in shopping for books	.01	.94
Personal relevance of shopping for books	3.31	.07
Gender	.11	.74
Age	1.17	.28

Evidently, choice satisfaction was not influenced by how interested participants were for shopping for books in general, their gender or age. However, there was a marginally significant influence of personal relevance of shopping for books on choice satisfaction ($F(1, 53) = 3.31, p < .07$). Still, controlling for the influence of the interest in shopping for books on choice satisfaction did not change the significance of the reported results ($F(1, 57) = 4.21, p < .05$ for choice satisfaction, $F(1, 57) = 3.55, p = .06$ for the extent of post-choice comparison). The mediation test also remained significant ($\beta = -.17, 95\%$ confidence interval: $[-.54, -.02]$) Therefore, there is no need to account for covariates in reporting the results of the study.

5.2.6 Summary of results, Study 0

The pre-test (Study 0) was conducted to ensure that the results of previous research on decision reversibility (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) could be replicated with the chosen experimental stimuli. Clearly, this was the case since the decision reversibility manipulation was successful and produced results consistent with the findings of decision reversibility literature to date. Further, Study 0 confirmed that post-choice comparative thinking is the driving force in reducing consumer

satisfaction with choices that can be remade. Thus, I decided to conduct Study 1 with the same experimental stimuli as in Study 0.

5.3 Study 1: reversibility options and choice satisfaction

5.3.1 Reliability of measures

All the multi-item scales used in Study 1 were highly reliable. As seen in **Table 5-3**, for each of the constructs the two items used to measure it were significantly ($p < .001$ for all measures), positively ($r > 0$ for all measures) and strongly ($r > .7$ for all measures) correlated.

Table 5-3 Reliability of measures, Study 1

Measure	# of questions	Test	<i>r</i>	<i>p</i> -value
Perceived reversibility	2	Pearson's correlation	.93	<.001
Extent of post-choice comparison			.85	<.001
Choice satisfaction			.77	<.001

Therefore, as in Study 0 I averaged the answers to two questions used to measure the same construct for perceived reversibility, extent of post-choice comparison and choice satisfaction, respectively. In the ensuing analyses, the decision reversibility options (independent) variable was coded as follows: 0 for irreversible decisions, 1 for the option to remake a choice and 2 for the option to unmake a choice.

5.3.2 Manipulation check

As Study 1 contained three groups of responses, grouped by decision reversibility options that participants had, ANOVA was the appropriate tool to use in analysing the influence of this factor on perceived reversibility, extent of post-choice comparison and choice satisfaction.

An ANOVA of decision reversibility options on perceived decision reversibility showed an overall significant effect ($F(2, 84) = 23.92, p < .001$). I followed up this analysis with planned contrasts. Planned contrasts revealed that participants exposed to an irreversible decision ($M_{irrev.} = 2.97, SD = 1.62$) believed they had less opportunity to reverse their decision than those exposed to an option to remake their choice ($M_{remake} = 5.57, SD = 1.63, t(84) = 5.79, p <$

.001) and an option to unmake their choice ($M_{unmake} = 5.66$, $SD = 1.87$, $t(84) = 6.08$, $p < .001$). Further, participants perceived the options to remake and to unmake a choice as equally reversible ($t(84) = .18$, $p > .86$). The manipulation of decision reversibility thus worked as intended.

5.3.3 Choice satisfaction

An ANOVA of decision reversibility options on choice satisfaction showed an overall significant effect ($F(2, 84) = 4.69$, $p = .01$). I followed up this analysis with a planned contrast. Planned contrast revealed that participants granted with an option to unmake their choice ($M_{unmake} = 6.67$, $SD = .54$) were more satisfied with the book choice they made than participants who had an option to remake their choice ($M_{remake} = 6.09$, $SD = .87$, $t(84) = 2.9$, $p < .01$). The results of this test and the manipulation check can be seen in **Figure 5-3**.

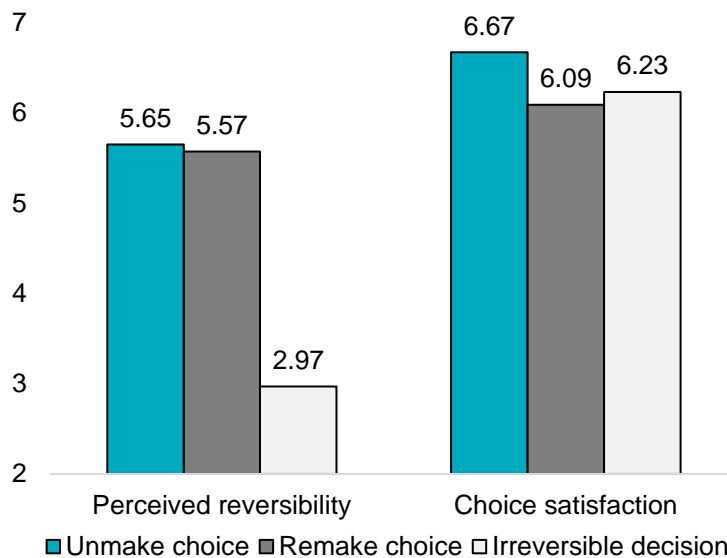


Figure 5-3 Decision reversibility and choice satisfaction, Study 1

Interestingly, in Study 1 there was no significant difference in choice satisfaction between participants who could remake their choice and those in the irreversible decision condition ($M_{irrev.} = 6.23$, $SD = .8$, $t(84) = -.68$, $p > .5$). This means that either participants in the remake choice condition were more satisfied with their choices than the literature would suggest (Bullens et al., 2013; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012) or the

participants in the irreversible decision condition were less satisfied with their choices than the literature would suggest, or both. Still, none of these potential discrepancies could invalidate the difference in choice satisfaction between having the options to unmake and to remake a choice. Thus, the results of Study 1 grant support to H₁.

Interestingly, the difference in choice satisfaction between having the option to unmake a choice and making an irreversible decision was significantly positive ($t(84) = 2.31, p = .02$). Thus, making reversible decisions does not always cause a decrease in choice satisfaction.

5.3.4 Post-choice comparison and mediation

An ANOVA of decision reversibility options on extent of post-choice comparison did not show a significant overall effect ($F(2, 84) = 1.24, p = .29$). Further, the expected difference in post-choice comparison between the options to unmake ($M_{\text{unmake}} = 2.14, SD = 1.27$) and to remake a choice ($M_{\text{remake}} = 2.72, SD = 1.55$) did not reach significance ($t(84) = -1.55, p = .12$). However, I still ran a simple mediation analysis. I used model 4 in Process macro for SPSS (Hayes, 2013) to do this analysis. I removed the irreversible choice condition from analysis, as doing so would make results easier to interpret. Its results and the conceptual model for this analysis are shown in **Figure 5-4**. However, I also ran this analysis using mediation for multicategorical independent variables (Hayes and Preacher, 2014) with the same results concerning the indirect effect of the option to unmake a choice, rather than remake a choice, on choice satisfaction via the extent of post-choice comparison between choice alternatives.

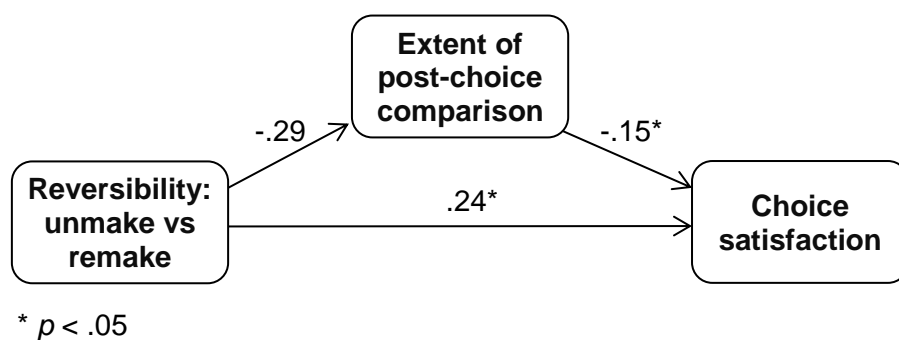


Figure 5-4 Conceptual diagram of the mediation, Study 1

The mediation test with 5,000 bias-corrected bootstrap resamples showed that the effect of decision reversibility options (unmake vs remake choice) on choice satisfaction was mediated by the extent of post-choice comparison between choice alternatives at a marginally significant level (indirect effect $\beta = .05$, 92% confidence interval: [.0003, .15]). The direct effect of decision reversibility options on choice satisfaction was significant, too ($\beta = .24$, $t = 2.6$, $p = .01$). Since the conclusions of a mediation test depend solely on significance of the indirect effect, it can be assumed that the difference in choice satisfaction between the options to unmake and to remake a choice was at least partially due to the extent of post-choice comparison that was lower for consumers who can unmake choices, rather than remake choices. Thus, analysis of data in Study 1 grants tentative support to H₂.

5.3.5 Influence of covariates

I ran an ANCOVA of decision reversibility options on choice satisfaction with the interest in shopping for books, personal relevance of shopping for books, gender and age as covariates. The link between covariates and choice satisfaction is shown in **Table 5-4**.

Table 5-4 Influence of covariates on choice satisfaction, Study 1

Covariate	F-statistic	p-value
Interest in shopping for books	.78	.38
Personal relevance of shopping for books	.52	.47
Gender	.07	.79
Age	2.06	.15

Evidently, no covariate influenced choice satisfaction and their influence on choice satisfaction does not need to be controlled for.

5.3.6 Summary of results, Study 1

Study 1 found support for two research hypotheses: H₁ and H₂. It showed that consumers are more satisfied with their choices if they can be unmade, rather than remade, which is at least partially due to the fact that the former option triggers less post-choice comparison between the chosen and non-chosen items than the latter.

5.4 Study 2: cognitive depletion, reversibility options and choice satisfaction

5.4.1 Reliability of measures

All the multi-item scales used in Study 2 were highly reliable. As seen in **Table 5-5**, for each of the constructs the two items used to measure it were significantly ($p < .001$ for all measures), positively ($r > 0$ for all measures) and strongly ($r > .7$ for all measures) correlated.

Table 5-5 Reliability of measures, Study 2

Measure	# of questions	Test	<i>r</i>	<i>p</i> -value
Perceived reversibility	2	Pearson's correlation	.95	<.001
Extent of post-choice comparison			.83	<.001
Choice satisfaction			.79	<.001

Therefore, as in Studies 0 and 1 I averaged the answers to two questions used to measure the same construct for perceived reversibility, extent of post-choice comparison and choice satisfaction, respectively. In the ensuing analyses, the decision reversibility options (independent) variable was coded as follows: 0 for irreversible decisions, 1 for the option to remake a choice and 2 for the option to unmake a choice. Cognitive depletion levels were coded as follows: 0 for no cognitive depletion and 1 for cognitive depletion.

5.4.2 Manipulation check

As Study 2 involved a 3 x 2 factorial design with two orthogonal independent variables, an ANOVA was an appropriate tool for analysing the effect of experimental manipulations on all dependent variables.

An ANOVA of decision reversibility options and cognitive depletion on perceived decision reversibility showed an overall significant main effect of decision reversibility ($F(2, 171) = 41.07, p < .001$), no significant main effect of cognitive depletion ($F(1, 171) = .17, p > .68$) and no significant interaction effect ($F(2, 171) = .88, p > .41$). Therefore, perceived decision reversibility was affected only by the decision reversibility manipulation. I followed up the ANOVA with planned main effect contrasts. Planned contrasts revealed that participants exposed to an irreversible decision ($M_{irrev.} = 3, SD = 1.76$) believed they had

less opportunity to reverse their decision than those exposed to an option to remake their choice ($M_{remake} = 5.58$, $SD = 1.67$, $F(1,171) = 64.81$, $p < .001$) and an option to unmake their choice ($M_{unmake} = 5.47$, $SD = 1.88$, $F(1,171) = 56.48$, $p < .001$). Further, participants perceived the options to remake and to unmake a choice as equally reversible ($F(1,171) = .21$, $p > .64$). The manipulation of decision reversibility thus worked exactly as intended. Note that to run these main effects contrasts, I created a custom syntax in SPSS. This syntax is shown in **Appendix C**.

5.4.3 Choice satisfaction

An ANOVA of decision reversibility options and cognitive depletion on choice satisfaction showed no significant main effect of decision reversibility options ($F(2, 171) = .46$, $p > .63$), no significant main effect of cognitive depletion ($F(1, 171) = .09$, $p > .76$) and an interaction effect that did not reach significance ($F(2, 171) = 1.39$, $p = .25$). While this result means the absence of total effect of either manipulation on choice satisfaction, it is still useful to test the mediating effect of decision reversibility options on choice satisfaction at different levels of cognitive depletion. It should be noted that the mediation effect can be confirmed in the absence of a total effect (Zhao, Lynch and Chen, 2010) and that the tests for indirect effects have higher statistical power than tests for total effects (Kenny and Judd, 2014; O'Rourke and MacKinnon, 2015).

5.4.4 Post-choice comparison and mediation

An ANOVA of decision reversibility options and cognitive depletion on the extent of post-choice comparison between options showed no significant main effect of decision reversibility options ($F(2, 171) = .12$, $p > .88$), no significant main effect of cognitive depletion ($F(1, 171) = 1.48$, $p > .22$) but a marginally significant interaction effect ($F(2, 171) = 2.54$, $p = .08$). More importantly, the interaction contrast of having the options to unmake, rather than to remake a choice at different levels of cognitive depletion was significant ($F(1, 171) = 4.01$, $p < .05$). For this reason, I ran planned simple contrasts for participants who could unmake vs remake a choice at different levels of cognitive depletion. Note that

to run these simple effects contrasts, I created a custom syntax in SPSS. This syntax is shown in **Appendix D**.

When participants were not cognitively depleted, they reported having made marginally fewer comparisons when they had an option to unmake their choice of a board game ($M_{unmake} = 1.96$, $SD = 1.26$) than when they had an option to remake such a choice ($M_{remake} = 2.63$, $SD = 1.52$, $F(1, 171) = 2.95$, $p = .09$). When participants were cognitively depleted, this difference in the extent of post-choice comparison was not significant ($M_{unmake} = 2.42$, $SD = 1.69$, $M_{remake} = 1.96$, $SD = 1.39$, $F(1, 171) = 1.27$, $p > .26$). Additionally, participants who could remake their choices reported having made marginally more comparisons when they were not cognitively depleted ($M_{no-depl.} = 2.63$, $SD = 1.52$), compared to when they were cognitively depleted ($M_{depl.} = 1.96$, $SD = 1.39$, $F(1, 171) = 2.9$, $p = .09$). This difference in the extent of post-choice comparisons between participants who were cognitively depleted and those who were not cognitively depleted was not present in the unmake choice ($p > .25$) and irreversible decision ($p > .11$) conditions. Therefore, it can be concluded that the cognitive depletion manipulation worked successfully.

Further, I ran a moderated mediation analysis in SPSS (Preacher, Rucker and Hayes, 2007). Moderated mediation analysis tests conditional indirect effects of the independent variable on the dependent variable via a mediator at different levels of a moderator. It is different from mediated moderation, where there is an overall moderation of the effect of the independent variable on the dependent variable by the moderator, that is increased or decreased by mediating mechanism (Muller, Judd and Yzerbyt, 2005). Since there was no significant interaction effect of the experimental manipulations on choice satisfaction in Study 2, only the moderated mediation is possible. Therefore, I checked whether choice satisfaction was affected by reversibility options because of the extent of post-choice comparisons when consumers were not cognitively depleted and when they were cognitively depleted.

In order to run this analysis, I removed the responses of participants who were in the irreversible decision condition from consideration. I therefore tested

whether there was a difference in choice satisfaction for participants who could unmake, rather than remake their choice, due to the extent of post-choice comparison they engaged in, at different levels of cognitive depletion. Since I hypothesised that cognitive depletion should prevent consumers from making post-choice comparisons (please see 2.5.1), I used a conceptual model where a moderator was affecting a mediator but was not affecting the dependent variable. This corresponds to model 7 in Process macro for SPSS (Hayes, 2013), which I used in this analysis. This conceptual model and the results of moderated mediation analysis can be seen on **Figure 5-5**.

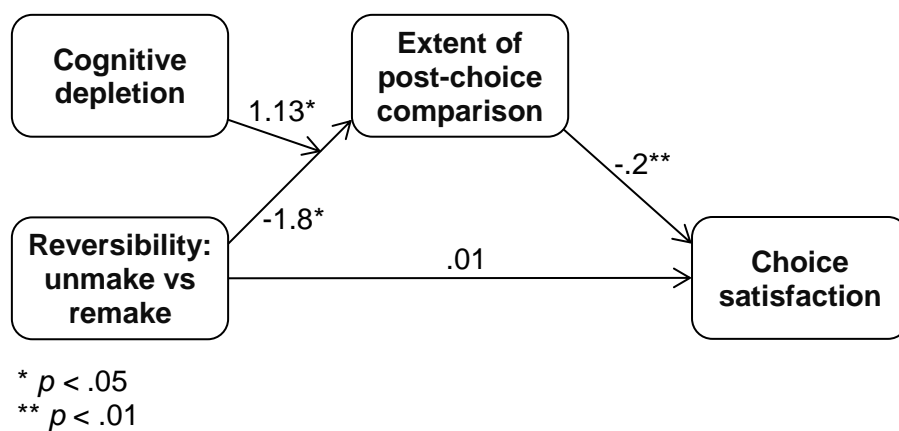


Figure 5-5 Conceptual diagram of the moderated mediation, Study 2

The moderated mediation test with 5,000 bias-corrected bootstrap resamples showed that the effect of decision reversibility options (unmake vs remake choice) on choice satisfaction was mediated by the extent of post-choice comparison between choice alternatives when participants were not cognitively depleted (indirect effect $\beta = .14$, 95% confidence interval: [.01, .36]). When participants were cognitively depleted, the extent of post-choice comparison did not mediate the relationship between the decision reversibility options and choice satisfaction (indirect effect $\beta = -.09$, 90% confidence interval: [-.23, .03]). Further, the index of moderated mediation was different from zero at 95% confidence level ($\beta = -.23$, 95% confidence interval: [-.52, -.04]), suggesting that the mediating effects were indeed different at different levels of cognitive depletion (Hayes, 2015). Additionally, the direct effect of decision reversibility on

choice satisfaction was not significant ($\beta = .01$, $t = .05$, $p > .96$), suggesting full moderated mediation.

Therefore, when participants were not cognitively depleted, the results in Study 2 were similar to those obtained in Study 1: participants in the unmake choice condition were more satisfied with their choices than those in the remake choice condition because they made fewer post-choice comparisons when they could unmake their choices, rather than remake their choices. When participants were cognitively depleted, no such effect occurred. This pattern of results gives support to H₁, H₂ and H₃.

5.4.5 Influence of covariates

I ran an ANCOVA of decision reversibility options and cognitive depletion on choice satisfaction with the interest in shopping for board games, personal relevance of shopping for board games, gender and age as covariates. The link between covariates and choice satisfaction is shown in **Table 5-6**.

Table 5-6 Influence of covariates on choice satisfaction, Study 2

Covariate	F-statistic	p-value
Interest in shopping for board games	6.31	.01
Personal relevance of shopping for board games	.36	.55
Gender	1.16	.28
Age	8.25	.01

As seen in **Table 5-6**, two covariates: interest in shopping for board games and participants' age significantly influenced choice satisfaction. It was therefore necessary to assess whether these covariates influenced the results of Study 2.

Firstly, controlling for these covariates did not change the influence of experimental manipulations on the extent of post-choice comparison. The interaction contrast of having the options to unmake, rather than to remake a choice at different levels of cognitive depletion was still significant ($F(1, 168) = 4.16$, $p < .05$). When participants were not cognitively depleted, they still reported having made marginally fewer comparisons when they had an option to unmake their choice of a board game than when they had an option to remake such a choice ($F(1, 168) = 3.02$, $p = .08$). When participants were

cognitively depleted, this difference in the extent of post-choice comparison was still not significant ($F(1, 168) = 1.34, p > .24$). Additionally, participants who could remake their choices reported having made more comparisons when they were not cognitively depleted, compared to when they were cognitively depleted ($F(1, 168) = 3.92, p < .05$). This means that the results were slightly improved by controlling for covariates. Again, the difference in extent of comparison between participants who were cognitively depleted and those who were not was not significant in the unmake choice ($p > .36$) and irreversible decision ($p > .13$) conditions.

Removing the irreversible decision condition from analysis showed that both the interest in shopping for board games ($F(1, 108) = 20.33, p < .001$) and participants' age influenced choice satisfaction ($F(1, 108) = 6.07, p = .02$). Therefore, these two covariates needed to be controlled for in the moderated mediation model.

Performing the moderated mediation analysis with participants' age and interest in shopping for board games for covariates still revealed a significant mediating effect of the extent of post-choice comparison on the relationship between having the options to unmake (rather than remake) a choice and choice satisfaction when participants were not cognitively depleted (indirect effect $\beta = .16$, 95% confidence interval: [.01, .37], but not when they were cognitively depleted (indirect effect $\beta = -.11$, 90% confidence interval: [-.27, .04]). The index of moderated mediation still significantly differed from zero (95% confidence interval: [-.51, -.08]). Therefore, the experimental results were not significantly affected by controlling for covariates.

5.4.6 Summary of results, Study 2

Study 2 showed that consumers who are cognitively depleted are equally satisfied with their choices, regardless of whether they can be unmade or remade, because cognitively depleting them prevents them from making post-choice comparisons between their chosen and foregone options. Both manipulations in this study worked as intended and the moderated mediation model produced the hypothesised results. Therefore, this study finds support for

hypotheses H₁, H₂ and H₃. Although there was some influence of covariates on choice satisfaction, these were different covariates compared to Study 0 and controlling for them did not change the experimental results. Still, further studies were necessary to rule out that shopping for board games as a category produced somewhat different results compared to Studies 0 and 1 that used books as a focal product category for choice.

Further, as including the irreversible decision condition had no theoretical use (none of the research hypotheses mention it) but obscured some relevant contrasts, such as in Study 2, I decided to no longer include it in further studies.

5.5 Study 3: variety-seeking, reversibility options and choice satisfaction

5.5.1 Reliability of measures

Not all the multi-item scales used in Study 3 were highly reliable. As seen in **Table 5-7**, for choice satisfaction and perceived reversibility the two questions used to measured them were significantly ($p < .001$ for both), positively ($r > 0$ for both) and strongly ($r > .7$ for all measures) correlated. However, the two perceived monetary commitment to retailer items were significantly negatively correlated (due to one item being reverse-coded), but only moderately ($r = -.42$). Therefore, these two questions were used in the analyses separately. Combining a measure out of these two questions did not change the reported results compared to using them in analyses separately.

Table 5-7 Reliability of measures, Study 3

Measure	# of questions	Test	<i>r</i>	<i>p</i> -value
Perceived reversibility	2	Pearson's correlation	.82	<.001
Perceived monetary commitment to retailer			-.42	<.001
Choice satisfaction			.72	<.001

Therefore, as in Studies 0-2 I averaged the answers to two questions used to measure the same construct for perceived reversibility and choice satisfaction, respectively. In the ensuing analyses, the decision reversibility options (independent) variable was coded as follows: 0 for the option to remake a choice and 1 for the option to unmake a choice and the variety-seeking prime

conditions were coded as: 0 for no variety-seeking motivation and 1 for variety-seeking motivation.

5.5.2 Manipulation check

As Study 2 involved a 2 x 2 factorial design with two orthogonal independent variables, an ANOVA was an appropriate tool for analysing the effect of experimental manipulations on all dependent variables.

An ANOVA of decision reversibility options and variety-seeking motivation on perceived decision reversibility showed no significant main effect of decision reversibility ($F(1, 115) < .001, p > .98$), no significant main effect of variety-seeking motivation ($F(1, 115) = .81, p > .37$) and no significant interaction effect ($F(1, 115) = .75, p > .38$). As expected, participants saw the options to unmake ($M_{unmake} = 5.44, SD = 1.77$) and to remake a choice ($M_{remake} = 5.41, SD = 1.68$) as equally reversible. The decision reversibility manipulation was thus successful. The variety-seeking manipulation check was not performed as the effect of manipulation should have been implicit to participants (Maimaran and Wheeler, 2008).

5.5.3 Choice satisfaction

An ANOVA of decision reversibility options and variety-seeking motivation on choice satisfaction showed no significant main effect of decision reversibility options ($F(1, 115) = 1.28, p > .26$), no significant main effect of variety-seeking motivation ($F(1, 115) = 1.75, p > .19$), but a significant variety seeking x decision reversibility interaction ($F(1, 115) = 4.29, p = .04$). This interaction is graphically represented in **Figure 5-6**.

I created a custom syntax in SPSS to run the planned simple effects contrasts. This syntax is shown in **Appendix E**. Planned simple effect contrasts revealed that when participants were not primed to seek variety in their choices (as in Studies 0-2), they were more satisfied with their board game choice when they had an option to unmake it ($M_{unmake} = 6.43, SD = .74$), rather than to remake it ($M_{remake} = 5.87, SD = .77, F(1, 115) = 4.89, p = .03$). When participants were primed to seek variety, they were equally satisfied with their choices regardless

of whether they were able to unmake ($M_{unmake} = 5.83$, $SD = 1.02$) or to remake them ($M_{remake} = 6$, $SD = 1.19$, $F(1, 115) = .46$, $p > .49$). Note that the latter contrast was in the opposite direction than the former but did not reach statistical significance on its own.

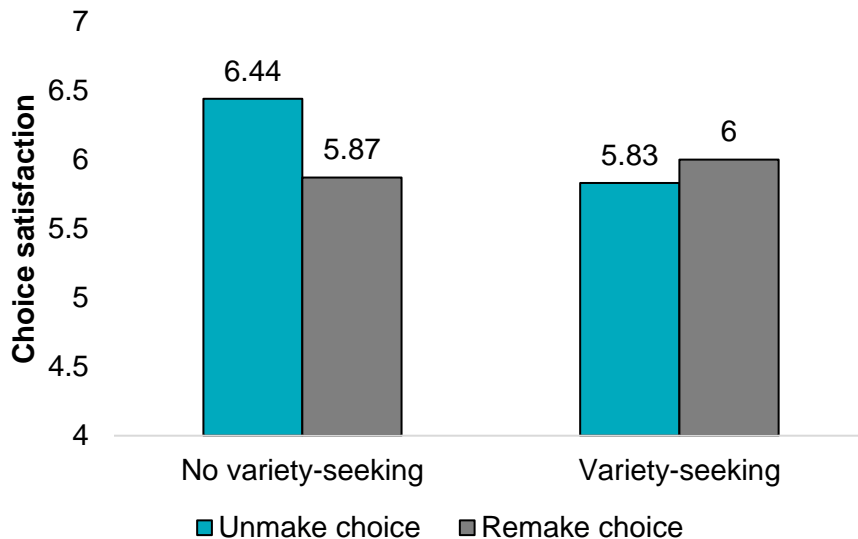


Figure 5-6 Choice satisfaction across the experimental conditions, Study 3

These results therefore find support for H₅, since variety-seekers did not spread alternatives as much as non-variety seekers, and also replicate the findings of previous studies for non-variety seekers.

5.5.4 Perceived monetary commitment and choice satisfaction

I ran the ANCOVA of decision reversibility options and variety-seeking prime on choice satisfaction with both items measuring the perceived monetary commitment to retailer as covariates. Neither measure of perceived monetary commitment (item 1, “With such a purchase, I would feel my money is committed to buying a product from this specific retailer” and item 2, “With such a purchase, I would feel I can still spend my money elsewhere if I choose to” (reverse coded) was related to choice satisfaction ($F(1, 113) = 2.44$, $p > .12$ and $F(1, 113) = 1.47$, $p > .22$, respectively). Controlling for them, there was still a significant variety-seeking prime x decision reversibility options interaction $F(1, 113) = 4.35$, $p = .04$). When participants were not primed to seek variety, those

who could unmake their choice were still more satisfied with it than those who could remake it ($F(1, 113) = 4.16, p = .04$). When participants were primed to seek variety, there was still no difference in choice satisfaction between the decision reversibility conditions ($F(1, 113) = .69, p > .4$).

Further, neither item that measured perceived monetary commitment mediated the effect of decision reversibility options on choice satisfaction at different levels of variety-seeking motivation. I used model 14 in Process macro for SPSS for this analysis (Hayes, 2013). In this model, the path from the mediator to the dependent variable, but not the path from the independent variable to the mediator, is supposed to be moderated. I did not expect perceived monetary commitment as a potential mediator to be affected by variety-seeking motivation. The influence of perceived monetary commitment on choice satisfaction, however, could have been affected by variety-seeking. Item 1 did not mediate this effect when participants were not seeking variety (indirect effect $\beta = .02$, 90% confidence interval: [-.03, .12]) nor when participants were seeking variety (indirect effect $\beta = .07$, 90% confidence interval: [-.01, .23]). Item 2 did not mediate this effect when participants were not seeking variety (indirect effect $\beta = .01$, 90% confidence interval: [-.02, .08]) nor when participants were seeking variety (indirect effect $\beta = -.05$, 90% confidence interval: [-.25, .01]). The index of moderated mediation did not significantly differ from zero for either measure (90% confidence intervals: [-.05, .21] and [-.28, .01], respectively). Therefore, the notion that the effects found in Studies 0-3 could occur due to the difference in perceived monetary commitment to a retailer or perceived freedom to spend money elsewhere can be rejected.

5.5.5 Influence of covariates

I ran an ANCOVA of decision reversibility options and variety-seeking prime on choice satisfaction with the interest in shopping for board games, personal relevance of shopping for board games, gender and age as covariates. The link between covariates and choice satisfaction is shown in **Table 5-8**.

None of the covariates had a significant influence on choice satisfaction and there was no need to control for their influence on it.

Table 5-8 Influence of covariates on choice satisfaction, Study 3

Covariate	F-statistic	p-value
Interest in shopping for board games	2.75	.1
Personal relevance of shopping for board games	.64	.42
Gender	.1	.76
Age	.7	.41

5.5.6 Summary of results, Study 3

Study 3 replicated the findings of Study 1 in that consumers are more satisfied with choices that can be unmade, rather than remade. It also found a moderator for this effect: consumers' variety-seeking motivation. Variety-seekers do not wish to preserve consistency in their preferences and will not spread the alternatives after a choice. Therefore, they should be less affected by post-choice comparative thinking and will appreciate the difference in being offered a chance to unmake, rather than remake a choice, less than non-variety seekers. Study 3 thus found support for hypotheses H₅ and H₁. Additionally, it ruled out the explanation that consumers were more satisfied with decisions that can be unmade, rather than remade, because the former kind of decisions gives consumers more freedom to spend their money elsewhere and does not require them to commit their funds to a specific retailer, compared to the latter. Study 3 also showed that the findings of Study 1 can be replicated with a different product category.

5.6 Study 4: maximisation, neuroticism, decision reversibility and choice satisfaction

5.6.1 Reliability of measures

Not all the multi-item scales used in Study 4 were highly reliable, as shown in **Table 5-9**. Evidently, the two perceived reversibility measures were significantly ($p < .001$), positively ($r > 0$) and strongly ($r > .7$) correlated. The two choice satisfaction measures were significantly correlated, but the strength of this correlation was somewhat below ideal. Still, given that these measures were reliable in Studies 0-4 and that the strength of correlation ($r = .65$) was very

close to .7, the reliability of the choice satisfaction scale can be considered acceptable.

Table 5-9 Reliability of measures, Study 4

Measure	# of questions	Test	Statistic	p-value
Perceived reversibility	2	Pearson's correlation	$r = .72$	<.001
Perceived monetary commitment to retailer			$r = -.24$	<.01
Neuroticism	8	Cronbach's alpha	$\alpha = .85$	N/A
Choice satisfaction	2	Pearson's correlation	$r = .65$	<.001

However, the two perceived monetary commitment to retailer items were negatively (due to one item being reverse-coded), but only weakly correlated ($r = -.24$). Therefore, these two questions were used in the analyses separately. Combining a measure out of these two questions would be incorrect. Further, the neuroticism scale was highly reliable ($\alpha > .8$) and was thus unchanged.

Therefore, as in Studies 0-3 I averaged the answers to two questions used to measure the same construct for perceived reversibility and choice satisfaction, respectively. I also averaged the eight neuroticism questions (three of them reverse-coded) into a single score. The two perceived monetary commitment items were entered into analyses separately. In the ensuing analyses, the decision reversibility options (independent) variable was coded as follows: -.5 for the option to remake a choice and .5 for the option to unmake a choice and the mind-set prime conditions were coded as: -.5 for non-maximising mind-set and .5 for maximising mind-set. Contrast-coding the mind-set prime and the decision reversibility options was done to ensure proper calculation of all the main and interaction effects in a multiple regression model (Irwin and McClelland, 2001). Neuroticism score was also mean-centred ($M = 3.65$) to enable easy interpretation of results.

5.6.2 Manipulation check

Since Study 4 included a continuous measured moderator, the appropriate tool for analyses was multiple linear regression. I ran a regression of perceived decision reversibility on decision reversibility options, mind-set prime,

neuroticism, decision reversibility options x mind-set prime interaction, decision reversibility options x neuroticism interaction, mind-set prime x neuroticism interaction and decision reversibility options x mind-set prime x neuroticism interaction. Its results are reported in **Table 5-10**.

Table 5-10 Results of the manipulation check, Study 4

Predictor	<i>B</i>	<i>t-statistic</i>	<i>p-value</i>
Decision reversibility options	.39	1.51	.13
Mind-set prime	.33	1.3	.19
Neuroticism	-.05	-.39	.7
Reversibility options x mind-set prime	.98	1.89	.06
Reversibility options x neuroticism	-.23	-.99	.32
Mind-set prime x neuroticism	.04	.17	.87
Reversibility options x mind-set prime x neuroticism	-.06	-.12	.9

In general, the decision reversibility manipulation was successful. However, there was an unexpected marginally significant interaction effect of decision reversibility options and mind-set prime on perceived reversibility. To analyse it further, I ran an ANOVA of decision reversibility options and mind-set prime on perceived decision reversibility. This ANOVA confirmed that there was no main effect of decision reversibility options ($F(1, 164) = 2.3, p > .13$), no main effect of mind-set prime ($F(1, 164) = 1.58, p > .21$) but a marginally significant interaction effect ($F(1, 164) = 3.35, p = .07$). Simple effect contrasts showed that participants in the maximising mind-set condition thought that their decisions were more reversible when they could be unmade ($M_{unmake} = 4.59, SD = 1.5$), rather than when they could be remade ($M_{remake} = 3.74, SD = 1.62, F(1, 164) = 5.88, p = .02$). This was not the case in the non-maximising mind-set condition ($M_{unmake} = 3.81, SD = 1.67, M_{remake} = 3.88, SD = 1.81, F(1, 164) = .05, p > .82$). This result was unexpected. Perhaps maximisers had higher standards for what can be considered a reversible decision. Still, given the results of choice satisfaction analyses that will be outlined next, this finding should not invalidate any further analyses. More importantly, on average participants perceived the options to unmake and to remake a choice as equally reversible.

5.6.3 Choice satisfaction

I ran a regression of choice satisfaction on decision reversibility options, mind-set prime, neuroticism, decision reversibility options x mind-set prime interaction, decision reversibility options x neuroticism interaction, mind-set prime x neuroticism interaction and decision reversibility options x mind-set prime x neuroticism interaction. Its results are shown in **Table 5-11**.

Table 5-11 Choice satisfaction analysis, Study 4

Predictor	<i>B</i>	<i>t-statistic</i>	<i>p-value</i>
Decision reversibility options	.07	.37	.71
Mind-set prime	.18	1.01	.31
Neuroticism	-.08	-.9	.37
Reversibility options x mind-set prime	.32	.92	.36
Reversibility options x neuroticism	.39	2.47	.01
Mind-set prime x neuroticism	-.02	-.13	.89
Reversibility options x mind-set prime x neuroticism	-.05	-.15	.88

Accordingly, as shown in **Table 5-11** there was an expected two-way interaction between neuroticism and decision reversibility options. It will be analysed further. However, there was no main effect of mind-set prime on choice satisfaction and no interaction effects of mind-set prime and any other factors on choice satisfaction. Therefore, Study 4 does not find support for H₄.

Since maximisation and non-maximisation priming did not affect choice satisfaction in any way, to analyse the two way-interaction effect of the other two factors on choice satisfaction I ran a regression analysis without the mind-set prime and all its interactions with other factors. I regressed choice satisfaction on decision reversibility options, neuroticism and their interaction.

There was no main effect of neuroticism on choice satisfaction: ($B = -.07$, $t(164) = -.84$, $p > .4$) and no main effect of decision reversibility options on choice satisfaction ($B = .07$, $t(164) = .39$, $p > .69$). Importantly, there was a significant interaction effect of decision reversibility options and neuroticism ($B = .4$, $t(164) = 2.58$, $p = .01$). To further analyse this interaction, I performed spotlight analysis (Fitzsimons, 2008) of the influence of decision reversibility options on choice satisfaction at different levels of neuroticism: one standard deviation (*SD*

= 1.13) above and below mean neuroticism ($M = 3.65$). Consumers high in neuroticism (4.78 on neuroticism scale) were more satisfied with their choices if they could unmake, rather than remake them ($B = .52$, $t(164) = 2.1$, $p < .04$). Consumer low in neuroticism (2.51 on neuroticism scale) were equally satisfied with their choices regardless of whether they could unmake or remake them ($B = -.39$, $t(164) = -1.56$, $p > .12$).

Further, having the option to remake a choice decreased choice satisfaction as neuroticism rose ($\beta = -.27$, $t(164) = -2.3$, $p < .03$). Neurotic participants were reacting more negatively to having the option to remake a choice, as expected. Interestingly, having the option to unmake a choice somewhat increased choice satisfaction as neuroticism rose, although not significantly ($\beta = .14$, $t(164) = 1.31$, $p > .19$). The interaction effect of decision reversibility options and neuroticism on choice satisfaction is graphically represented in **Figure 5-7**.

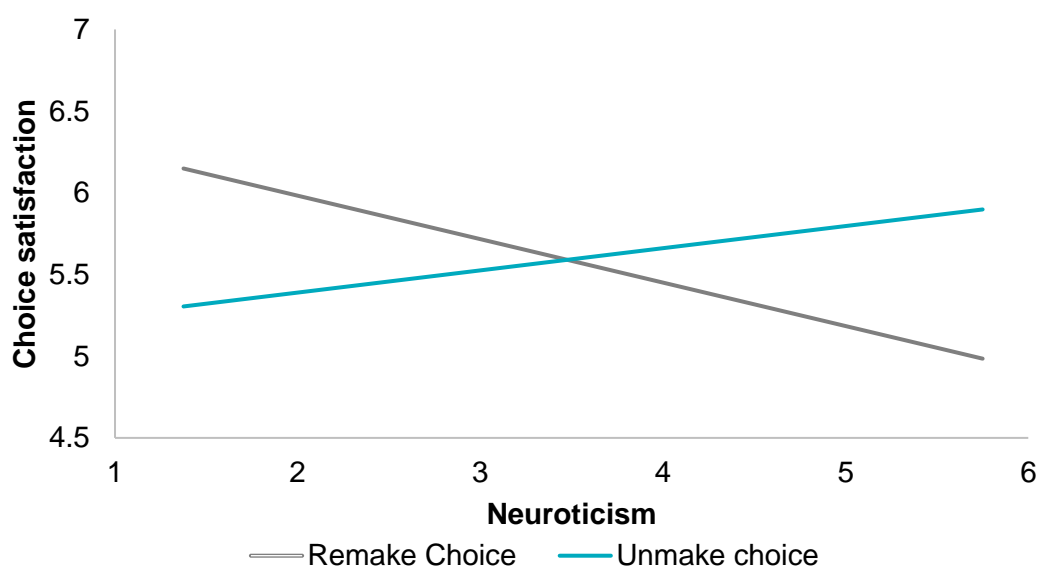


Figure 5-7 Interaction effect of decision reversibility and neuroticism, Study 4

Accordingly, neurotic consumers were more receptive to the option to unmake, rather than remake a choice and Study 4 finds support for H₅.

I also performed floodlights analysis (Spiller et al., 2013) to find out the levels of neuroticism at which having the option to unmake a choice increases choice satisfaction, compared to having the option to remake a choice. This analysis allows to find out the value of the moderator at which the p -value of the effect of

the independent variable on the dependent variable is exactly .05 and the areas where it is below and above this threshold. It is also called Johnson-Neyman technique (Johnson and Neyman, 1936). For this analysis, I used Model 1 in the Process macro in SPSS (Hayes, 2013), specifying choice satisfaction as the dependent variable, decision reversibility options as the independent variable and neuroticism as the moderator.

The analysis showed that participants whose neuroticism score was high (4.61 and above) were more satisfied with their choice when they could unmake it, rather than remake it. Interestingly, participants whose neuroticism score was extremely low (1.88 on a 1-7 scale) were more satisfied with their choice if it could be remade, rather than unmade. This finding is intriguing as it shows the reversal of the effect of decision reversibility on choice satisfaction. Perhaps participants with extremely low neuroticism envisaged enjoying making a second choice. Percentage-wise, 26% of participants highest in neuroticism felt more satisfied with choices that could be unmade, rather than remade and 5% of participants lowest in neuroticism felt more satisfied with choices that could be remade, rather than unmade.

Note also that the interaction effect of decision reversibility options and neuroticism on choice satisfaction remained marginally significant in both the non-maximising ($p = .07$) and the maximising mind-set conditions ($p < .1$) if the data file was split in two on the maximising manipulation. Although splitting the file decreases the power of regression analysis, I did this to rule out any influence of mind-set prime manipulation on choice satisfaction.

Furthermore, to simplify the data analysis I also performed a median split (Iacobucci et al., 2015) of neuroticism (median of 3.63) and ran an ANOVA on choice satisfaction with median-split neuroticism and decision reversibility options as predictors. It showed that there was no main effect of neuroticism ($F(1, 164) = .07, p > .78$), no main effect of decision reversibility options ($F(1, 164) = .33, p > .56$) but a significant interaction effect of decision reversibility options and neuroticism ($F(1, 164) = 6.54, p = .01$). Planned contrasts (using a custom syntax akin to the one shown in **Appendix E**) revealed that when neuroticism

was at or above the median (high), participants were more satisfied with their choice if it could be unmade ($M_{unmake} = 5.78$, $SD = 1.1$) rather than remade ($M_{remake} = 5.29$, $SD = 1.13$, $F(1, 164) = 4.15$, $p = .04$). When neuroticism was low, there was no difference in choice satisfaction between participants who had a chance to unmake a choice, compared with a chance to remake it ($M_{unmake} = 5.44$, $SD = 1.18$, $M_{remake} = 5.84$, $SD = 1.11$, $F(1, 164) = 2.52$, $p > .11$). Further, when a choice could be remade, participants high in neuroticism were less satisfied with their choice than participants low in neuroticism ($F(1, 164) = 4.86$, $p < .03$). When participants could unmake their choice, they were equally satisfied regardless of their neuroticism ($F(1, 164) = 1.98$, $p > .16$). This pattern of results corresponds to the one proposed by H₅. The results of the analysis of choice satisfaction using the median split of neuroticism are graphically represented in **Figure 5-8**.

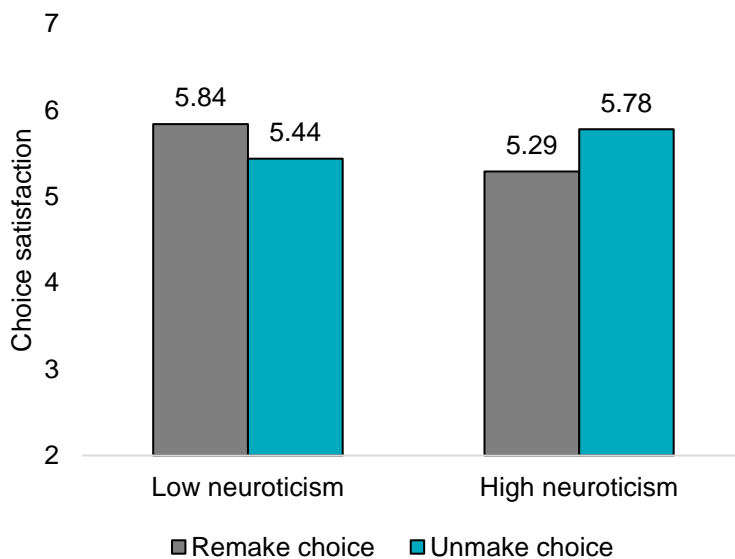


Figure 5-8 Choice satisfaction with median-split neuroticism, Study 4

Accordingly, results of median-split ANOVA and regression analysis both find support for H₅.

5.6.4 Perceived monetary commitment and choice satisfaction

I ran the ANCOVA of decision reversibility options, neuroticism and their interaction on choice satisfaction with both items measuring the perceived monetary commitment to retailer (and freedom from such commitment) as

covariates. One item measuring perceived monetary freedom (“With such a purchase, I would feel I can still spend my money elsewhere if I choose to”) was related to choice satisfaction ($B = .2$, $t(162) = 3.49$, $p = .001$). Still, the interaction effect of neuroticism and decision reversibility options on choice satisfaction was significant ($B = .4$, $t(162) = 2.64$, $p < .01$). The other perceived monetary commitment item (“With such a purchase, I would feel my money is committed to buying a product from this specific retailer”) did not significantly influence choice satisfaction ($B = .05$, $t(162) = .98$, $p > .32$).

Furthermore, I ran the ANCOVA of all three independent variables and all their interactions on choice satisfaction with both perceived monetary commitment items as covariates. Although the perceived monetary freedom item significantly influenced choice satisfaction ($B = .2$, $t(158) = 3.36$, $p = .001$), controlling for it and another perceived commitment to retailer item did not change the significance of decision reversibility options x neuroticism interaction ($B = .39$, $t(158) = 2.55$, $p = .01$). The other results in the ANCOVA were also unchanged.

Further, controlling for perceived monetary commitment to a retailer in an ANCOVA with median-split neuroticism and decision reversibility options on choice satisfaction did not change the significance of the interaction effect ($F(1, 162) = 8$, $p < .01$) or of any other effects. The significance of the reported planned contrasts also remained unchanged. Therefore, controlling for perceived monetary commitment to retailer did not change the significance of reported results.

To fully rule out the alternative explanation that perceived monetary freedom (or commitment to retailer) drove the differential effect of decision reversibility options on choice satisfaction at different levels of neuroticism I performed a mediated moderation analysis. I used model 14 in Process macro for SPSS (Hayes, 2013). This model was chosen because there is no theoretical reason to believe that neuroticism could change the impression of perceived monetary commitment to a retailer (perceived monetary freedom). It could, however, affect how perceived monetary commitment influences choice satisfaction. The results of mediated moderation analysis are reported in **Table 5-12**.

Evidently, neither measure of perceived monetary commitment to retailer mediated the interaction effect of decision reversibility options and neuroticism on choice satisfaction, as all 90% confidence intervals (CIs) contained a zero.

Table 5-12 Moderated mediation with perceived monetary commitment, Study 4

Mediator	Neuroticism level	β	90% CI
“With such a purchase, I would feel I can still spend my money elsewhere if I choose to”	2.51	.02	[-.04, .12]
	3.65	.02	[-.05, .10]
	4.78	.02	[-.03, .13]
“With such a purchase, I would feel my money is committed to buying a product from this specific retailer”	2.51	-.01	[-.11, .01]
	3.65	.004	[-.01, .05]
	4.78	.02	[-.01, .11]

Further, for neither measure was the index of moderated mediation significantly different from zero ($\beta = .02$, 90% CI: [-.04, .01] and $\beta = -.002$, 90% CI: [-.01, .08], respectively). Therefore, the explanation that perceived monetary commitment to retailer drove the observed effects in Study 4 can be ruled out entirely.

5.6.5 Influence of covariates

I ran an ANCOVA of decision reversibility options and neuroticism on choice satisfaction with the interest in shopping for board games, personal relevance of shopping for board games, gender and age as covariates. The link between covariates and choice satisfaction is shown in **Table 5-13**.

Table 5-13 Influence of covariates on choice satisfaction, Study 4

Covariate	<i>B</i>	<i>t</i> -statistic	<i>p</i> -value
Interest in shopping for board games	.04	.55	.59
Personal relevance of shopping for board games	-.004	-.05	.96
Gender	.45	2.49	.01
Age	.01	.29	.77

Only participants' gender had significant influence on choice satisfaction. Controlling for it, there was still a significant decision reversibility options x neuroticism interaction effect on choice satisfaction ($B = .33$, $t(159) = 2.11$, $p < .04$). Further, in the full regression model of choice satisfaction on all independent variables and all their interactions controlling for covariates did not change the significance of decision reversibility options x neuroticism interaction effect ($B = .33$, $t(155) = 2.02$, $p = .04$). Additionally, controlling for gender in an

ANCOVA of decision reversibility options and median-split neuroticism on choice satisfaction still returned a significant interaction effect ($F(1, 163) = 5.85, p < .02$). Controlling for gender, participants who were highly neurotic were now marginally more satisfied with their choices if they could be unmade, rather than remade ($F(1, 163) = 2.54, p < .07$). When a choice could be remade, highly neurotic participants were still less satisfied with their choices than participants low in neuroticism ($F(1, 163) = 5.53, p < .02$). Overall, the results of Study 4 held controlling for the influence of covariates on choice satisfaction.

5.6.6 Summary of results, Study 4

Study 4 showed that how satisfied consumers are with having options to unmake and to remake choices depends on their level of neuroticism. More neurotic consumers are less satisfied when they can remake a choice, rather than unmake a choice. Consumers in general are less satisfied with an option to remake a choice if they are more neurotic, because they react more negatively to post-choice comparisons that are triggered by having this option, as demonstrated in Studies 0-2.

Moreover, it appears that consumers who are extremely low in neuroticism actually prefer having the option to remake a choice, rather than to unmake it. This only pertains to about 5% of the population who are the lowest on neuroticism. Perhaps extremely emotionally stable consumers enjoy remaking choices or simply making choices, for Study 4 shows that neuroticism does not significantly change how consumers react to having a chance to unmake a choice.

Further, this result is independent of maximising or non-maximising mindset. The finding that maximising does not influence consumer satisfaction with choices that can be remade, rather than unmade, may be due to the nature of maximising manipulation in this study. In Study 4 I manipulated the high standards component of maximisation, as was done by Ma and Roese (2014) and measured neuroticism separately. There are three components of maximisation tendency in psychological theory: search for alternatives, high standards and decision difficulty (Nenkov et al., 2008), however, as discussed

in **2.6**, the maximisation tendency scale may overvalue decision difficulty, which is related to consumer neuroticism. Therefore, the findings of Study 4 potentially highlight the inconsistency in the maximisation tendency scales used in previous research, for example by Shiner (2015) as opposed to Ma and Roesse (2014).

Overall, Study 4 finds support for H₆, but not H₄. Further, I once again rule out the explanation that the difference in consumers' satisfaction with choices that can be unmade, as opposed to remade, is due to freedom to spend money elsewhere and monetary commitment to a specific retailer. The explanation that this difference is due to post-choice comparisons, the influence of which on choice satisfaction is moderated by consumer neuroticism, is more parsimonious and explains the data patterns better. Additionally, I also control for the influence of other covariates on choice satisfaction. The only covariate to influence choice satisfaction in Study 4 – participants' gender – did not influence choice satisfaction in any other studies. Controlling for its influence on choice satisfaction did not significantly change the reported results, suggesting that its influence on choice satisfaction is negligible.

5.7 Summary of all findings

I collected and analysed the experimental data in order to answer the research question:

How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers' choice satisfaction?

From the analysis of results of Studies 1-4, it appears that having an option to unmake a choice causes consumers to be more satisfied with respective choice than having an option to remake a choice. This has been tested across two different product categories. The results of mediation analyses in Studies 1 and 2 show that this effect occurs due to the fact that having an option to remake a choice triggers more post-choice comparative thinking (comparisons between the chosen and non-chosen alternatives) than having an option to unmake a choice.

This effect is moderated by several variables. Firstly, as Study 2 shows, if consumers are cognitively depleted, they are no longer able to make post-choice comparisons between their chosen and foregone alternatives. For this reason, they will not be less satisfied with their choices if they can be remade, but not unmade. Further, the differential effect of having the options to unmake and to remake a choice on choice satisfaction ceases to exist for consumers motivated to seek variety, as demonstrated in Study 3. These consumers have less desire to maintain consistent preferences after making a choice and are less likely to spread alternatives after a choice, because they do not see foregone options' attractive properties as a loss, but rather as an opportunity for another choice. For them making post-choice comparisons between chosen and foregone options is relatively less harmful, which negates the difference in choice satisfaction between having the option to remake and to unmake a choice.

Furthermore, neurotic consumers are more receptive to the negative influence of the option to remake a choice, rather than to unmake it, on choice satisfaction, as evidenced in Study 4. Neuroticism does not moderate consumers' reaction to having an option to unmake a choice, but makes consumers less satisfied if they can remake a choice. Losses of attractive attributes in foregone options overcome gains in attractive attributes of a chosen option more for neurotic consumers than non-neurotic consumers. Study 4, however, does not find the moderation of the effect of having an option to unmake, rather than remake, a choice on choice satisfaction by the maximising mind-set. Further, mind-set prime did not interact with any other independent variables in affecting choice satisfaction. This is likely due to the nature of manipulating maximising mind-set as high standards, and not as decision difficulty. Potentially, this result further highlights inconsistencies in how maximisation tendency is measured in the literature, as the decision difficulty component is related to neuroticism, unlike the high standards or search for alternatives components of maximisation tendency (Nenkov et al., 2008). Overall, Studies 1-4 tested the research hypotheses outlined in **Table 2-5**. The results of these tests are summarised in **Table 5-14**.

The four studies conducted for this thesis found support for five out of six experimental hypotheses and highlighted a potential problem with the unsupported hypothesis.

Table 5-14 Results of hypothesis testing

#	Hypothesis	Results
H ₁	Compared to having the option to remake a choice, having the option to unmake a choice will result in higher consumer satisfaction with their choices.	Supported, Studies 1-4
H ₂	The increase in choice satisfaction due to having an option to unmake, rather than to remake a choice, will be mediated by the extent of consumers' post-choice comparison between their chosen and non-chosen alternatives.	Supported, Studies 1 and 2
H ₃	Cognitively depleting consumers will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.	Supported, Study 2
H ₄	Maximising mind-set will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.	Not supported, Study 4
H ₅	Variety-seeking motivation will attenuate the positive difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.	Supported, Study 3
H ₆	Consumers high in neuroticism will have a higher difference in choice satisfaction between having an option to unmake a choice and having an option to remake a choice.	Supported, Study 4

Of course, due to the nature of null results in experiments, the existence of relationship between maximisation tendency, decision reversibility and choice satisfaction cannot be ruled out (Mitchell and Jolley, 2013) based solely on Study 4; however, there may be potential issues in how the constructs of maximisation tendency and the maximising mind-set are operationalised.

Further, in Studies 3 and 4 I also ruled out an alternative explanation for the relationship specified in H₁. Controlling for perceived monetary commitment to a retailer or perceived monetary freedom did not change the experimental results of these studies. Neither of these constructs mediated the decision reversibility – choice satisfaction relationship in any condition in either of the studies. Therefore, the effect of H₁ occurs above consumers' ability to shop elsewhere (or not to shop at all). Moreover, none of the moderation hypotheses (H₂, H₃ and H₅) can be explained by such factors that may influence choice satisfaction as perceived choice freedom or perceived justice of retailer policies. Neither choice freedom nor perceived justice should be affected by cognitive depletion,

neuroticism and variety-seeking motivation. Therefore, I believe that the mediating mechanism tested in Studies 0-2, i.e. post-choice comparative thinking, the extent of which is changed by cognitive depletion and the downstream effects of which are felt less for variety-seekers and more for neurotic consumers, is the most parsimonious explainer of the observed data.

Finally, the hypotheses tests upheld controlling for covariates such as study participants' age, gender, their interest in shopping for products used in studies and personal relevance of shopping for these products to them. Interestingly, each of these factors was related to choice satisfaction in at least one of the studies, but none of the factors were related to choice satisfaction in more than two studies out of five. This shows that the influence of these covariates on choice satisfaction is trivial (as it does not replicate more than once) and does not truly need to be controlled for, even if doing so does not change the reported results.

Overall, the conceptual model of the influence of decision reversibility options on choice satisfaction proposed in **Figure 2-2** was tested. Based on the results of hypothesis testing, the conceptual model was updated and is shown in **Figure 5-9**.

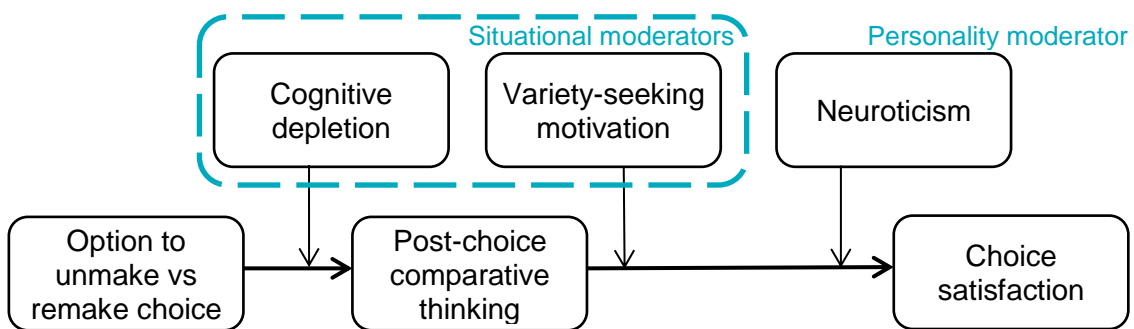


Figure 5-9 Updated conceptual model

This concludes the analysis of research findings. In the next chapter I will interpret these results and discuss their implications.

6 DISCUSSION

6.1 Introduction

In this chapter I will interpret the findings of experimental studies featured in this thesis. I will relate these findings to extant literature on reversible decisions and show why these findings explain consumer behaviour better than the extant literature. I will focus on the main effect of decision reversibility options on choice satisfaction, on the mediating mechanism for this effect and on the moderators that change this effect.

6.2 The effect of decision reversibility options on choice satisfaction

Consumers have many ways to reverse a purchase decision. If, for example, they make an online purchase from a clothing retailer (e.g. Asos), they may be able to cancel their order before it is delivered, exchange the order after they receive it for another item that was under their consideration or that was not originally under their consideration, or return the items for a full refund and then use their money to buy something else or not. For other retailers (such as Sportsdirect in the UK) orders made via non-online channels can only be exchanged in-store for store credit that can further be used to purchase something else that consumers have or have not previously considered purchasing. As **Table 2-4** shows, the extant decision reversibility research groups all these options under one operationalisation of decision reversibility: where the initial choice is remade.

This operationalisation is limiting as it assumes that the choice set that consumers made a choice from will remain fully accessible and consistent after a choice (which it may not) and that they have no other option to reverse a choice, such as cancel the order altogether or return their items for a refund.

Thus, the extant literature on decision reversibility demonstrates the generally negative effect of having only the option to remake a choice on choice (decision) satisfaction (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). Several explanations for this effect have

been proposed and were reviewed in **2.3.2**. The consistent thread among these explanations is that when choices can be remade, consumers still consider the attractive qualities of the foregone alternatives as a loss which looms larger than a gain in the attractive qualities of a chosen alternative, and this decreases choice satisfaction. Although none of these studies refer to comparative thinking per se, it can be concluded from them that comparisons between the chosen and foregone options are the reason consumers are less satisfied with decisions where choices can be remade. Indeed, I confirm this notion in a pre-test (Study 0).

What extant research does more, however, is claim that all reversible decisions lower decision satisfaction. For example, based on Gilbert and Ebert's (2002) findings, Epstein and Roesch (2008) conclude that when a shirt cannot be returned to a retailer for a refund (which is not how Gilbert and Ebert manipulated decision reversibility) consumers will be more satisfied with their decisions than if it can be returned.

Yet, when a consumer can return an item to a retailer for a refund or cancel their purchase altogether they need not re-evaluate the attractiveness of a chosen alternative in relation to foregone ones. They need not think about the foregone alternatives at all, as they do not have to remake a choice, but simply to choose whether to keep their chosen item at all. Returns and cancellations that are so common in retail (Janakiraman, Syrdal and Freling, 2016a) and represent the option to unmake a choice should not make consumers compare their chosen item to non-chosen ones. For this reason, I hypothesised that having the option to unmake a choice would produce different effects on choice satisfaction, compared to having the option to remake a choice.

I proved that this is the case in several studies. In Study 1 I showed this main effect of decision reversibility options on choice satisfaction, in Study 3 I showed that this effect exists when consumers do not seek variety in their sequential choices. The main effect from Study 1 was thus replicated over two different product categories (books and board games). Accordingly, it appears that consumers are more satisfied with their decisions if they have the option to

unmake, rather than remake a choice (H_1). Interestingly, in none of the studies were participants less satisfied when they could unmake a choice, compared to an irreversible decision. This may challenge the findings of previous theorists in decision reversibility.

Accordingly, I found that having the option to unmake a choice and to remake a choice produce significantly different outcomes when it comes to decision satisfaction. It is incorrect to equate them, then, and the claims of extant research that all reversible decisions lead to lower choice satisfaction are wrong.

6.3 Mediation by extent of post-choice comparison

Further, in Studies 0-2 I show that the negative effect of having the option to remake a choice on choice satisfaction, compared to making an irreversible decision (Study 0) and to having an option to unmake a choice (Studies 1 and 2) is driven by the extent of post-choice comparison between the chosen and non-chosen alternatives.

When choice alternatives have attractive attributes at all making comparisons between them will decrease the attractiveness of all choice alternatives (Brenner, Rottenstreich and Sood, 1999). When consumers' chosen item is more attractive overall than other items (which should be a case when they make a genuine choice from attractive alternatives), making comparisons between their relatively superior alternative and other alternatives will decrease the attractiveness of the chosen alternative (Hsee and Leclerc, 1998). Comparative thinking can thus decrease choice satisfaction (which is a post-choice evaluation of the attractiveness of a chosen option) both before and after a choice.

As discussed above, comparative thinking makes customers re-evaluate the positive and negative attributes of foregone alternatives, alongside the positive and negative attributes of a chosen alternative. Since consumers are loss-averse (Tversky and Kahneman, 1991), they will assign more weight to the loss of the positive attributes due to not choosing the foregone alternatives than to

the gain of the positive attributes due to choosing their most preferred alternative. This explains why consumers become less satisfied with decisions that are incomplete, where they make post-choice comparisons after a choice (Gu, Botti and Faro, 2013).

Note, however, that any reversible decision is incomplete until the consumer decides to exercise or not to exercise decision reversibility for good. Therefore, when consumers have a chance to either unmake or remake a choice, such a decision is incomplete (still reversible), but only the latter option reintroduces making a choice from the same assortment.

Because of this it is important to differentiate between comparative thinking (making comparisons between choice alternatives, e.g. 'this shirt looks more luxurious than the one I picked') from counterfactual thinking (e.g. 'I would be better off if I had picked a different shirt'). Both having the chance to unmake and to remake a choice can trigger counterfactual thinking, but only the latter should trigger comparative thinking. Accordingly, the findings of Studies 0-2 address the findings of Hafner, White and Handley (2012) who claim that having the option to remake a choice (or 'all reversible decisions' but operationalised solely as this option) exudes negative influence on choice satisfaction, compared to making an irreversible decision, because of counterfactual thinking. Interestingly, they measure the extent of comparative thinking, too, but do not use it in mediation analyses. Instead, I show that the negative effect of having the option to remake a choice on choice satisfaction (compared to having the option to unmake a choice in Studies 1-4 or to having no such option in Study 0) is due to comparisons that consumers make between their chosen and foregone alternatives.

Accordingly, having an option to remake a choice should produce more post-choice comparisons between the chosen and non-chosen alternatives than having an option to unmake a choice. These comparisons decrease choice satisfaction. Note also that the mediating mechanism was replicated between Studies 1 and 2 and between two different product categories (books and board games), although in Study 1 the mediation of the effect of having an option to

unmake, rather than remake a choice, on choice satisfaction was only marginally significant.

6.4 Moderation by cognitive depletion

Consumers' cognitive processing capacity is limited. Making post-choice comparisons rests on this capacity and utilises it (Bullens, van Harreveld and Förster, 2011). Reducing this capacity otherwise should then hamper consumers' ability to make post-choice comparisons. Therefore, as expected, Study 2 showed that when consumers are cognitively depleted, it is more difficult for them to make post-choice comparisons between their chosen and foregone options. For this reason, there should be no difference in choice satisfaction for cognitively depleted consumers regardless of which decision reversibility option is available to them (unmake or remake choice).

It should be noted, however, that the predicted interaction effect of cognitive depletion and decision reversibility options on choice satisfaction did not occur in Study 2. Instead, I found a moderated mediation effect: the relationship between decision reversibility options and choice satisfaction was mediated by the extent of post-choice comparison, but only when consumers were not cognitively depleted. Cognitively depleting them removed this effect. The absence of significant total effect was likely caused by the fact that cognitive depletion manipulation in Study 2 was not powerful enough: either participants in the no-depletion condition were somewhat cognitively depleted (which is somewhat likely) or participants in the depletion condition were not depleted enough, or both. Although I used the well-known Stroop effect manipulation (Stroop, 1935), which is widely used in psychology, perhaps changing the number of iterations of this manipulation (showing a different number of words) could produce a significant total effect.

Still, it can be concluded that depleting consumers' cognitive resources does remove the difference in the extent of post-choice comparison, and thus choice satisfaction, for consumers who can unmake and remake their choices. H_3 is then tentatively supported. The moderating role of cognitive depletion on choice satisfaction is not new as such: Hafner, White and Handley (2012) also

generated cognitive load to marginally suppress participants' counterfactual thinking (and likely comparative thinking, as well), but they ignored the option to unmake a choice, as did all other scholars who have researched reversible decisions to date.

It should also be noted that even if consumers are cognitively depleted, the extent of post-choice comparison would still exude negative influence on choice satisfaction ($\beta = -.2, p < .01$ in Study 2). Thus, cognitively depleting consumers makes them less able to make post-choice comparisons between their chosen and foregone options after a choice but does not change the fact that these comparisons still signal a loss of attractive attributes in foregone alternatives that looms larger than a gain of attractive attributes in a chosen alternative.

6.5 Moderation by variety-seeking motivation

Consumers normally strive for consistency in their preferences (Svenson, 2006). After making a choice, they would spread the alternatives, i.e. decrease the perceived attractiveness of foregone options and increase the perceived attractiveness of a chosen option. Having a chance to remake a choice prevents them from doing so as it makes consumers think about the attractive attributes in the foregone options (Bullens et al., 2013). Therefore, the effects described in **6.2 - 6.4** apply only to choices after which consumers are motivated to preserve consistent preferences. This is evident from Study 3, as well, for when consumers are primed to seek non-variety (consistency) in their choices, they are less satisfied with these choices if they can be remade, rather than unmade, as hypothesised in H_1 and shown in Study 1.

Variety-seeking motivation, on the other hand, makes consumers less likely to preserve their preferences (Ratner, Kahn and Kahneman, 1999). Consumers would choose the options they initially preferred less for the sake of variety alone. Because of this, variety-seeking motivation should prevent consumers from spreading alternatives, erasing the difference in choice satisfaction between those who can unmake, as opposed remake their choices. Variety-seeking motivation is unlikely to change how much comparison between choice alternatives consumers are engaged in after a choice, but is likely to change

how negatively consumers react to these comparisons. Indeed, in Study 3 I show that when consumers seek variety, they are no less satisfied with choices that can be remade, rather than unmade, which lends support to H₅. Further, those induced to seek variety in choices are somewhat more satisfied with choices that can be remade (rather than unmade), although not at the level of significance. Perhaps remaking a choice would provide some stimulation that is often the reason why consumers seek variety, to begin with (Kahn, Ratner and Kahneman, 1997). Maybe a more powerful design of a variety-seeking manipulation could produce a reversal of the negative effect of having an option to remake, rather than unmake a choice, on choice satisfaction.

6.6 Moderation by neuroticism

Neurotic people are emotionally unstable. They are prone to envy, jealousy, feelings of guilt and depression (Thompson, 2008). Neurotic individuals experience more intense negative affect in everyday life and in simple decisions (Bolger and Zuckerman, 1995; Milgram and Tenne, 2000). There is some evidence that neurotic consumers are more sensitive to choice conflict, i.e. they see the loss of attractive attributes from not choosing certain alternatives as more negative than non-neurotic individuals (Hügelschäfer and Alós-Ferrer, 2014). In this case, it is to be expected that neurotic individuals should be less satisfied with choices that can be remade, rather than unmade, than non-neurotic individuals.

Study 4 finds support for this notion (H₆). Consumers higher in neuroticism are less satisfied when they have an option to remake, rather than unmake a choice. This happens because consumers high in neuroticism are less satisfied with choices that can be remade than consumers low in neuroticism and not because they are more satisfied with choices that can be unmade than consumers low in neuroticism. These results were shown both in regression and ANOVA (with median-split neuroticism) analyses.

Further, in Study 4 the difference in choice satisfaction for consumers who could remake, rather than unmake a choice, became significant when neuroticism was high (26% top scorers in neuroticism). For consumers whose

neuroticism scores were extremely low (5% lowest scorers in neuroticism) the opposite was true: they were more satisfied with choices that could be remade, rather than unmade. This finding is interesting and unexpected. A possible explanation for this may be that extremely emotionally stable individuals would enjoy making choices again as this process can be stimulating (Botti and Iyengar, 2004). They may enjoy thinking about choice alternatives in general and not perceive forgoing attractive attributes as a loss, but rather be curious about re-examining these attractive attributes. Perhaps extremely emotionally stable consumers are natural variety-seekers.

For this reason, it would be interesting to see how neuroticism will interact with variety-seeking motivation in changing the effect of decision reversibility options on choice satisfaction. Will consumers' neuroticism or variety-seeking motivation take priority in determining whether they would be less satisfied (or not) with choices that can be remade or unmade?

It should be noted, however, that in Study 4 I do not find a main effect of decision reversibility options on choice satisfaction where one was expected. This may be due to using a different sample of participants (university students as opposed to MTurk workers in other studies) but may also be because of the mind-set prime manipulation that obscured the effects found in Studies 1-3.

6.7 Non-moderation by maximising mind-set

Maximisers aim to always choose the best. They have high standards, engage in extensive information processing and may perceive decisions as more difficult than non-maximisers in general (Nenkov et al., 2008; Schwartz et al., 2002). Maximisers are less likely to spread alternatives after a choice, because they do not feel committed to one single option (Sparks, Ehrlinger and Eibach, 2012). For this reason, it would have been interesting to see how maximisers, compared to non-maximisers, would react to having an option to unmake, rather than remake a choice.

Shiner (2015) shows that maximisers are more satisfied than non-maximisers when making choices that can be remade. I hypothesised that for this reason

they should be less dissatisfied with choices that could be remade, rather than unmade, than non-maximisers (H₄). Maximising and non-maximising were temporarily induced in participants as a mind-set (Ma and Roese, 2014). I do not find support for H₄ in Study 4. This null result does not provide sufficient evidence to claim that maximisers, as opposed to non-maximisers, are more, less or equally satisfied with having the option to unmake, rather than remake a choice.

Firstly, it should be noted that since maximisers avoid commitment to decisions, they may also appreciate the chance to unmake a choice. Therefore, H₄ was exploratory in nature as it was difficult to predict how exactly maximisation could moderate the main effect covered in H₁.

Secondly, it appears that the manipulation of maximising (non-maximising) mind-set (Ma and Roese, 2014) only manipulated one component of maximisation tendency: high standards. This is evident from the questions used to put participants in Study 4 into a maximising or non-maximising mind-set. It may also be gleaned from the fact that maximisers recognised the option to unmake a choice as more reversible than the option to remake a choice. The literature on return policies would claim that the former option gives consumers more freedom than the latter (Janakiraman, Syrdal and Freling, 2016a). Thus, perhaps accounting for high standards only does not produce any interaction with the main effect of decision reversibility options on choice satisfaction.

This may also highlight the problematic nature of the maximisation tendency scale. Many attempts to change it have been proposed (Diab, Gillespie and Highhouse, 2008; Nenkov et al., 2008; Richardson et al., 2014), since the original maximisation tendency scale (Schwartz et al., 2002) may be confounded with other personality measures, such as neuroticism. Perhaps, then, manipulating search costs by making consumers engage in more information search (and comparison-making) before choice could produce results that are different to those obtained in Study 4. On the other hand, the decision difficulty component of maximisation may correlate with neuroticism as neurotic consumers perceive their decisions as more difficult (Milgram and

Tenne, 2000). Thus, it is difficult to draw any inferences on the relationship between maximisation tendency and consumer satisfaction with reversible decisions based on the current literature and the findings of Study 4.

6.8 Other findings

6.8.1 Perceived reversibility

In all five studies the manipulation of decision reversibility was successful. In particular, in Studies 0-2 participants perceived the option to remake a choice as more reversible (changeable) than an irreversible decision. Similarly, in Studies 1 and 2 participants perceived the option to unmake a choice as more reversible (changeable) than an irreversible decision. Most importantly, in Studies 1-4 participants perceived the options to unmake and to remake a choice as equally reversible. Therefore, in consumer's minds, the options to unmake and to remake a choice do not differ in their degree of reversibility.

This means that there is sufficient degree of decision freedom in having the opportunity to remake a choice and that the opportunity to unmake a choice does not provide any extra gain in decision freedom.

This finding is interesting considering the fact that the option to unmake a choice is thought to be more exchange-lenient than the option to remake a choice (Janakiraman, Syrdal and Freling, 2016a). It seems that consumers discount the fact that the option to unmake a choice represents either the chance to remake that choice at a later point, or to make a different choice, or to choose not to choose at all. Interestingly, from the findings of Study 4 it appears that only the maximisers, who hold high standards in decision-making, can recognise this real-life superiority of the option to unmake a choice over the option to remake a choice.

Overall, the fact that the two decision reversibility options are seen as equally reversible bodes well for the construct of decision reversibility as the two kinds of reversible decisions that I looked at in this thesis can be assumed to represent the same overarching construct.

6.8.2 Alternative explanations for observed results

Although the option to unmake a choice does give consumers more decision freedom than the option to remake it, consumers fail to recognise this. Therefore, none of the findings of hypotheses tests can be explained by the notion that perceived decision freedom drives choice satisfaction. Further, the option to remake a choice gives consumers more freedom than an irreversible decision. Yet, Study 0 shows that having such an option also makes consumers less satisfied with their decisions. Overall, it is safe to rule out perceived decision freedom as an explanation for the observed results.

Further, having the option to remake a choice should be seen as fairer than having no option to reverse a purchase decision (Bower and Maxham, 2012), and yet the aforementioned pattern of results occurs. It is then safe to rule out perceived fairness as the explanation for the observed results, especially given that the judgment of fairness of retailers' policies should not be dependent on cognitive depletion or variety-seeking manipulations.

Finally, I ruled out the explanation that the difference in choice satisfaction between consumers who have an option to remake and to unmake their choices is due to the fact that the money of those who have the former option is tied up in a transaction with one retailer. The latter decision reversibility option gives consumers more control over their money and enables them to spend them elsewhere after unmaking a choice (or not to spend them anywhere). Controlling for the items related to perceived monetary commitment to a retailer in Studies 3 and 4 did not change the experimental results; nor was there a mediation of the effects in Studies 3 and 4 by perceived monetary commitment to a retailer. Therefore, it can be said that the effects observed in Studies 1-4 occur above the difference in perceived monetary commitment to a retailer (freedom of monetary spend) and not because of it.

Overall, comparative thinking after a choice appears to be the most parsimonious explanation for all the observed effects. Specifically, having the option to remake a choice triggers comparative thinking that decreases choice satisfaction, unless consumers are cognitively depleted (cannot make

comparisons), seek variety (do not see comparisons as trade-offs between options) or are low in neuroticism (are less susceptible to the negative effects of between-options trade-offs). From the point of view of scientific realism (Cacioppo, Semin and Berntson, 2004), such an explanation approximates reality (explains experimental results) better than abovementioned alternative explanations and can thus be seen as superior. It is, then, to be accepted until a more parsimonious explanation is provided in further research.

6.8.3 Covariates and choice satisfaction

I controlled the results of Studies 0-4 for the influence of covariates: interest in shopping in the given product category, personal relevance of shopping in the product category, age and gender. In Studies 1 and 3, no covariate influenced choice satisfaction. In every other study at least one covariate influenced choice satisfaction; however, these covariates were different across different studies. Further, controlling for the covariates' influence on choice satisfaction did not significantly change other experimental results in any of the studies. Therefore, the influence of these covariates on choice satisfaction was inconsistent and controlling for it was not necessary overall.

This shows that the conceptual model (**Figure 5-9**) approximates reality for both male and female consumers of different ages, irrespective of how involved they normally are in similar purchases. Of course, it is impossible to control for all variables that may influence one's choice satisfaction, but randomisation of experimental treatments should negate such an influence. For now, I believe that it is safe to conclude that the experimental effects had sufficient power to be detected above the influence of covariates on choice satisfaction.

6.9 Summary of discussion

Overall, in this thesis I showed that reversible decisions are not uniform and do not always lead to lower decision satisfaction. I identified two kinds of reversible decisions: those that could be unmade and those that could be remade and showed that the former kind of reversible decisions leaves consumers more satisfied than the latter. I showed that this effect is due to the different extent of

post-choice comparative thinking that is triggered by the two kinds of reversible decisions. I thought about some moderators for this effect and empirically tested some of them. I explained the links in the updated conceptual model, why these links are independent of covariates and why there was no moderation of the decision reversibility options' effect on choice satisfaction by maximising mind-set.

In this chapter of the thesis, I explained the findings of my empirical studies and related them to previous literature. I will now move on to explaining the implications of these findings for theory and practice.

7 CONCLUSIONS AND FURTHER RESEARCH

7.1 Introduction

In this chapter, I will focus on the outcomes of the research performed in this thesis. I will explain the theoretical and substantive contributions of the research conducted for this thesis and discuss the limitations of this research. Further, I will suggest new avenues for further research into decision reversibility and its influence on consumer satisfaction. I will then provide a brief personal statement on the learnings from conducting PhD-level research.

7.2 Contributions to theory

The research done in this thesis focused primarily on making contributions to the theoretical domain, i.e. to the theoretical link between decision reversibility and choice satisfaction. According to Lynch et al. (2012), the success of theoretical contribution in the field of consumer behaviour lies in its theoretical novelty, the shift of beliefs between the construct-to-construct relationships, the importance of these beliefs to theory of consumers (e.g. overturning prior theoretical accounts of findings about consumer behaviour) and the absence of more compelling theoretical accounts that can explain the observed data. I addressed the last point in 6.8.2 and will now show how this research satisfies the other criteria for a significant theoretical contribution (Lynch et al., 2012).

7.2.1 Theoretical novelty

Firstly, it would be useful to look at the novelty of the conceptual model.

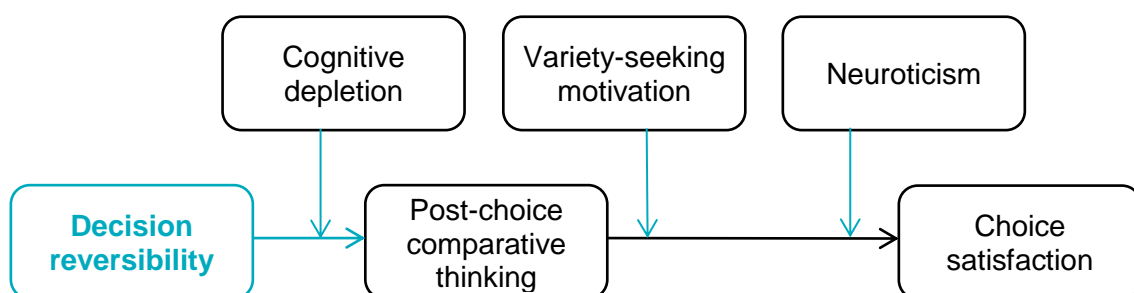


Figure 7-1 Theoretical novelty in conceptual model

Figure 7-1 shows which constructs were refined (turquoise edges and text and not black edges and text for constructs in the model) and which links between constructs are new (turquoise lines linking constructs and not black lines).

It would serve to first mention the constructs and the links in this conceptual model that are not new. None of the studies performed in this thesis change the constructs of cognitive depletion, variety-seeking motivation, neuroticism, post-choice comparative thinking and choice satisfaction. I used established definitions and operationalisations for these constructs. Further, the link between post-choice comparative thinking and choice satisfaction is not new on its own, as the negative effect of post-choice comparisons on choice satisfaction has been demonstrated in earlier consumer behaviour research (Gu, Botti and Faro, 2013). The following elements of the conceptual model, are, however, completely new:

- the notion that post-choice comparative thinking mediates the effect of decision reversibility options on choice satisfaction;
- the notion that cognitive depletion moderates the effect of decision reversibility on post-choice comparative thinking and choice satisfaction;
- the notion that variety-seeking motivation and neuroticism moderate the effect of decision reversibility on choice satisfaction.

Firstly, however, in this thesis I refined the construct of reversible decisions (decision reversibility). I show that there is more than one kind of reversible decisions, drawing from retail practice. I show that the two kinds of reversible decisions (i.e. when consumers have an option to unmake and to remake a choice) make a decision substantially reversible and that they are both perceived as giving a decision an equal amount of changeability. This contribution broadens the current theoretical account of reversible decisions, as I have previously criticised the extant decision reversibility theorists for largely ignoring the option to unmake a choice as a valid operationalisation of reversible decisions (please see **Table 2-4**).

7.2.2 Qualifying previous findings

The biggest theoretical contribution, however, lies in that I modify the link between decision reversibility and choice satisfaction. Firstly, I show that overall decision reversibility does not always lead to lower choice satisfaction. Secondly, I show that one kind of reversible decisions (when consumers can unmake a choice) makes consumers more satisfied with their choices than the other kind of reversible decisions (when consumers can remake a choice). This is an important distinction as it contradicts the statements by the extant reversible decision theorists regarding the suggested effect of these kinds of reversible decisions on choice satisfaction. I thus alter (but do not overturn) a previous account of how decision reversibility influences choice satisfaction.

Thirdly, I show that the differential effect of decision reversibility options on choice satisfaction is driven by the process of post-choice comparison between the chosen and foregone alternatives. The decision reversibility – post-choice comparative thinking link is new here, although it is semantically close to the decision reversibility – post-choice counterfactual thinking link that was established in previous research (Hafner, White and Handley, 2012). The link between decision reversibility options and comparative thinking is important as, in my opinion, it portrays more accurately why different decision reversibility options affect choice satisfaction the way they do than previous explanations of why reversibility lowers satisfaction. It is more concrete than simply suggesting that consumers keep thinking about their choices after they have been made (Bullens, van Harreveld and Förster, 2011), explains further why consumers who can remake a choice do not spread the alternatives (Bullens et al., 2013) and does not need to refer to the unobservable psychological defence system that triggers spreading of alternatives (Gilbert and Ebert, 2002). This thesis's theoretical account is also more precise than suggesting that counterfactual thinking is the true mediator of the decision reversibility – choice satisfaction relationship (Hafner, White and Handley, 2012). In the terms of scientific realism that is commonly adopted in consumer research (Lynch et al., 2012), the explanation for the effect of decision reversibility on choice satisfaction via post-choice comparative thinking is more parsimonious than previous theoretical

accounts and approximates the reality better than previous theoretical accounts. Thus, a claim that it is superior than them can be made.

7.2.3 New moderators of the main effect

Moreover, the fact that the effect of consumers' having an option to unmake or to remake a choice on post-choice comparative thinking is moderated by cognitive resource capacity is also new. Although decision reversibility theorists studied whether limiting cognitive resources changes people's satisfaction with decisions that can be remade (Bullens, van Harreveld and Förster, 2011; Hafner, White and Handley, 2012), the moderated mediation model (please see **Figure 5-5**) gives a more detailed theoretical account of the process through which decision reversibility options affect choice satisfaction than before. In general, resource depletion is a prominent subject in consumer behaviour (Vosgerau et al., 2008), which makes its link to decision reversibility and choice satisfaction theoretically relevant.

The link between variety-seeking motivation and consumer reactions to decision reversibility options is also new. Variety-seeking motivation is a hotly debated topic in consumer behaviour, as well: for example, the Society for Consumer Psychology, one of the leading professional bodies in consumer research, recognises it as a separate field of content expertise for its members. The link between such grand constructs as variety-seeking tendency and choice satisfaction is theoretically important on its own and the finding that this link is moderated by decision reversibility options is therefore theoretically interesting. Further, whilst the notion that variety-seeking motivation can be implicitly induced in consumers is not new, not many studies attempted to do it (Maimaran and Wheeler, 2008; Mukherjee, Kramer and Kulow, 2017).

Next, the finding that neuroticism moderates the relationship between decision reversibility options and choice satisfaction is perhaps the most theoretically interesting in the conceptual model. This is because at different levels of neuroticism consumers appear to be more or less comfortable with having an opportunity to remake a choice. The finding that a consumer's personality has a role in determining their reactions to reversible decisions is theoretically

substantial, especially given that there were few efforts to date to link personality to decision reversibility's effect on decision outcomes (Bullens et al., 2014; Shiner, 2015). Further, neuroticism is one of the factors in perhaps the most substantial personality theory in psychology, the Big Five (Costa and McCrae, 1992), which makes its moderation of the decision reversibility – choice satisfaction relationship very important. Interestingly, this finding is somewhat at odds with that of Shiner (2015), who showed that maximisers are more satisfied with reversible decisions (those that can be remade) than non-maximisers. Neuroticism is sometimes related to maximisation tendency (Nenkov et al., 2008), but its effects on choice satisfaction with different kinds of reversible decisions are not in the direction that could be assumed from Shiner's findings.

The finding that neurotic consumers become less satisfied with decisions that can be remade (but not unmade), since they are more sensitive to negative between-options trade-offs, but extremely emotionally stable consumers become more satisfied when they can remake (but not unmake) a choice deserves further inspection. Since neuroticism has been studied by neuropsychologists (Depue and Collins, 1999; Ormel et al., 2013; Servaas et al., 2013), it would be theoretically fascinating to inspect if there's a biological pre-disposition for neurotic and extremely emotionally stable consumers to react differently to remaking the same choice and to comparative thinking in general. The moderating effect of neuroticism on the relationship between decision reversibility options and choice satisfaction thus has significant potential for launching an avenue for further research into decision reversibility.

Finally, it should be noted that consumer satisfaction is one of the central constructs in marketing (Giese and Cote, 2000) and consumer behaviour (Pham, 2013) and research on it is thus very theoretically important. Decision reversibility literature, on the other hand, is growing slowly but has not reached the field of consumer behaviour yet, instead being studied by the discipline of applied psychology (Bullens and van Harreveld, 2016). Thus, I also make a contribution by bringing in the construct of reversible decisions from the field of

psychology into the marketing domain, making it more “market-ready” in the process.

7.2.4 Summary of contributions to theory

Overall, with this research I make the following theoretical contributions:

- alter the construct of reversible decisions;
- bring in this construct into the marketing domain;
- clarify the link between decision reversibility and choice (decision) satisfaction;
- show mediation of this link by post-choice comparative thinking;
- show moderation of this link by several prominent constructs related to purchasing situation and consumer personality.

I thus shift beliefs about the construct-to-construct links (and beliefs about one of the constructs itself) and introduce theoretically novel mediators and moderators, most of which play a major part in current consumer theory. Thus, I think that the findings in this thesis achieve a substantial contribution to the conceptual domain, as per Lynch et al.'s (2012) recommendations. This contribution is primarily to the study of post-choice processes in consumer behaviour (both decision reversibility and choice satisfaction, with reference to the theory of cognitive dissonance), but also to the theory of personality (Big Five personality, i.e. how neuroticism changes reactions to post-choice comparisons), the theory of ego depletion (how it affects post-choice comparisons and satisfaction) and the theory of consumer motivation (how variety-seeking motivation affects satisfaction with reversible decisions). Further, I make a contribution to the return policy and money-back guarantee literature (Bonifield, Cole and Schultz, 2010; Janakiraman and Ordóñez, 2012; Kim and Wansink, 2012; Suwelack, Hogueve and Hoyer, 2011) by linking exchange lenience (returning for an exchange versus returning for money back) to consumer satisfaction with their purchases, which has not been done before.

Finally, I also study how order cancellations affect satisfaction (compared to remaking a choice), which has not been done before. There is some research

that offering service cancellations may make service providers more profitable (Xie and Gerstner, 2007). Looking at satisfaction with one's decision may thus be a fruitful venue for further research into cancellation options.

7.3 Implications for marketing practice

Although making contributions to managerial practice was not the primary reason for this research, the obtained results can still be leveraged by practitioners.

7.3.1 Making changes to return and cancellation policies

Firstly, retailers and especially online retailers try to address the issue of excessive returns of goods, which can be done by limiting the leniency of return policies (Davis, Gerstner and Hagerty, 1995; Janakiraman, Syrdal and Freling, 2016b). The two decision reversibility options map onto one dimension of return policy leniency: exchange leniency, with an option to unmake a choice being seen more lenient than an option to remake it (Janakiraman, Syrdal and Freling, 2016a). I show that more lenient return and cancellation policies should bring on more positive consumer reactions. Consumer satisfaction is a significant predictor of future repurchase behaviour (Martin et al., 2008), thus retailers should find useful the finding that exchange-only return policies make consumers less satisfied. In the light of this, some retailers may consider making their return and cancellation policies more lenient to make their customers more satisfied. For example, Sports Direct International, the biggest sports retailer in the UK and one of the top 250 largest retailers in the world (Deloitte, 2017), only offers exchanges and not refunds on in-store purchases and may benefit from a more lenient policy. Of course, a more detailed cost-benefit analysis should be done by retailers who consider making their return policies more lenient; such an analysis would, however, be outside the scope of the research problem in this thesis as it focused on measuring consumer (choice) satisfaction only.

Secondly, since having an opportunity to remake a choice makes consumers less satisfied with their choice compared with having an opportunity to unmake

it, retailers may wish not to make the option to remake a choice salient to consumers. They may wish not to stress the opportunity for exchanging the purchased item. For example, an online retailer may wish to make it clear that it accepts order cancellations after a checkout but not that the items can be exchanged later, which should only inform consumers of the opportunity to unmake a choice.

Additionally, I find that providing an order cancellation option does not decrease choice satisfaction; in fact, it may increase it, as shown in Study 1. It may be financially feasible for online retailers to allow order cancellations as they do not need to spend money on shipping the now-unwanted items to consumers who could return them. Retailers such as Amazon and Asos already give customers this option and my research shows that this may be beneficial to consumers, especially if they are higher in neuroticism.

7.3.2 Using neuroticism in managing returns

Further, my findings can be useful to retailers who could identify neurotic customers. These retailers should more actively communicate the fact that these customers can unmake their choices. They should also make sure that they do not remind neurotic customers about a chance to remake a choice, as this can decrease their choice satisfaction. Non-neurotic consumers, on the contrary, do not need to be informed that they can unmake their choices. Therefore, retailers may alter the presentation of different return and cancellation conditions to different customers based on their level of neuroticism. This is easier done online: neurotic consumers may be informed that they can cancel their order or return items for a refund at checkout and non-neurotic consumers may learn this information actively by searching for a retailer's return and cancellation policy.

Neuroticism can be used successfully in psychographic segmentation of online retail customers in many different countries (Barnes et al., 2007). Combining this segmentation approach with offering varied communication of return conditions to different psychographic segments may help retailers increase their profit margins. Naturally, the success of these measures will depend on the

sophistication with which customer data is collected and handled but it is still possible to propose that retailers consider psychographic segmentation of their clients, focusing on neuroticism specifically, in order to manage returns and order cancellations. The data on consumer neuroticism can be easily collected, e.g. by means of a very short questionnaire (1-2 minutes in length) that could follow some questions on customer satisfaction that are often asked by retailers. Response rate may, however, be an issue with such an approach and alternative ways to gather the information about consumers' neuroticism levels may need to be devised.

7.3.3 Controlling the effects of exchange-only policies

Moreover, the findings of this thesis show that although giving consumers an option to unmake a choice leaves them more satisfied with their choice than giving them an option to remake it, this effect can be controlled. Therefore, this research may help retailers understand when having exchange-only policies will not harm consumer decision satisfaction and take action to prevent consumers from being dissatisfied with their purchases. Retailers may wish to consider cognitively depleting customers after a purchase, which can be achieved by sensory stimulation. For example, playing music during shopping could deplete cognitive processing capacity (Moreno and Mayer, 2000), especially if the music played in-store is highly dynamic and rhythmically varied (Kiger, 1989). Alternatively, slightly increasing the temperature in the check-out and returns handling areas (e.g. from 19 to 25°C) can also make consumers cognitively depleted, as was demonstrated in previous research by Cheema and Patrick (2012). The temperature of up to 25°C may be slightly uncomfortable for retail customers but is unlikely to cause them serious discomfort. The findings that cognitive depletion can be manipulated through retail atmospherics (e.g. music, temperature) are of particular interest to retailers. Retail atmospherics are a widely used tool for influencing consumer purchase intentions (Puccinelli et al., 2009), but retailers may be able to kill two birds with one stone and design a store environment that both promotes purchase and prevents dissatisfaction with exchange-only return policies. Retailers already vary both music and

temperature in their stores and may consider manipulating these so as to increase consumer satisfaction in reaction to return policy conditions.

If cognitively depleting consumers proves difficult or unfeasible, retailers may wish to motivate consumers to seek variety. In order to stimulate variety-seeking they can, for instance, offer their customers a spicy snack (Mukherjee, Kramer and Kulow, 2017) or gum to chew during shopping (Lee & Sergueeva, 2017). Note that from neither of these ways to encourage variety-seeking should consumers glean that their shopping motivation is being manipulated, as both these manipulations of variety-seeking tendency take effect implicitly. Alternatively, to stimulate variety-seeking motivation retailers can follow the more traditional techniques of frequent pricing changes and new product introductions (Ratner, Kahn and Kahneman, 1999). Variety-seeking can also be encouraged through retail servicescape: if the aisles in the shops are narrower, consumers will seek variety to achieve purchase freedom (Levav and Zhu, 2009). Perhaps making a returns handling area more cramped may prevent negative reactions to exchange-only return policies.

Overall, I show why retailers should introduce easy order cancellations and returns for a refund, rather than have exchange-only policies. However, I also recommend some ways in which retailers who have exchange-only policies can prevent consumer dissatisfaction with their purchases.

7.4 Research limitations

No research enquiry is perfect. This thesis is not an exception: there were limitations on the extent and the fashion in which knowledge could be produced in this thesis, imposed by the choice of research philosophy, research question, research participants, research design and research analysis. I will reflect on each of these limitations in detail, as doing so will highlight the issues that could be targeted by further research.

7.4.1 Limitations due to research paradigm and research question

Firstly, as shown in 3.7, choosing scientific realism as a paradigm to guide the research effort in this thesis limits the research question to be answered:

“How does having the option to unmake a choice, compared to having the option to remake a choice, influence consumers’ choice satisfaction?”.

Scientific realism assumes that there is one, objective reality, independent from my enquiry into it, and that this reality is mostly observable, but may be explained with some unobservable constructs (Cacioppo, Semin and Berntson, 2004). I therefore do not focus on individual or group meanings of decision reversibility and satisfaction, instead attempting to measure them on numerical scales that are the same for every participant. Perhaps enquiring what reversibility means to consumers or what satisfaction means to them could be theoretically interesting, but this is outside the scope of current research.

Further, in my research question I focus on the one-way relationship between decision reversibility options and choice satisfaction: the former influence the latter. This one-way relationship is hypothesised from previous decision reversibility research (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002; Hafner, White and Handley, 2012). While it is unlikely that the opposing relationship exists, i.e. that one’s decision satisfaction can change their judgment that the decision was reversible, it cannot be ruled out due to the lack of research on this matter.

Moreover, I focus on measuring only one dependent variable. Consumer satisfaction (Giese and Cote, 2000) and choice satisfaction in particular (Gu, Botti and Faro, 2013) are important constructs in marketing but are not the only outcome of retail transactions. Further research may inspect the influence of decision reversibility options on other downstream outcomes of consumer-retail interactions, such as repurchase intentions and customer lifetime value. Overall, the research limitations attributable to the research paradigm and the research question help shape research effort and make it more focused. I imposed them voluntarily.

7.4.2 Limitations due to sampling approach

In this research, I used Amazon Mechanical Turk samples in Studies 0-3 and University of Washington’s marketing students sample in Study 4. These are non-probability samples. Therefore, the generalisability of the findings to the US

population is questionable, especially given the fact that both MTurk and student samples do differ from the general population on several demographic and psychographic variables (Goodman, Cryder and Cheema, 2013; Paolacci, Chandler and Ipeirotis, 2010). The sample sizes were sufficient for experimental research (Ioannidis, 2005) but not for statistical inference to the whole US population (or the population of other countries, for that matter).

While this appears problematic, this limitation should be assessed in the context of experimental design. Experiments aim to establish a causal relationship, i.e. to increase internal validity, even if some external validity (generalisability) is sacrificed (Shadish, 2002). Therefore, using relatively homogeneous student samples is permissible in experimental research and is done very frequently, as well as using slightly more heterogeneous MTurk samples (Goodman and Paolacci, 2017). Further, I take on an approach to external validity proposed by Lynch (1999): external validity can only be criticised when there is a theoretically sound moderator of empirical effects. I try to minimise the chance that these moderators exist by controlling for covariates and using a student sample instead of an MTurk sample for studying the moderating effect of neuroticism on satisfaction with choices that can be unmade, as opposed to remade. This is because MTurk participants are known to be more neurotic than the US population in general (Goodman and Paolacci, 2017). Thus, I acknowledge the limitation due to sampling approach but do not think that it needs to be addressed further.

7.4.3 Limitations due to research design

Several issues can be identified regarding how the research in this thesis was conducted. Broadly, the most significant of them relate to the following:

- measurement of choice satisfaction and of the extent of post-choice comparison;
- manipulation checks for cognitive depletion, variety-seeking motivation and maximisation tendency;
- realism of decision reversibility manipulation;

- likelihood that there are further moderators of the main effect of decision reversibility options on choice satisfaction.

To begin with, I use Likert-type scales to measure choice satisfaction. While this approach to measuring this construct is very common in consumer behaviour and in topics related to incomplete and reversible decisions (Bullens et al., 2014; Gilbert and Ebert, 2002; Gu, Botti and Faro, 2013), there are alternative ways to measure satisfaction. In general, there is currently a push for “real-life” dependent variables, e.g. measuring monetary spend or behaviours, rather than intentions in the field of consumer behaviour (Mukhopadhyay, Raghurir and Wheeler, 2018). Choice satisfaction could thus be measured in behavioural terms, e.g. whether participants kept their chosen items (Hafner, White and Handley, 2012).

However, there could still be issues with this measurement of choice satisfaction. Firstly, it is debatable whether it is correct to compare the proportions of those who remade a choice and those who unmade a choice as they actually represent different behaviours. Secondly, the data collected in Studies 0-4 showed that very few participants actually took reversibility options when they had them (no more than 2 per study). Therefore, statistical testing of this data would be impossible. Lastly, consumers may delay the return or cancellation behaviour even if they are dissatisfied, which is true both from my personal observations and indicated by previous research (Janakiraman and Ordóñez, 2012). Therefore, the chosen approach to measuring choice satisfaction is not necessarily inferior to other approaches.

Further, the measure of the extent of post-choice comparison between participants' chosen and non-chosen alternatives relied on participants' self-reports. While the expected results were obtained with this measure and while this measure has been used in high-profile consumer behaviour research before (Gu, Botti and Faro, 2013), this may not be ideal. From this approach to measuring the extent of post-choice comparative thinking it is not possible to assess the content of these comparisons. A thought-listing technique could have been used (Hafner, White and Handley, 2012); however, it proved

problematic on MTurk as participants in one study that is not reported in this thesis (that used participants' thoughts as a mediator) did not generate enough relevant thoughts related to post-choice comparisons. This may be due to time pressure that MTurk workers are under or lack of desire on their part to scrutinise their own thought processes.

Further, consumers may make attribute-level comparisons, e.g. 'the cover of this book is more attractive than this one's' or alternative-level comparisons, e.g. 'this book is better than this one' (Mussweiler and Epstude, 2009). In line with Gu, Botti and Faro (2013) and Brenner, Rottenstreich and Sood (1999), I do not differentiate between attribute-level and alternative-level comparisons between choice alternatives. Normally, consumers will make attribute-level comparisons within the same product category (Hsee and Leclerc, 1998; Johnson, 1984), thus it can be assumed that the extent of post-choice comparative thinking is the extent of attribute-level comparisons between options. Ultimately, it is unlikely that attribute-level comparisons would differ from alternative-level comparisons in their influence on choice satisfaction with different kinds of reversible decisions, but further research may verify this.

Moreover, while I can state with confidence that decision reversibility manipulation worked well: participants in all studies saw the option to unmake a choice and to remake a choice as equally reversible and both of them as more reversible than an irreversible decision, I did not perform any manipulation checks for any other experimental manipulation. Therefore, their success could not be truly established.

The reasons for not performing the manipulation checks for cognitive depletion, variety-seeking motivation and maximising mind-set are two-fold. First, all of these manipulations should produce implicit effects on consumers. They should thus not be aware that they are more cognitively depleted if they are in the depletion condition, seek variety in choices if they are in the variety-seeking motivation condition and aim to make the best choice if they are in the maximising mind-set condition. Participants in Studies 2-4 thus would not know that they were exposed to respective manipulations. Further, reflecting on the

degree to which their cognitive resources are depleted may be difficult for consumers; the other two manipulations may cease to be successful if participants understood the intent of these manipulations (Bargh, 2002).

Second, the manipulations I used were borrowed, in as much likeness as possible, from high-profile publications in marketing: *Journal of Consumer Research* for cognitive depletion (Sokolova and Krishna, 2016) and the maximising mind-set prime (Ma and Roese, 2014) and *Journal of Marketing Research* for the variety-seeking prime (Maimaran and Wheeler, 2008). The quality of these manipulations can thus be assumed to be good, based on where these manipulations were featured.

There might also be some concern regarding the realism, or ecological (face) validity of the manipulation of decision reversibility options. First, I manipulated the option to unmake a choice as a cancellation option and not an option to return an item for a refund. Both cancellations and returns for a refund represent unmaking a choice but using the option to return items for a refund would not have face validity in an online experiment as with a return for a refund consumers are expected to obtain the goods first and return them later. Some participants may therefore find the idea of returning goods for a refund confusing in an online study. However, it should be noted that both practitioners such as Amazon and policy-makers such as the UK Government in the *Consumer Contracts (Information, Cancellation and Additional Charges) Regulations* (2013) recognize returns for a refund as a case of contract cancellations. These contract cancellations can be initiated at any point in time, even before the goods are shipped to consumers, which essentially means that returns for a refund are no different from a cancellation option, apart from having to send the items back to a retailer. Because of this, I do not expect that giving consumers an option to return items for a refund should result in different levels of choice satisfaction than giving them an option to cancel orders, but further research may test this.

Secondly, the degree to which the option to remake a choice reflects a typical shopping encounter is debatable. In a real-life shopping context, retailers can

accept an exchange for a completely different new item, for example, that was not initially in a consumer's choice set. The extent of post-choice comparisons due to having the option to remake a choice may potentially be affected by this. Alternatively, a consumer may find only one item (and choice option) attractive and an option to exchange a product may thus not be relevant to them. This will likely lead to reactance (Brehm, 1966) and a higher difference in satisfaction between having the option to unmake, rather than remake a choice. It should be noted, however, that **all** previous studies in decision reversibility (please see **Table 2-4**) used very similar operationalisations of the option to remake a choice as myself.

Thirdly, in all studies participants were exposed to decision reversibility options after a choice has been made. A reality of modern-day shopping is the fact that some consumers may know the return or cancellation policies before they make a purchase, especially if they have shopped at a given retailer before. However, previous research on decision reversibility found that consumers were less satisfied with their choices if they could be remade when consumers had known before making a choice that they would have an option to remake it later (Bullens et al., 2014). As the same effect was found when consumers only learned that their choice can be remade after making it (Gilbert and Ebert, 2002), I do not expect the time when consumers learn about the reversibility option (before or after a choice) to moderate the effect of reversibility options on choice satisfaction, but this may be confirmed in further research.

Consumers may also not learn retailers' return or cancellation policies at all. This is easier done in bricks-and-mortar retailers than online, where consumers are often informed about the opportunity to return items after checkout. Of course, if consumers are not aware of the decision reversibility options available to them, they should not be influenced by them at all, neither negatively nor positively.

Further, cancellation and return terms in real life are more complex than my operationalisations of them. In particular, there is a time dimension and an effort dimension to product returns (Janakiraman, Syrdal and Freling, 2016a). These

may change how consumers react to having an option to unmake and to remake a choice. For example, consumers who have a longer time limit to return products may forget to return them more easily than those who have a shorter time limit (Janakiraman and Ordóñez, 2012). This may change how satisfied consumers are with their decisions that can be unmade or remade, potentially by suppressing post-choice comparative thinking for those who can reverse their decision in very distant future. Alternatively, as the time flies consumer satisfaction may affect the actual behaviour (repurchase, returns/cancellations) differently. I had to limit the scope of the current research to make it manageable and could not focus on other dimensions of retailers' policies, prioritising the psychological process of comparative thinking due to decision reversibility instead.

Finally, in this research I made participants choose from extensive assortments (24 books or 16 board games). While doing so may decrease choice satisfaction on its own (Iyengar and Lepper, 2000), it should be noted that extant research found a negative influence of having the option to remake a choice on choice satisfaction even for choices between only two options (Bullens et al., 2013, 2014; Gilbert and Ebert, 2002). Therefore, it is very likely that the same results regarding the influence of different reversibility options on choice satisfaction will be found for choices from smaller assortments, as long as they have options that have uniquely attractive qualities (one option does not dominate the rest entirely).

Additionally, I did not make consumers actually pay for books or board games, which could have increased their commitment to their chosen option and produced stronger effects. This notion could be tested in further research.

Overall, the realism of the research enquiry in this thesis is not very high, as is often the case with experimental research that aims to make conceptual contributions first (Lynch et al., 2012; Pham, 2013). I prioritised establishing the causal relationship between having the options to unmake and to remake a choice and choice satisfaction. Perhaps doing a field study should be the next

step in making this research more practice-oriented and closer to 'real' consumer behaviour, but I think this should be done only in further research.

7.4.4 Limitations due to data analysis approach

Finally, using the significance testing for verifying the research hypotheses comes with its own limitations. While I selected the correct tests and performed them correctly, the findings only approximate the suspected relationship between the decision reversibility options and choice satisfaction. Although highly unlikely due to multiple replication, this relationship may, in fact, be spurious (Ioannidis, 2005). Significance testing calculates the probability of this, but even a 99.99% probability of a certain hypotheses' being true does not mean it is true. This is, of course, a criticism that can be applied to the highly quantitative field of consumer behaviour, in general (Pham, 2013). Social and behavioural sciences in general are subject to some false findings based on results of statistical hypothesis testing (Gelman, 2018).

Additionally, in Study 4 I also face the opposite issue: I obtain the result that shows no influence of mind-set prime on choice satisfaction at all. This null effect cannot be interpreted, as the relationship between the two variables may exist in reality but was not found in Study 4 due to insufficient power of the experiment; or it may not exist. Again, adopting a different research paradigm may have helped circumvent this issue, but doing so would also prevent correct testing of causal relationships. For these reasons, I state that I find or do not find support for hypotheses, not confirm or reject them, allowing for a trace of doubt over the results of significance testing.

7.5 Further research

Further research should address the limitations of this research and broaden the theoretical knowledge of how reversible decisions affect consumer satisfaction and behaviour. Firstly, the findings of Study 1 could be tested in a field setting. A field experiment in a retail store (or at an e-tailer) could provide some extra realism to the findings. The challenge would be to convince retailers

to alter their return policies according to the experimental design, as the benefits of such manipulations may not be clear to them.

Additionally, further research could focus on refining the mediation mechanism by measuring the extent of post-choice comparative thinking in a different way to that used in Studies 0-2. A thought listing procedure could be implemented. Alternatively, more advanced techniques such as the implicit association test (Greenwald, McGhee and Schwartz, 1998) could be used to measure both the extent of post-choice comparisons and accessibility of variety-seeking and maximising concepts to consumers.

Further, a different measure of satisfaction, e.g. retention of the chosen item or willingness to pay for it could be used. A different dependent measure in general could be used if the mediating mechanism is accepted. For example, further research may conduct a longitudinal study of how the different reversibility options influence long-term profits and customer churn rates.

Notably, I only look at an outcome of an individual transaction involving reversible decisions. Retailers may be interested in how decision reversibility may affect the whole customer journey or when in this journey should customers be informed of the reversibility options. Thus, I hope that my research will invite other scholars to map the influence of decision reversibility options on satisfaction (or further behaviour) across the whole consumer journey. Regarding the specific stages of this journey, it would be theoretically interesting to see how several factors at each stage affect consumer reactions to reversible decisions. **Figure 7-2** shows some potential moderators for the effect of decision reversibility options on choice satisfaction, across the scope of consumer behaviour (Pham, 2013).

Firstly, it is possible that customers who shop for others (e.g. for a gift) will feel differently about reversible decisions than those who shop for themselves. Those who shop for others do not experience choice overload, quite the opposite: they are more satisfied with choices from broader assortments (Polman, 2012). They are therefore less susceptible to negative between-option

comparisons. Perhaps they would then appreciate the opportunity to keep making these comparisons after a choice.

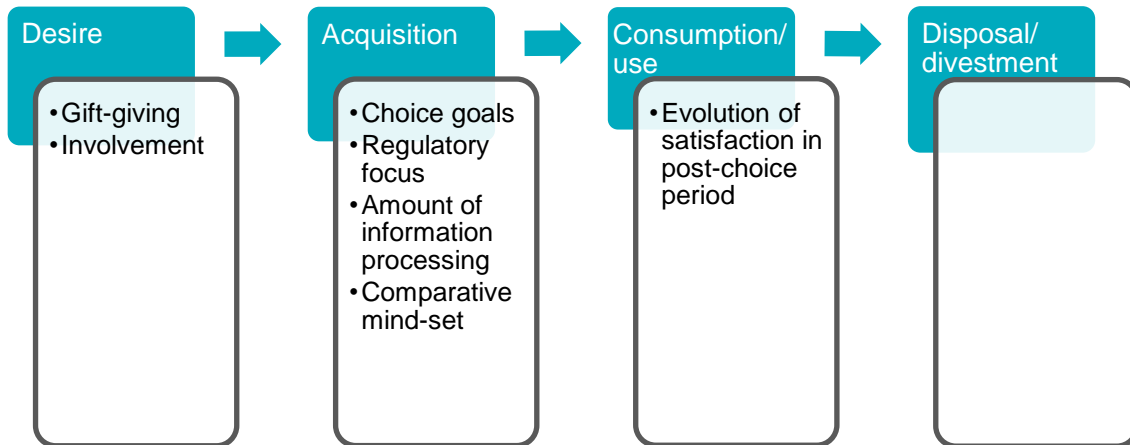


Figure 7-2 Further potential moderators across the scope of consumer behaviour

Secondly, involvement in a purchase decision may moderate the effect hypothesised in H₁. Note that involvement with a product category, i.e. personal relevance or importance of a product category (Coulter, Price and Feick, 2003) did not consistently influence choice satisfaction in Studies 0-4, nor did controlling for it change the experimental results. However, perhaps if a specific choice is more personally important for a consumer, they will feel even more satisfied with a choice that can be unmade, rather than remade, as the risk of making a wrong choice that is brought up by having an opportunity to remake a choice would be more salient to them.

Thirdly, it would be interesting to see how consumer satisfaction with reversible decisions changes based on the choice goal (Bettman, Luce and Payne, 1998). Of the five choice goals: decision confidence, justifiability, regret minimisation, evaluation costs and avoiding negative affect (Heitmann, Lehmann and Herrmann, 2007) the first two could decrease the effect of decision reversibility options on choice satisfaction, as having the option to remake a choice should present a chance for a more accurate or justifiable choice. The other three choice goals could increase the observed effect, as post-choice comparative thinking that is caused by having an option to remake a choice defies the goal

of minimising evaluation costs and may potentially lead to negative affect and regret.

Fourthly, there is evidence that consumers in a prevention focus are less negatively affected by a chance to remake a choice, rather than by an irreversible decision (Bullens et al., 2014). Consumers in a prevention focus are more concerned with a presence or absence of negative outcomes and consumers in a promotion focus are more concerned with presence or absence of positive outcomes (Higgins, 1997). In fact, making a reversible decision (where a choice can be remade) puts consumers in a prevention focus (Bullens et al., 2014). What remains to be seen, however, is whether these regulatory foci will affect choice satisfaction with decisions that could be unmade, rather than remade and whether the prevention focus will be triggered by a chance to unmake a choice, too.

Fifthly, the amount of information processing in a choice may also affect how consumers react to reversible decisions. For example, when consumers are under time pressure, they will regret choices from extensive choice sets more, because they would feel that they did not have time to make a good choice (Inbar, Botti and Hanko, 2011). Could they appreciate the opportunity to remake it or would being reminded of the attractiveness of foregone options decrease their satisfaction even further than for those who could process information more carefully? Further research may answer this question.

Moreover, consumers can be put into a comparative mind-set, where they will make comparisons between different things more freely (Xu and Wyer, 2008). Consumers can also start making comparisons after being told to scrutinise their choices (Sela and LeBoeuf, 2017). Will consumers in a comparative mind-set be more or less susceptible to having an option to unmake, rather than to remake a choice? Some preliminary experimental data that I collected with Cranfield University students (but do not report in this thesis) suggests that if consumers are encouraged to make comparisons between options, the difference in choice satisfaction between different decision reversibility

conditions disappears. This could be tested further, by implicitly manipulating the comparative mind-set.

Lastly, previous research demonstrated that with the passage of time consumers who have an option to remake a choice continue decreasing the evaluation of their chosen item relatively to foregone alternatives (Frey et al., 1984; Gilbert and Ebert, 2002). Thus, it is likely that having an option to remake, rather than unmake a choice, should make consumers increasingly less satisfied with their purchases as the time passes. On the other hand, in irreversible decisions the difference in choice satisfaction between the chosen and foregone alternatives disappears after an item is consumed (Arens and Hamilton, 2017), potentially suggesting that the effects observed in this study might disappear after consumption. As previous studies on choice overload reached the contrasting conclusion that the differences in satisfaction do not disappear after consumption (Gu et al., 2013; Hafner et al., 2012), further research may focus on modelling consumer satisfaction with different reversible decisions throughout the whole consumer post-purchase journey. These studies may also inspect whether consumer satisfaction with different reversible decisions depends on the temporal distance until final consumption, an element of construal level theory (Trope and Liberman, 2003). Prior evidence has linked the temporal distance to consumers' post-choice outcomes (Janakiraman and Ordóñez, 2012) and verifying whether temporal construal may affect consumer reactions to reversible decisions could be the continuation of such research.

Finally, the interplay between consumer personality and consumer reactions to reversible decisions should be explained further. I show how neuroticism affects the evaluation of choices that can be unmade and choices that can be remade. The other consumer personality variables to consider are the maximisation tendency (several replications could be done to confirm that the lack of effect in Study 4 is due to the lack of relationship between maximisation tendency and reactions to different reversible decisions) and consumer impulsiveness (Puri, 1996). Impulsive consumers are more likely to engage in impulse buying, i.e. to deliberate their purchases very little. Perhaps they would react more positively

to having an opportunity to unmake their choices, as having an opportunity to remake them may be too daunting for impulsive consumers.

Of course, it is not possible to predict all potential moderators for the effect of different decision reversibility options on choice satisfaction. Cultural background, social interactions, different choice schemata and other factors that influence consumer behaviour may all play a role. Herein, I only focused on several potential moderators where I can predict a potential moderation effect based on my knowledge of consumer behaviour. I would welcome further research effort to test whether these or any other variables affect consumer outcomes of decision reversibility options.

7.6 Summary of conclusions

I made theoretical contributions by problematising and refining the construct of reversible decisions, re-inspecting their link to decision satisfaction and specifying how this link is moderated by variety-seeking motivation, cognitive depletion and consumer neuroticism. I discussed how retailers can use the effects I found in designing return policies and offering cancellations. I also identified some research limitations and indicated some areas for further research. Until it is conducted, however, one notion rings true: unless they can cognitively deplete customers or make them seek variety, it is best for retailers to make sure that their customers are able not to remake their choices, but to unmake up their minds.

7.7 Personal statement

I have often heard Cranfield students compare a PhD to running a marathon. I have always felt that this comparison was inadequate: marathon runners normally know where they are running.

To me, this PhD was more akin to driving on an unfamiliar busy motorway, full of numerous junctions. As I was speeding on it, I did not know which junctions to take and where taking them would lead me. All I knew was a general sense of where I need to be. A compass pointing North. I started off with a different topic in mind (related to consumer perception of return policy terms) and

changed it significantly after having attended a PhD course in consumer behaviour at London Business School and reading up on decision reversibility. Therefore, I took an unexpected turn onto a different motorway.

As I was finding my way north on this foreign motorway, the road was bumpy and full of metaphorical potholes. Sometimes they were funny: I spent several months and a thousand of pounds designing manipulations of evaluation mode (comparative and isolated) that should moderate the main effect of decision reversibility options on choice satisfaction and running studies with them. I could not obtain statistically significant results, even if they were in the predicted direction. I spent about a day designing Study 3. It worked on the first try.

Ultimately, only Studies 1 and 2 went as planned, and even then not fully as planned. For the rest of the PhD, I took the unexpected turns in the road. The journey, overall, was interesting and strange, rather than long. I hope it ends in success.

REFERENCES

- Adams, J.S. (1963) 'Towards an understanding of inequity', *Journal of Abnormal and Social Psychology*, 67(5), pp. 422–436.
- Amazon UK (no date) *Cancel items or orders*. Available at: <http://www.amazon.co.uk/gp/help/customer/display.html?nodeId=201168530> (Accessed: 1 July 2018).
- Anderson, C.J. (2003) 'The psychology of doing nothing: forms of decision avoidance result from reason and emotion', *Psychological Bulletin*, 129(1), pp. 139–167.
- Anderson, E.T., Hansen, K. and Simester, D. (2009) 'The option value of returns: theory and empirical evidence', *Marketing Science*, 28(3), pp. 405–423.
- Anitsal, I., Anitsal, M.M. and Girard, T. (2011) 'Top 250 global retailers: on-line features of retailer websites', *Journal of International Business Research*, 10(1), pp. 45–57.
- Arens, Z.G. and Hamilton, R.W. (2017) 'The rebound of the forgone alternative', *Journal of Consumer Psychology*, 27(3), pp. 318–332.
- Arndt, J. (1985) 'On making marketing science more scientific: role of orientations, paradigms, metaphors, and puzzle solving', *Journal of Marketing*, 49(3), pp. 11–23.
- Averill, J.R. (1973) 'Personal control over aversive stimuli and its relationship to stress', *Psychological Bulletin*, 80(4), pp. 286–303.
- Baddeley, A.D. (2012) 'Working memory: theories, models, and controversies', *Annual Review of Psychology*, 63, pp. 1–29.
- Bargh, J.A. (2002) 'Losing consciousness: automatic influences on consumer judgment, behavior, and motivation', *Journal of Consumer Research*, 29(2), pp. 280–285.

- Barnes, S.J., Bauer, H.H., Neumann, M.M. and Huber, F. (2007) 'Segmenting cyberspace: a customer typology for the internet', *European Journal of Marketing*, 41(1/2), pp. 71–93.
- Bawa, K. (1990) 'Modeling inertia and variety seeking tendencies in brand choice behavior', *Marketing Science*, 9(3), pp. 263–278.
- Beckmann, N., Beckmann, J.F., Minbashian, A. and Birney, D.P. (2013) 'In the heat of the moment: on the effect of state neuroticism on task performance', *Personality and Individual Differences*, 54(3), pp. 447–452.
- Bell, D.E. (1982) 'Regret in decision making under uncertainty', *Operations Research*, 30(5), pp. 961–981.
- Bem, D.J. (1967) 'Self-perception: an alternative interpretation of cognitive dissonance phenomena.', *Psychological Review*, 74(3), pp. 183–200.
- Berinsky, A.J., Huber, G.A. and Lenz, G.S. (2012) 'Evaluating online labor markets for experimental research: Amazon.com's Mechanical Turk', *Political Analysis*, 20(3), pp. 351–368.
- Bettman, J.R. (1979) *An information processing theory of consumer choice*. Reading, MA: Addison-Wesley.
- Bettman, J.R., Luce, M.F. and Payne, J.W. (1998) 'Constructive consumer choice processes', *Journal of Consumer Research*, 25(3), pp. 187–217.
- Bettman, J.R. and Park, C.W. (1980) 'Effects of prior knowledge and experience and phase of the choice process on consumer decision making process: a protocol analysis', *Journal of Consumer Research*, 7(3), pp. 234–248.
- Bhaskar, R. (2008) *A realist theory of science*. London: Routledge.
- Bies, R.J. and Shapiro, D.L. (1987) 'Interactional fairness judgments: the influence of causal accounts', *Social Justice Research*, 1(2), pp. 199–218.
- Blaikie, N. (2008) *Approaches to social enquiry*. 2nd edn. Cambridge: Polity Press.

- Boles, T.L. and Messick, D.M. (1995) 'A reverse outcome bias: the influence of multiple reference points on the evaluation of outcomes and decisions', *Organizational Behavior and Human Decision Processes*, 61(3), pp. 262–275.
- Bolger, N. and Zuckerman, A. (1995) 'A framework for studying personality in the stress process', *Journal of Personality and Social Psychology*, 69(5), pp. 890–902.
- Bonifield, C., Cole, C. and Schultz, R.L. (2010) 'Product returns on the Internet: a case of mixed signals?', *Journal of Business Research*, 63(9–10), pp. 1058–1065.
- Bornemann, T. and Homburg, C. (2011) 'Psychological distance and the dual role of price', *Journal of Consumer Research*, 38(3), pp. 490–504.
- Botti, S. and Iyengar, S.S. (2004) 'The psychological pleasure and pain of choosing: when people prefer choosing at the cost of subsequent outcome satisfaction', *Journal of Personality and Social Psychology*, 87(3), pp. 312–326.
- Bower, A.B. and Maxham, J.G.III (2012) 'Return shipping policies of online retailers: normative assumptions and the long-term consequences of fee and free returns', *Journal of Marketing*, 76(5), pp. 110–124.
- Brehm, J.W. (1966) *A theory of psychological reactance*. New York: Academic Press.
- Brehm, J.W. (1956) 'Postdecision changes in the desirability of alternatives', *Journal of Abnormal and Social Psychology*, 52(3), pp. 384–389.
- Brehm, J.W. and Cohen, A.R. (1959) 'Reevaluation of choice alternatives as a function of their number and qualitative similarity', *Journal of Abnormal and Social Psychology*, 58(3), pp. 373–378.
- Brenner, L., Rottenstreich, Y. and Sood, S. (1999) 'Comparison, grouping, and preference', *Psychological Science*, 10(3), pp. 225–229.

- Brewer, M.B. and Crano, W.D. (2014) 'Research design and issues of validity', in Reis, H. T. and Judd, C. M. (eds.) *Handbook of Research Methods in Social and Personality Psychology*. New York: Cambridge University Press, pp. 11–26.
- Buhrmester, M., Kwang, T. and Gosling, S.D. (2011) 'Amazon's Mechanical Turk: a new source of inexpensive, yet high-quality, data?', *Perspectives on Psychological Science*, 6(1), pp. 3–5.
- Bullens, L. and van Harreveld, F. (2016) 'Second thoughts about decision reversibility: an empirical overview', *Social and Personality Psychology Compass*, 10(10), pp. 550–560.
- Bullens, L., van Harreveld, F. and Förster, J. (2011) 'Keeping one's options open: the detrimental consequences of decision reversibility', *Journal of Experimental Social Psychology*, 47(4), pp. 800–805.
- Bullens, L., van Harreveld, F., Förster, J. and Higgins, T.E. (2014) 'How decision reversibility affects motivation', *Journal of Experimental Psychology: General*, 143(2), pp. 835–49.
- Bullens, L., van Harreveld, F., Förster, J. and van der Pligt, J. (2013) 'Reversible decisions: the grass isn't merely greener on the other side; it's also very brown over here', *Journal of Experimental Social Psychology*, 49(6), pp. 1093–1099.
- Cacioppo, J.T., Semin, G.R. and Berntson, G.G. (2004) 'Realism, instrumentalism, and scientific symbiosis: psychological theory as a search for truth and the discovery of solutions', *American Psychologist*, 59(4), pp. 214–223.
- Calder, B.J. and Phillips, L.W. (1981) 'Designing research for application', *Journal of Consumer Research*, 8(2), pp. 197–207.
- Carrell, M.R. and Dittrich, J.E. (1978) 'Equity theory: the recent literature, methodological considerations, and new directions', *The Academy of Management Review*, 3(2), p. 202.

Chandler, J., Mueller, P. and Paolacci, G. (2014) 'Nonnaïveté among Amazon Mechanical Turk workers: consequences and solutions for behavioral researchers', *Behavior Research Methods*, 46(1), pp. 112–130.

Cheema, A. and Patrick, V.M. (2012) 'Influence of warm versus cool temperatures on consumer choice: a resource depletion account', *Journal of Marketing Research*, 49(6), pp. 984–995.

Chernev, A. (2003) 'When more is less and less is more: the role of ideal point availability and assortment in consumer choice', *Journal of Consumer Research*, 30(2), pp. 170–183.

Chernev, A., Böckenholt, U. and Goodman, J. (2015) 'Choice overload: a conceptual review and meta-analysis', *Journal of Consumer Psychology*, 25(2), pp. 333–358.

Chernoff, F. (2007) 'Critical realism, scientific realism, and international relations theory', *Millennium - Journal of International Studies*, 35(2), pp. 399–407.

Chuang, S.C., Cheng, Y.H., Wang, S.M. and Cheng, S.Y. (2013) 'The impact of the opinions of others on variety-seeking behavior', *Journal of Applied Social Psychology*, 43(5), pp. 917–927.

Cohen, B.H. (2013) *Explaining psychological statistics*. Hoboken, New Jersey: John Wiley & Sons.

Connolly, T., Ordóñez, L.D. and Coughlan, R. (1997) 'Regret and responsibility in the evaluation of decision outcomes', *Organizational Behavior and Human Decision Processes*, 70(1), pp. 73–85.

Consumer Contracts (Information, Cancellation and Additional Charges)

Regulations (2013) (SI 2013/3134). Available at:

http://www.legislation.gov.uk/ukxi/2013/3134/pdfs/ukxi_20133134_en.pdf

(Accessed: 1 July 2018).

Cook, T.D. and Campbell, D.T. (1979) *Quasi-experimentation: design and analysis issues for field settings*. Boston: Houghton Mifflin.

- Costa, P.T. and McCrae, R.R. (1998) 'Trait theories of personality', in Barone, D. F., Hersen, M. and Van Hasselt, V. B. (eds.) *Advanced Personality. The Plenum Series in Social/Clinical Psychology*. Boston, MA: Springer, pp. 103–121.
- Costa, P.T. and McCrae, R.R. (1980) 'Influence of extraversion and neuroticism on subjective well-being: happy and unhappy people', *Journal of Personality and Social Psychology*, 38(4), pp. 668–678.
- Costa, P.T. and McCrae, R.R. (1992) 'Four ways five factors are basic', *Personality and Individual Differences*, 13(6), pp. 653–665.
- Coulter, R.A., Price, L.L. and Feick, L. (2003) 'Rethinking the origins of involvement and brand commitment: insights from postsocialist Central Europe', *Journal of Consumer Research*, 30(2), pp. 151–169.
- Cunliffe, A.L. (2011) 'Crafting qualitative research: Morgan and Smircich 30 years on', *Organizational Research Methods*, 14(4), pp. 647–673.
- D'Angelo, J.D. and Toma, C.L. (2017) 'There are plenty of fish in the sea: the effects of choice overload and reversibility on online daters' satisfaction with selected partners', *Media Psychology*, 20(1), pp. 1–27.
- D'Astous, A. and Guèvremont, A. (2008) 'Effects of retailer post-purchase guarantee policies on consumer perceptions with the moderating influence of financial risk and product complexity', *Journal of Retailing and Consumer Services*, 15(4), pp. 306–314.
- Dar-Nimrod, I., Rawn, C.D., Lehman, D.R. and Schwartz, B. (2009) 'The Maximization Paradox: The costs of seeking alternatives', *Personality and Individual Differences*, 46(5–6), pp. 631–635.
- Davis, S., Gerstner, E. and Hagerty, M. (1995) 'Money back guarantees in retailing: Matching products to consumer tastes', *Journal of Retailing*, 71(1), pp. 7–22.
- Day, R. (1984) 'Modeling choices among alternative responses to dissatisfaction', *Advances in Consumer Research*, 11(1), pp. 496–499.

Deloitte (2017) *Global powers of retailing*. Available at: <https://www2.deloitte.com/content/dam/Deloitte/global/Documents/consumer-industrial-products/gx-cip-2017-global-powers-of-retailing.pdf> (Accessed: 1 July 2018).

Depue, R.A. and Collins, P.F. (1999) 'Neurobiology of the structure of personality: dopamine, facilitation of incentive motivation, and extraversion', *Behavioral and Brain Sciences*, 22(3), pp. 491–569.

Deshpande, R. (1983) "Paradigms lost": on theory and method in research in marketing', *Journal of Marketing*, 47(4), pp. 101–110.

Dhar, R. (1997) 'Context and task effects on choice deferral', *Marketing Letters*, 8(1), pp. 119–130.

Dhar, R. (1996) 'The effect of decision strategy on deciding to defer choice', *Journal of Behavioral Decision Making*, 9(4), pp. 265–281.

Dhar, R. and Nowlis, S.M. (2004) 'To buy or not to buy: response mode effects on consumer choice', *Journal of Marketing Research*, 41(4), pp. 423–432.

Dhar, R. and Simonson, I. (2003) 'The effect of forced choice on choice', *Journal of Marketing Research*, 40(2), pp. 146–160.

Diab, D.L., Gillespie, M.A. and Highhouse, S. (2008) 'Are maximizers really unhappy? The measurement of maximizing tendency', *Judgment and Decision Making*, 3(5), pp. 364–370.

Easterby-Smith, M., Thorpe, R. and Jackson, P.R. (2008) *Management research: Theory and practice*. 3rd edn. London: SAGE.

Edlund, J.E., Sagarin, B.J., Skowronski, J.J., Johnson, S.J. and Kutter, J. (2009) 'Whatever happens in the laboratory stays in the laboratory: the prevalence and prevention of participant crosstalk', *Personality and Social Psychology Bulletin*, 35(5), pp. 635–642.

Endler, N.S. and Hunt, J.M. (1968) 'S-R Inventories of Hostility and comparisons of the proportions of variance from persons, responses, and

situations for hostility and anxiousness', *Journal of Personality and Social Psychology*, 9(4), pp. 309–315.

Epstude, K. and Roese, N.J. (2008) 'The functional theory of counterfactual thinking', *Personality and Social Psychology Review*, 12(2), pp. 168–192.

European Parliament. Council of the European Union (2011) *Directive 2011/83/EU of 25 October 2011 on consumer rights*. Available at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32011L0083&from=EN> (Accessed: 1 July 2018).

Eysenck, H.J. (1967) *The biological basis of personality*. Springfield, IL: Thomas.

Faison, E.W.J. (1977) 'The neglected variety drive: a useful concept for consumer behavior', *Journal of Consumer Research*, 4(3), pp. 172–175.

Farquhar, P.H. and Rao, V.R. (1976) 'A balance model for evaluating subsets of multiattributed items', *Management Science*, 22(5), pp. 528–539.

Festinger, L. (1957) *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.

Festinger, L. (1964) *Conflict, decision, and dissonance*. Stanford, CA: Stanford University Press.

Field, A.P. (2013) *Discovering statistics using IBM SPSS statistics*. 4th edn. London: SAGE.

Fishbach, A., Ratner, R.K. and Zhang, Y. (2011) 'Inherently loyal or easily bored?: Nonconscious activation of consistency versus variety-seeking behavior', *Journal of Consumer Psychology*, 21(1), pp. 38–48.

Fitzsimons, G.J. (2008) 'Death to dichotomizing', *Journal of Consumer Research*, 35(1), pp. 5–8.

Fornell, C. (1992) 'A national customer satisfaction barometer: the Swedish experience', *Journal of Marketing*, 56(1), pp. 6–21.

- van Fraassen, B.C. (1980) *The scientific image*. Oxford: Clarendon.
- Frey, D. (1981) 'Reversible and irreversible decisions: preference for consonant information as a function of attractiveness of decision alternatives', *Personality and Social Psychology Bulletin*, 7(4), pp. 621–626.
- Frey, D., Kumpf, M., Irle, M. and Gniech, G. (1984) 'Re-evaluation of decision alternatives dependent upon the reversibility of a decision and the passage of time', *European Journal of Social Psychology*, 14(4), pp. 447–450.
- Frey, D. and Rosch, M. (1984) 'Information seeking after decisions: the roles of novelty of information and decision reversibility', *Personality and Social Psychology Bulletin*, 10(1), pp. 91–98.
- Galinsky, A.D., Moskowitz, G.B. and Skurnik, I. (2000) 'Counterfactuals as self-generated primes: the effect of prior counterfactual activation on person perception judgments', *Social Cognition*, 18(3), pp. 252–280.
- Gao, L. and Simonson, I. (2016) 'The positive effect of assortment size on purchase likelihood: the moderating influence of decision order', *Journal of Consumer Psychology*, 26(4), pp. 542–549.
- Gelman, A. (2018) 'The failure of null hypothesis significance testing when studying incremental changes, and what to do about it', *Personality and Social Psychology Bulletin*, 44(1), pp. 16–23.
- Gephart, R.P. (2004) 'Qualitative research and the Academy of Management Journal', *Academy of Management Journal*, 47(4), pp. 454–462.
- Germeijs, V. and Verschueren, K. (2011) 'Indecisiveness and Big Five personality factors: relationship and specificity', *Personality and Individual Differences*, 50(7), pp. 1023–1028.
- Ghins, M. (2017) 'Defending scientific realism without relying on inference to the best explanation', *Axiomathes*, 27(6), pp. 635–651.
- Giese, J.L. and Cote, J.A. (2000) 'Defining consumer satisfaction', *Academy of Marketing Science Review*, 1, pp. 1–22.

- Gilbert, D.T. and Ebert, J.E.J. (2002) 'Decisions and revisions: the affective forecasting of changeable outcomes', *Journal of Personality and Social Psychology*, 82(4), pp. 503–514.
- Givon, M. (1984) 'Variety seeking through brand switching', *Marketing Science*, 3(1), pp. 1–22.
- Gneezy, A. (2017) 'Field experimentation in marketing research', *Journal of Marketing Research*, 54(1), pp. 140–143.
- Goldberg, L.R. (1990) 'An alternative "description of personality": the Big-Five factor structure', *Journal of Personality and Social Psychology*, 59(6), pp. 1216–1229.
- Goodman, J.K., Cryder, C.E. and Cheema, A. (2013) 'Data collection in a flat world: the strengths and weaknesses of Mechanical Turk samples', *Journal of Behavioral Decision Making*, 26(3), pp. 213–224.
- Goodman, J.K. and Paolacci, G. (2017) 'Crowdsourcing consumer research', *Journal of Consumer Research*, 44(1), pp. 196–210.
- Greenhalgh, T. and Peacock, R. (2005) 'Effectiveness and efficiency of search methods in systematic reviews of complex evidence: audit of primary sources', *British Medical Journal*, 331(7524), pp. 1064–1065.
- Greenleaf, E.A. and Lehmann, D.R. (1995) 'Reasons for substantial delay in consumer decision making', *Journal of Consumer Research*, 22(2), pp. 186–199.
- Greenwald, A.G., McGhee, D.E. and Schwartz, J.L.K. (1998) 'Measuring individual differences in implicit cognition: the implicit association test', *Journal of Personality and Social Psychology*, 74(6), pp. 1464–1480.
- Gu, Y., Botti, S. and Faro, D. (2013) 'Turning the page: the impact of choice closure on satisfaction', *Journal of Consumer Research*, 40(2), pp. 268–283.

Gunthert, K., Cohen, L.H. and Armeli, S. (1999) 'The role of neuroticism in daily stress and coping', *Journal of Personality and Social Psychology*, 77(5), pp. 1087–1100.

Ha, H.-Y., Muthaly, S.K. and Akamavi, R.K. (2010) 'Alternative explanations of online repurchasing behavioral intentions: a comparison study of Korean and UK young customers', *European Journal of Marketing*, 44(6), pp. 874–904.

Hafner, R.J., White, M.P. and Handley, S.J. (2012) 'Spoilt for choice: the role of counterfactual thinking in the excess choice and reversibility paradoxes', *Journal of Experimental Social Psychology*, 48(1), pp. 28–36.

Hammersley, M. (1990) 'What's wrong with ethnography? The myth of theoretical description', *Sociology*, 24(4), pp. 597–615.

Harris, L.C. (2008) 'Fraudulent return proclivity: an empirical analysis', *Journal of Retailing*, 84(4), pp. 461–476.

Harvey, J.H. and Johnston, S. (1973) 'Determinants of the perception of choice', *Journal of Experimental Social Psychology*, 9(2), pp. 164–179.

Hayes, A.F. (2013) *Introduction to mediation, moderation, and conditional process analysis: a regression-based approach*. New York: The Guilford Press.

Hayes, A.F. (2015) 'An index and test of linear moderated mediation', *Multivariate Behavioral Research*, 50(1), pp. 37–41.

Hayes, A.F. and Preacher, K.J. (2014) 'Statistical mediation analysis with a multicategorical independent variable', *British Journal of Mathematical and Statistical Psychology*, 67(3), pp. 451–470.

Haynes, G.A. (2009) 'Testing the boundaries of the choice overload phenomenon: The effect of number of options and time pressure on decision difficulty and satisfaction', *Psychology & Marketing*, 26(3), pp. 204–212.

Hazan-Liran, B. and Miller, P. (2017) 'Stroop-like effects in a new-code learning task: a cognitive load theory perspective', *Quarterly Journal of Experimental Psychology*, 70(9), pp. 1878–1891.

Heiman, A., McWilliams, B., Zhao, J. and Zilberman, D. (2002) 'Valuation and management of money-back guarantee options', *Journal of Retailing*, 78(3), pp. 193–205.

Heiman, A., McWilliams, B. and Zilberman, D. (2001) 'Demonstrations and money-back guarantees: market mechanisms to reduce uncertainty', *Journal of Business Research*, 54(1), pp. 71–84.

Heitmann, M., Lehmann, D.R. and Herrmann, A. (2007) 'Choice goal attainment and decision and consumption satisfaction', *Journal of Marketing Research*, 44(2), pp. 234–250.

Higgins, E.T. (1997) 'Beyond pleasure and pain', *American Psychologist*, 52(12), pp. 1280–1300.

Hoerger, M. and Quirk, S.W. (2010) 'Affective forecasting and the Big Five', *Personality and Individual Differences*, 49(8), pp. 972–976.

Hogreve, J. and Gremler, D.D. (2008) 'Twenty years of service guarantee research: a synthesis', *Journal of Service Research*, 11(4), pp. 322–343.

Hsee, C.K. and Leclerc, F. (1998) 'Will products look more attractive when presented separately or together?', *Journal of Consumer Research*, 25(2), pp. 175–186.

Hsee, C.K., Loewenstein, G.F., Blount, S. and Bazerman, M.H. (1999) 'Preference reversals between joint and separate evaluations of options: a review and theoretical analysis', *Psychological Bulletin*, 125(5), pp. 576–590.

Hügelschäfer, S. and Alós-Ferrer, C. (2014) 'Neural evidence on the role of conflict monitoring in choice-induced preference change', *2014 Neuropsychoeconomics Conference Proceedings*. Munich, Germany, 29-30 May 2014. Starnberg, Germany: Association for Neuropsychoeconomics, p. 45.

Hui, M.K. and Bateson, J.E.G. (1991) 'Perceived control and the effects of crowding and consumer choice on the service experience', *Journal of Consumer Research*, 18(2), pp. 174–184.

Iacobucci, D. (2001) 'Analysis of variance', *Journal of Consumer Psychology*, 10(1), pp. 5–35.

Iacobucci, D., Posavac, S.S., Kardes, F.R., Schneider, M.J. and Popovich, D.L. (2015) 'Toward a more nuanced understanding of the statistical properties of a median split', *Journal of Consumer Psychology*, 25(4), pp. 652–665.

Inbar, Y., Botti, S. and Hanks, K. (2011) 'Decision speed and choice regret: when haste feels like waste', *Journal of Experimental Social Psychology*, 47(3), pp. 533–540.

Inman, J.J. (2001) 'The role of sensory-specific satiety in attribute-level variety seeking', *Journal of Consumer Research*, 28(1), pp. 105–120.

Inman, J.J., Campbell, M.C., Kirmani, A. and Price, L.L. (2018) 'Our vision for the Journal of Consumer Research: it's all about the consumer', *Journal of Consumer Research*, 44(5), pp. 955–959.

Inman, J.J., Dyer, J.S. and Jia, J. (1997) 'A generalized utility model of disappointment and regret effects on post-choice valuation', *Marketing Science*, 16(2), pp. 97–111.

Ioannidis, J.P.A. (2005) 'Why most published research findings are false', *PLoS Medicine*, 2(8), pp. 0696–0701.

Irwin, J.R. and McClelland, G.H. (2001) 'Misleading heuristics and moderated multiple regression models', *Journal of Marketing Research*, 38(1), pp. 100–109.

Iyengar, S.S. and Lepper, M.R. (2000) 'When choice is demotivating: can one desire too much of a good thing?', *Journal of Personality and Social Psychology*, 79(6), pp. 995–1006.

Iyengar, S.S., Wells, R.E. and Schwartz, B. (2006) 'Doing better but feeling worse: looking for the "best" job undermines satisfaction', *Psychological Science*, 17(2), pp. 143–150.

- Jacoby, J. and Matell, M.S. (1971) 'Three-point Likert scales are good enough', *Journal of Marketing Research*, 8(4), pp. 495–500.
- Janakiraman, N. and Ordóñez, L. (2012) 'Effect of effort and deadlines on consumer product returns', *Journal of Consumer Psychology*, 22(2), pp. 260–271.
- Janakiraman, N., Syrdal, H.A. and Freling, R. (2016a) 'The effect of return policy leniency on consumer purchase and return decisions: a meta-analytic review', *Journal of Retailing*, 92(2), pp. 226–235.
- Janakiraman, N., Syrdal, H. and Freling, R.E. (2016b) 'How to design a return policy', *Harvard Business Review*, 2 August, pp. 2–5.
- Johnson, M.D. (1984) 'Consumer choice strategies for comparing noncomparable alternatives', *Journal of Consumer Research*, 11(3), pp. 741–753.
- Johnson, P.O. and Neyman, J. (1936) 'Tests of certain linear hypotheses and their application to some educational problems', *Statistical Research Memoirs*, 1, pp. 57–93.
- Kahn, B.E., Kalwani, M.U. and Morrison, D.G. (1986) 'Measuring variety-seeking and reinforcement behaviors using panel data', *Journal of Marketing Research*, 23(2), pp. 89–100.
- Kahn, B.E., Ratner, R.K. and Kahneman, D. (1997) 'Patterns of hedonic consumption over time', *Marketing Letters*, 8(1), pp. 85–96.
- Kahneman, D. and Tversky, A. (1982) 'The simulation heuristic', in Kahneman, D., Slovic, P. and Tversky, A. (eds.) *Judgment under uncertainty: heuristics and biases*. Cambridge: Cambridge University Press, pp. 201–208.
- Kahneman, D. and Tversky, A. (1979) 'Prospect theory: an analysis of decision under risk', *Econometrica*, 47(2), pp. 263–292.
- Kenny, D.A. and Judd, C.M. (2014) 'Power anomalies in testing mediation', *Psychological Science*, 25(2), pp. 334–339.

Keppel, G. (1991) *Design and analysis: a researcher's handbook*. 3rd edn. New Jersey: Prentice Hall.

Kiger, D.M. (1989) 'Effects of music information load on a reading comprehension task', *Perceptual and Motor Skills*, 69(2), pp. 531–534.

Kim, J. and Wansink, B. (2012) 'How retailers' recommendation and return policies alter product evaluations', *Journal of Retailing*, 88(4), pp. 528–541.

Kim, K. and Miller, E.G. (2017) 'Vulnerable maximizers: the role of decision difficulty', *Judgment and Decision Making*, 12(5), pp. 516–526.

Kirkeboen, G. and Teigen, K.H. (2011) 'Pre-outcome regret: widespread and overlooked', *Journal of Behavioral Decision Making*, 24(3), pp. 267–292.

Kirman, A. and Rao, A.R. (2000) 'No pain, no gain: a critical review of the literature on signaling unobservable product quality', *Journal of Marketing*, 64(2), pp. 66–79.

Kupor, D.M., Liu, W. and Amir, O. (2018) 'The effect of an interruption on risk decisions', *Journal of Consumer Research*, 44(6), pp. 1205–1219.

Langer, E.J. (1975) 'The illusion of control', *Journal of Personality and Social Psychology*, 32(2), pp. 311–328.

Larson, G.E. and Saccuzzo, D.P. (1986) 'Gender, neuroticism and speed-accuracy tradeoffs on a choice reaction-time task', *Personality and Individual Differences*, 7(6), pp. 919–921.

Lattin, J.M. and McAlister, L. (1985) 'Using a variety-seeking model to identify substitute and complementary relationships among competing products', *Journal of Marketing Research*, 22(3), pp. 330–339.

Lee, D.H. (2015) 'An alternative explanation of consumer product returns from the postpurchase dissonance and ecological marketing perspectives', *Psychology & Marketing*, 32(1), pp. 49–64.

Lee, S.H. and Sergueeva, K. (2017) 'Chewing increases consumers' thought-engagement during retail shopping', *Journal of Retailing and Consumer Services*, 35, pp. 127–132.

Leong, S.M. (1989) 'A citation analysis of the Journal of Consumer Research', *Journal of Consumer Research*, 15(4), pp. 492–497.

Leplin, J. (1992) *Scientific realism*. Berkeley, CA: University of California Press.

Levav, J., Reinholtz, N. and Lin, C. (2012) 'The effect of ordering decisions by choice-set size on consumer search', *Journal of Consumer Research*, 39(3), pp. 585–599.

Levav, J. and Zhu, R. (2009) 'Seeking freedom through variety', *Journal of Consumer Research*, 36(4), pp. 600–610.

Lewis, P. and Blanchard, E.B. (1971) 'Perception of choice and locus of control', *Psychological Reports*, 28(1), pp. 67–70.

Locke, E.A. and Latham, G.P. (2002) 'Building a practically useful theory of goal setting and task motivation: a 35-year odyssey', *The American psychologist*, 57(9), pp. 705–717.

Loomes, G. and Sugden, R. (1982) 'Regret theory: an alternative theory of rational choice under uncertainty', *The Economic Journal*, 92(368), pp. 805–824.

Losch, A. (2009) 'On the origins of critical realism', *Theology and Science*, 7(1), pp. 85–106.

Lowe, R.H. and Steiner, I.D. (1968) 'Some effects of the reversibility and consequences of decisions on postdecision information preferences', *Journal of Personality and Social Psychology*, 8(2), pp. 172–179.

Luce, M.F. (1998) 'Choosing to avoid: coping with negatively emotion-laden consumer decisions', *Journal of Consumer Research*, 24(4), pp. 409–433.

Lutz, R.L. (1989) 'Editorial', *Journal of Consumer Research*, 16(1), p. 0.

- Lynch, J.G.Jr. (1982) 'On the external validity of experiments in consumer research', *Journal of Consumer Research*, 9(3), pp. 225–239.
- Lynch, J.G.Jr. (1999) 'Theory and external validity', *Journal of the Academy of Marketing Science*, 27(3), pp. 367–376.
- Lynch, J.G.Jr., Alba, J.W., Krishna, A., Morwitz, V.G. and Gürhan-Canli, Z. (2012) 'Knowledge creation in consumer research: multiple routes, multiple criteria', *Journal of Consumer Psychology*, 22(4), pp. 473–485.
- Ma, J. and Roese, N.J. (2014) 'The maximizing mind-set', *Journal of Consumer Research*, 41(1), pp. 71–92.
- MacInnis, D.J. and Folkes, V.S. (2010) 'The disciplinary status of consumer behavior: a sociology of science perspective on key controversies', *Journal of Consumer Research*, 36(6), pp. 899–914.
- Maimaran, M. and Wheeler, S.C. (2008) 'Circles, squares, and choice: the effect of shape arrays on uniqueness and variety seeking', *Journal of Marketing Research*, 45(6), pp. 731–740.
- Mantere, S. and Ketokivi, M. (2013) 'Reasoning in organization science', *Academy of Management Review*, 38(1), pp. 70–89.
- Mao, W. (2016) 'When one desires too much of a good thing: the compromise effect under maximizing tendencies', *Journal of Consumer Psychology*, 26(1), pp. 66–80.
- Markman, K.D., Gavanski, I., Sherman, S.J. and McMullen, M.N. (1993) 'The mental simulation of better and worse possible worlds', *Journal of Experimental Social Psychology*, 29(1), pp. 87–109.
- Martin, D., O'Neill, M., Hubbard, S. and Palmer, A. (2008) 'The role of emotion in explaining consumer satisfaction and future behavioural intention', *Journal of Services Marketing*, 22(3), pp. 224–236.
- Mattila, A.S. and Cranage, D. (2005) 'The impact of choice on fairness in the context of service recovery', *Journal of Services Marketing*, 19(5), pp. 271–279.

- McAlister, L. and Pessemier, E. (1982) 'Variety seeking behavior: an interdisciplinary review', *Journal of Consumer Research*, 9(3), pp. 311–322.
- Meyer, B.W. and Winer, J.L. (1993) 'The Career Decision Scale and neuroticism.', *Journal of Career Assessment*, 1(2), pp. 171–180.
- Milgram, N. and Tenne, R. (2000) 'Personality correlates of decisional and task avoidant procrastination', *European Journal of Personality*, 14, pp. 141–156.
- Miller, G.A. (1956) 'The magic number seven, plus or minus two: some limits on our capacity for processing information', *Psychological Review*, 63(2), pp. 81–97.
- Mintel (2014) *Clothing retailing - UK - October 2014*. Available at: <http://academic.mintel.com/display/679590/> (Accessed: 1 July 2018).
- Mitchell, M.L. and Jolley, J.M. (2013) *Research design explained*. 8th edn. Belmont, CA: Wadsworth Cengage Learning.
- Mitchell, V.-W. and Nygaard, A. (1999) 'Consumer perceived risk: conceptualisations and models', *European Journal of Marketing*, 33(1–2), pp. 163–195.
- Mogilner, C., Shiv, B. and Iyengar, S.S. (2013) 'Eternal quest for the best: sequential (vs. simultaneous) option presentation undermines choice commitment', *Journal of Consumer Research*, 39(6), pp. 1300–1312.
- Mooradian, T.A. and Olver, J.M. (1997) "I can't get no satisfaction:" the impact of personality and emotion on postpurchase processes', *Psychology & Marketing*, 14(4), pp. 379–393.
- Moorthy, S. and Srinivasan, K. (1995) 'Signaling quality with a money-back guarantee: The role of transaction costs', *Marketing Science*, 14(4), pp. 442–466.
- Morales, A.C., Amir, O. and Lee, L. (2017) 'Keeping it real in experimental research - understanding when, where, and how to enhance realism and

measure consumer behavior', *Journal of Consumer Research*, 44(2), pp. 465–476.

Moreno, R. and Mayer, R.E. (2000) 'A coherence effect in multimedia learning: the case for minimizing irrelevant sounds in the design of multimedia instructional messages', *Journal of Educational Psychology*, 92(1), pp. 117–125.

Morgan, G. and Smircich, L. (1980) 'The case for qualitative research', *Academy of Management Review*, 5(4), pp. 491–500.

Mukherjee, S., Kramer, T. and Kulow, K. (2017) 'The effect of spicy gustatory sensations on variety-seeking', *Psychology & Marketing*, 34(8), pp. 786–794.

Mukhopadhyay, A., Raghurir, P. and Wheeler, S.C. (2018) 'Judgments of taste and judgments of quality', *Journal of Consumer Psychology*, 28(1), pp. 1–4.

Muller, D., Judd, C.M. and Yzerbyt, V.Y. (2005) 'When moderation is mediated and mediation is moderated', *Journal of Personality and Social Psychology*, 89(6), pp. 852–863.

Murray, J.B. and Ozanne, J.L. (1991) 'The critical imagination: emancipatory interests in consumer research', *Journal of Consumer Research*, 18(2), pp. 129–144.

Mussweiler, T. and Epstude, K. (2009) 'Relatively fast! Efficiency advantages of comparative thinking', *Journal of Experimental Psychology: General*, 138(1), pp. 1–21.

Nenkov, G.Y., Morrin, M., Ward, A., Schwartz, B. and Hurland, J. (2008) 'A short form of the maximization scale: factor structure, reliability and validity studies', *Judgment and Decision Making*, 3(5), pp. 371–388.

Nestler, S. and von Collani, G. (2008) 'Hindsight bias and the activation of counterfactual mind-sets', *Experimental Psychology*, 55(5), pp. 342–349.

- Nordstrom, C.R., Williams, K.B. and LeBreton, J.M. (1996) 'The effect of cognitive load on the processing of employment selection information', *Basic and Applied Social Psychology*, 18(3), pp. 305–318.
- O'Rourke, H.P. and MacKinnon, D.P. (2015) 'When the test of mediation is more powerful than the test of the total effect', *Behavior Research Methods*, 47(2), pp. 424–442.
- Oliver, R.L. (1981) 'Measurement and evaluation of satisfaction processes in retail settings', *Journal of Retailing*, 57(3), pp. 25–48.
- Olsen, S.O., Tudoran, A.A., Honkanen, P. and Verplanken, B. (2016) 'Differences and similarities between impulse buying and variety seeking: a personality-based perspective', *Psychology & Marketing*, 33(1), pp. 36–47.
- Ormel, J., Bastiaansen, A., Riese, H., Bos, E.H., Servaas, M., Ellenbogen, M., Rosmalen, J.G.M. and Aleman, A. (2013) 'The biological and psychological basis of neuroticism: current status and future directions', *Neuroscience and Biobehavioral Reviews*, 37(1), pp. 59–72.
- Orne, M.T. (1962) 'On the social psychology of the psychological experiment: with particular reference to demand characteristics and their implications', *American Psychologist*, 17(11), pp. 776–783.
- Owen, R.S. (2004) 'Consumer warranties and satisfaction guarantees', *Services Marketing Quarterly*, 26(2), pp. 49–67.
- Paolacci, G., Chandler, J. and Ipeirotis, P. (2010) 'Running experiments on Amazon Mechanical Turk', *Judgment and Decision Making*, 5(5), pp. 411–419.
- Parker, J.R. and Schriff, R.Y. (2011) 'Rejectable choice sets: how seemingly irrelevant no-choice options affect consumer decision processes', *Journal of Marketing Research*, 48(5), pp. 840–854.
- Partington, D. (2002) *Essential skills for management research*. London: SAGE.

Peracchio, L.A., Luce, M.F. and McGill, A.L. (2014) 'Building bridges for an interconnected field of consumer research', *Journal of Consumer Research*, 40(6), pp. v–viii.

Peterson, R.A. and Wilson, W.R. (1992) 'Measuring customer satisfaction: fact and artifact', *Journal of the Academy of Marketing Science*, 20(1), pp. 61–71.

Pham, M.T. (2013) 'The seven sins of consumer psychology', *Journal of Consumer Psychology*, 23(4), pp. 411–423.

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

Polman, E. (2012) 'Effects of self-other decision making on regulatory focus and choice overload', *Journal of Personality and Social Psychology*, 102(5), pp. 980–993.

Posselt, T., Gerstner, E. and Radic, D. (2008) 'Rating e-tailers' money-back guarantees', *Journal of Service Research*, 10(3), pp. 207–219.

Preacher, K.J. and Hayes, A.F. (2004) 'SPSS and SAS procedures for estimating indirect effects in simple mediation models', *Behavior Research Methods, Instruments, & Computers*, 36(4), pp. 717–731.

Preacher, K.J., Rucker, D.D. and Hayes, A.F. (2007) 'Addressing moderated mediation hypotheses: theory, methods, and prescriptions', *Multivariate Behavioral Research*, 42(1), pp. 185–227.

Prelec, D. and Loewenstein, G. (1998) 'The red and the black: mental accounting of savings and debt', *Marketing Science*, 17(1), pp. 4–28.

Puccinelli, N.M., Goodstein, R.C., Grewal, D., Price, R., Raghurir, P. and Stewart, D. (2009) 'Customer experience management in retailing: understanding the buying process', *Journal of Retailing*, 85(1), pp. 15–30.

Punj, G. (2011) 'Impulse buying and variety seeking: similarities and differences', *Journal of Business Research*, 64(7), pp. 745–748.

- Puri, R. (1996) 'Measuring and modifying consumer impulsiveness: a cost-benefit accessibility framework', *Journal of Consumer Psychology*, 5(2), pp. 87–113.
- Purvis, A., Howell, R.T. and Iyer, R. (2011) 'Exploring the role of personality in the relationship between maximization and well-being', *Personality and Individual Differences*, 50(3), pp. 370–375.
- Raju, P.S. (1980) 'Optimum stimulation level: its relationship to personality, demographics, and exploratory behavior', *Journal of Consumer Research*, 7(3), pp. 272–282.
- Ratner, R.K., Kahn, B.E. and Kahneman, D. (1999) 'Choosing less-preferred experiences for the sake of variety', *Journal of Consumer Research*, 26(1), pp. 1–15.
- Read, D. and Loewenstein, G. (1995) 'Diversification bias: explaining the discrepancy in variety seeking between combined and separated choices', *Journal of Experimental Psychology: Applied*, 1(1), pp. 34–49.
- Reutskaja, E. and Hogarth, R.M. (2009) 'Satisfaction in choice as a function of the number of alternatives: when "goods satiate"', *Psychology & Marketing*, 26(3), pp. 197–203.
- Richardson, C.M.E., Ye, H.J., Ege, E., Suh, H. and Rice, K.G. (2014) 'Refining the measurement of maximization: gender invariance and relation to psychological well-being', *Personality and Individual Differences*, 70, pp. 229–234.
- Roese, N.J. (1997) 'Counterfactual thinking', *Psychological Bulletin*, 121(1), pp. 133–148.
- Roese, N.J. and Epstude, K. (2017) 'The functional theory of counterfactual thinking: new evidence, new challenges, new insights', in Olson, J. M. (ed.) *Advances in Experimental Social Psychology*. 1st edn. Cambridge, MA: Academic Press, pp. 1–79.

- Roese, N.J. and Summerville, A. (2005) 'What we regret most... and why', *Personality and Social Psychology Bulletin*, 31(9), pp. 1273–1285.
- Rohm, A.J. and Swaminathan, V. (2004) 'A typology of online shoppers based on shopping motivations', *Journal of Business Research*, 57(7), pp. 748–757.
- Rook, D.W. (1987) 'The buying impulse', *Journal of Consumer Research*, 14(2), pp. 189–199.
- Rousseau, D.M., Manning, J. and Denyer, D. (2008) 'Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses', *The Academy of Management Annals*, 2(1), pp. 475–515.
- Sagi, A. and Friedland, N. (2007) 'The cost of richness: the effect of the size and diversity of decision sets on post-decision regret', *Journal of Personality and Social Psychology*, 93(4), pp. 515–524.
- Saunders, M.N.K., Lewis, P. and Thornhill, A. (2016) *Research methods for business students*. Harlow, England: Pearson.
- Scheibehenne, B., Greifeneder, R. and Todd, P.M. (2010) 'Can there ever be too many options? A meta-analytic review of choice overload', *Journal of Consumer Research*, 37(3), pp. 409–425.
- Schimmack, U., Oishi, S., Furr, R.M. and Funder, D.C. (2004) 'Personality and life satisfaction: a facet-level analysis', *Personality and Social Psychology Bulletin*, 30(8), pp. 1062–1075.
- Schwartz, B., Ward, A., Monterosso, J., Lyubomirsky, S., White, K. and Lehman, D.R. (2002) 'Maximizing versus satisficing: happiness is a matter of choice', *Journal of Personality and Social Psychology*, 83(5), pp. 1178–1197.
- Schwarz, N. (1999) 'Self-reports: how the questions shape the answers', *American Psychologist*, 54(2), pp. 93–105.
- Sela, A. and LeBoeuf, R.A. (2017) 'Comparison neglect in upgrade decisions', *Journal of Marketing Research*, 54(4), pp. 556–571.

- Servaas, M.N., van der Velde, J., Costafreda, S.G., Horton, P., Ormel, J., Riese, H. and Aleman, A. (2013) 'Neuroticism and the brain: a quantitative meta-analysis of neuroimaging studies investigating emotion processing', *Neuroscience and Biobehavioral Reviews*, 37(8), pp. 1518–1529.
- Shadish, W. (2002) *Experimental and quasi-experimental designs for generalized causal inference*. 2nd edn. Boston: Houghton Mifflin Harcourt.
- Shafer, A.B. (2000) 'Mediation of the Big Five's effect on career decision making by life task dimensions and on money attitudes by materialism', *Personality and Individual Differences*, 28(1), pp. 93–109.
- Shafir, E., Simonson, I. and Tversky, A. (1993) 'Reason-based choice', *Cognition*, 49(1–2), pp. 11–36.
- Shah, A.M., Eisenkraft, N., Bettman, J.R. and Chartrand, T.L. (2016) "Paper or plastic?": How we pay influences post-transaction connection', *Journal of Consumer Research*, 42(5), pp. 688–708.
- Shames, M.L. (1990) 'On data, methods, and theory: an epistemological evaluation of psychology', *Canadian Psychology/Psychologie canadienne*, 31(3), pp. 229–238.
- Shapiro, D.N., Chandler, J. and Mueller, P.A. (2013) 'Using Mechanical Turk to study clinical populations', *Clinical Psychological Science*, 1(2), pp. 213–220.
- Shiner, R.L. (2015) 'Maximizers, satisficers, and their satisfaction with and preferences for reversible versus irreversible decisions', *Social Psychological and Personality Science*, 6(8), pp. 896–903.
- Shiv, B. and Fedorikhin, A. (1999) 'Heart and mind in conflict: the interplay of affect and cognition in consumer decision making', *Journal of Consumer Research*, 26(3), pp. 278–292.
- Simmons, J.P., Nelson, L.D. and Simonsohn, U. (2011) 'False-positive psychology: undisclosed flexibility in data collection and analysis allows

presenting anything as significant', *Psychological Science*, 22(11), pp. 1359–1366.

Simonson, I. (1990) 'The effect of purchase quantity and timing on variety-seeking behavior', *Journal of Marketing Research*, 27(2), pp. 150–163.

Smith, A.K., Bolton, R.N. and Wagner, J. (1999) 'A model of customer satisfaction with service encounters involving failure and recovery', *Journal of Marketing Research*, 36(3), pp. 356–372.

Sokolova, T. and Krishna, A. (2016) 'Take it or leave it: how choosing versus rejecting alternatives affects information processing', *Journal of Consumer Research*, 43(4), pp. 614–635.

Sparks, E.A., Ehrlinger, J. and Eibach, R.P. (2012) 'Failing to commit: maximizers avoid commitment in a way that contributes to reduced satisfaction', *Personality and Individual Differences*, 52(1), pp. 72–77.

Spiller, S.A., Fitzsimons, G.J., Lynch, J.G.Jr. and McClelland, G.H. (2013) 'Spotlights, floodlights, and the magic number zero: simple effects tests in moderated regression', *Journal of Marketing Research*, 50(2), pp. 277–288.

Steel, P. (2007) 'The nature of procrastination: a meta-analytic and theoretical review of quintessential self-regulatory failure', *Psychological Bulletin*, 133(1), pp. 65–94.

Stroop, J.R. (1935) 'Studies of interference in serial verbal reactions', *Journal of Experimental Psychology*, 18(6), pp. 643–662.

Suwelack, T., Hogueve, J. and Hoyer, W.D. (2011) 'Understanding money-back guarantees: cognitive, affective, and behavioral outcomes', *Journal of Retailing*, 87(4), pp. 462–478.

Suwelack, T. and Krafft, M. (2012) 'Effects of money-back and low-price guarantees on consumer behavior', in Diamantopoulos, A., Fritz, W. and Hildebrandt, L. (eds.) *Quantitative marketing and marketing management*. Wiesbaden, Germany: Gabler Verlag, pp. 531–561.

- Svenson, O. (2006) 'Pre- and post-decision construction of preferences: differentiation and consolidation', in Lichtenstein, S. and Slovic, P. (eds.) *The construction of preference*. Cambridge: Cambridge University Press, pp. 356–371.
- Sweller, J. (1988) 'Cognitive load during problem solving: effects on learning', *Cognitive Science*, 12(2), pp. 257–285.
- Sweller, J. (1994) 'Cognitive load theory, learning difficulty, and instructional design', *Learning and Instruction*, 4(4), pp. 295–312.
- Taylor, K.A. (1997) 'A regret theory approach to assessing consumer satisfaction', *Marketing Letters*, 8(2), pp. 229–238.
- Thagard, P. (2002) 'Empiricism, realism, and religion', *Science*, 298(5595), p. 971.
- Thompson, E.R. (2008) 'Development and validation of an international English Big-Five mini-markers', *Personality and Individual Differences*, 45(6), pp. 542–548.
- Thompson, E.R. and Prendergast, G.P. (2015) 'The influence of trait affect and the five-factor personality model on impulse buying', *Personality and Individual Differences*, 76, pp. 216–221.
- Trope, Y. and Liberman, N. (2003) 'Temporal construal', *Psychological Review*, 110(3), pp. 403–421.
- Tse, D.K. and Wilton, P.C. (1988) 'Models of consumer satisfaction formation: an extension', *Journal of Marketing Research*, 25(2), pp. 204–212.
- Tsiros, M. (1998) 'Effect of regret on post-choice valuation: the case of more than two alternatives', *Organizational Behavior and Human Decision Processes*, 76(1), pp. 48–69.
- Tsiros, M. and Mittal, V. (2000) 'Regret: a model of its antecedents and consequences in consumer decision making', *Journal of Consumer Research*, 26(4), pp. 401–417.

- Tversky, A. and Kahneman, D. (1991) 'Loss aversion in riskless choice: a reference-dependent model', *The Quarterly Journal of Economics*, 106(4), pp. 1039–1061.
- Tversky, A. and Simonson, I. (1993) 'Context-dependent preferences', *Management Science*, 39(10), pp. 1179–1189.
- Tyler, T.R. and Degoey, P. (1995) 'Collective restraint in social dilemmas: procedural justice and social identification effects on support for authorities', *Journal of Personality and Social Psychology*, 69(3), pp. 482–497.
- Vosgerau, J., Dhar, R., Wertenbroch, K. and Bruyneel, S. (2008) 'Ego depletion and cognitive load: same or different constructs?', *Advances in Consumer Research*, 35, pp. 217–220.
- Walton, J.R., Berkowitz, E.N., Ross, I. and Cvar, M. (1979) 'Consumer behavior and perceived decision freedom: a reexamination', *Journal of Applied Psychology*, 64(5), pp. 472–476.
- Watson, D., Clark, L.A. and Tellegen, A. (1988) 'Development and validation of brief measures of positive and negative affect: The PANAS scales', *Journal of Personality and Social Psychology*, 54(6), pp. 1063–1070.
- Watson, D.C. (2001) 'Procrastination and the five-factor model: a facet level analysis', *Personality and Individual Differences*, 30(1), pp. 149–158.
- Weinberg, S. and Abramowitz, S.K. (2002) *Data analysis for the behavioral sciences using SPSS*. Cambridge: Cambridge University Press.
- Weinhardt, J.M., Morse, B.J., Chimeli, J. and Fisher, J. (2012) 'An item response theory and factor analytic examination of two prominent maximizing tendency scales', *Judgment and Decision Making*, 7(5), pp. 644–658.
- Wells, W.D. (1993) 'Discovery-oriented consumer research', *Journal of Consumer Research*, 19(4), pp. 489–504.

- Wertenbroch, K. (2015) 'From the editor: an opportunity for more relevance from broadening behavioral research in marketing', *Journal of Marketing Behavior*, 1(1), pp. 1–7.
- Westbrook, R.A. and Oliver, R.L. (1991) 'The dimensionality of consumption emotion patterns and consumer satisfaction', *Journal of Consumer Research*, 18(1), pp. 84–91.
- White, C.M., Hoffrage, U. and Reisen, N. (2015) 'Choice deferral can arise from absolute evaluations or relative comparisons', *Journal of Experimental Psychology: Applied*, 21(2), pp. 140–157.
- Winer, R.S. (1999) 'Experimentation in the 21st century: the importance of external validity', *Journal of the Academy of Marketing Science*, 27(3), pp. 349–358.
- Wood, S.L. (2001) 'Remote purchase environments: the influence of return policy leniency on two-stage decision processes', *Journal of Marketing Research*, 38(2), pp. 157–169.
- Wu, P.-H. and Kao, D.T. (2011) 'Goal orientation and variety seeking behavior: the role of decision task', *Journal of Economic Psychology*, 32(1), pp. 65–72.
- Xie, J. and Gerstner, E. (2007) 'Service escape: profiting from customer cancellations', *Marketing Science*, 26(1), pp. 18–30.
- Xu, A.J. and Wyer, R.S. (2007) 'The effect of mind-sets on consumer decision strategies', *Journal of Consumer Research*, 34(4), pp. 556–566.
- Xu, A.J. and Wyer, R.S. (2008) 'The comparative mind-set: from animal comparisons to increased purchase intentions', *Psychological Science*, 19(9), pp. 859–864.
- Yi, Y. (1990) 'A critical review of consumer satisfaction', in Zeithmal, V. A. (ed.) *Review of marketing*. Chicago: American Marketing Association, pp. 68–123.
- Zeelenberg, M., van Dijk, W.W. and Manstead, A.S.R. (2000) 'Regret and responsibility resolved? Evaluating Ordóñez and Connolly's (2000)

conclusions', *Organizational Behavior and Human Decision Processes*, 81(1), pp. 143–154.

Zeelenberg, M. and Pieters, R. (2007) 'A theory of regret regulation 1.0', *Journal of Consumer Psychology*, 17(1), pp. 3–18.

Zemack-Rugar, Y., Moore, S.G. and Fitzsimons, G.J. (2017) 'Just do it! Why committed consumers react negatively to assertive ads', *Journal of Consumer Psychology*, 27(3), pp. 287–301.

Zhao, X., Lynch, J.G.Jr. and Chen, Q. (2010) 'Reconsidering Baron and Kenny: myths and truths about mediation analysis', *Journal of Consumer Research*, 37(2), pp. 197–206.

APPENDICES

Appendix A Stimuli used in book choice task, Studies 0 and 1

Appendix B Stimuli used in board game choice task, Studies 2-4

Appendix C Custom syntax for main effects contrasts, Study 2

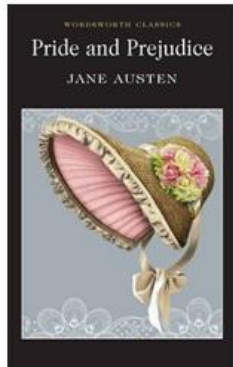
Appendix D Custom syntax for simple effects contrasts, Study 2

Appendix E Custom syntax for simple effects contrasts, Study 3

Appendix F An example of a full experiment, Study 3

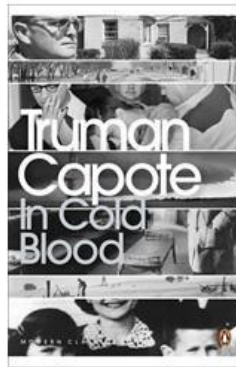
Appendix A Stimuli used in book choice task, Studies 0 and 1

1. *Pride and Prejudice*, Jane Austen



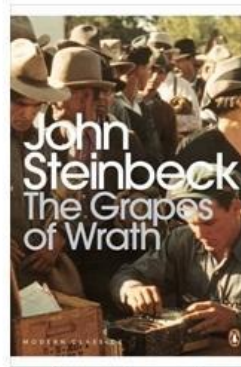
An ironic novel of manners

2. *In Cold Blood*, Truman Capote



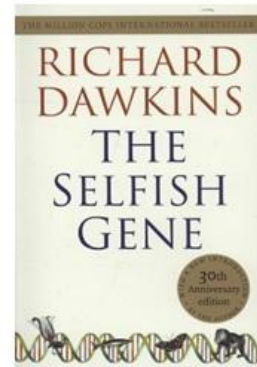
Chilling true-crime novel

3. *The Grapes of Wrath*, John Steinbeck



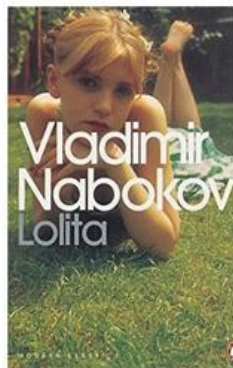
Epic on human hope and struggle

4. *The Selfish Gene*, Richard Dawkins



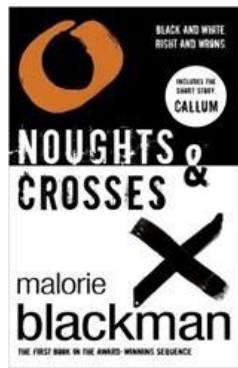
Classic overview of evolution

5. *Lolita*, Vladimir Nabokov



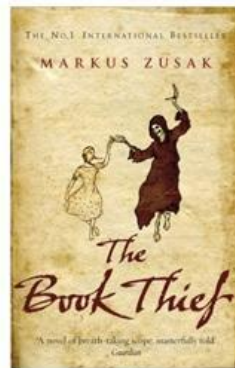
Strange, troubling love story

6. *Noughts & Crosses*, Malorie Blackman



Bitter-sweet tale of dystopia

7. *The Book Thief*, Markus Zusak



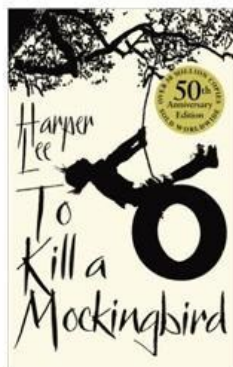
Grim depiction of Nazism

8. *Hitchhiker's Guide to the Galaxy*, D. Adams



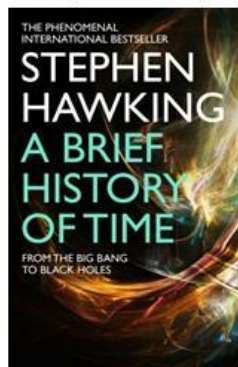
Work of a comic genius

9. *To Kill a Mockingbird*, Harper Lee



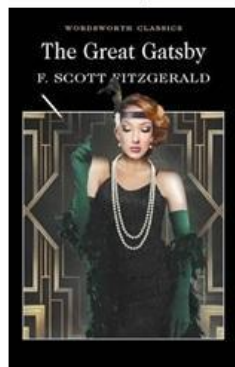
Delightful historical drama

10. *A Brief History of Time*, Stephen Hawking



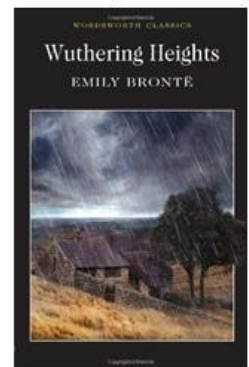
Clear, clever science classic

11. *The Great Gatsby*, F. Scott Fitzgerald



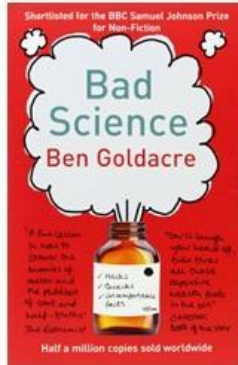
Devastating account of "Jazz Age"

12. *Wuthering Heights*, Emily Bronte



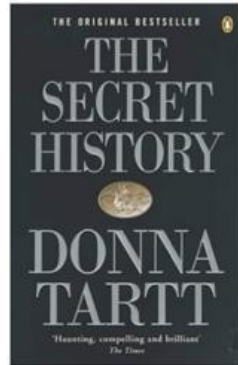
Wild, passionate love story

13. Bad Science,
Ben Goldacre



Witty exposé on iffy science

14. The Secret History,
Donna Tartt



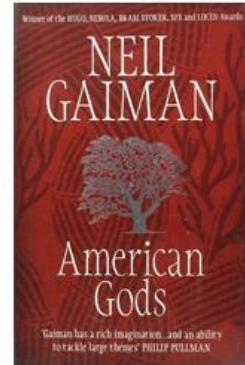
Haunting psychological thriller

15. Norwegian Wood,
Haruki Murakami



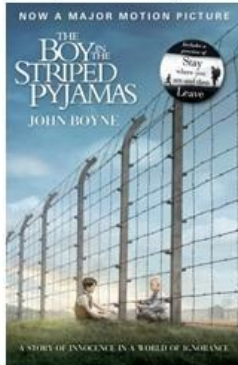
Troubling coming of age story

16. American Gods,
Neil Gaiman



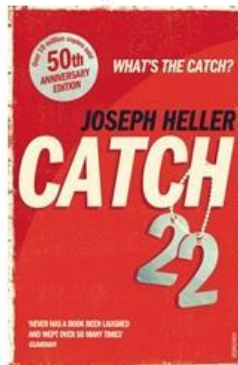
Dark journey into America's soul

17. Boy in the Striped
Pyjamas, J. Boyne



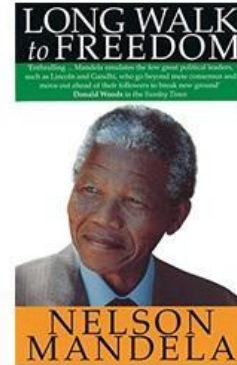
Alarming tale on horrors of war

18. Catch 22,
Joseph Heller



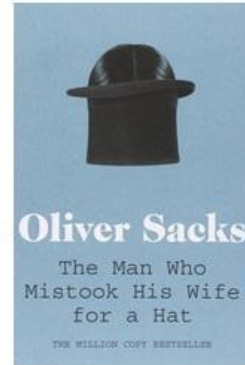
Explosive satirical novel

19. Long Walk to Freedom,
Nelson Mandela



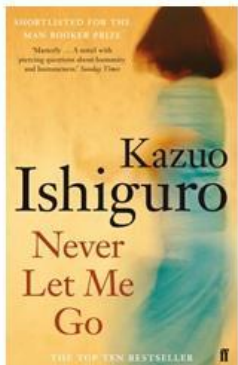
Riveting memoirs of an icon

20. The Man who Mistook
His Wife for a Hat, O. Sacks



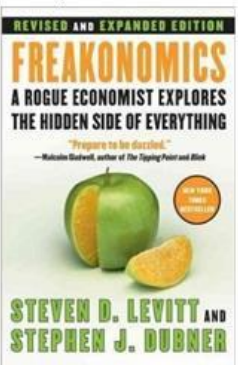
Bizarre account of broken minds

21. Never Let Me Go,
Kazuo Ishiguro



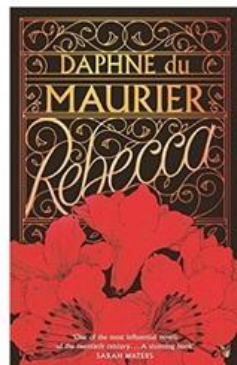
Piercing drama on humanity

22. Freakonomics,
Stephen J. Dubner



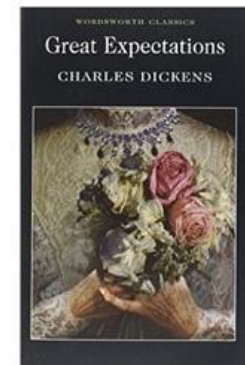
Creative attack on economics

23. Rebecca,
Daphne du Maurier



Subtle, troubling melodrama

24. Great Expectations,
Charles Dickens



Gripping tale of crime and guilt

Appendix B Stimuli used in board game choice task, Studies 2-4

Cluedo



Reclusive millionaire was murdered in his mansion. Now it's up to you to crack the case. Question everything to unravel the mystery. Who did it? How? Why? Ransack the mansion for clues and leave no card unturned.

The Logo Board Game



Our life is full of things. From chocolate to cereal, football to flowers - they all have logos. This game taps into the knowledge piled up over our lives and adds a few astonishing facts and surprises to entertain the whole family.

7 Wonders



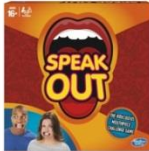
Lead an ancient civilization to rise from its barbaric roots and become a world power. Lead your troops to a military victory or create a nation of artisans and philosophers. Build a merchant state or master science and technology.

The Yes! No! Game



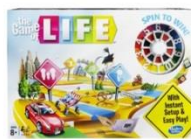
The fast & furious game where answering Yes or No gets you dinged out by the bell. This card game contains 1 pack of 50 Question Cards and 1 Yes/No Bell, to be rung when a player answers Yes or No to quick fire questions.

Speak Out



Get ready to be doubled over with laughter with this ridiculous mouthpiece challenge game! Expect laugh-out-loud fun as players try to say different phrases while wearing a mouthpiece that won't let them shut their mouth.

The Game of Life



Game of Life is spin the wheel of fate and take a drive along the twisting roads families have enjoyed for more than 40 years. Do good deeds as you go through the game to earn Life Tiles and more money down the road.

Codenames



Codenames is a challenging social word game. Two rival spymasters know the secret identities of 25 agents. Their teammates only know the agents' codenames. The teams compete to make contact with all their agents first.

Lattice



Escape to the islands with Lattice, a new classic strategy board game where simple rules combine into surprisingly deep strategies. Match tiles by color or shape. Win by being the first player to play all your tiles.

Sorry!



The game of sweet revenge now with POWER-UP action at a value price! Fire your bolts ahead of your enemies. Use Ice to freeze your opponent on the spot! Hurry and get your pawns home before your enemies seek revenge!

5 Second Rule



It should be easy to name 3 things that you brush, or 3 famous Michaels ... but can you do it under the pressure of 5 seconds twisting down and with the other players staring, waiting for you to get flustered?

Taboo



The game of unspeakable fun! Get 2 teams together to compete in this guessing game. Team players must take turns in describing a word on a card, without using the tabooed words listed. There are more ways to play for extra fun!

Labyrinth



Race for treasures in a moving maze! Be the first to collect all your treasures by shifting the walls of the labyrinth to create a clear path. Players take turns to search the Labyrinth for their magical objects and characters.

Carcassonne



Build the area surrounding this impressive city, one tile at a time. They then place a follower on fields, cities, roads or monasteries in order to create knights, monks, farmers and thieves and score as many points as possible.

Scotland Yard



Criminal mastermind Mister X has escaped Scotland Yard and it's up to you to catch him! Use travel tickets chasing him by taxi, bus, and underground, around Picadilly Circus, along the River Thames, and through Paddington Station.

Absolute Balderdash



Absolute Balderdash is a hilarious bluffing game in which you try to con your opponents into believing your made up answer to a weird and wonderful collection of questions on Events, Words, Laws, Initials and People.

Articulate!



The fast talking description game. Passionate rivalries, animated banter, helpless laughter. The idea is to describe as many words as possible to your team-mates in just 30 seconds, without saying rhymes with or sounds like.

Appendix C Custom syntax for main effects contrasts, Study 2

```
UNIANOVA MCHECK BY DEPL_M REV_M  
/PRINT = DESCRIPTIVE  
/CONTRAST (REV_M)=SPECIAL (-1 1 0)  
/CONTRAST (REV_M)=SPECIAL (-1 0 1)  
/CONTRAST (REV_M)=SPECIAL (0 -1 1)
```

In this syntax, MCHECK refers to perceived decision reversibility, DEPL_M refers to cognitive depletion manipulation and REV_M refers to decision reversibility options manipulation. The first contrast compares perceived decision reversibility between groups of participants exposed to an irreversible decision (-1) and the option to remake a choice (1); the second – between groups of participants exposed to an irreversible decision (-1) and the option to unmake a choice (1), the third – between groups of participants exposed to the option to remake a choice (-1) and the option to unmake a choice (1). The syntax also produces descriptive statistics.

Appendix D Custom syntax for simple effects contrasts, Study 2

```
UNIANOVA COMPAV BY DEPL_M REV_M
/PRINT = DESCRIPTIVE
/LMATRIX = "No depletion, unmake vs remake choice"
REV_M 0 -1 1 DEPL_M*REV_M 0 -1 1 0 0 0
/LMATRIX = "Depletion, unmake vs remake choice"
REV_M 0 -1 1 DEPL_M*REV_M 0 0 0 0 -1 1
```

In this syntax, *COMPAV* refers to the extent of post-choice comparison, *DEPL_M* refers to cognitive depletion manipulation and *REV_M* refers to decision reversibility options manipulation. The first contrast (*LMATRIX*) compares the extent of post-choice comparison between groups of participants exposed to the option to remake a choice (-1) and the option to unmake a choice (1) only when participants were not cognitively depleted. The second contrast (*LMATRIX*) compares the extent of post-choice comparison between groups of participants exposed to the option to remake a choice (-1) and the option to unmake a choice (1) only when participants were cognitively depleted. The syntax also produces descriptive statistics.

Appendix E Custom syntax for simple effects contrasts, Study 3

```
UNIANOVA SATAV BY VARI_M REV_M
/PRINT = DESCRIPTIVE
/LMATRIX = "No variety, unmake vs remake choice"
REV_M -1 1 VARI_M*REV_M -1 1 0 0
/LMATRIX = "Variety, unmake vs remake choice"
REV_M -1 1 VARI_M*REV_M 0 0 -1 1
```

In this syntax, SATAV refers to choice satisfaction, VARI_M refers to variety-seeking prime manipulation and REV_M refers to decision reversibility options manipulation. The first contrast (LMATRIX) compares the extent of post-choice comparison between groups of participants exposed to the option to remake a choice (-1) and the option to unmake a choice (1) only when participants were primed not to seek variety. The second contrast (LMATRIX) compares the extent of post-choice comparison between groups of participants exposed to the option to remake a choice (-1) and the option to unmake a choice (1) only when participants were primed to seek variety. The syntax also produces descriptive statistics.

Appendix F An example of a full experiment, Study 3

This survey should take you 5-10 minutes to complete and should be taken on a laptop or desktop computer.

All the information from this survey will be treated in confidence and anonymously.

Please read every page carefully and answer all the questions in this survey.

Thank you in advance for your time and help! Please click the arrow below to start.

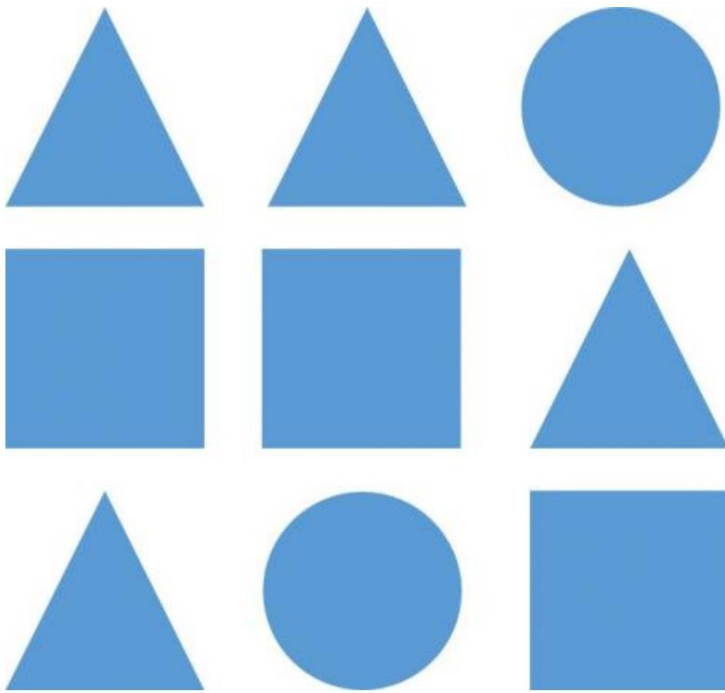


Page 1

On the next few pages you'll see some pictures. Please study the pictures carefully and then answer the questions about them.



Page 2



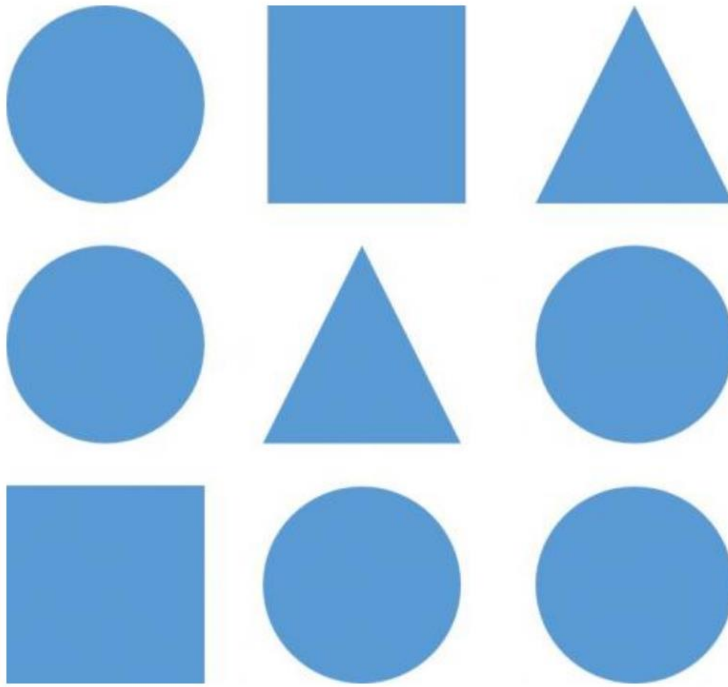
How many of these shapes do you see in the picture above?

Triangles

Circles

Squares





How many of these shapes do you see in the picture above?

Triangles

Circles

Squares



Page 4

What shapes did you see in the last two pictures?



Page 5

Now imagine that you're browsing an online retailer's website in order to buy a board game to play with your family or friends.

On the next screen you'll see a list of board games sold by this retailer. For each board game, there is the title, a picture of the packaging and a short description.

Please buy a board game that you like the most. Please choose your preferred board game carefully.



Page 6

Cluedo



Reclusive millionaire was murdered in his mansion. Now it's up to you to crack the case. Question everything to unravel the mystery. Who did it? How? Why? Ransack the mansion for clues and leave no card unturned.

The Logo Board Game



Our life is full of things. From chocolate to cereal, football to flowers - they all have logos. This game taps into the knowledge piled up over our lives and adds a few astonishing facts and surprises to entertain the whole family.

7 Wonders



Lead an ancient civilization to rise from its barbaric roots and become a world power. Lead your troops to a military victory or create a nation of artisans and philosophers. Build a merchant state or master science and technology.

The Yes! No! Game



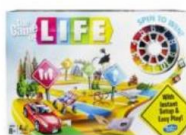
The fast & furious game where answering Yes or No gets you dinged out by the bell. This card game contains 1 pack of 50 Question Cards and 1 Yes/No Bell, to be rung when a player answers Yes or No to quick fire questions.

Speak Out



Get ready to be doubled over with laughter with this ridiculous mouthpiece challenge game! Expect laugh-out-loud fun as players try to say different phrases while wearing a mouthpiece that won't let them shut their mouth.

The Game of Life



Game of Life is spin the wheel of fate and take a drive along the twisting roads families have enjoyed for more than 40 years. Do good deeds as you go through the game to earn Life Tiles and more money down the road.

Codenames



Codenames is a challenging social word game. Two rival spymasters know the secret identities of 25 agents. Their teammates only know the agents' codenames. The teams compete to make contact with all their agents first.

Lattice



Escape to the islands with Lattice, a new classic strategy board game where simple rules combine into surprisingly deep strategies. Match tiles by color or shape. Win by being the first player to play all your tiles.

Page 7: part 1

Sorry!



The game of sweet revenge now with POWER-UP action at a value price! Fire your bolts ahead of your enemies. Use Ice to freeze your opponent on the spot! Hurry and get your pawns home before your enemies seek revenge!

5 Second Rule



It should be easy to name 3 things that you brush, or 3 famous Michaels ... but can you do it under the pressure of 5 seconds twisting down and with the other players staring, waiting for you to get flustered?

Taboo



The game of unspeakable fun! Get 2 teams together to compete in this guessing game. Team players must take turns in describing a word on a card, without using the tabooed words listed. There are more ways to play for extra fun!

Labyrinth



Race for treasures in a moving maze! Be the first to collect all your treasures by shifting the walls of the labyrinth to create a clear path. Players take turns to search the Labyrinth for their magical objects and characters.

Carcassonne



Build the area surrounding this impressive city, one tile at a time. They then place a follower on fields, cities, roads or monasteries in order to create knights, monks, farmers and thieves and score as many points as possible.

Scotland Yard



Criminal mastermind Mister X has escaped Scotland Yard and it's up to you to catch him! Use travel tickets chasing him by taxi, bus, and underground, around Picadilly Circus, along the River Thames, and through Paddington Station.

Absolute Balderdash



Absolute Balderdash is a hilarious bluffing game in which you try to con your opponents into believing your made up answer to a weird and wonderful collection of questions on Events, Words, Laws, Initials and People.

Articulate!



The fast talking description game. Passionate rivalries, animated banter, helpless laughter. The idea is to describe as many words as possible to your team-mates in just 30 seconds, without saying rhymes with or sounds like.

I would like to buy:

Cluedo	The Logo Board Game	7 Wonders	The Yes! No! Game
Speak Out	The Game of Life	Codenames	Lattice
Sorry!	5 Second Rule	Taboo	Labyrinth
Carcassonne	Scotland Yard	Absolute Balderdash	Articulate!



Thank you!

If you change your mind, you'll be able to select a different board game by the end of the survey.



Page 8

For each question, please indicate how you feel at the moment.

How satisfied are you with the board game choice that you made?

1. Very dissatisfied	2.	3.	4.	5.	6.	7. Very satisfied
-------------------------	----	----	----	----	----	----------------------

How good or bad do you feel about the board game choice that you made?

1. Very bad	2.	3.	4.	5.	6.	7. Very good
----------------	----	----	----	----	----	-----------------



Page 9

Please rate the following statements about your choice of the board game.

I feel I have a chance to change my board game order.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

I feel my board game order can be altered.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------



With such a purchase, I would feel my money is committed to buying a product from this specific retailer.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
-------------------------	----	----	----	----	----	----------------------

With such a purchase, I would feel I can still spend my money elsewhere if I choose to.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
-------------------------	----	----	----	----	----	----------------------



Page 11

If you'd like to select a different board game, this is your chance

Keep my current board game	Select a different board game
----------------------------	-------------------------------



Page 12

Cluedo



Reclusive millionaire was murdered in his mansion. Now it's up to you to crack the case. Question everything to unravel the mystery. Who did it? How? Why? Ransack the mansion for clues and leave no card unturned.

The Logo Board Game



Our life is full of things. From chocolate to cereal, football to flowers - they all have logos. This game taps into the knowledge piled up over our lives and adds a few astonishing facts and surprises to entertain the whole family.

7 Wonders



Lead an ancient civilization to rise from its barbaric roots and become a world power. Lead your troops to a military victory or create a nation of artisans and philosophers. Build a merchant state or master science and technology.

The Yes! No! Game



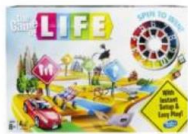
The fast & furious game where answering Yes or No gets you dinged out by the bell. This card game contains 1 pack of 50 Question Cards and 1 Yes/No Bell, to be rung when a player answers Yes or No to quick fire questions.

Speak Out



Get ready to be doubled over with laughter with this ridiculous mouthpiece challenge game! Expect laugh-out-loud fun as players try to say different phrases while wearing a mouthpiece that won't let them shut their mouth.

The Game of Life



Game of Life is spin the wheel of fate and take a drive along the twisting roads families have enjoyed for more than 40 years. Do good deeds as you go through the game to earn Life Tiles and more money down the road.

Codenames



Codenames is a challenging social word game. Two rival spymasters know the secret identities of 25 agents. Their teammates only know the agents' codenames. The teams compete to make contact with all their agents first.

Lattice



Escape to the islands with Lattice, a new classic strategy board game where simple rules combine into surprisingly deep strategies. Match tiles by color or shape. Win by being the first player to play all your tiles.

Sorry!



The game of sweet revenge now with POWER-UP action at a value price! Fire your bolts ahead of your enemies. Use Ice to freeze your opponent on the spot! Hurry and get your pawns home before your enemies seek revenge!

5 Second Rule



It should be easy to name 3 things that you brush, or 3 famous Michaels ... but can you do it under the pressure of 5 seconds twisting down and with the other players staring, waiting for you to get flustered?

Taboo



The game of unspeakable fun! Get 2 teams together to compete in this guessing game. Team players must take turns in describing a word on a card, without using the tabooed words listed. There are more ways to play for extra fun!

Labyrinth



Race for treasures in a moving maze! Be the first to collect all your treasures by shifting the walls of the labyrinth to create a clear path. Players take turns to search the Labyrinth for their magical objects and characters.

Carcassonne



Build the area surrounding this impressive city, one tile at a time. They then place a follower on fields, cities, roads or monasteries in order to create knights, monks, farmers and thieves and score as many points as possible.

Scotland Yard



Criminal mastermind Mister X has escaped Scotland Yard and it's up to you to catch him! Use travel tickets chasing him by taxi, bus, and underground, around Picadilly Circus, along the River Thames, and through Paddington Station.

Absolute Balderdash



Absolute Balderdash is a hilarious bluffing game in which you try to con your opponents into believing your made up answer to a weird and wonderful collection of questions on Events, Words, Laws, Initials and People.

Articulate!



The fast talking description game. Passionate rivalries, animated banter, helpless laughter. The idea is to describe as many words as possible to your team-mates in just 30 seconds, without saying rhymes with or sounds like.

I would like to buy:

Cluedo	The Logo Board Game	7 Wonders	The Yes! No! Game
Speak Out	The Game of Life	Codenames	Lattice
Sorry!	5 Second Rule	Taboo	Labyrinth
Carcassonne	Scotland Yard	Absolute Balderdash	Articulate!



Finally, please rate the following statements about yourself:

I am really interested in board games.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

Shopping for board games is something I might personally do.

1. Strongly disagree	2.	3.	4.	5.	6.	7. Strongly agree
----------------------------	----	----	----	----	----	-------------------------

I am

Male	Female
------	--------

My age in years is

