KU LEUVEN

FACULTY OF ECONOMICS AND BUSINESS

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Why poor people are prone to remain poor

The effect of future time perception on impulsive decision-making

Ben Praet (r0263629)
Marijke Smets (r0306869)
Berend Wauters (r0375841)

Thesis submitted to obtain the degree of

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Promoter: Anouk Festjens

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Poor people are prone to remain poor because they have a tendency to make more impulsive decisions than their wealthier counterpart. This puts a huge burden on today's society. Therefore, the goal of the current study is to investigate whether poor people's impulsive behavior may be partially attributed to a distorted time perception. In order to do so, we created an online survey in which the feeling of financial constraint was manipulated in three different ways. Statistical analysis revealed that the feeling of financial constraint had an influence on participants' future time perception, but only for one of three manipulations. More specifically, it was found that people with low income have a tendency to perceive the future as more distant when they are feeling financially constraint (vs. control condition). For high income individuals, the opposite was true. Moreover, no evidence was found for the premise that an elongated future time perception (induced by financial constraint) has an effect on impulsive behavior. The limited support for our hypotheses may be attributed to a few important limitations of the study. Therefore, more detailed research is necessary in order to draw more reliable conclusions.

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General Introduction

In our everyday life we are exposed to numerous temptations that in certain occasions lead us to make impulsive decisions. When occurring rarely, such shortsighted decisions are relatively harmless. Drinking a glass of alcohol or booking an expensive holiday will not make a difference in a person's well-being. However, it is observed that certain individuals have a tendency to make impulsive decisions on a regular basis, which brings about problems in their financial and personal situation. More specifically, studies show that poor people in particular exhibit more impulsive behaviors than their wealthier counterpart, which in turn makes them prone to remain poor (Shah et al., 2012). Moreover, their shortsightedness concerning financial choices (i.e., excessive borrowing, overspending, neglecting health care) put a significant burden on society (Mani et al., 2013). To give some idea, in 2012, 12.7 percent of the world's population (which corresponds to 896 million people) lived on less than $1.90 a day (Worldbank, 2016), which is especially the case in developing countries. However, poverty is also a prominent problem in more developed countries. For instance, overall consumer debt in the US amounted $11.52 trillion in 2014, and in the same year debt levels rose at the fastest rates since 2007 (Frizell, 2014). However, the mechanisms through which poverty occurs and reinforces itself are not well understood. Therefore, the goal of the present paper is to get a better understanding of poor people's shortsightedness and to partially explain why they make more impulsive decisions.

Previous research has given various explanations of why poor people have difficulties in making financial decisions and thus remain poor. A dominant view states that poverty influences people's mindset and that the mere *feeling* of poverty can lead to a specific focus of attention. More specifically, when people feel financially constraint, a tunneling of attention to the most afflicting problems occurs, and this at the expense of other problems (Mani et al., 2013). Thus, even though a person is not necessarily poor by definition, they can be triggered to feeling financially constraint which can lead to limited cognitive resources. These limited cognitive resources, in turn, make them more susceptible to make impulsive financial decisions (Mani et al., 2013; Tully et al., 2015).

The impulsive decision-making process on itself is rather complex and one solid, comprehensive theory has not yet been formulated. However, scholars agree on the fact that people differ in their intertemporal preferences (i.e., trade-offs between costs and benefits over time; Frederick, Loewenstein, & O'Donoghue, 2002), but disagree on the basis of this difference. Multiple studies offered a value-based explanation – that is, people

make myopic or shortsighted decisions because they overvalue the outcome of an immediate reward at the expense of a future one. However, an alternative view states that impulsivity stems from an increase in the temporary distance to a delayed reward. More specifically, a person who perceives the future as more distant will consequently be more impulsive, since the delayed reward seems further away (Zauberman et al., 2009).

This difference in a person's future time perception has been attributed to various aspects such as sexual cues (Kim, & Zauberman, 2013) and construals (Trope, & Liberman, 2010; Hansen, & Trope, 2013; Fujita et al., 2006). However, the current study aims at investigating one other possible explanation – that is, the feeling of financial constraint. We assume that the feeling of financial constraint elongates people's future time perception, which in turn makes them more susceptible to impulsive decision-making. Thus, the goal of the current study is to formulate an answer to the following question: Can the effect of poverty on impulsive behavior be partially attributed to a distorted time perception?

To answer this research question we conducted an experimental study using an online survey. Our research population consisted of male and female adults between the ages of 25 and 65 years old. We chose to evoke financial constraint in three different ways corresponding to the manipulations in the studies of Nelson and Morrison (2005), Mani et al. (2013) and Zhou, Vohs and Baumeister (2009). By exposing participants to one of three manipulations we investigated if the feeling of financial constraint (i.e., feeling poor) influences people's future time perception and consequently make them more impulsive.

In the current study, we will first give an overview of the most important literature regarding poverty and the impulsive decision-making process. Second, we will link these concepts and provide two hypotheses that may partially explain why poor people are prone to remain poor. Next, we will explain the methodology that was used to investigate the proposed hypotheses, which is followed by a statistical analysis of the results. Finally, we provide an interpretation of the results in our discussion and propose limitations of the study and possibilities for future research in the personal remarks section.

1 Literature review

We start with reviewing the literature on the effects of feeling poor on decision-making. First, we give an overview of studies showing that poor people make decisions that reinforce their poverty conditions – that is, they have a tendency to make more impulsive decisions than the more affluent. Next, we discuss some recent theories on intertemporal choices and provide a detailed overview of studies that address the effect of people's future time perception on impulsive decision-making. Finally, we link these concepts and formulate our hypotheses.

1.1 Poverty

Poverty is still known as one of the most urgent problems confronting the world. A large body of research has shown that poverty brings about a wide variety of consequences, which may be classified into two different types. First, there are the material or tangible consequences of poverty, which are visible to the outside world. Second, there are the psychological consequences of poverty (Mani et al., 2013; Vohs et al., 2006). According to recent findings, these intangible psychological consequences are a major reason for the poverty trap (Haushofer, & Fehr, 2014; Mani et al., 2013; Vohs, 2013; Vohs et al., 2014).

1.1.1 Material (tangible) poverty

Poor people are known to exhibit more counterproductive behavior than the more affluent. To illustrate, it has been shown that the poor are less capable of handling their own finances, less likely to use preventive health care, more eager to play the lottery, more likely to undersave and overspend, and more prone to use drugs (Mani et al., 2013).

Previous research typically provided two types of explanations as to why poor people are more likely to make detrimental decisions that reinforce their conditions of poverty. The first class of explanations centers on the personality traits of the poor. That is, it is assumed that the poor are less intelligent, less productive workers, less attentive parents and poorer administrators of their finances (Mani et al., 2013; Shah et al., 2012), and that this leads to more irrational behavior that reinforces poverty. The second class of explanations centers on the circumstances in which the poor are living. More specifically, it is assumed that the poor grow up in less educated families, are more likely to live in subordinated

neighborhoods and are more prone to live in neglected social conditions in general. These circumstances will also lead to irrational behavior that reinforces poverty and thus will perpetuate a disadvantaged state (Shah et al., 2012; Vohs, 2013).

Apart from being objectively poor, it was also reported that the mere fact of *feeling* poor affects consumer behavior. For example, it was found that people who feel financially constrained have different spending patterns than people who do not feel constrained (Tully et al., 2015). To be specific, feeling poor increased the willingness to "stretch" resources by spending on material goods rather than experience goods. For example, in one of the experiments of Tully et al. (2015), all participants were asked to think of one discretionary material good and one experience good (of similar price) and to indicate how likely they were to buy the experience versus durable good. Results showed that the more participants felt financially constrained, the more their preference increased for material goods (i.e., smartphone, trampoline,…) over experiences (i.e., concerts, vacations,…; Haushofer, & Fehr, 2014; Tully et al., 2015). Furthermore, Briers and Laporte (2013) found that the feeling of being financially constraint increases the tendency to spend on high-caloric (vs. low-caloric) food. For instance, in one of their experiments, they manipulated financial constraint by asking participants to indicate the amount of money on their savings account on a scale where the highest anchor was either €400 (i.e., control condition) or €400.000 (i.e., condition of feeling financially constrained). Afterwards, participants were asked to rate thirty-six dishes, each according to the perceived pleasure of consuming them and their perceived caloric content. Results revealed that financially constrained people chose more food products with higher caloric content (Briers, & Laporte, 2013), which may be an indication of more impulsiveness in these individuals.

1.1.2 Psychological (intangible) consequences

Recent research showed that feelings of financial constraint do not only exert a directly observable impact on consumer behavior, but that it also affects people's mindset and that this may provide a better explanation for the poverty trap than the explanations based on personality traits or environmental conditions (see section 1.1.1).

To be specific, the amount of money on a person's savings account has the potential to instigate a wide variety of psychological processes, one of them being stress (Haushofer, & Fehr, 2014). When money is abundant, basic expenses (i.e., buying food, fuel, clothes) are easily managed and are seldom an origin of stress. However, when money is scarce,

these basic expenses become acute and pressing, and require much more attention. Allocating a scarce budget across many necessary expenses is for many an origin of stress because mistakes are costly (Shah et al., 2012). It is shown that the higher stress levels of the poor often result in unhappiness, depression, anxiety and higher cortisol levels. Paradoxically, these consequences will make it even more difficult to escape the state of poverty (Haushofer, & Fehr, 2014).

Yet, according to Mani et al. (2013), stress is not the only explanation for the poverty trap and neither is it the only (psychological) effect of poverty. On top of the concerns and uncertainties that poverty induces, poverty seems to be able to capture people's attention and trigger intrusive thoughts. It leads to a change in mindset – that is, a tunneling of attention. To explain this in more detail, the authors use "the suitcase" metaphor. More specifically, consider packing a large versus small suitcase for a business trip where all else stays constant. When packing the large suitcase, everything you want can be mindlessly tossed in the case. But with the smaller suitcase, there is only room for critical goods, it triggers more planning. Such a situation also applies when being poor, you are forced to tunnel your attention and to plan (Fernbach et al., 2015; Mani et al., 2013). For example, low-income house owners will neglect regular home- or car maintenance expenses while focusing on more pressing costs. Neglecting those relative small repairs can become considerable problems later on. This is also the case in the financial domain. Low-income individuals are more prone to take short-term, high-interest loans to solve the most pressing problems that are capturing their full attention. They give all their focus on the biggest problems while neglecting the smaller.

The idea that poverty leads to a focusing of attention to the most urgent problems (while others are neglected) has been tested in several experiments. For instance, Mani et al. (2013) found in a series of field studies that sugarcane farmers in India performed worse on a general intelligence task (i.e., Raven's Progressive Matrices) before harvest (when feeling poor) than after the harvest (when feeling rich). Similarly, the farmers were less capable of coping with challenging financial decisions before the harvest than after. In the same paper, Mani et al. (2013) reported in a series of laboratory studies that poor participants performed significantly worse on a general intelligence task when they had to solve a hard financial problem compared to an easy financial problem. This in contrast with rich participants who performed better than the poor participants in both problems and in which both results (of the easy as well as the hard financial problem) were approximately similar (Mani et al., 2013). In another experiment executed by Shah et al. (2012),

participants played a version of 'Wheel of Fortune'. Resource constraint was manipulated by adjusting the number of chances participants had to guess. "Poor" participants had six guesses per round and rich participants had twenty guesses per round (total of fourteen rounds). After the game, participants completed a version of the 'Dots-Mixed task'. This task estimates cognitive control capability by presenting the participants visual stimuli located left or right of a fixation cross. On congruent trails, participants had to press a dot on the same side as the stimuli (on incongruent trials, they had to press a dot on the opposite side). Poor participants performed worse than did rich participants (Shah et al., 2012). To summarize, this set of studies indicated that poverty taxes cognitive resources – that is, less mental resources are available for accomplishing less relevant tasks (Haushofer, & Fehr, 2014; Mani et al., 2013). This decrease in mental power has huge consequences for the financially poor when considering monetary expenses. The poor will only be able to give the most relevant monetary concerns their full attention and are in this way more prone to making more irrational decisions in less relevant tasks (Mani et al., 2013; Vohs, 2013).

Vohs (2013) reinterpreted the findings of Mani et al. (2013) using a framework termed "the limited-resource model of self-control". This model assumes that exerting self-control in a first task reduces self-control in a subsequent task. The poor are more frequently confronted with situations that require self-control, as they must resist spending their limited budgets on suboptimal products. This constant need for willpower drains their self-control resources, such that more irrational decisions follow in a later stage. Thus, they will become more susceptible to making unwise spending or other regrettable decisions (e.g., overeating) later on (Mani et al., 2013; Vohs, 2013).

An important note in the above discussion is that the mere *feeling* of financial constraint can lead to a focusing of attention (on the most urgent problems at the expense of others; Mani et al., 2013). This means that a tunneling of attention may even occur for people who are not necessarily poor according to the 'outside-world', but nevertheless feel poor. It is a fact that many consumers often feel financially constrained in their lives. This feeling of constraint, which is mostly created when consumption needs exceeds the capacity to provide them, will more than likely lead to limited cognitive resources (Mani et al., 2013; Tully et al., 2015).

1.2 Impulsivity

From the previous discussion we can conclude that "poor" people (i.e., people who feel financially constrained) engage in more impulsive consumer behavior than the more affluent. Moreover, being poor seems to affect their mindset, as poverty may lead to more stress, a tunneling of attention, and a depletion of cognitive resources, eventually leading to more impulsive decisions. Although these psychological processes (stress, tunneling of attention and depletion) may explain why poverty leads to impulsive decision-making to some extent, the goal of the present paper is to approach the problem from a different perspective by testing whether poverty leads to a shift in time perception.

In the next section, we first describe the most dominant theories on intertemporal decision-making. We move on to discussing a more recent theory, stating that impulsive decisions follow from shifts in time perception (rather than shifts in valuation). We conclude by formulating our hypotheses that link the impulsive decisions of poor people with the concept of shifts in time perception and intertemporal decision-making.

1.2.1 Time discounting

People often make shortsighted decisions and such decisions can have a significant negative impact on a person's health or financial situation (Cyders, & Coskunpinar, 2011; Ameriks et al., 2007). Nonetheless, issues like smoking, overeating, alcohol abuse and procrastinating are ubiquitous and put a huge burden on society. Therefore, it is important to investigate which mechanisms underlie this general shortsightedness and, hence, be able to provide solutions.

There is an extensive amount of research that addresses the underlying factors of impulsive behavior and the findings are diverse. For instance, Hoch and Loewenstein (1991) provide a model stating that one's level of self-control is the result of an internal struggle between desire and willpower. Desire reflects one's need for an immediate satisfaction, whereas willpower refers to the strategies that are used to overcome this desire. The researchers suggest that the level of self-control is dependent on the strength of these two opposing factors – that is, people make shortsighted decisions when the desire is too high (i.e., desirability of a cigarette or a chocolate cake) or willpower is too low (i.e., when the desired object is proximate).

Related to the view that an upsurge in desire can lead to myopia (shortsightedness) is the idea that people fail to control their behavior in case they temporarily perceive the value of an immediate reward as higher than the value of a future reward (Green, Fry, & Myerson, 1994). For instance, they temporarily attach greater value to the pleasure of smoking a cigarette now than to the long-term health benefits of not smoking. In this context, researchers often refer to the concept of time discounting. This means that the value of a delayed reward is discounted (or reduced in its value) relative to the value of an immediate reward (Bickel, & Marsch, 2001; Frederick, Loewenstein, & O'Donoghue, 2002). If the pleasantness of smoking a cigarette and the pleasantness of avoiding cardiovascular problems would co-exist in time, there would not be a problem of self-control (i.e., almost all people would avoid having the health problems and resist the cigarette). It is the fact that the health benefit of not smoking unfolds further in time which makes the choice between smoking and not smoking a matter of self-control (Rachlin, 1974).

The fact that a delay decreases the value of an outcome has been captured by various quantitative models. The earliest models argued that people discount the value of future rewards exponentially, meaning that the discounting rate of an individual is constant over time and increases with the length of the delay (see Figure 1). Yet, other researchers argued that individuals discount future rewards in an inconsistent manner (Ainslie, 1975). The latter is also referred to as hyperbolic discounting and means that the rate at which delayed rewards are discounted decreases as the length of the delay increases over time (see Figure 2). For example, Thaler (1981) found that participants required $30 to wait three months instead of receiving $15 now, but required only $60 to wait for one year and $100 to wait for three years. Thus, as time progressed, participants required a smaller amount of money in the future to make them indifferent to receiving a certain amount now. Moreover, Kirby, Petry and Bickel (2004) found that participants who were drug-addicts discounted delayed rewards hyperbolically and that their hyperbolic discounting rate was higher than the one for non-addicted participants. Thus, individuals have the tendency to, as time progresses, increasingly prefer a reward that is smaller and comes sooner over a reward that is larger and comes later (Frederick, Loewenstein, & O'Donoghue, 2002).

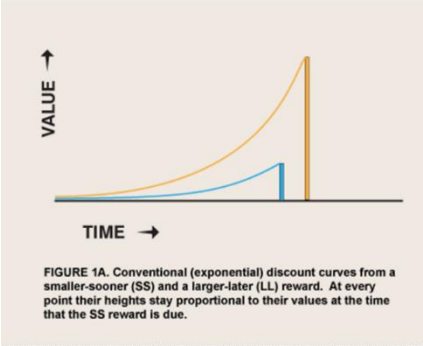


Figure 1: Exponential discounting

Source: Ainslie (2005)

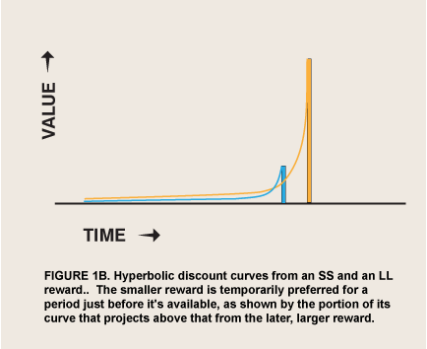


Figure 2: Hyperbolic discounting

Source: Ainslie (2005)

To summarize, people differ in what scholars have termed "intertemporal preferences", which involves a trade-off between costs and benefits that are spread over time (Frederick, Loewenstein, & O'Donoghue, 2002). However, a common ground of all the above explanations is that these differences in intertemporal preferences are *value-based* – that is, they assume that people make shortsighted decisions because they overvalue immediate outcomes at the expense of future ones at the moment of the myopic decision. Based on this value-based explanations many prevention campaigns have been designed to reduce the degree to which people make impulsive decisions. For example, information campaigns typically aim at increasing long-term decision-making by either reducing the desire for the immediate outcome (i.e., offering the option to postpone a decision) or by heightening the willpower to resist the outcome (i.e., introducing pre-commitment devices; Hoch, & Loewenstein, 1991). Yet, these solutions often proved to be unsatisfactory and very tailored to the specific situation. Therefore, recent research explored another mechanism for myopia, namely a mechanism based on a distorted time perception (Zauberman et al., 2009). That is to say, this recent stream of research argues that people's shortsightedness is a consequence of a perceived increase in the temporary distance to a delayed reward (rather than an increase in the value of the immediate reward). To understand this better, consider a situation where someone decides between the immediate pleasure of eating a cake and the future health benefits of not eating it. In such a situation, an individual who perceives the future as being more distant will be more likely to make a myopic decision than someone who perceives the future as being relatively closer (Zauberman et al., 2009). We will discuss this alternative explanation for myopia in more detail in the next section.

1.2.2 Impulsivity and time perception

In the above section we discuss the possible alternative mechanism through which people make shortsighted decisions. That is, due to a distorted time perception, an individual may perceive the future as further away and therefore make a myopic decision (because they feel more distant to a future reward). Thus, it is assumed that time is experienced subjectively and that there is no such thing as a "unified" time view. In previous research this assumption has been confirmed numerous times (Grondin, 2001; Zauberman et al., 2009). For example, time typically seems to slow down during brief and frightening events (such as skydiving), where people overestimate the duration of their fall (Stetson, Fiesta, & Eagleman, 2007). Time can also subjectively progress very fast, such as during activities where a person is having fun (Sackett et al., 2010). In general, the subjective duration of time is found to be influenced by several of factors, such as attentional engagement (Chaston, & Kingstone, 2004; Tse et al. 2004) and self-control (Vohs, & Schmeichel, 2003). For example, Tse et al. (2004) subjected their participants to an oddball paradigm where a series of visual and/or auditory stimuli was given to the participants. The oddball paradigm is frequently used in literature and believed to be closely related to attentional mechanisms (Garci-Larrea et al., 1992; Polich, 1986; Potts et al., 1996), meaning that this type of experiment leads to a certain attentional engagement. They found that the low-probability oddball stimulus in the series (capturing more attention) tends to last subjectively longer for the participants than the high-probability one, even though their objective duration is the same. This means that through attentional engagement, time was able to expand subjectively. Moreover, Vohs and Schmeichel (2003) asked their participants to control their emotions (i.e., a task that requires self-control) while watching a film clip, and found that they overestimated the duration relative to the control group. More general, it is found that self-control promotes a closer attention to time (Baumeister et al., 1994), which on its turn, creates the experience of an elongated perception of time (Block, & Zakay, 1997; Vohs, & Shmeichel, 2003). Therefore, attentional engagement, either to the passage of time (i.e., due to situations of self-control) or to the task itself (i.e., due to resource scarcity), is able to extend the perception of experienced time (Vohs, & Shmeichel, 2003; Tse et al., 2004; Zakay, 1990). As a side note, it is found that physiological activation expands time in a similar way in both humans and non-humans, by administering dopaminergic agents like methamphetamine (Maricq, Roberts, & Church, 1981; Matell, King, & Meck, 2004; Meck, 1996). In sum, these studies indicate that the perception of experienced time is indeed subjective and can be influenced by a wide variety of factors.

A related, but slightly different concept than experienced time perception is a person's perception of *future* time. This concerns the subjective perception of time that has yet to be experienced (in contrast to experienced duration where time has passed). Kim and Zauberman (2013) stated that processes that are able to elongate present or past experiences will not necessarily generate an extended future time perception. Yet, they also suggest that it may be very likely that an individual's' perception of the current passage of time serves as a perceptual input to guide their perception of future time. In other words, an individual who is feeling time as passing more slowly in the present, may judge the future to be more distant. Thus, factors such as attentional engagement (Tse et al. 2004) and the exertion of self-control (Vohs and Schmeichel, 2003) that slow down experienced time, may potentially also slow down future time. Note that these two factors were identified as consequences of feeling financially constrained.

Although the idea that time is subjective widely accepted, there is still disagreement about the factors that influence the perception of future time. For example, Kim and Zauberman (2013) found that sexual cues cause individuals to experience a temporal delay as subjectively longer, which results in an increase in their impulsivity concerning monetary rewards. In one of their experiments, heterosexual males completed two supposedly unrelated studies, namely a photo-evaluation study and a time-perception study. In the photo-evaluation study, participants evaluated either fifteen erotic pictures (i.e., sexual cue) or fifteen neutral pictures. Afterwards, participants were asked about their perception of time. They judged twelve future durations that ranged from one month to twenty-three months. Results indicated that participants who were exposed to a sexual cue evaluated future time durations as longer than did participants in the control condition. In a consecutive study, the researchers also found that participants who experienced a temporal delay as longer (because of the exposure to a sexual cue) had more impatience towards a monetary reward than did participants in the control condition. The authors thus concluded that sexual images lead people to be more impatient due to a perceived longer waiting time for a delayed reward, which is predicted by the time-based mechanism of impulsivity.

Thus, important is that in recent literature several factors were suggested that may influence the perception of future time (such as sexual cues) and that this is another pathway (next to the value-based mechanisms) that may influence the tendency to which people make myopic decisions. If men who are exposed to erotic pictures perceive a day in the future as more distant, they will be more likely to opt for the smaller, sooner financial reward (Zauberman, & Kim, 2013). Similarly, it was found that substance abusers and smoker

have a distorted future time perception as they perceive the waiting time for a reward (i.e., drugs or a cigarette) as longer, which may explain their impulsive behaviors (Sayette et al., 2005; Kirby, & Petry, 2004). The goal of the current paper is to investigate one other important factor that may influence the perception of future time, namely the feeling of financial constraint. That is to say, the time-distortion perspective on myopia implies that the shortsighted actions that are consistently observed in certain decision situations (i.e., situations in which the decision-maker is poor) can be reinterpreted in terms of a shift in time perception. For instance, it could be predicted that feeling poor increases the perceived temporal distance to the future and therefore enhances shortsightedness. Predictions such as these will be tested in the present paper and presented in more detail in the next section.

1.3 Why poor people make impulsive decisions

As we have discussed in our literature review, poor people have the tendency to make impulsive decisions, which reinforces their poverty conditions. In the current study one potential mechanism for this behavior of the poor is tested – that is, whether feelings of financial constraint lead to a shift in time perception (such that the future seems more distant), making impulsive decisions more likely.

Why would feelings of financial constraint lead to a shift in future time perception? As discussed in the previous section, feelings of financial constraint may lead to a higher need for self-control (Vohs, 2013), attentional engagement (Shah, Mullainathan and Shafir, 2012), and higher stress levels (Haushofer and Fehr, 2014), and these factors have been linked with subjective time perception. Additionally, it is reported that higher arousal or stress levels change the perception of future time (Zauberman, & Kim, 2013). Taken together, these findings suggest that poor people are expected to experience an elongated time perception. As explained in section 1.2, this may explain why financially constrained individuals make more impulsive decisions. Finally, it is also reported that merely evoking financial worries has a similar influence on poor people's cognitive functions as they experience during the day (Mani et al., 2013).

1.3.1 Formulation of hypotheses

To summarize, in the current study two hypotheses were formulated to support the following research question: can the effect of poverty on impulsive decision-making be partially attributed to a distorted time perception? In the first hypothesis it is argued that evoking feelings of financial constraint will lead to an elongated current time perception and that this extended time perception will bring about an elongated future time perception. Thus, it is assumed that attentional engagement, induced by the thoughts of financial constraints, can elongate the perception of (future) time (Vohs, & Shmeichel, 2003). This assumption builds on the idea that an individuals' perception of the current passage of time is used as a perceptual input to guide their perception of future time, as suggested by Kim and Zauberman (2013). Therefore, the first hypothesis states the following:

> ***Hypothesis 1****: The feeling of financial constraint will elongate a person's future time perception.*

Furthermore, following the time-based explanation of intertemporal choice (Zauberman & Kim, 2013), it is argued that an extended future time perception leads to more impulsive behavior. The idea that poor people might have an extended future time perception may hence provide a possible explanation why poor people are more impulsive in their decision-making process. The second hypothesis builds on the research that argues that an elongated future time perception, on its turn, can lead a person to make more impulsive or shortsighted decisions (Zauberman, & Kim, 2013). Therefore, the following hypothesis is formulated:

> ***Hypothesis 2****: The feeling of financial constraint will lead a person to make more impulsive decisions.*

To test these hypotheses, an experimental study was designed using an online survey. The feeling of financial constraint is evoked within the participants in three different ways through three different manipulations. Then, the future time perception is measured, as well as the impulsivity of the participants. The methodology will be explained in more detail in the method section.

2 Methodology

2.1 Participants and design

To investigate whether feelings of deprivation elongate time perception, we conducted an online experiment. One-hundred-and-thirty-three participants between 25 and 65 years old (male = 47.9%, women = 52.1 %) completed the survey. The feeling of financial constraint was evoked using three different manipulations corresponding to the studies of Nelson and Morrison (2005), Mani et al. (2013) and Zhou, Vohs and Baumeister (2009). Participants randomly received one of the three deprivation manipulations (each of the three sub studies thus had a two cell between subject design) and then all responded to the questions probing for their future time perception and impulsivity. Participants were told that the goal of the survey was to get more insight into the socio-economic status of adults.

2.2 Stimuli and procedure

The online survey was constructed in *Qualtrics* and distributed to participants via email and social media. Participants were first presented with an introductory text that informed them about the goal of the experiment and guaranteed anonymity. Participants were then randomly presented with one of the three poverty manipulations. In *Appendix 1* a full example of the survey is provided.

The procedure of the first poverty manipulation was similar to the procedure used in the study of Nelson and Morrison (2005). Initially, participants were informed that the goal of the experiment was to find out whether one's financial situation could be linked to several demographic factors (such as gender or age). They were also told that they would receive three questions related to this issue. The first two questions probed for the financial situation of the participants. That is, participants first had to indicate the extent to which they thought they earned more than the average person (i.e., 4-point Likert scale, 1 = much less and 4 = much more). Next, they were asked to indicate the monthly budget they had available to spend freely on goods or services (making abstraction of fixed costs such as rent or electricity costs). The third question manipulated participants' feelings of financial constraint. That is, participants were asked to indicate the amount of money on their savings account on an 8-point Likert scale where the highest anchor was either €1.000 (i.e., condition of feeling relatively rich) or €400.000 (i.e., condition of feeling relatively poor).

Participants responding towards the top of the scale with endpoint €1.000 were assumed to feel relatively rich, whereas participants responding towards the bottom or middle of the scale with endpoint €400.000 were assumed to feel relatively poor.

In the second poverty manipulation a similar procedure was used as in the study of Mani et al. 2(013). First, participants were informed that the goal of the study was to get insight into how consumers deal with their finances. They were told that they would receive four scenarios that all represented a financial problem. To manipulate financial constraint, half of the participants received a series of difficult financial problems (e.g., "Imagine a scenario where you lose 15% of your salary, would this bring about substantial changes in your lifestyle?"), whereas the other half were confronted with relatively easy financial problems (e.g., "Imagine a scenario where you lose 5% of your salary, would this bring about substantial changes in your lifestyle?"). The idea was that the 'easy' financial problems would evoke few or no financial concerns in participants whereas the 'hard' financial problems would evoke many financial concerns in participants, but only in participants who were poor or had relatively strict budgets.

The procedure of the third poverty manipulation was as follows (for a similar procedure see Zhou, Vohs, and Baumeister, 2009). Initially, participants were informed that the goal of the experiment was to test their memory. To manipulate financial constraint, they were randomly assigned to either a 'financial' condition or a 'weather' condition where thoughts on their own financial situation were made salient or non-salient, respectively. Participants in the 'financial' condition were asked to provide a detailed overview of their financial expenses of the last month. Afterwards, they were asked to list the factors that, in their opinion, contributed to financial difficulties in their own personal life. They were also told that they could think of aspects such as mortgages, rent or healthcare costs. In the 'weather' condition participants were asked to provide a detailed overview of the weather conditions of the last month. Afterwards, they were asked to list the factors that, in their opinion, contributed to the current climate changes.

After being exposed to one of the three aforementioned deprivation manipulations, all participants were presented with two blocks of questions measuring their (1) time perception and (2) impulsivity. Similar questions were used as in the study of Zauberman et al. (2009). To measure participants' time perception, they were asked to estimate the duration of a period between today and three different days in the future. To be specific, they were asked to indicate on a 10-point Likert scale to what extent they considered a day

in three weeks [three months, three years] from now as being distant or close to them (0 = very close, 10 = very distant). To probe for participants' impulsivity, we measured their hyperbolic discounting rate. More specifically, participants were first told that we wanted to investigate the extent to which they found it pleasant or unpleasant to wait for a certain reward. To be specific, we asked them: "Which amount of money do you need to receive in three weeks to be indifferent to receiving €100 right now?". The same was asked for a delay of three months and three years. Moreover, we presented participants with four choices between a healthy or unhealthy snack as an additional measure of their impulsivity.

Finally, in order to measure feelings of financial limitation, we asked participants to indicate how often they felt financially constrained in the sense that they could not afford certain expenses in the past month (on a 7-point scale; 0 = never, 7 = very often). In this way, it could be measured if the manipulations were successful (i.e., if participants felt financially constrained after it was made salient). Participants also entered some demographic information such as their gender, age, education, work situation, and income. The survey ended with a question where participants had to indicate how long the survey lasted (i.e., the duration of the survey), as one additional measure of time perception.

3 Statistical Analysis

3.1 Deprivation manipulation: Labelled scale (Nelson, & Morrison, 2005)

3.1.1 Outliers

The observations of six participants were removed as they provided extreme[1] perceived distances on the time perception scale (n = 3) or indifference values in the delay discounting task (n = 3). Also, the observations of three participants were removed as they answered illogically on the time perception scale (i.e., indicating years as less further away than months and months as less further away than weeks, n = 2) or in the delay discounting task (i.e., requiring more money after three weeks than after three months or three years, n = 1), since these answers indicate a misunderstanding of the questions. The final dataset contains the observations of 48 participants.

3.1.2 Manipulation check

To test whether the manipulation of financial deprivation was successful (i.e., whether participants in the deprivation condition indicated feeling more financially constraint than participants in the control condition), a one-way ANCOVA was conducted. The dependent variable was financial constraint, the independent variable was deprivation and the covariate was income. This analysis revealed no main effect of deprivation ($F(1, 44) = .16$, $p = .69$), nor a main effect of income ($F(1, 44) = 1{,}84$, $p = .18$). There was also found no deprivation by income interaction-effect ($F(1, 44) = .14$, $p = .71$). Thus, the manipulation of deprivation was unsuccessful.

3.1.3 Results

To test our hypothesis stating that deprivation increases perceived distance to the future, a one-way repeated ANCOVA was conducted. Time period (three weeks/ three months/ three years) was the within subject variable, deprivation was the between subject variable, and

[1] (- 3 <= ZDuration_3weeks <= 3) & (- 3 <= ZDuration_3months <= 3) & (- 3 <= ZDuration_3years <= 3) & (- 3 <= ZMoney_3weeks <= 3) & (- 3 <= ZMoney_3months <= 3) & (- 3 <= ZMoney_3years <= 3) & (Duration_3weeks<=Duration_3months<=Duration_3years)&(Money_3weeks<=Money_3months<= Money_3years) & Money>=100

income was the covariate. This analysis[2] revealed a main effect of time period (F(1.50, 65.76) = 27.27, p = .00). More specifically, a day in three weeks was experienced as less distant (M = 2.67, SD = 1.77), than a day in three months (M = 4.56, SD = 2.22, p = .00), and as less distant than a day in three years (M = 7.46, SD = 1.98, p = .00). The distance between the latter two periods (i.e., three months and three years) was also significantly different (p = .00). Moreover, we found a significant interaction effect of time period and income (F(1.50, 65.76) = 4.17, p = .03), but no time period by deprivation two-way interaction effect (F(1.50, 65.76) = .58, p = .52), nor a time period by deprivation by income three-way interaction effect (F(1.50, 65.76) = .91, p = .38). The interaction between income and time period is visualized in Figure 3.

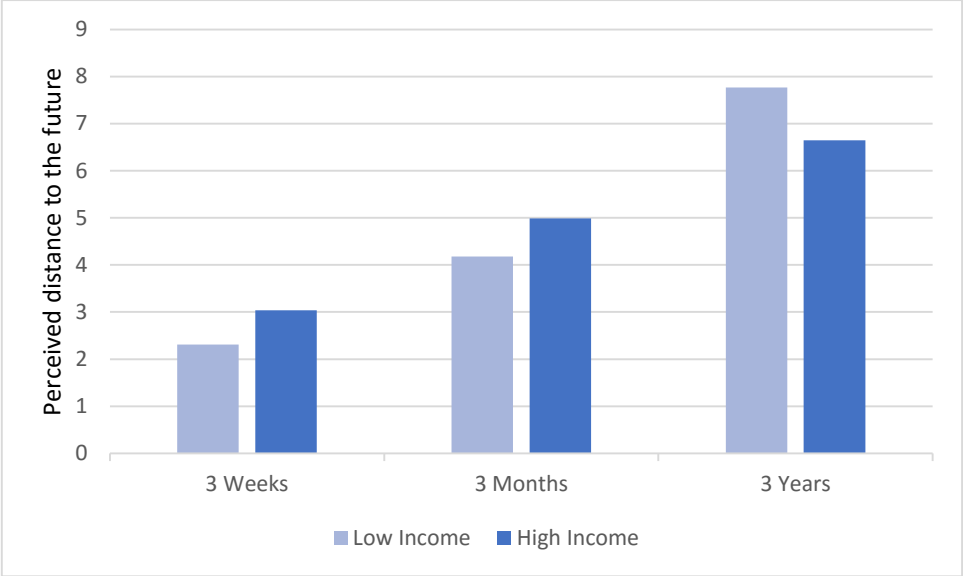


Figure 3 – Income by time period interaction effect (Manipulation 1)

The results of the analysis further revealed a main effect of deprivation (F(1,44) = 9.04, p = .00), but no main effect of income (F(1, 44) = .35, p = .56) on perceived distance to the future. There was also an income by deprivation interaction effect (F(1, 44) = 9.22, p = .00). More specifically, when deprivation is present, participants with a low income indicate the future as further away (M = 5.15, SD = .40) than participants with a high income (M = 4.50, SD = .50). The interaction between income and deprivation is visualized in Figure 4.

[2] We observed that the Mauchly's Test of Sphericity was significant (p < 0.05), thus the assumption of sphericity was broken. The results of the Greenhouse-Geisser test were therefore used.

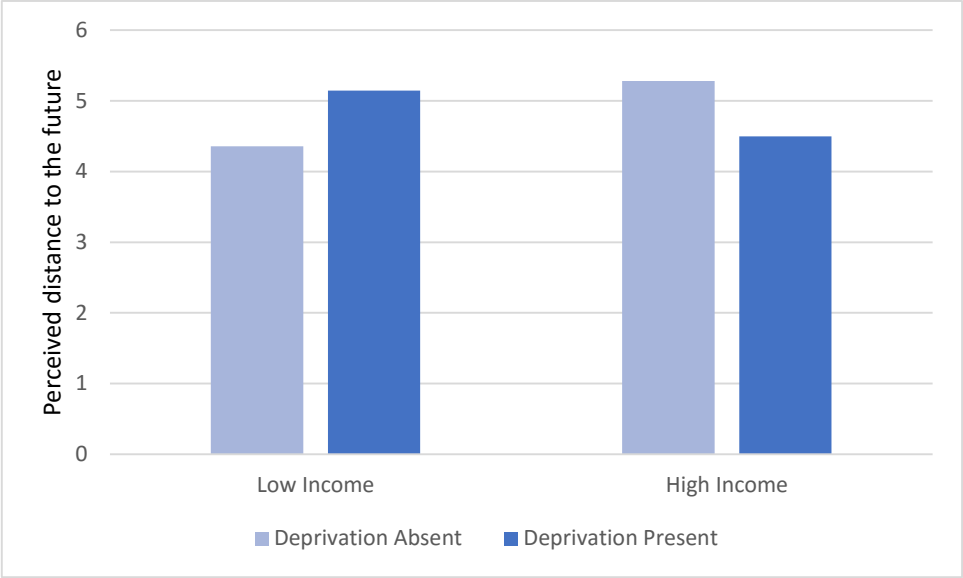


Figure 4 – Income by deprivation interaction effect (Manipulation 1)

To test our hypothesis stating that deprivation increases delay discounting, a second one-way repeated ANCOVA[3] was conducted. The amount of money people wanted to receive in three weeks versus three months versus three years was the within subject variable, deprivation was the between subject variable, and income was the covariate. This analysis[4] revealed no main effect of the delay (F(1.02, 44.80) = .21 p = .65). Moreover, we found no significant interaction effect of delay and income (F(1.02, 44.80) = .12, p = .74), no delay by deprivation two-way interaction effect (F(1.02, 44.80) = .38, p = .54), nor a delay by deprivation by income three-way interaction effect (F(1.02, 44.80) = 1.22, p = .28). The results of the analysis further revealed no main effect of deprivation (F(1, 44) = .24, p = .63) or income (F(1, 44) = .28, p = .60) on the amount of money required in the future. There was also no income by deprivation interaction effect (F(1, 44) = 1.05, p = .31).

To test whether the deprivation manipulation affected the amount of (unhealthy) snacks chosen, a one-way ANCOVA was conducted with the amount of unhealthy food choices (n = 4) as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed no main effect of deprivation (F(1, 44) = .33, p = .57), no main effect of income (F(1, 44) = .79, p = .38), and no deprivation by income interaction effect (F(1, 44) = 1.45, p = .24).

[3] See footnote 1.

[4] See footnote 2.

To test whether the deprivation manipulation affected experienced time perception, a one-way ANCOVA was conducted with the degree of overestimation of survey duration as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed no main effect of deprivation ($F(1, 44) = .44$, $p = .51$), no main effect of income ($F(1, 44) = .10$, $p = .75$), and no deprivation by income interaction effect ($F(1, 44) = .23$, $p = .64$).

3.2 Manipulation 2: Hypothetical financial scenarios (Mani et al., 2013)

3.2.1 Outliers

The observations of one participant was removed as it provided extreme[5] indifference values in the delay discounting task. Also, the observations of seven participants were removed as they answered illogically on the time perception scale (i.e., indicating years as less further away than months and months as less further away than weeks, n = 1) or in the delay discounting task (i.e., requiring more money after three weeks than after three months or three years, n = 4, or values requiring less money than the initial value, n = 2), since these answers indicate a misunderstanding of the questions. The final dataset contains the observations of 42 participants.

3.2.2 Manipulation check

The same one-way ANCOVA as in 3.1.2 was conducted to test whether the manipulation of deprivation was successful. The dependent variable was financial constraint, the independent variable was deprivation and the covariate was income. This analysis revealed a main effect of deprivation ($F(1, 38) = 6.00$, $p = .02$), and a main effect of income ($F(1, 38) = 8.37$, $p = .01$). There was also found a deprivation by income interaction-effect ($F(1, 38) = 5.30$, $p = .03$). Thus, the manipulation of deprivation was successful.

3.2.3 Results

To test our hypothesis stating that deprivation increases perceived distance to the future, a one-way repeated ANCOVA was conducted. Time period (three weeks/ three months/ three

[5] See footnote 1.

years) was the within subject variable, deprivation was the between subject variable, and income was the covariate. This analysis[6] revealed a main effect of time period (F(1.58, 59.89) = 18.51, p = .00). More specifically, a day in three weeks was experienced as less distant (M = 2.12, SD = 1.64), than a day in three months (M = 3.93, SD = 2.09, p = .00), and as less distant than a day in three years (M = 6.98, SD = 2.09, p = .00). The distance between the latter two periods, (i.e., three months and three years) was also significantly different (p = .01). Moreover, we found no significant time period by income two-way interaction effect (F(1.58, 59.89) = 2.434, p = .11), and no time period by deprivation two-way interaction effect (F(1.58, 59.89) = .58, p = .52), nor a time period by deprivation by income three-way interaction effect (F(1.58, 59.89) = .45, p = .60). The main effect of time period is visualized in Figure 5.

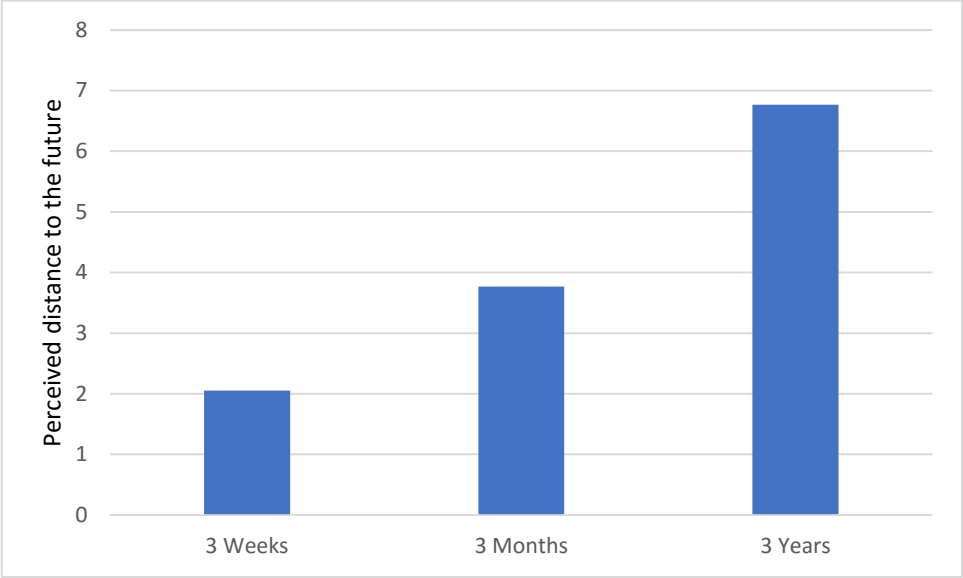


Figure 5 – Main effect of time period (Manipulation 2)

The results of the analysis further revealed no main effect of deprivation (F(1,38)= .20, p= .89), and no main effect of income (F(1,38)= .45, p= .51) on perceived distance to the future. There was also no income by deprivation interaction effect (F(1,38)= .06, p= .80).

To test our hypothesis stating that deprivation increases delay discounting, a second one-way repeated ANCOVA[7] was conducted. The amount of money people wanted to receive in three weeks versus three months versus three years was the within subject variable,

[6] See footnote 2.

[7] See footnote 1.

deprivation was the between subject variable, and income was the covariate. This analysis[8] revealed a main effect of the delay (F(1.02, 38.57) = 6.43 p = .02). More specifically, the amount in three weeks to be indifferent was less (M = 149.62, SD = 151.64,), than the amount in three months (M = 244.83, SD = 296.21, p = .06), and less than the amount in three years (M = 579.69, SD = 971.72, p = .01). The difference between the latter two delays (i.e., 3 months and 3 years) was also not significant (p= .02). Moreover, we found a significant two-way interaction effect of delay by income (F(1.02, 38.57) = 4.24, p = .05), no delay by deprivation two-way interaction effect (F(1.02, 38.57) = .12, p = .74), nor a delay by deprivation by income three-way interaction effect (F(1.02, 38.57) = .01, p = .91). The results of the analysis further revealed no main effect of deprivation (F(1, 38) = .30, p = .59) or income (F(1, 38) = 3.54, p = .07) on the amount of money required in the future. There was also no income by deprivation interaction effect (F(1, 44) = .03, p = .86). The interaction effect of income and amount of money is visualized in Figure 6.

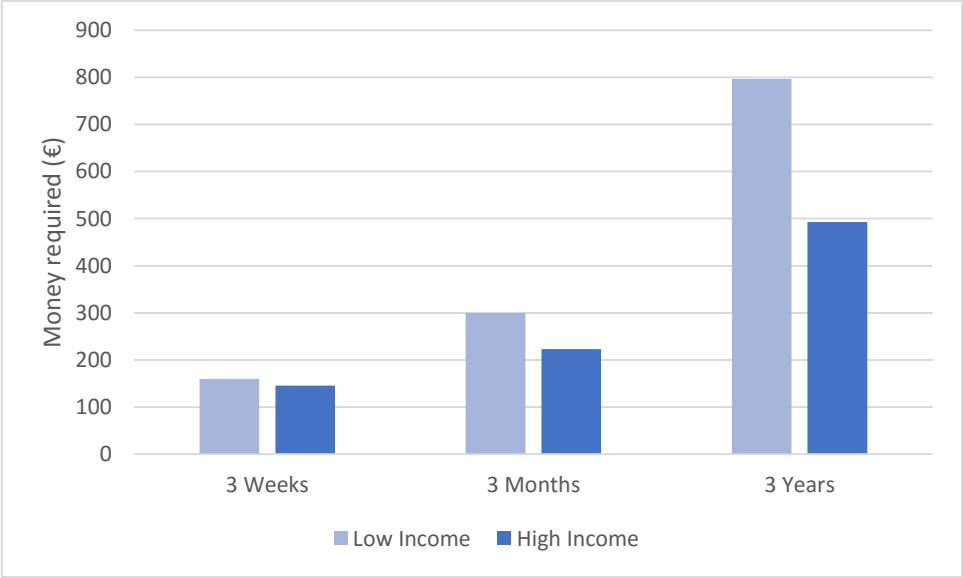


Figure 6 – Income by time delay interaction effect (Manipulation 2)

To test whether the deprivation manipulation affected the amount of (unhealthy) snacks chosen, a one-way ANCOVA was conducted with the amount of unhealthy food choices (n = 4) as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed no main effect of deprivation (F(1, 38) = .01, p = .95), no main effect of income (F(1, 38) = .19, p = .67), and no deprivation by income interaction effect (F(1, 44) = .04, p = .85).

[8] See footnote 2.

To test whether the deprivation manipulation affected the experienced time perception, a one-way ANCOVA was conducted with the degree of overestimation of survey duration (i.e., ratio estimated survey duration/ real survey duration) as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed a main effect of deprivation ($F(1, 38) = .13$, $p = .72$), no main effect of income ($F(1, 38) = .00$, $p = .98$), and no deprivation by income interaction effect ($F(1, 38) = .18$, $p = .68$).

3.3 Manipulation 3: Monetary expenditures – weather conditions (Zhou, Vohs, & Baumeister, 2009)

3.3.1 Outliers

We removed the observations of seven participants because they did not met the requested criteria[9] as they provided extreme indifference values in the delay discounting task (n = 5) or answered illogically in the delay discounting task (i.e., requiring more money after three weeks than after three months or after three years, n = 2), since these answers indicate a misunderstanding of the questions. The final dataset contains the observations of 42 participants.

3.3.2 Manipulation check

The same one-way ANCOVA as in 3.1.2 was conducted to test whether the manipulation of deprivation was successful. The dependent variable was financial constraint, the independent variable was deprivation and the covariate was income. This analysis revealed no main effect of deprivation ($F(1, 38) = .77$, $p = .39$), but did reveal a main effect of income ($F(1, 38) = 4.82$, $p = .03$). There was also found no deprivation by income interaction-effect ($F(1, 38) = .29$, $p = .59$). Thus, the manipulation of deprivation was unsuccessful.

3.3.3 Results

A one-way repeated ANCOVA was conducted to test our hypothesis stating that deprivation increases perceived distance to the future. Time period (three weeks/ three

[9] See footnote 1.

months/ three years) was the three-levelled within subject variable, deprivation was the between subject variable, and income the covariate. This analysis[10] revealed a main effect of time period ($F(1.53, 58.06) = 17.49$, p = .00). More specifically, a day in three weeks was experienced as less distant ($M = 2.57$, $SD = 1.84$), than a day in three months ($M = 4.62$, $SD = 1.98$, p = .00), and a day in three years ($M = 7.74$, $SD = 1.82$, p = .00). The distance between the latter were also significantly different (p = .00). Investigating the significance of possible interactions between time period, and/or deprivation, and/or income we found no significant interaction effects. The interaction effect of time period and income was (F(1.53, 58.06) = .02, p = .97), the interaction effect of time period by deprivation was (F(1.53, 58.06) = .03, p = .94), and the three-way interaction effect of time period by deprivation by income was (F(1.53, 58.04) = .04, p = .93). The results of the analysis further revealed no main effect of deprivation ($F(1, 38) = 1.24$, p = .27) and also none of income ($F(1, 38) = .00$, p = .97) on the perceived distance to the future. Moreover, there was also no significant income by deprivation interaction effect ($F(1, 38) = 1.28$, p = .27).

To test our hypothesis stating that deprivation increases delay discounting, a second one-way repeated ANCOVA[11] was conducted. The amount of money people wanted to receive in three weeks, three months or three years by now was the three-levelled within subject variable, deprivation was the between subject variable, and income the covariate. This analysis[12] revealed no main effect of the delay ($F(1.03, 39.28) = 3.20$, p = .08). More specifically, the amount in three weeks to be indifferent was less ($M = 139.69$, $SD = 103.78$), than the amount in three months ($M = 221.13$, $SD = 398.76$, p = .27), and less than the amount in three years ($M = 549.88$, $SD = 1142.26$, p = 0.09). The difference between the latter two delays was also not significant (p= .06). Moreover, we found no significant interaction effect of delay and income (F(1.03, 39.28) = 1.30, p = .26), no delay by deprivation two-way interaction effect (F(1.03, 39.28) = .31, p = .59), nor a delay by deprivation by income three-way interaction effect (F(1.03, 39.28) = .28, p = .61). The results of the analysis further revealed no main effect of deprivation (F(1, 38) = .06 p = .81) or income (F(1, 38) = .98, p = .33) on the amount of money required in the future. There was also no income by deprivation interaction effect (F(1, 38) = .05 p = .82).

[10] See footnote 2.

[11] See footnote 1.

[12] See footnote 2.

To test whether the deprivation manipulation affected the amount of (unhealthy) snacks chosen, a one-way ANCOVA was conducted with the amount of unhealthy food choices (n = 4) as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed no main effect of deprivation ($F(1, 38) = .12$, $p = .73$), no main effect of income ($F(1, 38) = .86$, $p = .36$), and no deprivation by income interaction effect ($F(1, 38) = .02$, $p = .89$).

To test whether the deprivation manipulation affected experienced time perception, a one-way ANCOVA was conducted with the degree of overestimation of survey duration as dependent variable, deprivation as independent factor, and income as a covariate. This analysis revealed no main effect of deprivation ($F(1, 38) = .07$, $p = .79$), no main effect of income ($F(1, 38) = .32$, $p = .57$), and no deprivation by income interaction effect ($F(1, 38) = .17$, $p = .68$).

4 Discussion

For our first hypothesis stating that deprivation increases perceived distance to the future we found only partial evidence. That is, only when deprivation was manipulated by adjusting the labels of a scale that probed for participants' savings (i.e., manipulation 1), we found that feelings of deprivation elongate the perceived distance to the future. More specifically, when deprivation is present, participants with low income perceived the future as further away than participants with high income. When deprivation was absent, the opposite was true. We also found that the effect of this particular deprivation manipulation depended on the income level of the participant (see Figure 2). Interesting enough, this deprivation by income interaction effect we found coincides with the findings of Mani et al. (2013) and is possibly representative for a whole population. However, this set of results was not robust against other deprivation manipulations (see section 3.2 and section 3.3). To be specific, we found no effects of the deprivation manipulation when asking participants to write about their expenses of the last month or when asking participants to give a detailed overview of the weather of the last month (i.e., manipulation 3). This was also the case when confronting the participants with 'easy' financial problems which would evoke few or no financial concerns versus 'hard' financial problems which would evoke many financial concerns (i.e., manipulation 2). There may be several explanations as to why there were found no significant effects in the first and last manipulation, which are discussed below.

First, the fact that the three deprivation manipulations led to different results makes it plausible to state that each manipulation may have manipulated different variables. When the survey is not carefully explained to the participants it is possible, according to Perdue and Summers (1986), that the wrong construct was manipulated and/or independent variables could have been redefined by the participants (i.e., interpreting variables different than meant to be). A second explanation could be that in manipulation 1 the manipulation itself was successful (which is plausible to conclude when looking at the results), but that the manipulation check on its own has failed. For instance, Sigall and Mills (1998) argue that a measure that is used to check whether a manipulation is successful may not always necessarily be a valid measure. Thus, it is important to be cautious in claiming that findings are less plausible because the manipulation check failed. For example, the participants could have indeed obtained a feeling of being poor (vs. rich) due to the manipulation, but this manipulation perhaps did not stimulate the feeling of being more financially restricted,

meaning that there was no significance difference in financial restriction between the two groups. In other words, it may be that the poor felt financially deprived but not restricted in their daily lives (they perhaps learnt to cope with their financial situation). Moreover, manipulation 3 had no significant results as well as no significant manipulation check. It is plausible that the manipulation could have worked to a certain point, but that it was too 'weak'. This means that the financial condition could have had a significant effect on the dependent variable, but that it was not significant. Manipulation 2 was the only manipulation with a significant manipulation check (but had no significant results). This could mean that the manipulation itself, as well as manipulation 3, was too weak. That is to say, it possibly did effect the dependent variable, but the effect was not significant. In addition, the hard condition could have encouraged people to go deeply into thinking about their financial conditions (using all their financial means to deal with it). Going through this 'thinking-exercise' they possibly encountered several restrictions (in contrary with the easy condition), and this led to a significant manipulation check. In other words, the hard condition led to a financial restriction, but not to financial deprivation.

Our second hypothesis, stating that feelings of deprivation lead to more impulsive behavior (through a shift in future time perception), could not be confirmed by any of our deprivation manipulations. That is, the deprivation manipulation did not affect the delay discounting task of low or high income individuals. This is surprising as previous research repeatedly found that deprivation leads to more impulsive behavior (Mani et al., 2013). Given that we also did not detect (for two of the three manipulations) an effect of time period on the amount of money people requested in the delay discounting task, it might be the case that people did not fully understood the task. Previous research has shown that choice-based elicitation procedures that zoom in on people's indifferences values (€15 now versus €30 in three weeks and depending on the responses this choice becomes €15 versus €35 in the second step and so forth) are more reliable than the procedure of directly asking the indifference value (Bostic et al., 1990; Hardisty et al., 2013). As such, it could be wiser to have used a choice-based procedure in the delay discounting task. Moreover, the amount of people participating in the survey was low. If a larger dataset was used, we would expect it to be more likely to see a significant result between the delay periods (which is in any case expected), and subsequently more likely to find out the influence of financial constraint on impulsivity. Finally, there were some limitations with the used income measure. That is, the questioned net income (see *Demographic Questions, point 5*) only considered values up to '€2500 – €3500'. Considering combined households (i.e., of both spouses, partners,...), this value can be easily exceeded and the participant is easily labelled

as high-income. This can severely influence the results. In this study, it is therefore difficult to conclude if the manipulation failed to evoke financial constraint or if these limitations were too strongly present.

Furthermore, two additional measures of impulsivity and time perception were used in order to measure these concepts in an alternative way. First, apart from the delay discounting task, the amount of unhealthy snacks was used to measure impulsivity. There was found no effect of deprivation, income, or their interaction on impulsivity. This is in sharp contrast to the results of Mani et al. (2013) who found that sugar cane farmers were worse at controlling their impulses before the harvest (feeling poor) rather than after the harvest (feeling rich). Even though the consumption of unhealthy snack food is associated with impulsivity (Honkanen et al., 2012), this is a more indirect way than the delay discounting task. It is quite possible that the categorization of products into "healthy" versus "unhealthy" food snacks may be too simplistic, or the choices we provided could be too limited to unambiguously measure impulsivity. Moreover, for this measure there may be some social desirability, since the participants might think they 'have' to choose the healthy option (because healthy snacks are socially more desirable). Second, there was no effect of deprivation or income on the alternative measure of experienced time perception (i.e., the ratio between estimated and real survey duration). Note that this in sharp contrast with the results of the "label" deprivation manipulation (section 3.1) that showed a deprivation by income interaction effect on measures of future time perception. Yet, it is important to acknowledge the difference between future and experienced time perception. Kim and Zauberman (2013) merely suggested that an individual's' experienced time perception serves as a perceptual input to guide their perception of future time. Thus, these results indicate that experienced time may not survey as an input to judge future time. However, the lack of findings on the experienced time perception measure should be interpreted with caution as the amount of participants was limited and participants completed the survey in a less controlled setting and may have been able to pause their survey for a few minutes, possibly distorting this ratio.

In sum, the results give some partial evidence for our first hypothesis. More specifically, we found that feelings of financial deprivation elongated future time perception and that the effect of feeling deprived differed for low-income versus high-income people (but only for manipulation 1). However, there was no evidence that an elongated future time perception leads to more impulsive behavior. Additional explanations for the absence of this effect and limitations of the study are discussed in the personal remark section.

5 Personal Remarks

5.1 Personal Remarks – Marijke Smets

Our results provide little evidence for our hypotheses, which in my opinion is mainly due to our small sample. As a result of restrictions in time, we gathered a sample of only one-hundred-and-thirty-three participants, being the bare minimum for a quantitative experimental design with three conditions. However, it may also be that in our study the measure used in manipulation 1 simply worked better than the measures used in manipulation 2 and 3. For instance, there was a strong discrepancy between the samples of the first and last manipulation and the samples used in the studies they were based on. More specifically, in the study of Mani et al. (2013) participants were situated in the lower quartile of the U.S. income distribution, whereas in our study half of the participants had a high income. This may have made it harder to evoke financial constraint in our study (since participants were relatively rich), in contrary to evoking financial constraint in participants who were already relatively poor (as was the case in the abovementioned study). In addition, in the study of Zhou, Vohs, and Baumeister (2009) the authors tested Chinese students, which is a quite different sample composition as in our study. In can be expected that the behavior of students versus adults and Chinese versus Europeans can strongly differ.

Moreover, a worrying finding was that only the manipulation check for manipulation 2 was successful, which also makes the hypothesis-confirming findings less plausible. However, there is some debate about the relevance of manipulation checks. As mentioned in the discussion, Sigall and Mills (1998) argue that a non-significant manipulation check does not necessarily mean that amanipulation failed. To be specific, the authors claim that a measure that is used to check an independent variable may not be a valid measure of the construct even though it seems to obviously be. For instance, when we asked the participants to indicate if they felt financially constrained it may be that they misunderstood the question (i.e., is the term ‘financial constraint’ as clear to them as it is to us?), that they had never thought about it before or that their indicated feeling does not match their feeling in reality (i.e., because of denial, unawareness, under- or overestimation of own feelings). Thus, numerous alternative explanations exist as to why the manipulation check was unsuccessful, meaning that caution is needed when claiming that non-significant manipulation checks make the results less plausible.

Next to the small sample and unsuccessful manipulation checks, there were a few other limitations in this study that may have contributed to the lack of evidence for our hypotheses. In what follows, these limitations will be discussed as well as suggestions for future research.

5.1.1 Limitations of the study

An important limitation in the current study is related to construct validity (i.e., whether the test measures wat it intends to measure). In particular, the fact that there could be found no significant results for the money delay task is somewhat strange, since it is highly documented that people require a smaller amount of money as the length of the delay increases over time (Ainslie, 1975; Frederick, Loewenstein, & O'Donoghue, 2002; Thaler, 1981). Thus, there is a strong possibility that the measurement of money delay in the survey did not measure participants' hyperbolic discounting rate since the question was misunderstood. This misunderstanding was confirmed in the feedback we received of some participants who indicated that they had difficulties with responding to the money delay question and who found certain questions to be 'strange'. This might be due to the kind of questioning procedure that was used. Previous studies found that a choice-based elicitation procedure leads to fewer inconsistencies than asking participants directly for their preferences (Bostic et al., 1990; Hardisty et al., 2013). Thus, a possible alternative would have been to give participants the choice between, for example, €100 now or €150 in three weeks, and based on their answer (i.e., €100 versus €150) adapt the subsequent options until indifference towards the amount is obtained. Moreover, the unsuccessful manipulation checks of manipulation 1 and 3 might be indicators for problems with the construct validity of financial constraint. More specifically, the survey was distributed online, giving us no control of the setting in which the questions were answered. For instance, some duration times of the survey exceeded the average (i.e., there were durations up to 1232 minutes), which indicates that certain participants were bored or distracted and/or answered the questions at different times during the day. Thus, there is a high possibility that a large amount of the participants filled in the survey in an environment with certain distractions, making our attempt to evoke financial constraint in participants fruitless (since the effect of the constraint prime may only last for a short period in time). It would have been wise to pre-test the constructs, but due to time restrictions we were unable to do so. However, as discussed above, the relevance of manipulation checks is disputable.

In addition, there was also a limitation concerning the external validity of the study (i.e., whether the results can be generalized to the population). Since the survey was distributed in our direct environment, there could be some bias in the selection of the sample, which in turn makes the results less representative for the population. For instance, 51.4% of participants had a relatively high income that ranged between €2500 and €3000, and 37.9% of participants had an age of 50 to 55 years old. Moreover, the question that measured income lacked the option of 'more than €3000', which means that there could have possibly been participants with even a higher income. Thus, certain demographic information of the participants does not correspond to the reality of the population.

Because of the presence of some important limitations, I am personally not fully convinced that our methodology was of sufficient quality to make strong statements about our results. However, I do believe that with some adjustments in our design, we could be able to do so. Therefore, I made some suggestions in the next section that might elevate the quality of the used methodology in future research.

5.1.2 Future research

The first most obvious suggestion for future research would be to include more participants in the study in order to increase the reliability of the results. Second, it would be wise to conduct the study in a more controlled environment, preferably in a laboratory setting, where distractions of the outside world can be avoided. Moreover, because of the absence of hypothesis-confirming findings for manipulation 2 and 3, it may be possible that in our study the used measurements of Nelson and Morrison (2005) and Zhou, Vohs, and Baumeister (2009) were insufficient in making financial constraint in participants salient. Even though it is not said that the used measurements of evoking financial constraint are flawed, I suggest that alternative measures are explored.

The urgency of this research subject cannot be ignored. Since studies show that the poor tend to reinforce their poverty conditions which puts a huge burden on society, it is of vital importance to further investigate the underlying mechanisms of their impulsivity.

5.2 Personal Remarks – Ben Praet

Personally, I think that we gathered too few respondents. This made it difficult to determine if the cause of several insignificant results could be attributed to this random noise and unclear questions. I think that we still found an exciting result, namely that our first manipulation was able to extend the future time perception. This means that evidence for our first hypothesis is found. However, I don't believe that this proves that our other two manipulations were unable to do so. There was too much random noise present which may hide the real data (see limitations section). It may or may not be possible that the other two manipulations were noisier by chance. It is however, also important to acknowledge the difference in the manipulations used; maybe only thinking about finances is insufficient to evoke feelings of financial constraint (manipulation 3), and maybe it is necessary to feel poor (manipulation 1). Another possibility is that the specific numbers used in the survey questions were unable to differentiate between a hard and an easy condition to evoke feelings of financial constraint (for manipulation 2). Therefore I think it is interesting to do a follow up study using all three manipulations with more respondents, to determine the real effect of all manipulations.

Our manipulation check tests gave unsatisfying results for our first manipulation, but one should not place too much value on this, as is discussed in our general discussion. The significant result for the manipulation check that is obtained in our second manipulation may on the other hand indicate that this manipulation is also able to evoke feelings of financial constraint, but that there were insufficient respondents to find evidence for an extended future time perception. I believe that with more respondents we would be able to draw reliable conclusions about this. Therefore, I think that it is not possible to conclude that the other two manipulations are not able to evoke feelings of financial constraint (and subsequently elongating one's future time perception), due to the possibility of random noise blurring the results. I do however think that the results of the first manipulation are a good indicator that our hypothesis can be confirmed.

The second hypothesis could not be confirmed (the delay discounting task) by any of our manipulations. Personally, I am inclined to attribute this completely to noise and outliers by certain participants. This is due to the fact that we could not even prove for two out of three manipulations that people require more money when they have to wait longer, which is also mentioned in the general discussion. This indicates that the quality of our obtained data is weak. As discussed in the limitations section, enhancing the clearness of the questions, or even use a choice-based elicitation procedure for the delay discounting task,

using another outlier procedure, and gathering more respondents could definitely overcome this problem in my opinion.

In conclusion, I think a follow-up study is necessary that would overcome several of the limitations that are discussed, to enable a clarification of why some results were insignificant, as our result could be severely influenced by our limitations. The most prominent one is a lack of respondents, and the delay discounting task that had several other shortcomings. Still, the result that first manipulation was able to extend the future time perception is exciting, and is definitely a reason to carry out a follow up study.

5.2.1 Limitations of the study

During this study, several limitations were encountered. Foremost, the amount of respondents that filled in our survey was objectively on the low side. This is also referred to in the general discussion. There were only in between twenty and twenty-five correspondents per manipulated group, which is close to the necessary minimum for statistical analysis. With a small amount of respondents, the impact of single individuals is relatively high. More respondents would decrease the noise in the data, enabling to draw more conclusions. More respondents might have led to more significant results, as they might have been lost now in the random noise.

Another limitation is that our respondents are completing their survey in an uncontrolled environment (i.e., at work, at home or even while paying bills). This could potentially put respondents in a mindset where they feel financial constraint regardless of the presence or absence of the deprivation before starting the survey. Related is the issue that some participants took hours to complete the survey. This indicates that some people temporarily stopped filling in the survey, possibly reducing the impact of our manipulation. This is because temporary cues may not linger for long, meaning that the impact of cues primes may only last for a short amount of time. Both environments may thus require more statistical power than in a controlled environment. Another problem is that the data indicated that there were multiple persons that did not understand our questions (see filtering for illogical answers, section 3), and in more particular the delay discounting question. As discussed in the general discussion, a choice-based elicitation procedure may give better results (Bostic et al., 1990; Hardisty et al., 2013). A lot of respondents' personal feedback made it clear that some questions were a somewhat 'strange, and difficult to understand'. One way to overcome some of the previously listed limitations would be to

only allow respondents to finish the survey without a break and to enhance the clearness of the questions (by incorporating the feedback of respondents). Another solution would be to let respondents fill in the survey in a controlled environment. This may form a solution to the uncontrolled environment, but could also bring difficulties regarding the validity of the study, as participants are put in a different environment. The previously proposed solutions are aimed to enhance the quality of the answers on the survey.

Additionally, the sample we have addressed in our study is not representative for the whole population, since we contacted participants only in our direct environment. This makes it hard to generalize our results to the entire population. Taking a closer look at the age of our respondents, for example, we see that 77.5% of the respondents is older than 47 years.

Furthermore, the outlier detection procedure we used may not have been suitable for the delay discounting task. We used a method that was based on the standard deviation around the mean. This works well for parameters like the perceived distance to the future, as it is inherently limited to certain values. However, for the delay discounting question there was no upper limit on the amount of money required. Extreme outliers tend to make the Z-score of the rest of the data very small. This resulted in participants requiring ten times the amount of money (i.e., € 1000) to wait three weeks not being filtered out. Another outlier detection procedure that may overcome the previous limitation is based on using the absolute deviation around the median (Leys et al., 2013). Removing these outliers could have a large effect on the mean and standard deviation, and thus also on the statistical analysis.

5.2.2 Future research

Given the previous limitations of our study, the quality of our data can be further enhanced, which may allow us to find more satisfying results. For example, delay discounting question can be improved by explaining the question in more detail. Furthermore, more respondents are definitely necessary. I would focus on enhancing the clearness of our questions and on finding more participants. From our results, manipulation 1 seems to be the most promising; it is shown that its deprivation manipulation could indeed extend a person's time perception. This may be due to less noise (due to luck), but it is very likely that this is simply a better manipulation to evoke feelings of financial constraint. Therefore, further study is needed with more respondents (using a more representative sample) filling in our survey (with more clear questions). If it is impossible to gather more respondents, I would only use the first manipulation, as this gave the best results in our study.

5.3 Personal Remarks – Berend Wauters

Our first hypotheses could be only confirmed by one manipulation and moreover, its manipulation check was not significant. This points out that the deprivation in this manipulation could have failed. However, one must consider that the use of manipulation checks is still a topic of debate which means that if the manipulation check is not significant, this does not necessarily means that the manipulation has failed (Perdue, & Summers, 1986; Sigall, & Mills, 1998). But in general, our obtained results indicate that our hypotheses cannot be confirmed. Personally, I think this is due to our small sample size (i.e., one-hundred-and-thirty-three participants). This sample size is not representative for a whole population. In addition, there are some other limitations that cause additional random noise which will be discussed in the next section. These all combined form a poor basis to make adequate conclusions and thus really prove something.

5.3.1 Limitations of the study

This study had several limitations, which I would address in a subsequent study. First of all, I would drastically increase the number of participants to increase the statistical power of the study. That is to say, statistical power refers to the idea that a study needs a minimum sample size in which one is most likely to observe an effect of a given size (Wikipedia, 2016). To illustrate this, one can ask for example how many times it is needed to toss a dice to conclude it is not rigged.

Second, I would use another manipulation of deprivation. In my sub-study, I manipulated deprivation by assigning participants to either a 'financial' condition or a 'weather' condition in which their own financial situation was made respectively salient or non-salient. In the 'financial' condition, participants were asked to provide a detailed overview of their financial expenses over the last 30 days. Afterwards, they were asked to list the factors that, in their opinion, contributed to financial difficulties in their own personal lives. Considering the factors, I told them they could think of aspects such as mortgages, rent or healthcare costs. In the 'weather' condition, participants were asked to provide a detailed overview of the weather conditions over the last 30 days. Afterwards, they were asked to list the factors that, in their opinion, contributed to the current climate changes. However, the manipulation check showed that participants did not report to feel significantly more financially deprived in the deprivation condition. Yet, we should be careful with concluding that a manipulation did (not) work in case the manipulation check is not significant. That

is, the use of manipulation checks is still a topic of debate (Perdue, & Summers, 1986; Sigall, & Mills, 1998). A non-significant manipulation check does not necessary mean that the manipulation has failed. It just means that the manipulation did not *significantly* influence the concerning dependent variable, in this case, financial restriction. Moreover, the manipulation check of the "label" deprivation manipulation (see section 3) also did not prove to be significant, even though it did generate effects on our dependent measure. In any case, next time I would use another deprivation manipulation. One that would be able to make participants feel significantly financial deprived. For example, I would assign halve of the participants to a writing task involving financial comparison. More specifically, I would instruct them to write about situations in which they compared themselves to their peers and in which they felt relatively worse (i.e., financial deprived). Moreover, I would ask them to describe the context of the situation in which they felt financially worse, what happened, why they started comparing themselves, how they felt, how they react, etc. (Sharma, & Alter, 2012).

Third, I would adapt the delay discounting task such that it would not directly ask for participants' indifference value but that instead would gradually zoom in on that value, based on participants previous choices. Such a choice based procedure has proved to be more reliable than asking participants directly for their preferences (Bostic et al., 1990; Hardistv et al., 2013). In addition, this section of *Hyperbolic Discounting* was not understood well. We received questions from the participants about this section and strange, illogically results which indicate troubles to understand these questions or even a misunderstanding of these questions.

Fourth, the measure we used to measure monthly income was not optimal. That is, the upper-class of income was limited to an interval of '€2500 – €3000'. There was no 'more than €3000 category. This may be a problem because the participants with a high income are all situated in one category, the '€2500 – €3000 category. In addition, some participants thought this question was applicable for both spouses / partners / …, others thought this was only applicable for themselves. If the participants reasoned that the question applied for both spouses / partners / … they would be able to satisfy the standard of high income (i.e., '€2500 – €3000 category) even with a normal individual income and thus making it more difficult to adequately interpret the obtained results.

5.3.2 Future research

The alternative view on inter-temporal choice stating that a person who perceives the future as more distant will consequently be more impulsive (i.e., since the delayed reward seems further away; Zauberman et al., 2009) opens up many interesting pathways for future research. In short, being poor is not only noticeable in the amount of money poor people have in their savings accounts but it is also noticeable in their relation with time. It is thus crucial to investigate this underlying mechanism in order to be able to provide more solutions. To give some examples, adjustments can be made in: obtaining long-term loans, the usage of preventive health care (making poor people more conscious about long-term advantages), gambling (communicating the long-term disadvantages), etc. More precisely, it would be very interesting if policy-makers would take this effect into account in their overall decision-making considering the poor.

Considering possible future research, it is recommended to take care of the mentioned limitations (i.e., larger share of participants, a participant friendly and clearer survey, …). Hopefully, these limitations may help future researches to think about the potential types of approaches considering the subject.

6 General Conclusion

In this paper, the mechanisms underlying poor people's impulsive decision-making process were investigated, as this would help to understand the problem of poverty. To do so, we conducted an online survey to test whether the impulsive behavior the poor exhibit can be attributed to a change in time perception. We found that the feeling of financial constraint extended participants' future time perception, but only for one out of three manipulations. We were unable to confirm if this distortion in time perception leads to more impulsive behavior. Still, this is an exciting result given some limitations of the study such as the size and quality of the sample. Therefore, future research is necessary in order to overcome these deficiencies and find more robust results.

7 Appendices

7.1 Appendix 1: Example Survey

Dear,

We are master students in Management at University of Leuven. This survey is part of our master thesis on the socio-economic situation of adults. The survey takes about 15 minutes. Your answers are completely anonymously registered and processed.

Thank you very much for your cooperation.

Marijke Smets
Ben Praet
Berend Wauters

KU LEUVEN

Between subjects variables – manipulations

Manipulation 1 (see Nelson, & Morrison, 2005):

This study will explore how people's financial situation is linked to some demographic factors such as gender, education, job, age, etc. To get more insight, we will ask a few questions that probe your financial situation. Note that this survey is completely anonymous. Answers to these questions are strictly confidential and will never be linked to any indication data (which you also do not have to enter).

For the quality of the data of the survey, it is extremely important that you answer the following questions as honest as possible.

Thank you very much for your cooperation.

Financial constraint present:

1) Given your gross monthly salary, to what extent do you think you earn more or less than the average person?
   - Much less
   - Less
   - About the same
   - More
   - Much more

2) Please indicate on the scale below how much money (in €) you have on your savings account.

0 - 50 000	50 000 - 100 000	100 000 - 150 000	150 000 - 200 000	200 000 - 250 000	250 000 - 300 000	300 000 - 350 000	350 000 - 400 000

3) Please give an estimation of the monthly budget you have available to spend freely on goods or services (make abstraction of fixed costs such as rent, payments, telephone, internet, water and electricity costs).

Financial constraint <u>absent</u>:

1) Given your gross monthly salary, to what extent do you think you earn more or less than the average person?
   - Much less
   - Less
   - About the same
   - More
   - Much more

2) Please indicate on the scale below how much money (in €) you have on your savings account.

0 - 100	100 - 200	200 - 300	300 - 400	400 - 500	500 - 600	600 - 700	700 - 800	800 - 900	> 900

3) Please give an estimation of the monthly budget you have available to spend freely on goods or services (make abstraction of fixed costs such as rent, payments, telephone and internet, or water and electricity costs).

<u>Manipulation 2:</u>

This study wants to investigate the way in which people manage their finances. In what follows, you will be presented with 4 scenarios. Please imagine yourself being in these three scenarios as best as possible and give a detailed opinion.

Financial constraint present [absent]:

1) Scenario 1:
   Imagine that you have problems with your car and that an estimation of €1500 [€150] for maintenance costs is made. The insurance covers only 10% of these costs. Therefore, you must make the following choice:
   a) The full amount in cash. To do this, would you have to appeal to your savings? Could you pay the full amount instantly? How would you approach this?
   b) A loan that you can pay back monthly. A typical loan requires monthly amounts of 150 € for 12 months, which would cost a total of about €1800.
   c) Take the risk, not bring in your car in the garage and hope that he will last even longer. This means of course that you risk total "breakdown", which means much more cost in the long term.

   Which of these three decisions would you make? Would this be a difficult or easy decision for you? Describe briefly.

2) Scenario 2:
   We are in difficult economic times. Imagine that your boss has to cut substantially in the budget. Imagine a scenario in which you lose 15% [5%] of your salary. Given your personal situation, would this bring about substantial changes in your lifestyle? If so, what kind of changes? What impact would this have on your budget for your home, holidays, leisure? Describe briefly.

3) Scenario 3:
   Imagine you suddenly have to pay €2000 [€200] immediately because of unforeseen circumstances. Is there a way you could finance this amount on such short notice? How would you proceed doing this? Would this mean that you would have to do sacrifices in the long run? If so, which ones? Describe briefly.

4) Scenario 4:
   Suppose your refrigerator needs to be replaced. For the model you wish to buy, there are two different funding options:
   a) You can pay the full amount in cash which would cost you €999 [€399].
   b) You can pay the amount in 12 months (12 x €100 [€40]), which would cost you a total of € 1200 [€480].

   Which option would you choose? Would you have enough cash for option 1? Would it be worth it to pay the interest in this case? Describe briefly.

Manipulation 3:

Financial constraint present:

This study wants to measure how well you can remember certain things. That is why we are asking you to make a detailed summary of your financial expenses of the past 30 days. Can you explain this briefly in a few sentences?

Everyone in his/her life gets faced with financial constraints, but the factors that lead to these restrictions, however, vary from person to person.

With this study, we want to get a better understanding of these factors. Please indicate below which factors in particular could contribute to financial difficulties. You must take into account aspects of your current situation that contribute most to your financial constraints (e.g.: mortgage or rent, family expenses, school fees for the children, health costs, etc.). Can you explain this briefly in a few sentences?

Financial constrain absent:

This study wants to measure how well you can remember certain things. That is why we are asking you to make a detailed summary of the weather conditions of the past 30 days. Can you explain this briefly in a few sentences?

With this study, we also want to understand what factors you think contribute to the current climate change. What do you think are the underlying factors? Can you explain this briefly in a few sentences?

Within subject variables

Time perception:

With the next task, we want to get a better understanding of your time perception. Therefore, you will be asked to indicate on a linear scale the duration of a period between today and several days in the future. Days in the future range from 3 weeks to 3 years. In total you will have to estimate the duration of 3 periods.

Read the instructions and answer carefully. Wrong answers do not exist, it is a personal feeling.

1) Imagine a day in 3 weeks [3 months] [3 years] from today.

   To what extent do you consider this day to be very close or very distant to you (0 = very close; 10 = far away)?

0 Very close	1	2	3	4	5	6	7	8	9	10 Very distant

Hyperbolic discounting:

In the next task, we want to get a better understanding of how pleasant/unpleasant you find it to wait for a particular reward. Please read the questions carefully and always answer truthfully.

1) How much euros would you need to receive in 3 weeks [3 months] [3 years] to be indifferent from receiving €100 now?

Impulsivity:

We want to find out what type of consumer you are based on a number of product choices. Please respond quickly each time whichever product you would prefer.

1) What would you prefer?

or

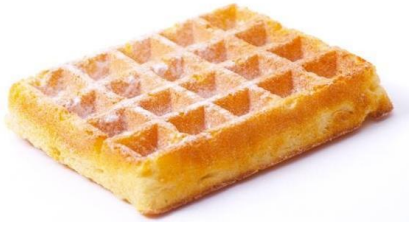
2) What would you prefer?

or

3) What would you prefer?

or

4) What would you prefer?



or

Financial constraint:

1) We would like to get an insight into the extent you are financially limited. Specify on the scale below how many times this month you have had the feeling that you could not do certain expenses?

Never	0	1	2	3	4	5	6	7	Very often

Demographic questions:

1) What is your gender?
   - Male
   - Female

2) What is your age?

3) What is your highest degree?
   - Primary school
   - Secondary school
   - Professional bachelor

- Academic bachelor
- Academic master
- Others

4) What is your current work situation?
   - Student
   - Employed
   - Unemployed
   - Other

5) If you add everything together, what would the total monthly net income of your household be (after deduction of taxes and social insurance contributions)?
   - No income
   - Less than 500 euros
   - 500 – 1000 euros
   - 1000 – 1500 euros
   - 1500 – 2000 euros
   - 2000 – 2500 euros
   - 2500 – 3000 euros

Time perception:

1) How long do you think was the duration of this survey (in minutes)?

7.2 Appendix 2: Seminar Report Marijke Smets

Voor de aanvang van deze Master in het Management heb ik een Master in Bedrijfscommunicatie afgerond die werd voorafgegaan door een Bachelor Communicatiewetenschappen. Na het volgen van de seminaries over academisch schrijven, heb ik opgemerkt dat deze vooropleiding mij reeds een zeer goede basis heeft geleverd. Vakken als Initiatie in de Onderzoekspraktijk, Methoden en Technieken van het Sociaal Wetenschappelijk Onderzoek, Kwalitatieve Onderzoeksmethoden en Statistiek hadden mij al een gedetailleerd beeld gegeven van belangrijke elementen in onderzoek en het opstellen van een onderzoekspaper. Uiteraard heeft ook de masterproef in mijn Master Bedrijfscommunicatie een cruciale bijdrage geleverd aan mijn kennis en vaardigheden wat betreft sociaal wetenschappelijk onderzoek. Ik heb gemerkt dat hetgeen ik hieruit geleerd heb in grote mate geholpen heeft bij het schrijven van mijn huidige thesis. Toch kon ik ook vaststellen dat de seminaries mij nieuwe inzichten hebben gegeven wat betreft bepaalde elementen van een masterproef die ik ook zeker heb kunnen toepassen.

Hoewel ik in de voorgaande jaren reeds veel heb gewerkt met Limo, heb ik in het seminarie over informatievaardigheden ondervonden dat er veel meer platformen zijn van waaruit ik relevante informatie kan halen. Waar ik normaal gezien enkel Limo en Google Scholar raadpleegde, heb ik voor deze masterproef mijn zoekbronnen uitgebreid naar onder andere online databases, catalogussen en Web of Science. Daarnaast vond ik de tip over het online sorteren en opslaan van bronnen uitermate handig. In mijn vorige masterproef heb ik jammer genoeg achteraf moeten vaststellen dat ik bronnen was vergeten of foutief had opgenomen in mijn bronnenlijst, terwijl dit blijkbaar zeer makkelijk te voorkomen is.

Wat ik zeer interessant vond in het seminarie over academisch schrijven was de aandacht die werd besteed aan de probleemstelling. Er werd aangegeven dat het van uitermate belang is om de maatschappelijke relevantie van het onderzoek aan te tonen en dus niet louter te baseren op theorie. Ikzelf heb de neiging om te snel over te gaan op het theoretische en wetenschappelijke aspect, maar sta niet lang genoeg stil bij het onderbouwen van de bijdrage van de masterproef. De opbouw die wordt aangeraden in het seminarie vond ik daarom zeer sterk. Er werd geopperd om eerst een duidelijke probleemstelling te formuleren die aangeeft waarom het huidige onderzoek relevant is en daarna deze probleemstelling concreter te formuleren in een onderzoeksvraag. Toegepast op onze eigen masterpaper, betreft onze probleemstelling de vaststelling dat arme mensen in grotere mate impulsief gedrag vertonen en dit niet alleen nadelig is voor hun eigen financiële situatie,

maar ook een zware last legt op onze maatschappij. De onderzoeksvraag die daaruit voorkomt is of dit effect van armoede op impulsiviteit mogelijks verklaard zou kunnen worden door een verstoord tijdsperspectief. Het zou inderdaad geen zin hebben om deze onderzoeksvraag te stellen als deze geen enkele maatschappelijke relevantie met zich zou meedragen. Algemeen vond ik dit seminarie een grote hulp om duidelijkheid te scheppen over de structuur van de masterproef. Soms heb ik moeite om het bos door de bomen te zien door de grote hoeveelheid aan informatie. Er zijn zoveel theorieën, bronnen en ideeën dat het soms moeilijk wordt om deze op een logische manier te ordenen. Ik vond de slides wat betreft opbouw en structuur hierbij een cruciale hulp, gezien deze bestonden uit voorbeelden vanuit andere masterproeven die een duidelijk beeld gaven van hoe mijn thesis er moest uitzien.

Daarnaast was vooral het seminarie over de experimentele methode van belang voor mijn masterproef gezien het een experimenteel onderzoek betreft. In dit seminarie werd nog eens herhaald welke soorten relaties en verbanden er kunnen zijn tussen verschillende variabelen, hetgeen in het huidig onderzoek niet altijd even makkelijk te achterhalen was. Dit omwille van de combinatie tussen zowel een within subject variabele als twee between subject variabelen waarvan de between subject variabelen elk 3 niveaus hadden. Hierdoor heb ik bij het analyseren van de resultaten toch wel wat moeilijkheden ondervonden. Verder werd er ook duidelijkheid gegeven over de mogelijke invloed van controlevariabelen en het verschil tussen mediatoren en moderatoren. Het verschil tussen beide soorten verbanden was me niet volledig duidelijk en ik had ook moeite met deze verbanden te kunnen afleiden uit de analyses. In het seminarie echter werd dit gedetailleerd behandeld, wat mij in dit geval zeker heeft geholpen.

Ik ben er zeker van dat deze seminaries voor sommigen een belangrijke hulp kunnen zijn. Alleen ben ik niet volledig overtuigd van de toegevoegde waarde ervan voor studenten die een vooropleiding hebben gehad in de Sociale Wetenschappen waarin het opstellen van een onderzoekspaper reeds uitgebreid aan bod komt. Ik ben niet geheel op de hoogte van de inhoud van andere richtingen wat betreft deze leerstof, maar heb wel ondervonden dat de vooropleiding Bedrijfscommunicatie reeds zeer gedetailleerd ingaat op de huidige inhoud van de seminaries. Hetgeen ik daarnaast dan weer wel miste was een meer uitgebreid seminarie over statistische analyse. Hoewel enkele statistische analyses behandeld zijn geweest in het seminarie econometrie, zou een extra seminarie hierover mij wel geholpen hebben. Ik heb weliswaar al statistiek en SPSS in het verleden gehad, maar een opfrissing van de belangrijkste analyses (buiten enkel regressieanalyses) zou in dit geval waardevol

geweest zijn. Toch kan ik stellen dat ik door de seminaries nog enkele belangrijke inzichten heb verworven die zeker en vast een hulp zijn geweest bij het opstellen van mijn masterproef. Tot slot, ben ik ook heel tevreden over de toevoeging van een onderzoeks-aspect aan de thesis in de Master in het Management. Zelf heb ik ervaren dat ik zeer veel leer uit het in praktijk omzetten van deze kennis naar een uitgebreide masterproef waarin alle elementen van het wetenschappelijk onderzoek naar voren komen (en dus niet enkel een literatuurstudie zoals in de voorgaande jaren het geval bleek te zijn).

7.3 Appendix 3: Seminar Report Ben Praet

Inleiding

In deze tekst ga ik kort beschrijven wat ik geleerd heb uit deze seminaries die gegeven zijn om informatie en uitleg te geven over het maken van de thesis. Ik zal eerst per module de belangrijkste inzichten die ik verworven heb specifiëren, waarna ik mijn algemene indruk en mening zal uiteenzetten over deze hoorcolleges.

Seminaries

Module 1: Algemene inleidende informatieve sessie

In deze module werd er ons eerst wat praktische informatie gegeven over wat er verwacht werd van ons tijdens deze thesis, en waarover de sessies zullen gaan. Er werd ons ook enkele tips meegegeven over wat er absoluut niet kan en wat er zeker aangeraden is. Deze zaken waren mij al bekend voor deze sessie, maar het was nog wel een goede reminder, en zeker de moeite waard om dit opnieuw te bekijken tijdens het werken aan de thesis.

In een tweede Powerpoint presentatie werd er meer informatie gegeven over hoe er met informatie omgegaan moet worden. Er werden nog wel goede tips gegeven over hoe je het best op zoek gaat naar de relevante informatie, waarbij ik zelfs veel dingen voor het eerst zag. Ik leerde hoe je Limo beter kunt gebruiken dan gewoon wat proberen en op een random manier proberen de relevante papers te vinden. Voor de rest was deze sessie vooral een reminder van goede thesis praktijken.

Module 2: Academisch schrijven

In deze module werd er ons uitgelegd hoe we best academisch schrijven. Tijdens deze twee sessies zou er bekeken hoe er best op wetenschappelijke manier geschreven wordt, en hoe dat er een presentatie best wordt gegeven. Na een korte inleiding waarin uiteengezet werd hoe dat een thesis structureel eruit ziet, en de volgorde waarin alles verloopt werd elk specifiek deel van de thesis in dieper detail toegelicht. Hoewel de uitleg en de slides vrij duidelijk gegeven waren, was het vooral herhaling aangezien ik al een thesis heb uitgewerkt. Dit gelde eigenlijk voor alle studenten in de zaal, waardoor er heel snel door de slides gegaan werd, en uiteindelijk zelfs vroegtijdig en er helemaal gestopt werd. Ik vond dit wel redelijk terecht. Ook het gebrek aan kennis van de presentator over haar

publiek vond ik wat slecht georganiseerd. Het nut van deze sessies ontbrak mij, met de slides alleen zou het ook wel gaan. De slides vond ik wel goed en een nuttige bron om op terug te vallen tijdens de masterproef zelf. Ik had het nuttiger gevonden dat deze sessies tijdens de thesis zouden vallen, omdat je ze dan rechtstreeks kunt toepassen, en anders dit alles vergeet.

Module 3: Onderzoeksmethodologie

Deze laatste module bestond uit vier aparte sessies, waar meer uitleg verschaft werd over de methodologie van een onderzoek. Deze zullen kort besproken worden.

Formuleren van een onderzoeksonderwerp

Tijdens deze seminarie werd er uitleg gegeven over verscheidende zaken omtrent een onderzoeksonderwerp, meer specifiek over de kenmerken en opbouw ervan. Het verband tussen de probleemstelling en de doelstellingen en onderzoeksvragen werden verhelderd aan de hand van voorbeelden, wat wel goed was. Helaas was het allemaal niet zo relevant voor ons, gezien we voor onze thesis dit allemaal kregen van de promotor. Het stuk over literatuur en het theoretisch kader vond ik eigenlijk nog wel nuttig, en heb er nog wel uit geleerd. De slides waren vooral een naslagwerk, voor nog eens te controleren of we alles goed aan het doen waren tijdens deze thesis.

Econometrie

Hoewel we al tijdens de lessen met het vak econometrie kennis hebben gehad, werden tijdens deze lessen nog vrij veel concepten geïntroduceerd of verduidelijkt aan de hand van voorbeelden. De slides die we nog zelf moesten bekijken waren ook nog wel nuttig, en relatief duidelijk. Deze les was wel relevant aangezien we ook in onze thesis vrij veel statistische concepten gebruikt hebben.

Experimentele methode

Persoonlijk vond ik dat de les wat snel en theoretisch was, maar toch relevant. Zeker omdat we in onze thesis ook een experiment hebben uitgevoerd. Er werden bepaalde aandachtspunten benadrukt, wat niet allemaal nieuw en verrassend was, maar toch wel goed om er aan herinnerd te worden. Tijdens mijn thesis en opleiding burgerlijk hebben we al vrij veel van deze concepten gezien, maar deze thesis was toch wel een beetje anders. Dit alles was wel toepasbaar en nog wel relevant.

Kwalitatieve onderzoeksmethoden

Deze les vond ik wat moeilijk om te volgen. Het was wat te theoretisch, en het was moeilijk om echt de zaken concreet en toepasbaar te maken. Met wat meer voorbeelden zou het voor mij nog duidelijker te worden. Toch was deze seminarie wel relevant, aangezien we wel data verzameld hebben via enquêtes.

Algemeen

Over het algemeen vond ik deze reeks van seminaries vooral een goede reminder van zaken dat ik al wist. In die zin waren slides alleen voor mij genoeg geweest. Zeker ook omdat de slides zelf duidelijk genoeg waren om het meeste ervan te snappen. Ik vond het wat jammer dat deze lessenreeks in het eerste semester vielen, zo was het wat onduidelijk over wat nu echt belangrijk was. Dit omdat ik het niet zozeer meteen kon toepassen op mijn thesis. Persoonlijk vind ik het veel nuttiger als we al bezig zijn met de thesis, zo kan je meteen bijsturen en inspiratie opdoen tijdens deze seminaries. Anders wordt er veel vergeten van wat hier verteld geweest is. Verder vond ik het wat raar dat er zoveel irrelevante topics gegeven werden (of gepland werd om te geven). Ook zou er meer rekening mee moeten gehouden worden met de achtergrond van deze groep studenten. Iedereen heeft namelijk al een thesis gemaakt.

7.4 Appendix 4: Seminar Report Berend Wauters

Alvorens mijn Master in het Management heb ik een Bachelor in de Geografie afgerond. In deze opleiding heb ik zeer veel verscheidene papers geschreven wat me, onbewust al dan niet bewust, veel heeft bijgeleerd betreft het schrijven en structureren van deze werken. Echter, mijn enigste confrontatie ooit met schrijven van een groot werk was deze van het schrijven van mijn Bachelorproef. Dit eindwerk verliep echter niet zo vlot waardoor ik met een zekere tegenzin naar mijn masterproef keek. Hierdoor was ik ervan overtuigd om de seminariesessies van de masterproef bij te wonen en waren deze dan ook zeer aantrekkelijk. Ik wilde de masterproef zo efficiënt en effectief mogelijk aanpakken (betreffende planning, structuur, opdeling, deadlines enzoverder.) zodat ik niet weer, zoals bij mijn Bachelorproef, als een figuurlijke 'kip-zonder-kop' te werk ging.

De eerste module 'a*lgemene informatiesessie*' diende als inleiding en vond ik zeker noodzakelijk. Ik heb het gevoel dat het moeilijk is te communiceren met zo een grote groep als het master in het management waardoor het zeker een pluspunt is allemaal eens samen te komen om duidelijk de hoofdzaken en verwachtingen betreffende de masterproef één voor één op te lijsten. Op deze manier kregen wij een macrosstructuur wat we als steunpilaar konden gebruiken voor het verder verloop van het academiejaar. In deze sessie werd er ook een woordje uitleg gegeven over het verzamelen van informatie. Dit kan via zoekplatformen zoals Limo, Google Scholar (wat ik beide eerder gebruikte), maar ook met andere online databases, catalogussen enzoverder. Dit was voor mij persoonlijk niet interessant omwille van het groot aanbod aan informatie op Limo en de verkregen papers via de promotor. Hoewel ik me kan inbeelden dat voor andere studenten dit zeker wel interessant kan zijn. Wat ik persoonlijk wel heb meegenomen uit deze sessie is het online sorteren en opslaan van de gebruikte bronnen. Dit is tijdbesparend en fouten vermijdend wat natuurlijk welkom is.

Vervolgens kregen we twee seminariesessie over module twee *'academisch schrijven*'. Hierbij werd er veel aandacht besteedt aan de probleemstelling. Dit is namelijk het vertrekpunt, al dan niet de basis van je masterproef, en moet zo duidelijk mogelijk geformuleerd worden. Persoonlijk denk ik dat veel studenten de fout maken om dit snel te formuleren en dan te gaan zoeken naar allerlei verklaringen. Maar de quote van Einstein tijdens de presentatie dat hij vijfenvijftig minuten van de zestig zou besteden aan het zoeken en formuleren van het probleem om dan vervolgens de overige vijf minuten te gebruiken

om een oplossing te zoeken deed me hier inderdaad sterk over nadenken. Er werd voorgesteld om de probleemstelling eerst en vooral duidelijk te formuleren in een onderzoeksvraag en aan te halen wat haar maatschappelijke significantie is. Het is dan namelijk ook fijner en meer motiverend voor ons studenten eenmaal wij er het maatschappelijk belang van inzien. Eenmaal dit gedaan was kon men overgaan naar het theoretische en vervolgens wetenschappelijke aspect. In deze masterproef werd het dan ook op deze manier gedaan. Bij de slides over opbouw en structuur werden er veel voorbeelden gegeven van studenten die als goed of slecht voorbeeld dienden. Dit vond ik relevant omdat men soms beter leert om te zien hoe het niet moet dan omgekeerd, dit zodat potentiële fouten in de toekomst vermeden kunnen worden wat zeker een tijdbesparend effect heeft.

De derde en laatste module behandelde de '*onderzoeksmethodologie*'. In dit seminarie werden de verschillende soorten relaties, verbanden en dergelijke kort aangehaald. In de sessie zelf was het niet moeilijk om mee te zijn maar eenmaal we alleen stonden was het niet altijd even duidelijk. Ondanks de beschikbare slides heb ik deze niet geraadpleegd, dit omdat onze promotor, Anouk Festjens, ons de nodige slides met uitleg had doorgestuurd. Deze slides, samen met het internet en teamgenoten was voldoende. Het interpreteren van de resultaten was op het eerste zicht moeilijk en verwarrend maar beetje bij beetje begon ik door de bomen het bos te zien. Zeker na onze laatste bijeenkomst met onze promotor werd de klik gemaakt en kon ik de resultaten en het proces erachter duidelijk interpreteren. Voor mij persoonlijk was de module over de onderzoeksmethodologie dus niet relevant maar ik kan er wel inkomen dat dit eventueel wel het geval zou zijn voor andere studenten wiens promotor hen aan hun lot overlaat.

Module één en twee waren voor mij relevant maar toch heb ik zelf ervaren dat men al doende leert. Je kan zoveel theorie raadplegen als je wilt, toch leer je (vind ik persoonlijk) veruit het meeste door je er achter te zetten. Wat ik wel een sterk voordeel aan de seminaries vind is dat wanneer je even vast zit of niet precies weet hoe je een bepaalde sectie moet aanpakken je altijd de gegeven uitleg en bijhorende gegeven slides kunt raadplegen. Deze combinatie kan een masterproef sterk maken. Hoewel veel studenten de seminaries niet nuttig vonden betwijfel ik hun oordeel wel. Er zijn altijd wel studenten (en zeker studenten die net hun Bachelor jaar afgerond hebben) bij die je niet hoort klagen die er wel de nodig baat bij hadden. Daarenboven zouden er ook veel studenten klagen indien deze seminaries niet gegeven werden en zij aan hun lot werden overgelaten (zeker in combinatie met een promotor die hen niet de nodige hulp geeft). Hierdoor ben ik zeker voorstander om de seminaries door te laten gaan in de volgende jaren.

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FACULTY OF BUSINESS AND ECONOMICS
Naamsetraat 69 bus 3500
3000 LEUVEN, België
tel. + 32 16 32 66 12
fax + 32 16 32 67 91
info@econ.kuleuven.be
www.econ.kuleuven.be