

# **How Pride and Guilt Guide Pro-Environmental Behaviour**

Marleen C. Onwezen

## **Thesis committee**

### **Promotor**

Prof. Dr G. Antonides

Professor of Economics of Consumers and Households

Wageningen University

### **Other members**

Dr W. van Dijk, Leiden University, The Netherlands

Prof. Dr E.M. Steg, University of Groningen, The Netherlands

Prof. Dr J.B. Thøgersen, Aarhus University, Denmark

Prof. Dr J.C.M. van Trijp, Wageningen University

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# **How Pride and Guilt Guide Pro-Environmental Behaviour**

Marleen C. Onwezen

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Marleen C. Onwezen

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## Introduction

The world is currently confronted with environmental problems such as water pollution, loss of biodiversity, and air pollution. Although there is no consensus regarding the extent to which these problems cause climate change—for example, global warming, melting ice caps, and extreme weather conditions—it is widely acknowledged that they are related (e.g., IPCC, 2013; Stainforth et al., 2005; Walther et al., 2002). Furthermore, there is general agreement on the fact that consumers' consumption of goods and services is one of the main contributors to environmental problems (IPCC, 2013; Peters & Hertwich, 2006; Weber & Mathews, 2008). A promising way to reduce environmental problems is therefore to encourage consumers towards more sustainable consumption patterns. This raises the question of how environmentally friendly behaviour can be stimulated.

In general individuals seem to value the environment. When we ask a neighbor, our aunt, or an arbitrary passer-by what he or she thinks of environmental pollution—for example companies polluting soil or individuals throwing away trash in a nearby ditch—people often react by stating that this is irresponsible and antisocial behaviour. This would imply that individuals value the environment and are concerned about the environment when consuming goods or services, however environmental concerns are not the only motive that guides decision making. For example, a new trendy Audi A3 is more attractive to most consumers than the more environmentally friendly electric Nissan Leaf, buying new astonishing shoes for a party is more attractive than the more sustainable option of using your old ones, using the car is more convenient than taking the train to go to your mothers' birthday, and choosing the regular instead of the environmentally friendly produced apples is more attractive because these are cheaper. At consumption moments there is a range of factors which guide the decision making process such as convenience, price, taste, health, and familiarity (e.g., Steptoe et al., 1995). Consumption moments often involve a trade-off between personal benefits (e.g., fun, time, energy, or money) and engaging in pro-environmental acts. Consequently, consumers that value the environment do not always engage in pro-environmental behaviour. This is also referred to as the dual role of citizens and consumers (Berglund & Matti, 2006) or the attitude–intention gap (Krystallis et al., 2012; Vermeir & Verbeke, 2006). To promote pro-environmental actions it is important to know which factors influence consumers' pro-environmental behaviour, as sustainable consumption patterns may be changed when interventions target these factors.

Why are people at some moments more environmentally friendly than at other moments? We propose that emotions might play a role here because individuals like to feel good about themselves. Imagine, for example, how feelings of guilt drive you to take the bike instead of the car to the supermarket around the corner, or the pride you experience after buying a new

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expensive wooden table that is produced while sustaining the jungles in South America. Emotions guide consumer choices because individuals aim to feel good, and individuals ultimately avoid the experience of guilt and strive to feel proud. In this dissertation we will study whether and how feelings of pride and guilt influence pro-environmental decision making.

We propose that pride and guilt are especially relevant in the context of environmental decision making. Pride and guilt are part of a specific group of emotions, namely self-conscious emotions. These are elicited after a self-evaluation of personal behaviour using a set of personal and social standards to determine whether a specific behavioural act is right or wrong. Self-conscious emotions therefore guide moral and pro-social behaviour (i.e. behaviour that benefits others) (Tracy & Robins, 2004a). Due to this self-evaluative and moral character of self-conscious emotions we<sup>1</sup> propose that these emotions guide individuals to comply with existing standards regarding the environment. We specifically focus on pride and guilt because these emotions focus individual attention on the specific behaviour (e.g., focus on specific aspects of one's behaviour to make up for caused harm or to maintain a good feeling) and activate specific action tendencies towards this behaviour. Other self-conscious emotions such as shame, hubris and embarrassment focus attention on the total self (e.g., a tendency to hide or withdraw), and therefore do not guide specific action tendencies (Lewis, 1993; Tracy & Robins, 2004a). Additionally, pride and guilt guide individuals to comply with existing norms and standards regarding the environment. Existing standards regarding sustainable consumption are quite positive, however individuals do not always follow these standards (e.g., Vermeir & Verbeke, 2006), and interventions might be more effective when they connect to consumers' existing norms and standards. This makes pride and guilt particularly relevant to study.

Recently, research on the role of self-conscious emotions in pro-social decision making (Hutcherson & Gross, 2011; Nelissen et al., 2009), and more specifically pro-environmental decision making (e.g., Harth et al., 2013; Mallett, 2012), is growing. Although these studies refer to the importance of self-conscious emotions in guiding behaviour, many important questions regarding the specific function of self-conscious emotions remain. In short, it is not clear whether they guide subsequent pro-environmental behaviour and how this process occurs. In this dissertation we aim to address these questions by exploring *the fundamental way in which pride and guilt guide pro-environmental behaviour via self-reflection*. We propose that pride and guilt guide behaviour via a self-regulatory function, as that personal and social standards are used to evaluate whether one's behaviour matches these standards. This self-evaluation might evoke pride or guilt, which in turn provide information regarding one's behaviour and guide future choices in order to feel good. Because these emotions occur through self-evaluation we

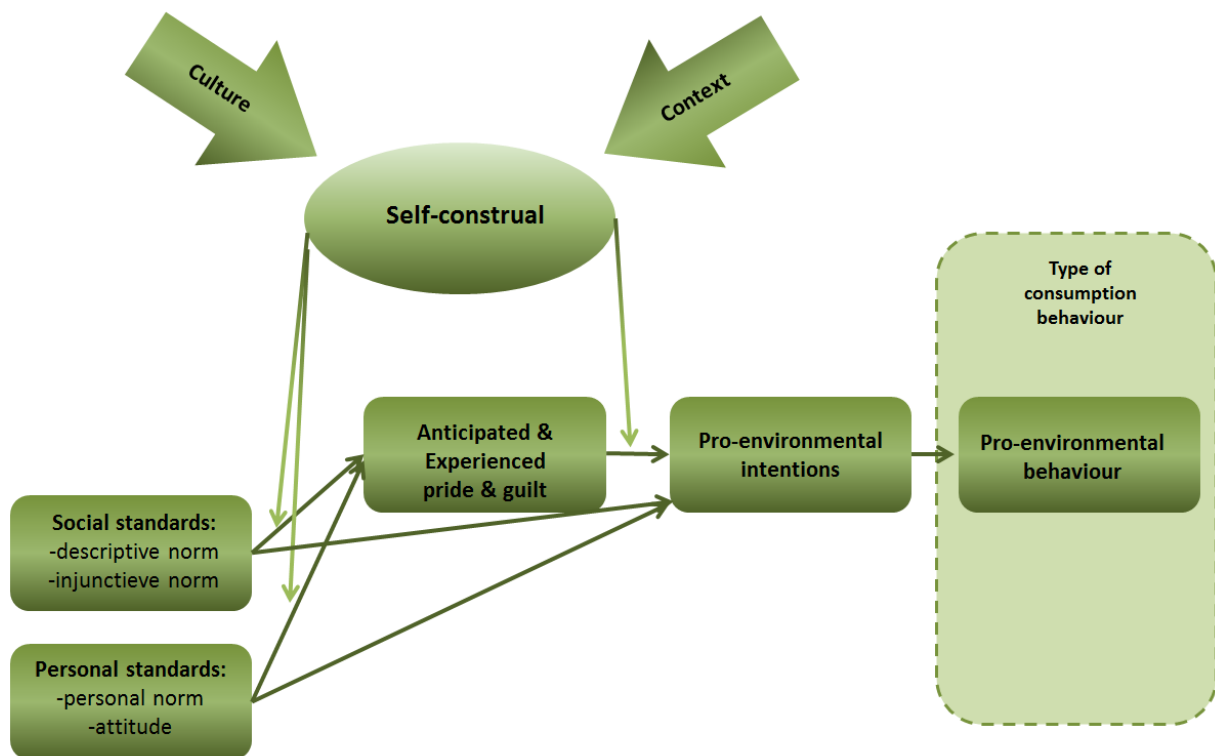
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<sup>1</sup> I use 'we' instead of 'I' throughout this dissertation, as the individual chapters are the result of a collaboration between myself, my promoter, and in some cases a co-author.



propose that the way one sees oneself in relationship to others (i.e. self-construal) affects the function of these emotions.

This thesis aims to contribute to a better understanding of the antecedents, functions and behavioural effects of self-conscious emotions which will provide insights into mechanisms that underlie a wide range of psychological phenomena such as self-regulation (Vohs & Baumeister, 2011), goal attainment (Perugini & Bagozzi, 2001), and the effects of social norms and attitudes on behaviour (Hynie et al., 2006). Furthermore, a better understanding of how pride and guilt guide environmentally friendly behaviour can help marketers and policy makers to develop more effective marketing campaigns and interventions to guide environmentally friendly consumer choices. Below we provide an overview of this thesis.



*Figure 1.* Conceptual model of the dissertation

*Note.* For reasons of simplicity we decided to exclude the constructs which do not form the core of our thesis. For full disclosure, awareness of consequences affects ascribed responsibility which in turn affects social and personal standards. Perceived behavioural control affects intentions and behaviour.

### Overview of the thesis

This thesis aims to explore the fundamental ways in which pride and guilt affect pro-environmental decision making. We test the model shown in Figure 1. Chapter 1 provides the theoretical background of this model. We aim to explore whether pride and guilt guide behaviour via a self-regulatory function (Chapters 2-4), so that they provide feedback on how one is performing regarding one's own standards and the perceived standards of others. This self-evaluation might evoke pride or guilt. A self-evaluation of one's past behaviour evokes the *experience* of emotions, whereas a self-evaluation of future behaviour results in *anticipated* emotions. Both experienced and anticipated emotions are proposed to steer one's behaviour in a hedonically satisfying direction (i.e. self-regulation). Furthermore, we propose that the way one sees oneself affects the self-evaluation process which forms these emotions and the subsequent effects of these emotions on pro-environmental behaviour. We explore the role of the self by exploring whether the function of emotions differs when different construals of the self are cultivated or activated (Chapters 5 & 6). We end this dissertation with a discussion of the main findings and the theoretical and practical implications of our findings (General Discussion).

This thesis is a set of individual empirical chapters based on journal articles. The upside of this setup is that each chapter can be read individually<sup>2</sup>. The downside is that the chapters may have some overlap in issues which are explained or discussed. Table 1 summarizes the purpose, used constructs, amount of respondents, behavioural domains, and key findings of each chapter. An overview of each chapter follows below.

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<sup>2</sup> Note that each chapter is an individual journal article. We provide a detailed explanation of the measurements and analyses used in each chapter. As such a description and justification of the research design and main methods for data collection and analysis is not provided in Chapter 1. Furthermore, some differences exist in terminology across the individual chapters because they are submitted to or published by different journals. For example, in some chapters we use the term environmentally friendly behaviour and in others we use pro-environmental decision making. Note that these different terminologies refer to the same concept.

Table 1. Overview of the purpose, used constructs, amount of respondents, behavioural domains and key findings of each chapter

	Chapter 2	Chapter 3	Chapter 4	Chapter 5	Chapter 6
<b>Purpose</b>	-Explore effect of pride and guilt on subsequent pro-environmental choices -Compare endogenous versus exogenous emotional effects	-Specify the function of pride and guilt in the NAM <sup>1</sup> and an integrated NAM-TPB <sup>2</sup> model	-Explore the self-regulatory function of pride and guilt within the TPB across different consumption contexts -Distinguishing between injunctive and descriptive norms	-Explore the self-regulatory function of pride and guilt across individualistic and collectivistic cultures within the TPB	-Explore whether the self-regulatory function of pride and guilt within the TPB differs when the social versus private self is activated within individuals
<b>Included concepts</b>	-Endogenous and exogenous pride and guilt -Anticipated and experienced pride and guilt -Behaviour (self-report)	-Anticipated pride and guilt -Injunctive social norms -Attitudes -Personal norms -Intention -Behaviour (self-report) <sup>3</sup>	-Anticipated pride and guilt -Injunctive social norms -Descriptive social norms -Attitudes -Intention -Behaviour (self-report) <sup>4</sup>	-Anticipated pride and guilt -Descriptive social norms -Attitudes -Intention -Behaviour (self-report)	-Experienced pride and guilt -Descriptive social norms -Attitudes -Intention -Behaviour (self-report)
<b>#Respondents<sup>5</sup></b>	-Study 1 = 1,937 -Study 2 = 847 -Study 3 = 423	-617	-Study 1 = 944 -Study 2 = 992	- 3,854	-Study 1 = 685 -Study 2 = 108 -Study 3 = 116 -Study 4 = 217
<b>Behavioural domain</b>	-Study 1 = buying environmentally friendly products and saving & recycling -Study 2 = organic, fair trade, and fruit consumption -Study 3 = environmentally friendly choices	-Buying environmentally friendly products -Travelling	-Study 1 = organic consumption -Study 2 = fair trade and fruit consumption	-Buying environmentally friendly products -Saving & recycling	-Study 1 = buying organic products -Study 2-4 = intention to buy environmentally friendly products
<b>Key findings</b>	-Pride and to a lesser extent guilt affect subsequent pro-environmental choices -Pride and guilt affect environmentally friendly decision making from a feedback mechanism and not via a basic mechanism to feel good	-Pride and guilt have a self-regulatory function in the NAM, and the integrated NAM-TPB model	-Pride and guilt regulate behaviour to be in accordance with both injunctive and descriptive norms -The self-regulatory function of anticipated pride and guilt is stronger in sustainable contexts compared to healthy consumption contexts	-The self-regulatory function of pride and guilt differs between collectivistic and individualistic countries. -The function of emotions is more social for collectivistic cultures compared to individualistic cultures	-The self-regulatory function of pride and guilt differs when activating the social versus private self within individuals -Guilt becomes more social when activating the social self, whereas pride becomes more self-oriented when activating the private self

*Note.* <sup>1</sup> NAM = Norm Activation Model (Schwartz, 1977); <sup>2</sup> Integrated NAM-TPB refers to a model that combines the NAM and the Theory of Planned Behaviour (TPB; Ajzen, 1991) (Bamberg et al., 2007); <sup>3</sup>Perceived behavioural control, ascribed responsibility, and awareness of consequences were also included, but because these constructs do not form the core of our thesis we decided to exclude these constructs from the table for reasons of simplicity; <sup>4</sup>Perceived behavioural control was also included; <sup>5</sup>Some studies include a delayed outcome measure (Study 1 Chapter 2; Study 2 Chapter 4; Chapter 5), this table reports the amount of respondents that filled out both questionnaires (i.e. the amount of respondents which is used for the analysis).

### *Overview of chapters*

**Chapter 2** explores whether and how pride and guilt affect subsequent pro-environmental decision making. Previous studies do not provide clear evidence regarding the effects of pride and guilt on subsequent pro-environmental behaviour. Acting or not acting in a pro-environmental way might induce feelings of pride and guilt respectively, which does not necessarily mean that these emotions guide future pro-environmental choices. Additionally, Chapter 2 aims to explore how these emotional effects occur, whether via a self-evaluation function or via a basic tendency to feel good. We propose that pride and guilt influence pro-environmental behaviour by providing information about whether the intended behaviour is in line with one's standards. We therefore compare the effects of endogenous and exogenous emotions. We propose that endogenous pride and guilt (i.e. emotions evoked by related events) have stronger effects on pro-environmental behaviour than exogenous pride and guilt (i.e. emotions evoked by unrelated events). The predictions are supported by three studies showing that anticipated and experienced pride and guilt affect pro-environmental behaviour at a later point. These effects were only present for endogenous emotions, implying that these emotions influence behaviour via a feedback mechanism.

**Chapter 3** further explores the feedback mechanism of pride and guilt. The emotional feedback mechanism can function in different ways. Several researchers have specified the function of pride and guilt in different ways (direct effects, mediating effects versus moderating effects) but have rarely tested these proposed associations. We propose that anticipated pride and guilt have a self-regulatory function (i.e. mediation effect), meaning that they guide individuals to behave themselves in accordance with existing standards regarding the environment. Chapter 3 explores how the relationship between these emotions can be specified in the Norm Activation Model (NAM) and the Theory of Planned Behaviour (TPB). The results show that within the NAM anticipated pride and guilt guide individual pro-environmental behaviour to be in line with personal norms (i.e. self-regulatory function). Moreover, we integrated the NAM with the TPB and show that the self-regulatory function of pride and guilt remains present in an integrated NAM-TPB model (Bamberg et al., 2007). Existing attitudes, personal norms, and injunctive social norms towards the environment are used to anticipate emotions, which in turn guide environmentally friendly intentions. This chapter thus shows that pride and guilt have a self-regulatory function in two vested models.

**Chapter 4** further explores the self-regulatory function of anticipated pride and guilt within the TPB. Previous studies that explore the self-regulatory function of negative self-conscious emotions within the TPB show mixed findings regarding the mediating effects of emotions on the effect of social norms and intentions (Hynie et al., 2006; Su et al., 2011). This chapter distinguishes between injunctive and descriptive social norms and includes multiple

contexts to explore whether this accounts for the mixed findings. Three studies show that anticipated pride and guilt regulate behavioural intentions to ensure they are in accordance with attitudes, injunctive social norms, and descriptive social norms. Additionally, we show that this self-regulatory function of anticipated pride and guilt differs across contexts. This may explain the mixed findings of previous studies. We show that anticipated self-conscious emotions have a larger mediating effect in pro-social contexts (i.e. organic and fair trade consumption) compared to personally oriented (i.e. healthy consumption) contexts.

**Chapter 5** explores whether the way one sees the self affects the self-regulatory function of anticipated pride and guilt. We propose that differences in cultural construal of the self account for differences in the self-regulatory function across countries. We propose that individuals use different standards to evaluate themselves, dependent on whether they have a private (i.e. being unique and having individual goals and standards) versus social (i.e. the self is part of a group, and one has group goals and standards) self-construal. We include individualistic and collectivistic countries because previous studies indicate that these countries differ in the construal of the private versus social self (i.e. independent versus interdependent self). As expected the findings show that there are no differences across countries in the self-regulatory function of anticipated pride and guilt *within* individualistic and *within* collectivistic cultures, but that there are differences *between* collectivistic and individualistic cultures. These results validate the self-regulatory function of anticipated pride and guilt across a range of individualistic and collectivistic countries. Additionally, the results provide a first indication that the function of emotions is more social in nature for individuals from collectivistic cultures than individualistic cultures. These findings imply that cultural differences in the function of emotions are associated with cultural differences in the self-construal.

**Chapter 6** further explores the role of the self by exploring whether the function of pride and guilt might also vary within individuals due to activating different construals of the self. Previous studies show that the private and the social self can be activated within individuals at different moments in time. This chapter aims to explore *whether* the effects of pride and guilt on intentions can be increased by activating the social self and *how* these effects occur. Three experiments show that activating the social self increases the effects of guilt on pro-environmental intentions, whereas activating the private self increases the effects of pride on pro-environmental intentions. Furthermore, we show that these effects occur because the activation of private versus social selves results in different self-evaluations. Activating the social self makes individuals more sensitive to social norms in the formation of guilt, whereas activating the private self makes individuals more sensitive to attitudes in the formation of pride. These findings imply that guilt is a more social emotion than pride.



# Chapter 1

## Theoretical background

This chapter provides an overview of relevant literature and explains the choices we made in this thesis. This chapter starts with a definition of emotion, including how emotions influence behaviour. Furthermore, we argue why we use a discrete emotion approach (Section 1.1). We then explain what self-conscious emotions are and why this thesis focuses on this group of emotions (Section 1.2), and specifically on pride and guilt (Section 1.3). Section 1.3 also provides a definition of pride and guilt and an overview of previous research regarding the influence of these emotions on pro-social and pro-environmental behaviour.

Based on this literature overview we identified a range of research gaps. This thesis aims to answer these research gaps in the context of pro-environmental behaviour. Section 1.4 therefore provides an overview of the most influential theories in explaining pro-environmental behaviour. This section also explains how we use these theories to increase our understanding of the function of pride and guilt in the context of pro-environmental behaviour. This chapter concludes with an overview of the identified gaps in the literature and how this thesis aims to increase understanding on these topics (Section 1.5).

### *1.1. Emotions and their influence on behaviour*

During each and every day individuals experience numerous emotions. Almost everyone recognises feelings of love, anger, guilt, fear, joy, and grief as being highly important, even defining, moments in human life. To many people a life without emotion would seem to be a life without meaning. We follow a generally accepted and often used definition of emotions (Frijda, 1986). Frijda states that an emotion can be defined as a subjective and evaluative experience that arises when an individual is evaluating (i.e. appraising) an external or mental event that is relevant to a personal goal. An emotion can be positive when the person perceives that the event is signalling progression towards a personal goal or negative if the person perceives that the event is impeding such a goal. The emotional experience results in short-term physiological changes that prompt a readiness to act.

This definition includes an important aspect of emotions, namely that emotions behave according to specific laws and therefore have predictable consequences. The lawfulness of emotions provides the opportunity to predict the consumer behaviour that follows from emotions. Thus although emotions carry the stereotype of causing foolish, illogical, and sometimes destructive behaviour, they have a valuable function in shaping and regulating behaviour towards valued goals. Emotions provide feedback on our behaviour; they are cues

about goal performance. Because individuals aim to maintain positive emotions and get rid of negative emotions, emotions guide subsequent choices for future goal pursuit (e.g., Bagozzi et al., 1991; Brown & McConnel, 2011; Zeelenberg et al., 2008).

In addition, emotions not only affect behaviour when they arise due to appraisals of events that already occurred, but they can also be *anticipated* due to future events. The possible consequences of imagined goal success and goal failure are used to anticipate which emotions one will experience in the future (Mellers & McGraw, 2001). These anticipated emotions influence goal-directed behaviour because individuals are motivated to feel good (Bagozzi et al., 2003; Baumeister et al., 2008; Perugini & Bagozzi, 2001; Zeelenberg, Van Dijk, & Van der Pligt, 2000). Experienced and anticipated emotions are fundamentally related to each other (e.g., Baumeister et al., 2007; Loewenstein & Lerner, 2003). Anticipated emotions are learned over time, so past emotional experiences are used to anticipate which emotions one will experience regarding similar events. Previous studies show that individuals have a tendency to overestimate the emotions they are going to experience, and as such anticipated emotions might have a larger impact on behaviour than the actual experience of an emotion (Mellers & McGraw, 2001; Van Dijk et al., 2012).

Both experienced and anticipated emotions guide behavioural decision making, however the nature of these two forms of emotions is different, so experienced emotions occur after showing a particular behaviour whereas anticipated emotions occur before behaviour. The current thesis therefore includes both anticipated and experienced emotions in order to get a complete view of the function of emotions. In the remainder of this thesis we refer to both anticipated and experienced emotions whenever we use the term emotions. If we focus specifically on anticipated or experienced emotions we will explicitly mention this.

Emotional experiences are not only positive or negative. A wide range of emotional experiences such as anger, fear, guilt, surprise and pride have been identified. These emotions can be categorized in different ways. Emotions, for example, have been categorized along three dimensions, including valence, arousal or activation, and approach–avoidance (Lang, Bradley, & Cuthbert, 1997; Russell, 1980; Watson, Wiese, Vaidya, & Tellegen, 1999). Although these dimensions are useful for categorizing emotions, important nuances are lost if emotions of the same dimension (e.g., valence) are collapsed when exploring the function of these emotions (Lerner & Keltner, 2000). ‘Appraisal theories’ (e.g., Frijda, 1986; Lazarus, 1991; Roseman, Wiest, & Swartz, 1994; Smith & Ellsworth 1985) generally state that each emotion is elicited by a specific set of perceptions of a given situation, called appraisals. An appraisal is an evaluative judgment and interpretation thereof. Different people can have different appraisals to the same event, thereby resulting in different emotional reactions (or no emotional reactions at all). Appraisal theory of emotions also states that each emotion is a unique experience that activates



related feelings, thoughts, action tendencies, actions, and “emotivational goals” (i.e. emotions having distinctive goals that can guide behaviour) (e.g., Roseman et al., 1994). For example, individuals might experience guilt after hurting someone or breaking a moral standard. Feelings of guilt are followed by a tendency to make up for or minimise any damage caused (Tangney, Miller, Flicker, & Barlow, 1996), whereas a closely related emotion of shame arises after an individual has shown to be inadequate and feels worthless or inferior compared to others. Feelings of shame are followed by a tendency to hide or withdraw from the situation (Tangney et al., 1996). Therefore, although guilt and shame are both negatively valenced emotions they are evoked by different appraisals of events and are related to distinct action tendencies. Previous studies underscore the importance of a discrete emotion approach in the context of the environment, so different emotions predict different environmental intentions (Harth et al., 2013) and behaviours related to environmental risks (Nerb & Spada, 2001). These studies therefore indicate that it is only possible to fully understand how emotions work and to predict how they affect decision making by making a distinction between specific emotions. We therefore adopt a discrete emotion perspective.

Although the valence-based approach (i.e. dimensions of positive and negative affect) and the discrete emotion approach might seem opposing, we believe that these approaches can complement each other. Laros and Steenkamp (2005), for example, propose a hierarchical model of emotions in which both approaches are combined. They specify emotions at three different levels: superordinate level, basic emotions and subordinate level. The superordinate level distinguishes between positive and negative affect. The level of basic emotions specifies four positive (contentment, happiness, love, and pride) and four negative (sadness, fear, anger, and shame) emotions. The subordinate level distinguishes between 42 specific emotions based on Richins’ (1997) set of consumption emotions. The hierarchical model of emotions is an example of a model that includes the advantages of a valence-based approach, meaning that emotions can be categorized along dimensions, and the advantages of a discrete emotion approach, meaning that emotions can be studied at a specific level and important nuances are retained. Because studies do not always include multiple emotions and the setup between studies differs, it is not always clear how specific emotions may differ in their effects on pro-environmental behaviour. As such, the literature on this topic would benefit from a structural systematic approach. Below we will explain why we focus on self-conscious emotions and how these emotions relate to the abovementioned emotion framework (Laros & Steenkamp, 2005).

### *1.2. Self-conscious emotions and their influence on pro-environmental behaviour*

To date research has placed greater emphasis on basic emotions, and the research on self-conscious emotions remains rather limited (e.g., Tracy & Robins, 2004a). In response to the need for further research and a shared theoretical basis for this research, Tracy and Robins (2004a) have developed a theoretical model. Their model is based on appraisal theory, though they specify their theory for self-conscious emotions because models of appraisal theory do not fully apply to self-conscious emotions. These models do not focus on the self (i.e. how one sees oneself in relation to others) and self-evaluations, which forms the central feature of self-conscious emotions (Tangney, 1999).

Self-conscious emotions belong to the subordinate level of the hierarchical model of emotions (Laros & Steenkamp, 2005), because the discrete emotions in this category differ from basic emotions such as anger, fear, disgust, sadness, happiness, and surprise (Ekman, 1992; Izard, 1992), in five ways: 1) Although basic emotions might involve self-evaluative processes, self-conscious emotions need self-awareness and self-representations to be activated, 2) Self-conscious emotions develop later in life than basic emotions, 3) Self-conscious emotions seem to specifically promote the attainment of social goals, whereas basic emotions serve the attainment of both survival and social goals, 4) Universally recognised facial expressions are not found for all self-conscious emotions, whereas all basic emotions are characterised by universally recognised, discrete facial expressions, and 5) Self-conscious emotions are more cognitively complex than basic emotions (Tracy & Robins, 2004a).

The central feature of self-conscious emotions involves both recognition and evaluation of the self (Lewis, 1993; Tangney, 1999; Tracy & Robins, 2004a). Depending on the results of this self-evaluation, people can experience a variety of emotions, including shame, guilt, pride, embarrassment, or hubris. These emotions are also referred to in other classifications of emotions such as moral emotions (Haidt, 2003) or social emotions, and not all researchers clearly differentiate between these classifications of emotions. We state that self-conscious emotion research focuses on a broader function of these emotions, meaning they are functional in striving towards identity relevant goals (Tracy & Robins, 2004a), whereas moral and social emotion research focuses on specific moral and social functions of these emotions. Moral emotions provide immediate rewards and punishments through self-reflection on moral standards, while social emotions guide social goals such as maintaining relationships and social status.

The *theoretical model of Tracy and Robins* (2004a; Tracy et al., 2007) is shown in Figure 1.1. This model explains, 1) The activation of appraisals that evoke self-conscious emotions, and 2) Structures the antecedents that evoke specific self-conscious emotions.

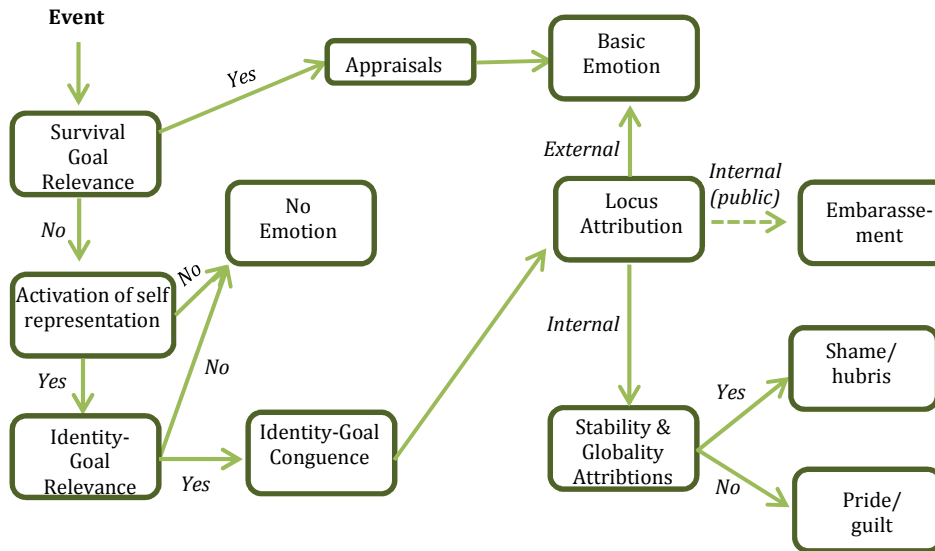


Figure 1.1. Process model of self-conscious emotions adopted from Tracy and Robins (2004a)

A first prerequisite for the elicitation of self-conscious emotions is that the event should not threaten the survival and reproduction needs of an individual because these events will evoke basic instead of self-conscious emotions. A second prerequisite for the occurrence of self-conscious emotions refers to the activation of a self-representation. An individual's identity consists of a range of self-representations (e.g., past, future, present, ideal, private or public self). Individuals must be aware of their self (i.e. attention must be directed to one's self) in order to evaluate whether the external event is in accordance (or not) with one's activated self-representation. Thirdly, the event must be relevant to the individual's identity goals. Individuals have to be aware of standards and adopt these standards in order to be able to evaluate whether one exceeds, meets or fails to meet these standards (e.g., one feels only pride when achieving a personally meaningful goal). Fourthly, an individual has to feel personally responsible for the outcome (i.e. am I responsible?).

The model then distinguishes between antecedents that evoke *different* self-conscious emotions. The model specifies two dimensions; valence, and global versus specific attribution. These dimensions differ from the earlier mentioned dimensions (valence, arousal or activation, and approach-avoidance), because they do not refer to how emotions are experienced but to the antecedents that evoke emotions. For valence, a person experiences negative emotions if the event is evaluated as *goal incongruent* and positive emotions if the event is evaluated as *goal congruent*. For example, if a person exceeds standards regarding the environment by buying an expensive energy-saving dishwasher one experiences positive emotions, whereas leaving one's trash behind in the woods might conflict standards regarding the environment and elicit negative emotions. Additionally, attributions can be global versus specific. A *global attribution* refers to an evaluation of an event with a focus on the self, resulting in a focus on stable and

performance related aspects of an event (e.g., “I can’t believe *I* did that”) and evokes hubris (i.e. refers to extreme hubristic pride or arrogance) after a positive attribution and shame after a negative attribution. A *specific attribution* refers to an event with a focus on task-related and unstable aspects of the event (e.g., “I can’t believe I did *that*”) and evokes pride or guilt dependent on the attribution of valence (positive versus negative). For example, if a person throws paint down the sink the person feels guilt if they attribute this event to being in a hurry (specific attribution) and ashamed if they attribute this event to their own laziness (global attribution).

Finally, there is a higher-order self-conscious emotion of embarrassment which is less cognitively complex than the other self-conscious emotions. This emotion occurs when the public self is activated. Individuals experience this emotion under public exposure of a mistake that does not represent a core characteristic of the self (Miller & Tangney, 1994). This emotion therefore does not need further appraisal, as individuals can become embarrassed by events that are attributed to global and specific aspects of the self.

Because self-conscious emotions arise by how people think of themselves and how they evaluate themselves, we believe that these emotions are especially relevant in the context of pro-environmental behaviour. The self-evaluation process might guide individuals to regulate their behaviour in accordance with existing standards regarding the environment. Self-conscious emotions are already found to guide pro-social and moral behaviour (Eisenberg, 2000; Haidt, 2003). Environmentally friendly behaviour can be regarded as a specific form of pro-social behaviour (i.e. acting in a manner that benefits others) (Hopper & Nielsen, 1991). Environmentally friendly behaviour refers to all types of individual behaviour which, compared to alternative behaviours damages the natural environment as little as possible, or even benefits the natural environment (Steg & Vlek, 2009; Stern, 2000). Like pro-social behaviour, environmentally friendly behaviour consists of a trade-off between personal benefits (e.g., saving energy, time or money) and benefits for the planet and all its inhabitants.

Note that we refer to pro-social instead of altruistic behaviour because this refers to all behaviour that benefits others whereas altruistic behaviour refers to behaviour that benefits others with little or no benefits in return. We decided to refer to pro-social behaviour because pro-environmental behaviour can also be selfishly motivated. The reduction of aversive negative emotions or striving towards positive emotions as a form of emotional regulation motivates action with the self-interest of making oneself feel better (Gross, 2002). Individuals perform the behaviour to feel good about themselves (Andreoni, 1990) so pro-environmental behaviour cannot be seen as pure altruism. Moreover, environmentally friendly behaviour can also be performed out of selfishly oriented motives. Organic food is, for example, also purchased for health-motives (Magnusson et al., 2003), or a consumer choice for sustainable products includes

both personal benefits and benefits for the planet (e.g., cheap and tasty local produced apples or volunteering for an environmental cause which boosts one's social status) (Van Dam & Van Trijp, 2011). We decided to focus on environmentally friendly behaviour which is performed out of pro-environmental motives, because this thesis aims to understand how self-conscious emotions function in the context of the environment. We explore whether emotions regulate behaviour to be in accordance with one's standards via a self-evaluative process. Therefore the pro-environmental behaviour we refer to in this thesis is not fully pro-social, however the environmental standards that are used to evaluate behaviour (e.g., acting because being environmentally friendly is the right thing to do) are pro-social in that they are motivated to benefit others.

### *1.3. Pride and guilt*

We already described why self-conscious emotions are relevant in the context of the environment. We now deliberate why we focus specifically on pride and guilt. First, pride and guilt activate specific action tendencies related to the event that elicited the emotion, whereas other self-conscious emotions of embarrassment, shame and hubris focus attention on the global or public self. For example, shame is a painful emotion which is often accompanied by feelings of shrinking, worthlessness, powerlessness and a tendency to withdraw, whereas guilt results in a tendency to consider the specific behaviour and activate specific action tendencies to make up for the caused harm (Tangney & Dearing, 2002). For pride and hubris a similar pattern occurs. Hubris is an emotion that occurs after attributing a positive achievement to stable aspects (e.g., ability) of the total self, whereas pride occurs after attributing positive achievements to unstable and controllable causes (e.g., effort). Hubris and pride in turn evoke different behaviours, so hubris is associated with a number of negative outcomes such as aggression, hostility, and relationship conflicts, whereas (authentic) pride is related to pro-social action tendencies (Tracy & Robins, 2007). Pride and guilt therefore seem the most promising self-conscious emotions in finding ways to stimulate pro-environmental behaviour because they focus attention to the specific action and activate behaviour related to the event that elicited the emotion. Furthermore, we state that individuals can more easily change their behaviour towards the environment if they believe it occurred due to causes that can be changed and controlled compared to when they believe it occurred to stable personal characteristics. For example, an environmentally unfriendly act of throwing paint down the sink might be changed more easily if one believes it occurred because one did not have enough time, one forgot that it was polluting the environment, or one lost one's self-control for a moment compared to when one believes

that their behaviour was caused by stable attributes of the self, for example, because they are not competent, intelligent, or pro-social enough<sup>3</sup>.

Furthermore, pride and guilt represent two complementary emotions, one positive and one negative. As such we can compare their effects and provide insights of practical and theoretical relevance into the function of positive versus negative self-conscious emotions. Below we provide an overview of the literature concerning the role of pride and guilt in the context of environmentally friendly behaviour.

*Pride.* Individuals experience pride when they attribute positive outcomes to their own efforts (Lazarus, 1991; Lewis, 2000). It is a positive and pleasant feeling accompanied with feeling something is achieved, accomplished, and feeling confident and productive (Tracy & Robins, 2007). Pride guides action tendencies that serve a better performance and reinforces behaviour that leads to future feelings of pride (Tracy, Shariff, & Cheng, 2010). Individuals are, for example, more involved (Williams & DeSteno, 2009), have a greater perseverance to complete tasks (Williams & DeSteno, 2008), are more prone to stay committed to volunteer for charity (Boezeman & Ellemers, 2007), and show more pro-social behaviour (Michie, 2009) compared to individuals who feel less proud. These studies provide an indication that experienced pride guides pro-social behaviour, because it is the product of one's own effort and brings a person closer to goals and standards (Hart & Matsuba, 2007). There is much less research towards anticipated pride. Anticipated pride was found to increase self-control (Katzir, et al., 2010; Page Winterich & Haws, 2011) and affect behaviour over time (Patrick et al., 2009). These studies indicate that anticipated pride also guides future decision making and helps individuals to regulate their behaviour.

The role of positive emotions in predicting sustainable behaviour is understudied. Although one study proposes that positive emotions such as pride affect sustainable behaviour (Corral-Verdugo, 2012), only one recent study shows evidence that collectively<sup>4</sup> experienced pride is associated with intentions to protect the environment (Harth et al., 2013). The direct evidence is limited, however previous studies imply that pride might affect pro-environmental consumer behaviour.

*Guilt.* Individuals experience guilt when they feel responsible for a negative outcome that is recognized to violate a personally relevant moral or social standard (Kugler & Jones, 1992). Guilt is a negative experience that is accompanied with feeling tense, remorseful, and worried (Fergusson, Stegge, & Damhuis, 1991). Guilt may activate action tendencies that guide individuals to compensate for their negative acts or repair their hurt feelings (Roseman et al., 1994; Tangney, 1993; Tangney, Miller, Flicker, & Barlow, 1996). Individuals who anticipate more

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<sup>3</sup> Note that we do not state that other self-conscious emotions could not affect environmentally friendly behaviour at all, though we propose that pride and guilt seem more relevant in this context compared to the other self-conscious emotions.

<sup>4</sup> Collectively experienced emotions refer to emotions that are elicited due to the behaviour of the group one belongs to.

guilt are, for example, more prone to help others (Lindsey et al., 2007) and make ethical decisions (Steenhaut & Van Kenhove, 2006). Furthermore, experienced guilt is also found to guide positive behaviour, so individuals who experience guilt show more cooperative (Ketelaar & Au, 2003; Nelissen et al., 2007) and morally appropriate behaviour (Sheikh & Janoff-Bulman, 2010) than those who do not. Similarly, in the context of environmentally friendly behaviour, anticipated (Bamberg et al., 2007; Kaiser et al., 2008; Verhoef, 2005; Wiidegren, 1998) and experienced (Bamberg & Möser, 2007; Mallet, 2012) guilt were found to motivate intentions to behave in an environmentally friendly manner, for example by conserving natural resources, purchasing organic meat, or using public transportation.

Previous studies thus imply that pride and guilt might guide pro-environmental behaviour, however, it is not yet clear how the function of these emotions can be specified. In our view, the model of Tracy and Robins (2004a) does not answer the question of how self-conscious emotions function precisely. Below we will describe which aspects are missing and how our thesis will contribute to these research gaps. We will explore these research gaps in the context of pro-environmental behaviour. We believe that it is important to build on existing knowledge. We therefore use influential and vested frameworks in the context of pro-environmental behaviour to explore the research gaps. As such we increase the probability that the findings are valid in other contexts and decrease the possibility of excluding important variables. Below we provide an overview of theories used to explain pro-environmental behaviour, followed by the research gaps we identified and a detailed description of how our thesis contributes to these research gaps.

#### *1.4. Theories explaining pro-environmental behaviour*

There is an extensive body of research that focuses on explaining pro-environmental consumer behaviour from individual motivations. This body of research can be divided in three streams with a different focus: perceived costs and benefits, moral and normative concerns, and affect (Steg & Vlek, 2009)<sup>5</sup>.

*Pro-environmental behaviour out of self-interest: Perceived costs and benefits.* Various studies in the context of pro-environmental behaviour adopt a rational choice model, assuming that individuals make deliberate choices for the alternative with the highest benefits and the

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<sup>5</sup> Note that this overview of research towards pro-environmental consumer behaviour mainly focuses on theories that are developed to explain individual motivations to engage in pro-environmental behaviour. Therefore theories that focus on underlying mechanisms to explain why certain behaviour occurs are not included. Consider, for example, cognitive dissonance theory (Festinger, 1957), which can explain why negative emotions of guilt guide individuals to ignore their responsibility for their environmentally unfriendly behaviour (change cognition) or engage in environmentally friendly behaviour to reduce the experienced dissonant state (change behaviour). Other examples are attribution theory (Heider, 1958) or construal level theory (Liberman & Trope, 1998). Moreover, this overview mainly focused on theories, thereby excluding relevant constructs in the context of the environment such as habits (Aarts & Dijksterhuis, 2000) and self-efficacy (Tabernero & Hernández, 2011) which are shown to impact pro-environmental behaviour.

lowest costs. The Theory of Planned Behaviour (TPB; Ajzen, 1991) is an influential theory in this domain. The TPB is successfully applied to various domains, including environmental behaviour (e.g., Kaiser & Gutscher, 2003; Staats, 2003). In short, the TPB shows that intentions are formed by attitudes (i.e. positive or negative evaluations of one's performance of a specific behaviour), subjective norms (i.e. perceptions of relevant others' beliefs that one should/should not perform a specific behaviour), and perceived behavioural control (i.e. the degree of control that a person believes he/she has with regard to the performance of a specific behaviour). In turn, intentions and perceived behavioural control predict behaviour (Ajzen, 1991).

*Pro-environmental behaviour out of pro-social concerns: Moral and normative concerns.* Various studies focus on the role of moral and normative concerns. These studies perceive pro-environmental behaviour as a pro-social act which involves behaviour that benefits others. The two most influential theories in this stream of research are the Norm Activation Model (NAM; Schwartz, 1977) and the Value-Belief-Norm (VBN) theory of environmentalism (Stern, 2000).

Regarding the NAM, Schwartz (1977) originally developed this model to explain altruistic behaviour. Personal norms (i.e. feelings of moral obligation) are determined by two factors: the awareness that one's behaviour has certain consequences and the feeling of responsibility for performing the specific behaviour. Personal norms in turn predict behaviour (Schwartz, 1977).

The VBN further elaborates on the NAM. This theory proposes that awareness of consequences is rooted in general beliefs (e.g., believe there is limit to growth) about human-environment relationships measured with the new environmental paradigm (NEP) and in relatively stable value orientations (egoistic, altruistic and biospheric (i.e. concerns for the environment) values). Research shows that individuals who have strong NEP beliefs and those who score high on values beyond their own interest (i.e. altruistic and biospheric values) are more likely to have positive personal norms, intentions, and behaviour towards the environment (Stern, 2000).

Finally, there is a body of research that focusses on the influence of social norms on pro-environmental decision making (Cialdini, Kallgren, & Reno, 1991; Cialdini, Reno, & Kallgren, 1990). These authors refer to the importance of distinguishing between two types of social norms; injunctive social norms and descriptive social norms. Both injunctive social norms (i.e. norms regarding what should be done) and descriptive social norms (i.e. norms regarding how other people behave) are shown to affect pro-environmental behaviour depending on which norm is activated (Cialdini & Goldstein, 2004).

*Pro-environmental behaviour out of feelings: Affect.* Recently, the research towards the effects of emotions on pro-environmental behaviour is growing. The literature investigating the role of emotions in pro-environmental consumption is at an early stage of development. Scholars in this field often define affect quite vaguely. For example, they mention feelings towards the



idea of environmental degradation (Smith et al., 1994; Chan & Lau, 2000), empathy towards others (Granzin & Olsen, 1991) or towards the natural environment (Mayer & Frantz, 2004; Nisbet et al., 2009) as a possible determinant of sustainable consumer choices. We state that research towards the effects of emotions on pro-environmental behaviour shows four major contributions towards the understanding of the function of emotions.

Firstly, a few studies show the importance of emotions for pro-environmental behaviour beyond the impact of cognitive factors, thus implying that behaviour is not only formed by cognitive deliberations but also by affect. For example, a recent study investigated the emotions that consumers attach to the use of green products as a way to explain the decision to adopt more sustainable alternatives (Moons & De Pelsmacker, 2012). This study shows that besides the cognitive factors of the TPB emotions are highly relevant predictors of intention to use electric cars.

Secondly, a range of studies shows that an evaluation of past environmental behaviour results in the experience of emotions, which in turn affects behaviour. For example, a confrontation with a carbon footprint calculator (Mallett, Melchiori, & Strickroth, 2013) or one's after-consumption experience (Gregory-Smith et al., forthcoming) may result in feelings of guilt. Feelings of guilt in turn guide one's support for a pro-environmental group (Mallett et al., 2013).

Thirdly, several studies show that *anticipated* emotions also affect pro-environmental behaviour. For example, anticipated guilt and anticipated regret influence pro-environmental choices (Grob, 1995; Kaiser, 2006; Carrus et al., 2008).

Finally, different specific emotions are shown to guide different environmental intentions, and this implies that each specific emotion activates distinct action tendencies in the context of the environment. Experienced pride, guilt, and anger each affect different pro-environmental intentions respectively such as in-group pro-environmental protection, repair the damage, and punish the responsible people (Harth et al., 2013). Overall this field of research still needs further development.

Arguably each of the theories presented above (perceived costs and benefits, moral and normative concerns, and affect) is relevant in the context of pro-environmental consumption. This thesis therefore aims to combine these three streams of research. We aim to explore the role of pride and guilt (affect) in two vested theories that differ in their view on pro-environmental motives. Researchers who view environmentally friendly behaviour as primarily motivated by pro-social motives often use the NAM as a theoretical framework, whereas researchers who view environmentally friendly behaviour as primarily guided by self-interest often use the TPB (Bamberg & Möser, 2007). Moreover, we differentiate between injunctive social norms and descriptive social norms because we believe that this will provide relevant

insights into which standards are used for the self-evaluation process that evokes self-conscious emotions. Note that we decided to include the NAM and not the VBN because we propose that values and the NEP do not have a direct effect on emotions. Personal norms include moral convictions and a specific sense of an obligation to act, which provides a possibility to evaluate whether one is living up to this obligation or not, whereas values and the NEP include more global world views (that are used to form personal norms). This reasoning is underscored by multiple studies on the NAM that propose that pride and guilt are associated with personal norms (e.g., Schwartz, 1977; Hunecke, Blöbaum, Matthies, & Höger, 2001), though they do not empirically test these associations.

As already noted, we will use these vested theories to increase understanding of how anticipated pride and guilt influence pro-environmental behaviour. Figure 1 shows a simplified version of our theoretical model. A detailed description of the identified research gaps and our propositions is provided below (Section 1.5).

### *1.5. Identified research gaps and propositions*

Tracy and Robins (2004a) provided a synthesis of the literature on self-conscious emotions and developed a model that is an important basis for future systematic research on self-conscious emotions. Although their model offers a useful starting point it needs to be validated by research, and several statements of their model need further specification. Based on their model and our literature overview, we identified a range of questions to increase our understanding in the function of self-conscious emotions in general and in the context of pro-environmental behaviour. The identified research gaps, our propositions, and the manner in which this thesis contributes to these research gaps are described next.

*How do self-conscious emotions affect behaviour?* Previous studies show implications that pride and guilt are associated with environmentally friendly behaviour. However, there is limited evidence regarding the causality of these effect. For example, no experimental studies that explore the effects of experienced pride or guilt on subsequent environmentally friendly behaviour were reported. This thesis responds to this research gap by exploring whether pride and guilt guide future pro-environmental behaviour.

Furthermore, how self-conscious emotions precisely function remains unclear. The model of Tracy and Robins (2004a) pays little attention to the effects of self-conscious emotions on subsequent behaviour. It is not clear *how* self-conscious emotions guide behaviour. We propose that self-conscious emotions guide behaviour via a self-regulatory function. As self-conscious emotions serve to inform individuals about the compatibility of their behaviour with their perceived personal and social standards they have the potential to regulate future behaviour, such that they guide future choices to be in accordance with these standards (Beer & Keltner,

2004; Blasi, 1999; Carver & Scheier, 1998; Johnston & Krettenauer, 2011). Self-regulation is a way in which individuals handle conflicting goals; override immediate gratification and behave in accordance with one's standards and long-term goals (Baumeister, 2002; Carver & Scheier, 1998; Muraven & Baumeister, 2000). As already noted, environmentally friendly behaviour also consists of a trade-off between personally oriented and pro-social motives. We therefore propose that self-regulation might play an important role in stimulating environmentally friendly behaviour, and that pride and guilt guide pro-environmental behaviour via self-regulation. We propose that a similar mechanism occurs for anticipated and experienced emotions so that both forms of emotions are evoked after evaluating whether one's (past or intended) behaviour is in accordance with one's standards. Though there is an important difference. Anticipated emotions guide the same behaviour as the behaviour which is evaluated, whereas experienced emotions due to evaluations on past behaviour might guide future behavioural choices.

We will explore the self-regulatory function of pride and guilt in two vested theories. The function of pride and guilt is specified differently within the literature regarding the NAM and the TPB. Moreover, the function of these emotions has not been extensively tested yet, as previous studies focus on one possible function and do not include positive emotions such as pride. This thesis extends previous studies by exploring the functions of pride and guilt within the TPB, the NAM, and an integrated NAM-TPB model. We propose that pride and guilt affect environmentally friendly behaviour via a self-regulatory function so that they mediate the effects of attitudes, personal norms, injunctive norms, and descriptive norms on intentions.

*Do individuals use personal or social standards for self-evaluation?* The extent to which self-conscious emotions are social in nature is not yet clear. Several researchers mainly stress the social nature of self-conscious emotions. They argue that self-conscious emotions are mainly evoked after evaluations of individual behaviour regarding social standards, that self-conscious emotions mainly serve social goals (e.g., Baldwin & Baccus, 2004; Leary, 2007), and are only evoked after public threats (Kemeny et al., 2004). Tracy and Robins (2004a) provide a different view. They focus on individuals' self-evaluations regarding personal standards. Tracy and Robins (2004a) suggest that individuals internalize other people's standards such as social feedback and social norms and use these internalized standards to evaluate themselves, which might evoke self-conscious emotions. Social standards will not elicit self-conscious emotions if the individual does not attach importance to them or uses them to evaluate one's own behaviour (Tracy, Robins, & Tangney, 2007). Taken together, the extent to which *self-conscious emotions are formed by personal versus social standards* seems unclear. This thesis contributes to this lack of clarity by exploring the extent to which self-conscious emotions are evoked by personal (attitudes and personal norms) and social (injunctive and descriptive social norms) standards. It

is important to differentiate clearly between social standards and social goals. Social standards refer to one's perception of how other people perform or expect others to perform. Social goals refer to one's goals in relationship to others, such as social acceptance and maintaining relationships. Whether or not self-conscious emotions serve social goals is beyond the scope of this research question, as this thesis mainly focuses on one specific behaviour (pro-environmental behaviour). We focus on the question of whether personal or social standards are used for self-evaluation.

We propose that self-conscious emotions can be evoked by all types of self-evaluations that are relevant to one's identity goals or the way one sees the self. This proposition is underscored by the findings of Christensen et al. (2004), who show that only identity-relevant injunctive and descriptive norms evoke positive emotions. Both personal and social standards provide information on whether one is behaving rightly or wrongly. We therefore propose that both personal and social standards are used for self-evaluations that might evoke self-conscious emotions.

*Are there differences between different consumption behaviours?* We note that research towards self-conscious emotions mainly focuses on social contexts (e.g., Beer et al., 2003; Tracy & Robins, 2004a), assuming that self-conscious emotions play a central role in achieving social goals such as maintaining relationships and social status. Additionally, several authors refer to the importance of these emotions in maintaining moral standards and thereby guiding pro-social behaviour (e.g., Eisenberg, 2000; Haidt, 2003). However, one could argue that self-conscious emotions function in a similar vein in a more personally oriented context such as health-related behaviour. For example, one could feel guilty after eating a bar of chocolate while one aims to lose 10 pounds of weight in the upcoming weeks. This feeling of guilt might provide feedback regarding one's behaviour, and subsequently guide a more healthy behavioural choice to avoid feelings of guilt. Up until now differences in the function of self-conscious emotions across contexts are unexplored. This thesis responds to this gap in the research by initially exploring whether the function of self-conscious emotions differs across a personally oriented and a pro-socially oriented consumption context. Healthy consumption was included as personally oriented behaviour because it contributes to one's wellbeing and can lower the risk of diseases such as coronary heart disease (e.g., Gerster, 1991). Organic and fair trade consumption were included as pro-social consumption because these behaviours are among others performed for pro-environmental (Magnusson et al., 2003) or social justice motives (de Pelsmacker et al., 2005). We will explore this research gap within the TPB because this theory is often applied in multiple contexts, whereas the NAM is designed for altruistic contexts.

*What is the role of 'the self'?* The way one sees the self seems to play an important role for self-conscious emotions. Self-awareness has three consequences for self-conscious emotions

(Leary, 2007). Firstly, being aware of oneself allows people to regulate their present behaviour in terms of how they will feel about it later. Secondly, being aware of the self also allows awareness that other people have a self, which in turn have the potential to judge one's own self. Thirdly, the ability to think about oneself makes it possible to evoke emotions due to evaluations of the self along standards. Tracy and Robins (2004a) also acknowledge 'the importance of the self', and they refer to an activation of self-representations and self-evaluations as important prerequisites for the elicitation of self-conscious emotions. In our view it is not fully clear what the *role of the self* is in the function of self-conscious emotions.

Multiple distinctions in the construal of the self are made in previous research (Cross et al., 2011). In general, all theories regarding the construal of the self distinguish an employment of a social self (i.e. the self reflects oneself as a part of significant social groups) and a private self (i.e. the self as a unique individual differentiated from all others) (Oyserman et al., 2002; Trafimow, Triandis, & Goto, 1991; Triandis, 1989). We propose that the way one sees the self plays an important role in the *self-evaluation process*, which evokes self-conscious emotions. We propose that individuals with a social self-construal are more sensitive to what other people expect of them, and this means that social standards are used more to evaluate the self when compared to individuals with a private self-construal who are unique people and attach more importance to their personal standards.

The private and social self can vary across cultures (Mesquita, 2001; Markus & Kitayama, 1991), so collective cultures have an overrepresentation of individuals with a social self (i.e. interdependent self), whereas individualistic cultures have an overrepresentation of individuals with a private self (i.e. independent self). The private and social can also vary within cultures, as that different self-construals can be activated within an individual at different moments in time (Triandis, 1995; Verplanken et al., 2009). This thesis aims to compare differences in the function of self-conscious emotions across collectivistic and individualistic countries and across individuals for whom the private versus social self is activated. As such we can explore whether differences between cultures can also be activated within individuals. We explore this research gap within the TPB because this theory is validated across multiple countries and includes personal and social standards, whereas the original NAM only includes personal standards.



## Chapter 2

### **The function of pride and guilt in pro-social decision making:**

#### **Do endogenous emotions have stronger effects than exogenous emotions on pro-environmental decision making?**

Self-conscious emotions of pride and guilt guide pro-social decision making. We extend previous studies by investigating the function of these emotions. We explore the effects of related (i.e. endogenous) and unrelated (i.e. exogenous) pride and guilt on a specific form of pro-social behaviour, environmentally friendly behaviour. In three studies, we show that pride and, to a lesser extent, guilt affect subsequent environmentally friendly behaviour. Moreover, these effects are only present for related emotions, which imply that pride and guilt affect environmentally friendly decision making not just from a basic tendency to feel good but also from feedback on whether individual behaviour is in line with one's standards. This emotional feedback-mechanism guides future environmentally friendly consumer behaviour. We discuss practical and theoretical implications of the results.

This chapter is based on:

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Do endogenous emotions have stronger effects than exogenous emotions on pro-environmental decision making? *Manuscript under review.*

## 2.1. Introduction

Self-conscious emotions, such as pride and guilt have been found to guide pro-social decision making (e.g., Dickert et al., 2011; Eisenberg, 2000). These emotions are elicited after self-reflection and self-evaluation of personal behaviour as compared with a set of personal and social standards (Tangney et al., 2007; Tangney & Fischer, 1995; Tracy & Robins, 2004a). Self-conscious emotions guide pro-social decision making because this set of standards often has a moral basis to which individuals want to comply in order to feel good. A better understanding of the function and behavioural effects of self-conscious emotions is needed to understand how these emotions guide pro-social decision making (e.g., Katzir & Eyal, 2013; Tracy, Robins, & Tangney, 2007).

This paper aims to contribute to this understanding by exploring the function of two specific emotions: pride and guilt. Pride and guilt are self-conscious emotions (Tracy & Robins, 2004a). We focus specifically on pride and guilt, because previous studies state that especially these self-conscious emotions focus attention on the specific behaviour and activate action tendencies related to the event that evoked these emotions, whereas other self-conscious emotions focus attention on the total self and therefore do not guide behaviour towards the specific behaviour (Lewis, 1993; Tracy & Robins, 2004a).

Baumeister et al. (2007) state that conscious emotions guide behaviour via a feedback mechanism, such that emotions provide feedback, promote learning and alter guidelines for future behaviour. Past behaviour thus results in emotional experiences, which are used as feedback to anticipate future emotions and guide subsequent behaviour. We propose that pride and guilt influence pro-social decision making by providing information on whether the intended behaviour accords with one's standards. The current study aims to explore this reasoning, by testing whether endogenous pride and guilt (i.e. emotions evoked by related events; Zeelenberg et al., 2008) have stronger effects on behaviour than exogenous pride and guilt (i.e. emotions evoked by unrelated events; Zeelenberg et al., 2008).

Previous studies show that endogenous shame motivates pro-social behaviour whereas exogenous shame does not (De Hooge et al., 2008). However, it has not yet been fully explored whether these effects can also be found for other self-conscious emotions. Previous studies indicate that this reasoning applies to guilt (e.g., De Hooge et al., 2011), but did not differentiate between exogenous and endogenous pride. Moreover, in general less research has focused on positive compared to negative emotions (Fredrickson, 2001). We extend previous research by exploring whether the positive emotion of pride functions in a manner comparable to guilt in guiding a specific form of pro-social decision making.

The context of environmentally friendly decision making provides a suitable and topical context to study the effects of exogenous and endogenous pride and guilt on pro-social decision



making, because the decision to act in an environmentally friendly manner can be regarded as a specific form of pro-social behaviour (e.g., Granzin & Olsen, 1991). Individuals must go beyond immediate self-interest and expend effort (e.g., recycling or separating waste) or use money (e.g., buying organic products instead of regular products) to gain benefits for our collectively owned planet. Note that this reasoning differentiates between the standards used to engage in environmentally friendly behaviour and the behaviour itself. Environmentally friendly standards refer as explained above to pro-social motives, whereas pro-environmental behaviour might serve self-interested motives as individuals engage in this behaviour to feel good about themselves (i.e. not experience negative emotions and strive for positive emotions) (Andreoni, 1990).

The present study will provide theoretical insights into the functioning of positive versus negative self-conscious emotions and practical insights in the usefulness of pride and guilt to stimulate environmentally friendly behaviour. First, we aim to explore whether pride and guilt indeed affect subsequent environmentally friendly behaviour. Second, we aim to explore whether pride and guilt affect pro-environmental behaviour via a feedback-function by investigating whether endogenous pride and guilt have stronger effects on pro-environmental behaviour compared to exogenous pride and guilt.

### **2.2. Theoretical framework and hypotheses**

#### *Self-conscious emotions and their effects on pro-social decision making*

Self-conscious emotions can be categorised into two dimensions (Lewis, 1993). First, a distinction is made between positive and negative emotions that follow from a favourable or unfavourable evaluation of the self. Second, a distinction is made between global versus specific evaluations of the self. Global evaluations refer to evaluations of the self as a whole (e.g., I did not perform in an environmentally friendly way, because I am a bad person), which results in hubris or shame. Specific evaluations refer to evaluations on specific aspects of the self (e.g., I did not perform in an environmentally friendly way, because I was in a hurry), which results in pride or guilt (Lewis, 1993). We will focus on specific self-conscious emotions of pride and guilt because these emotions focus individual attention on the specific behaviour (e.g., what I did was right/wrong, and I must/must not do it again) and thereby activate specific action tendencies, whereas global evaluations focus attention on the total self rather than on specific behaviours. The relevant emotions of pride and guilt will be described below.

*Pride* arises when individuals evaluate that their own behaviour, for which they feel personally responsible, exceeds personal or social standards (Mascolo & Fischer, 1995; Tracy & Robins, 2007). Pride, is a positive and pleasant feeling that is associated with autonomy and self-achievement (Rodriguez-Mosquera et al., 2000). It is a desired emotion toward which

individuals strive to experience and maintain. Subsequently, pride is associated with an individual's perseverance to accomplish personal goals, such as time spent on an effortful and hedonically negative task (Williams & DeSteno, 2008), pro-social behaviour, such as engaging in caregiving acts (Tracy & Robbins, 2004b), being a likeable interaction partner (Williams & DeSteno, 2009), social justice, and altruism (Michie, 2009).

Environmentally friendly behaviour can be regarded as a specific form of pro-social or altruistic behaviour. We therefore propose that pride can also guide environmentally friendly behaviour. Also in the context of sustainable behaviour, the role of positive emotions is understudied (Corral-Verdugo, 2012). Nevertheless, a recent study demonstrated that collectively experienced pride is associated with intentions to protect the environment in favour of the in-group (Harth et al., 2013). Hence, we expect that:

*Hypothesis 1a: Pride regarding one's environmental behaviour has a positive effect on subsequent environmentally friendly behaviour.*

*Guilt* is evoked when one recognises and feels responsible for violating a personal or social standard (Baumeister et al., 1994; Kugler & Jones, 1992). Feeling guilty is a negative emotional state, which includes feelings of being tense, remorseful and worried (Lazarus, 1991; Tangney, 1995). Individuals are activated to get rid of this negative feeling, and subsequently, guilt motivates cooperation and pro-social behaviour (De Hooge et al., 2007; Ketelaar & Au, 2003; Nelissen et al., 2007). Because guilt reportedly motivates a range of altruistic behaviours, one might argue that guilt also motivates environmentally friendly behaviour.

Previous studies indeed associated feelings of guilt with environmentally friendly intentions (Mallet, 2012) and the purchase of organic meat, which is perceived by consumers to be an environmentally friendly act (Verhoef, 2005). Guilt was also found to indirectly (via personal norms) affect public transportation (Bamberg et al., 2007) and environmentally friendly behaviour (Bamberg & Möser, 2007). We therefore propose that:

*Hypothesis 1b: Guilt regarding one's environmental behaviour has a positive effect on subsequent environmentally friendly behaviour.*

We thus expect that both pride and guilt have a positive effect on pro-environmental behaviour. This may sound contrasting as pride and guilt respectively refer to a positive versus a negative emotion. However, we propose that pride regarding environmentally *friendly* behaviour and guilt regarding environmentally *unfriendly* behaviour both have a positive effect on subsequent pro-environmental decision making. Both emotions provide feedback whether one's behaviour matches environmental standards; pride informs whether behaviour exceeds standards, whereas guilt informs whether behaviour fails standards. We extend previous studies (e.g.,

Harth et al., 2013) by exploring *how* these emotions guide pro-environmental behaviour. We distinguish between related and unrelated effects of these emotions, and between experiencing and anticipating these emotions, to increase understanding in the function of pride and guilt. Below we elaborate on these different forms of pride and guilt.

### *Related and unrelated emotional effects*

Zeelenberg et al. (2008) distinguished between emotions that influence behaviour that is *related* or *unrelated* to the felt emotion, also referred to as endogenous and exogenous effects of emotions. Endogenous emotions are part of the goal-setting and goal-striving process and thus are effective for related behaviours, whereas exogenous effects refer to the behavioural effects of emotions that are external to the goal-setting and goal-striving process (Zeelenberg et al., 2008). For example, one might feel guilty for behaving in an environmentally unfriendly way by throwing paint in the sink. Consequently, one can try to get rid of this aversive feeling, for example, by taking a shorter shower (related) or by helping one's neighbour to carry her groceries inside (unrelated). Other researchers refer to this distinction as integral (i.e. related) and incidental (i.e. unrelated) emotions (Han, Lerner, & Keltner, 2007).

Previous research has often investigated exogenous emotional effects (Keltner & Lerner, 2010; Ketelaar & Clore, 1997) and has subsequently primarily focussed on the basic mechanism of individuals to get rid of negative emotions and strive towards positive emotions. These studies show the tendency of emotions to carry over from one situation to another, but do not show a deeper understanding in the signalling function of these emotions. A small body of research differentiates between exogenous and endogenous effects of emotions and notes whether they use exogenous or endogenous emotions and for what reason (De Hooge et al., 2007; Ketelaar & Au, 2003). Separate experiments have shown that both exogenous and endogenous guilt activate pro-social behaviour (e.g., Ketelaar & Au, 2003). The comparison between exogenous and endogenous emotional effects in a single experiment is explored in a limited number of studies (e.g., a study towards shame from De Hooge et al., 2008). A recent study of De Hooge et al. (2011) demonstrates that endogenous and exogenous effects of guilt have different impacts on behaviour, such that respondents provide more money to a person to whom they feel guilty when this person is present (endogenous) compared to when this person is absent (exogenous)<sup>6</sup>. Until now, no studies have been available that compare the exogenous and endogenous effects of pride.

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<sup>6</sup> Feelings of guilt were manipulated by falsely informing individuals that due to their bad performance, another player (i.e. victim) in a game did not receive a bonus. In turn, respondents are asked to divide money between themselves, the victim and a third person. When the victim towards whom a participant feels guilty is present (endogenous), the feelings of guilt are projected on this person by providing more money to this person compared to a third person. When this person is absent, the feelings of guilt are no longer related to the specific event that evoked

In accordance with previous studies (Baumeister et al., 2007; de Hooge et al., 2011), we state that pride and guilt affect behaviour not only by appealing to a basic tendency to feel good but also by informing individuals about whether their behaviour accords with their standards. Pride and guilt provide a feedback mechanism that informs individuals about whether their (intended) behaviour is right or wrong and subsequently guide decision making. We hypothesise that emotions that provide relevant feedback regarding behaviour (endogenous emotions) have a stronger impact on this behaviour than emotions that do not provide relevant feedback (exogenous emotions):

*Hypothesis 2: Endogenous pride and guilt have stronger effects on environmentally friendly behaviour than exogenous pride and guilt.*

### *Anticipated and experienced emotional effects*

Not only do individuals experience emotions, but they are also capable of imagining future emotions—anticipated emotions—based on the imaginary occurrence of certain desirable or undesirable future events (Baumgartner et al., 2008; Mellers & McGraw, 2001). The present study includes both anticipated and experienced pride and guilt because previous studies have indicated that both forms can affect future behaviour (e.g., Baumeister et al., 2007). Furthermore, the nature of these two forms of emotions differs, such that experienced emotions occur after behaviour whereas anticipated emotions occur before behaviour. This study therefore includes both anticipated and experienced emotions to get a complete view of the function of emotions. We propose that both anticipated and experienced pride and guilt affect subsequent pro-environmental behaviour (Hypothesis 1), and that these effects are stronger for endogenous than exogenous emotions (Hypothesis 2).

### **2.3. Study overview**

We use a multi-method approach. Study 1 is a two-wave survey conducted in six Western countries ( $N = 1,937$ ). This study explores whether anticipated pride and guilt predict the environmentally friendly consumer behaviours reported two weeks later (Hypothesis 1), beyond past environmentally friendly behaviour and country effects. Study 2 ( $N = 1,518$ ) is a two-wave survey conducted in the Netherlands. This study explores endogenous and exogenous effects of anticipated pride and guilt on organic, healthy and fair trade food consumption reported two weeks later (Hypotheses 1 and 2), over and above past behaviour. Study 3 is an experiment conducted in the Netherlands ( $N = 423$ ) that explores the effects of endogenous and

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the emotional experience (exogenous). In this case one equally divides the money between the victim and a third person.

exogenous experienced pride and guilt on environmentally friendly intentions and behavioural choices (Hypotheses 1 and 2).

## 2.4. Study 1

Study 1 aims to explore whether anticipated pride and guilt regarding the environment predict buying of environmentally friendly products and saving and recycling behaviour measured later in time. Emotional experiences after evaluations of past behaviour are used to anticipate future emotions (Baumeister et al., 2007). Anticipated emotions are thus likely affected by past behaviour because they are learned over time. As such, we controlled for past behaviour to ascertain that emotions affect environmentally friendly behaviour and not the other way around. Moreover, we aim ascertain that the effects of pride and guilt are similar across a range of Western countries. We propose that pride and guilt have comparable effects on environmentally-friendly behaviour across the included Western countries: Germany, the Netherlands, United Kingdom, Canada, Australia, and United States.

## 2.5. Methods

### *Participants*

The sample comprised 3,083 respondents from Germany ( $n = 519$ ), the Netherlands ( $n = 508$ ), United Kingdom ( $n = 508$ ), Canada ( $n = 522$ ), Australia ( $n = 514$ ), and the United States ( $n = 512$ ). These respondents were randomly drawn from an online research panel. The research agency was asked to select representative samples in terms of age and gender from each country. The sample comprised 49.7% males and 50.3% females, with a mean age of 46.5 years ( $SD = 15.6$ ).

### *Design*

The respondents were approached to complete an online questionnaire by a research agency in two waves. Respondents were not informed regarding the second wave, such that they were not aware of the link between the two studies. In the first wave, the respondents ( $N = 3,083$ ) answered items concerning anticipated pride and guilt regarding the environment and items on self-reported environmentally friendly behaviour. In the second wave, two weeks after the first questionnaire, the respondents completed the same items on self-reported environmentally friendly behaviours of the last two weeks, as in the first wave. The second wave was completed by 62.9% of the participants ( $N = 1,937$ )<sup>7</sup>.

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<sup>7</sup> To determine whether the respondents who completed waves 1 and 2 and the respondents who completed only wave 1 showed similar relations among the variables of interest, we performed Fisher Z tests. The results revealed that neither of the correlations between anticipated pride and guilt and buying environmentally friendly products

### *Measurements*

To account for order effects due to the presentation order of the items, we randomised all items within the blocks.

*Anticipated pride and guilt.* Anticipated pride and guilt were each measured with three items. Because we wanted to compare the effects of pride and guilt, we selected items from the work of Holbrook and Batra (1987), who measured pride and guilt in a similar manner. For the measure of anticipated pride, the respondents rated the following items: “If I behave in an environmentally friendly way, then I would feel proud/worthy/superior.” For the measure of anticipated guilt, the respondents rated the following items: “If I behave in an environmentally unfriendly way, then I would feel guilty/feel remorseful/have a bad conscience.” All the items were rated on 5-point scales (with labeled end points from 1 = “not at all” to 5 = “very much”). Cronbach’s alpha values of the scales were .86 for anticipated pride and .96 for anticipated guilt.

*Self-reported environmentally friendly behaviour.* Environmentally friendly behaviour was measured with a selection of items from Thøgersen and Ölander (2003). We included items from the following domains: buying environmentally friendly products and saving and recycling behaviour. Several items were adapted in a range of broad categories to increase comparability across all included countries. Buying of environmentally friendly products was assessed by asking respondents to indicate how often they buy: organic personal care products, organic food products, organic apparel, organic wines, and two more general categories of organic products and environmentally friendly products. For saving and recycling behaviour, we asked the respondents to indicate how often they turned off the lights when leaving a room, used energy-saving light bulbs, turned down the heat when leaving a room for more than 4 hours, turned off the water when brushing teeth, and separated waste. All the items were rated on 5-point scales (with labeled end points from 1 = “never” to 5 = “very often”). The respondents answered these items both at waves 1 and 2. In the second wave the respondents were asked to report their past behaviour in the last two weeks. The items were used to compute average scores for buying environmentally friendly products at waves 1 (Cronbach’s  $\alpha = .89$ ) and 2 (Cronbach’s  $\alpha = .89$ ) and for saving and recycling behaviour at waves 1 (Cronbach’s  $\alpha = .68$ ) and 2 (Cronbach’s  $\alpha = .62$ ).

### *Analysis*

We performed two hierarchical regression analyses with buying environmentally friendly products and saving and recycling measured at wave 2 as dependent variables. The independent

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(pride  $Z = 0.421, p = \text{n.s.}$ ; guilt  $Z = 1.617, p = \text{n.s.}$ ) and between anticipated pride and guilt and saving and recycling behaviour (pride  $Z = -0.667, p = \text{n.s.}$ ; guilt  $Z = 0.291, p = \text{n.s.}$ ) differed significantly across the two groups.

variables were included consecutively in four blocks. In the first block, all countries were included as dummy variables to control for country differences. Germany was used as reference category. In the second block, environmentally friendly behaviour measured at wave 1 was included to control for past environmentally friendly behaviour. In the third block, anticipated pride and guilt were included to explore whether these anticipated self-conscious emotions predicted subsequent environmentally friendly behaviour. In the fourth block, we included interaction effects between anticipated pride and guilt, on the one hand, and country, on the other hand. In this way, we could determine whether the effects of anticipated pride and guilt differed between the included countries. Anticipated pride and guilt were centred before computing the interaction terms to overcome problems of multicollinearity between the primary effects and the interaction effects (Shieh, 2011).

## 2.6. Results

Table 2.1 shows the means, standard deviations and correlation coefficients. The results showed that there were high correlations between past and subsequent buying ( $r = .791$ ) and saving and recycling ( $r = .704$ ) behaviour. Anticipated pride and guilt show to be positively correlated with each other, and as proposed with subsequent environmentally friendly behaviours.

Table 2.1. Means, standard deviations, and correlations between variables in Study 1

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.
<i>Wave 1</i>							
1. Pride	3.09	1.05	1				
2. Guilt	2.89	1.20	.516**	1			
3. Buying behaviour	2.39	0.91	.486**	.430**	1		
4. Saving & recycling	4.12	0.77	.271**	.277**	.249**	1	
<i>Wave 2</i>							
5. Buying behaviour	2.49	0.91	.441**	.352**	.791**	.256**	1
6. Saving & recycling	4.29	0.68	.272**	.272**	.295**	.704**	.364**

Note. \*\* $p < .001$ ; *M* = mean; *SD* = standard deviation.

Table 2.2 shows the results of the two regression analyses. The results showed a significant  $R^2$  of the first block for both buying of environmentally friendly products and saving and recycling. The results showed that the Netherlands, UK, Canada and the US reported a significantly lower level of buying environmental products than Germany. Canada and the US reported a significantly lower level of saving and recycling behaviour than Germany.

The results showed that past behaviour (Block 2) explained a large amount of the variance in environmentally friendly behaviour two weeks later; 60.9% of the variance in buying

of environmental products was explained by past behaviour, whereas 45.4% of the variance in saving and recycling behaviour was explained by past behaviour.

Including anticipated pride and guilt (Block 3) significantly improved the models of both buying environmentally friendly products and saving and recycling, above and beyond country differences and past behaviour. Anticipated pride had a stronger effect on saving and recycling behaviour than anticipated guilt. Additionally, anticipated pride had a significant impact on buying environmentally friendly products, whereas the effect of anticipated guilt was not significant.

Interaction effects between country and anticipated pride and guilt were included in the fourth block. This fourth block did not significantly improve the models, indicating that the effects of anticipated pride and guilt on environmentally friendly behaviour did not differ significantly between all included countries.

Table 2.2. Hierarchical regression analyses of the effects of anticipated pride and guilt on environmentally friendly behaviours in Study 1

		Buying behaviour			Saving & recycling		
		$\beta$	$t$	$F(df1, df2)$ F-value; $p$ -value; $R^2$ ; $p$ -value	$\beta$	$t$	$F(df1, df2)$ F-value; $p$ -value; $R^2$ ; $p$ -value
1	Constant_Germany		60.061***			29.845***	
	Netherlands	-.154	-5.524***		.025	.905	
	UK	-.096	-3.413***		.004	.134	
	Canada	-.073	-2.709*	$F(5.1932) =$	-.129	-4.905***	$F(5.1932) =$
	Australia	-.042	-1.565	7.206; $p < .001$ ;	.062	2.385*	19.242; $p < .001$ ;
	US	-.116	-4.174***	$R^2 = .018$ ; $p < .001$	-.158	-5.777***	$R^2 = .047$ ; $p < .001$
2	Past Behaviour	.787	56.144***	$F(6.1931) =$ 41.162; $p < .001$ ; $\Delta R^2 = .609$ ; $p < .001$	.691	41.95***	$F(6.1931) =$ 323.936; $p < .001$ ; $\Delta R^2 = .454$ ; $p < .001$
3	Anticipated pride	.079	4.505***	$F(8.1929) =$	.078	4.095***	$F(8.1929) =$
	Anticipated guilt	.006	.352	414.134; $p < .001$ ; $\Delta R^2 = .005$ ; $p < .001$	.051	2.696*	253.936; $p < .001$ ; $\Delta R^2 = .011$ ; $p < .001$
4	NL Xpride	-.023	-1.081		-.031	-1.292	
	UK Xpride	-.014	-.575		-.048	-1.771	
	Canada Xpride	-.021	-1.048		-.017	-.749	
	Australia Xpride	-.037	-1.811		-.058	-2.464*	
	US Xpride	-.012	-.539		.002	.097	
	NL Xguilt	.034	1.587		.037	1.510	
	UK Xguilt	.030	1.319		.034	1.294	
	Canada Xguilt	.029	1.434	$F(18,1919) =$	.016	.695	$F(18,1921) =$
	Australia Xguilt	.033	1.646	184.513; $p < .001$ ;	.046	1.996*	113.682; $p < .001$ ;
	US Xguilt	.050	2.236*	$\Delta R^2 = .002$ ; $p = n.s.$	.031	1.189	$\Delta R^2 = .003$ ; $p = n.s.$

Note. For each block we only reported the additionally included independent variables; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; NI = the Netherlands; UK = United Kingdom; US = United States.



## 2.7. Discussion

Study 1 confirms Hypothesis 1, as that anticipated pride and guilt affect subsequent environmentally friendly decision making. The results indicated that anticipated pride has a stronger impact on environmentally friendly decision making than anticipated guilt. Nevertheless, guilt remains an effective emotion in stimulating subsequent environmentally friendly behaviour. Note that the effect sizes of anticipated pride and guilt are very small. The effects of anticipated emotions might be small because past behaviour explains a large amount of the variance in environmentally friendly behaviour. Subsequently, only a small part of the variance remains to be explained by anticipated emotions. The significance of the effects shows that anticipated self-conscious emotions affect subsequent environmentally friendly behaviour, over and above the strong effect of past behaviour.

In line with previous findings, Study 1 showed that there are differences in environmentally friendly decision making across countries (Lévy-Leboyer et al., 1996; Thøgersen, 2010). Thus individuals from some countries engage more often in environmentally friendly behaviour than others. We extend previous studies by showing that these differences do not occur due to anticipated emotions. The influence of anticipated pride and guilt on environmentally friendly behaviour does not differ significantly across countries. These findings implied that the effects of pride and guilt on environmentally friendly behaviour can be generalised across Western countries. This validation across countries is important to ascertain generalisability (e.g., Markus & Kitayama, 1991).

Study 1 only included the effects of pride and guilt on related behaviour. However, to ascertain that pride and guilt have a stronger effect on environmentally friendly behaviour when these emotions inform individuals whether the specific environmentally friendly behaviour is in line (or not) with one's standards (Hypothesis 2), we should include both endogenous and exogenous pride and guilt. In Study 2, we therefore included both related and unrelated feelings of pride and guilt.

## 2.8. Study 2

Study 2 aims to explore whether anticipated pride and guilt have stronger effects on behaviour when these emotions are *related* to personal standards regarding living up to or breaking these specific behaviours compared to when these emotions are *unrelated*. More specific, we explore whether anticipated emotions of pride and guilt regarding environmentally friendly consumption behaviour affect *related* self-reported consumption regarding organic food, and *unrelated* consumption regarding healthy and fair trade food.

We focused on food consumption because this allowed us to include comparable behaviours from different contexts; environment, health, and fair trade. We propose that

anticipated emotions regarding the environment predict related behaviour regarding environmentally friendly consumption behaviour, and not unrelated behaviour regarding healthy consumption and fair trade consumption. Additionally, we propose that anticipated emotions regarding healthy or fair production methods predict related behaviour regarding healthy consumption or fair trade consumption, respectively. We used organic food consumption because this is produced with respect for the environment (for example Whole Earth), and buying organic products can therefore be regarded as a specific form of environmentally friendly behaviour.

### 2.9. Methods

#### *Participants*

Study 1 shows no significant differences in the effects of pride and guilt on environmentally friendly behaviour across Western cultures. Study 2 is therefore conducted in the Netherlands. The participants were 1,518 Dutch respondents recruited by a market research agency. The sample comprised 751 males (49.5%) and 767 females, with a mean age of 44.7 years ( $SD = 14.7$ ).

#### *Design*

The respondents were asked by a market research agency to answer an online questionnaire. The respondents were approached in two waves. Respondents were not informed that these studies were related. In the first wave, the respondents were randomly assigned to one of three conditions: environment, health, or fair trade. They were asked to indicate anticipated emotions of pride and guilt regarding their own environmentally friendly, healthy *or* fair trade consumption behaviour. Furthermore, the respondents in all three conditions were asked to indicate self-reported consumption regarding a range of organic, healthy *and* fair trade food products in the first wave and in the second wave (two weeks later). The second wave was completed by 55.8% of the participants ( $N = 847$ ).<sup>8</sup>

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<sup>8</sup> To determine whether the respondents who completed waves 1 and 2 and the respondents who completed only wave 1 showed similar relations among the variables of interest, we performed Fisher Z tests. The results revealed that neither of the correlations between anticipated pride and guilt and buying organic products, healthy products and fair trade products differed significantly across the two groups. With the exception of the correlation between anticipated guilt regarding the environment and buying organic products ( $\text{guilt}^{\text{env}} Z = -2.44, p < .01$ ); Respondents who filled out waves 1 and 2 showed a higher correlation ( $r = .41$ ) compared to the respondents who only filled out wave 1 ( $r = .27$ ).

### Measurements

To account for order effects due to the presentation order of the items, we randomised all the items within each block.

*Anticipated pride and guilt.* Anticipated pride and guilt were measured similarly to Study 1 (Holbrook & Batra, 1987). For the environment, we used the following item “If I would buy food that is produced in an environmentally (un)friendly way, then I would feel... For health, we used the following item “If I would eat (un)healthy then I would feel....” For fair trade, we used the following item: “If I would buy food that is produced in a(n un)fair way then I would feel....” All the items were rated on 7-point scales (with labeled end points from 1 = “not at all” to 7 = “very much”). The corresponding Cronbach’s alpha values are shown in Table 2.3.

*Self-reported consumption behaviour.* Past consumption behaviour was measured on 7-point ordinal scales (ranging from 1 = “never,” 2 = “less than once a month,” 3 = “once a month,” 4 = “2-3 times a month,” 5 = “1-2 times a week,” 6 = “3-6 times a week,” to 7 = “every day”). *Organic food consumption* behaviour was measured by asking the respondents how often they ate or drank organic meat, organic vegetables, organic fruit and organic dairy in the last two months. *Fair trade food consumption* was measured by asking the respondents how often they ate or drank fair trade coffee, fair trade tea, and fair trade chocolate in the last two months. These items were selected because they represented the largest organic and fair trade food categories in the Netherlands. *Healthy food consumption* was measured by asking the respondents to indicate how often they ate fruit and vegetables in the last two months. The respondents also answered these items at wave 2. Cronbach’s alphas are shown in Table 2.3.

### Analysis

Because the answering category of self-reported consumption “less than once a month” is not an exact measure, we cannot regard self-reported consumption as a cardinal scale. We therefore decided to use Mplus, a software package that provided the possibility of including self-reported consumption as an ordinal variable. The analyses were divided in two phases.

First, a structural regression model with latent variables was estimated separately for each of the three conditions: environment, health, or fair trade. In these models we only included the *related* past and subsequent consumption behaviour. Thus consumption was the dependent variable and related past behaviour and related anticipated pride and guilt were the independent variables. All independent variables were free to co-vary with one another. This model allowed us to explore whether the proposed associations result in a good model fit.

Second, we proposed that anticipated emotions have a stronger effect on related compared to unrelated consumption behaviours. We therefore estimated structural regression models for each of the three conditions in which we included the *related* and *unrelated* past and

subsequent consumption behaviour. For each model, all three self-reported consumption behaviours of organic, healthy and fair trade foods were included as dependent variables. Anticipated emotions regarding either the environment, one's health *or* production methods and all three past behaviours were included as independent variables. Anticipated pride and guilt were free to co-vary, past behaviours were free to co-vary and subsequent behaviours were free to co-vary.

Several indices were used to assess model fit. A relative chi-square of less than 5 refers to adequate fit and less than 3 to good model fit (Kline, 2011). RMSEA is desirably below .07 (Steiger, 2007). The WRMR is recommended to evaluate model fit for models with categorical or ordinal variables. A WRMR value of less than 1.0 indicates good fit (Yu & Muthén, 2002). Finally, CFI and TLI indices equal or above .90 indicate a satisfactory model (Hu & Bentler, 1999).

### 2.10. Results

Table 2.3 shows the correlation coefficients between the variables of interest. Consumption behaviour and past behaviour are positively correlated. Although the correlation coefficients between anticipated pride and guilt and consumption behaviour measured at wave 2 are weak, they generally confirm our propositions for anticipated pride. Organic consumption, healthy consumption and fair trade consumption showed the highest correlations with anticipated pride regarding the environment, one's health or fair trade, respectively. The correlation coefficients between anticipated guilt and self-reported consumption did not show all the predicted associations and were generally lower than anticipated pride.

First, we estimated three separate models in which *related* consumption behaviour was regressed on past behaviour, and anticipated pride and guilt. These models resulted in a good model fit for organic (relative  $\chi^2 = 1.41$ ;  $p < .001$ ; RMSEA = .028; WRMR = .445; CFI = .998; TLI = .997), for healthy (relative  $\chi^2 = 2.37$ ;  $p < .001$ ; RMSEA = .053; WRMR = .572; CFI = .954; TLI = .928), and for fair trade (relative  $\chi^2 = 1.59$ ;  $p < .001$ ; RMSEA = .034; WRMR = .463; CFI = .991; TLI = .987) consumption. These findings imply that anticipated pride and guilt predict subsequent behaviour (Hypothesis 1).

Then, we aimed to explore Hypothesis 2. We estimated three structural regression models in which we included *related and unrelated* consumption behaviours as dependent variables. Table 2.4 shows that these models do not result in an adequate model fit. This is a logical consequence of the fact that anticipated emotions were associated with related and unrelated subsequent consumption behaviours, whereas we hypothesised that they only significantly affect related consumption behaviour.

Table 2.3. Correlation coefficients of anticipated pride and guilt measured at Wave 1, and self-reported consumption behaviours measured at Wave 2 in Study 2

	$\alpha$	$M$	$SD$	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.
<i>Environment</i>														
1. Pride	.96	3.58	1.56	1										
2. Guilt	.98	2.92	1.47	.627**	1									
<i>Health</i>														
3. Pride	.90	4.56	1.42	-	-	1								
4. Guilt	.95	3.69	1.60	-	-	.484**	1							
<i>Fair trade</i>														
5. Pride	.95	3.65	1.53	-	-	-	-	1						
6. Guilt	.98	2.95	1.45	-	-	-	-	.641**	1					
<i>Past Self-reported consumption</i>														
7. Organic food	.91	2.49	1.55	.388**	.409**	.164**	.098*	.268**	.274**	1				
8. Fruit and vegetables	.64	5.76	1.13	.149**	.171**	.242**	.189**	.158**	.123**	.178**	1			
9. Fair trade food	.85	1.84	1.34	.185**	.243**	.117*	.047	.285**	.313**	.612**	.084**	1		
<i>Self-reported consumption (wave 2)</i>														
10. Organic food	.91	2.24	1.44	.154**	.113**	.124**	0.082	.126*	.094	.274**	.068**	.184**	1	
11. Fruit and vegetables	.69	5.81	1.05	.057	.061	.162**	.150**	-.011	-.018	.082**	.263**	.034	.257**	1
12. Fair trade food	.82	1.73	1.17	.053	.061	.086	.039	.106*	.023	.176**	.028	.265**	.568**	.179**

Note. \*\* =  $p < .001$ ; \* =  $p < .05$ .

Table 2.4. Estimates, fit indices and Chi-square difference tests of structural regression models of Study 2 with anticipated pride and guilt as independent variables and self-reported consumption behaviour measured at Wave 2 as dependent variables

Behaviour	Anticipated emotions regarding environment				Anticipated emotions regarding health				Anticipated emotions regarding justice			
	Past Behaviour	Pride	Guilt	$R^2$	Past behaviour	Pride	Guilt	$R^2$	Past behaviour	Pride	Guilt	$R^2$
Buying organic	.290(.046)***	.098(.036)**	.007(.039)	.117	.397(.047)***	.084(.036)*	.003(.033)	.223	.393(.050)***	.089(.033)**	.002(.035)	.159
Buying fruit and vegetables	.315(.066)***	.017(.036)	.015(.038)	.096	.612(.109)***	.069(.033)*	.043(.033)	.183	.464(.078)***	-.008(.033)	-.002(.035)	.244
Buying fair trade	.341(.054)***	.026(.045)	.027(.047)	.136	.431(.055)***	.083(.043)	-.014(.036)	.184	.382(.053)***	.111(.038)**	-.064(.038)	.176
	Relative $\chi^2 = 1369.157/236$ ; $p < .001$ ; RMSEA = .095; WRMR = 2.419; CFI = .942; TLI = .932				Relative $\chi^2 = 547.025/236$ ; $p < .001$ ; RMSEA = .052; WRMR = 1.276; CFI = .982; TLI = .979				Relative $\chi^2 = 1056.764/236$ ; $p < .001$ ; RMSEA = .083; WRMR = 2.089; CFI = .950; TLI = .941			

Note. \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; Est = Estimate; SE = standard error.

The results showed that related past behaviour is the largest predictor of buying organic, healthy and fair trade products. Furthermore, organic consumption was significantly predicted by anticipated pride regarding the environment. Unexpectedly, anticipated pride regarding one's health and fair trade also predicted organic consumption. Fruit and vegetable consumption was predicted by anticipated pride regarding healthy eating and not by the other anticipated emotions. Buying fair trade products was significantly predicted by anticipated pride regarding buying fair trade products and not by the other anticipated emotions. Anticipated guilt showed no significant effects on consumption for all three conditions.

### **2.11. Discussion**

Study 2 showed that anticipated pride regarding buying environmentally friendly products predicted subsequent self-reported consumption of organic food (Hypothesis 1a confirmed). These effects were not present for anticipated guilt (Hypothesis 1b not confirmed). Similar to Study 1, the current results implied that anticipated pride was more effective than anticipated guilt in predicting environmentally friendly behaviour. Additionally, anticipated pride regarding the environment only predicted related (i.e. organic) decision making, and not unrelated (i.e. fair trade and healthy) decision making (Hypothesis 2).

Furthermore, Study 2 showed that fair trade and healthy consumption were predicted by related anticipated pride and not by anticipated emotions regarding other personal standards. These results underscore Hypothesis 2, such that behaviour was only predicted by anticipated emotions regarding related personal standards. Unexpectedly, organic consumption was predicted by anticipated pride regarding the environment, one's health and fair production methods. One could argue that this finding contradicts Hypothesis 2; however, these results can be explained by previous findings. Individuals are motivated to buy organic products for environmental protection, out of concerns for one's health, and out of concerns for social aspects, such as support of local farming and fair trade (e.g., Padel & Foster, 2005). Subsequently, anticipated emotions regarding the environment, one's personal health, and fair production all inform individuals whether their organic buying behaviour is in line (or not) with their personal standards or goals. This implies that the findings of Study 2.2. are in accordance with Hypothesis 2, such that pride indeed predicts behaviour when these emotions are informative whether performing the specific behaviour in the future is in line (or not) with one's personal standards. This reasoning is underlined by the fact that anticipated emotions regarding the environment do not predict healthy and fair trade consumption. Organic consumption thus might be motivated by a range of other motives than one's motivation to protect the environment. This reasoning might also explain why the effects of anticipated pride and guilt on subsequent behaviour are smaller in Study 2 compared to Study 1. Anticipated pride and guilt

regarding buying environmentally friendly products only explain the environment-related intentions to buy organic food, and not the health-related, justice-related or other motivated intentions to buy organic food.

Study 2 increased our understanding of the functions of anticipated pride and guilt by showing indications that only related (endogenous) pride affects subsequent consumption behaviour. Study 2 showed these effects for anticipated emotions. Previous research has indicated that unrelated (exogenous) emotions influence behaviour because individuals want to maintain positively experienced emotions or get rid of negatively experienced emotions. Because anticipated emotions are not experienced yet, it seems reasonable that these emotions do not affect unrelated behaviours out of a basic mechanism to feel good. Anticipated emotions do not include emotional feelings that one aims to get rid of or aims to maintain. Study 3 therefore aims to explore whether the distinct effects of endogenous and exogenous pride can be replicated for experienced emotions of pride and guilt. Moreover, Studies 1 and 2 showed implications that anticipated pride has a stronger impact on subsequent environmentally friendly behaviour than anticipated guilt. However, because we measured both of these anticipated emotions within individuals, the correlation between pride and guilt (multicollinearity) may have created several difficulties for comparing the effects of these highly related emotions. In Study 3, we will manipulate experienced pride and experienced guilt between subjects, thereby improving the comparability of the effects of pride and guilt on subsequent environmentally friendly behaviour.

Moreover, Study 1 and Study 2 indicate that pride and to a lesser extent guilt affect subsequent behaviour. However, we are still not sure what caused participants to feel high levels of pride or guilt. Experimental or cross-legged designs (measuring emotions and behaviour and multiple moments in time) are necessary to provide clear evidence of causal effects. Study 3 therefore extends the findings of Studies 1 and 2, by exploring whether experimentally manipulated emotional experiences affect pro-environmental decision making.

### **2.12. Study 3**

Study 3 seeks to replicate the effects of pride and guilt on subsequent environmentally friendly intentions (Hypothesis 1) for experienced emotions. Furthermore, the present study aims to explore whether experiencing pride and guilt related to the environment is more effective in stimulating environmentally friendly intentions than experiencing unrelated pride and guilt (Hypothesis 2).

Previous research stated that feelings of pride and guilt are partially derived from trait levels of these emotions. Trait guilt (Kugler & Jones, 1992) and trait pride (Tracy & Robins, 2007) can be defined as a continuing sense of these emotions beyond immediate circumstances.



By asking respondents to indicate how much pride or guilt they anticipate to experience regarding the environment at an earlier moment in time, we can control for baseline anticipated emotions and focus on the effects of experienced emotions in the present.

### 2.13. Methods

#### *Participants*

The participants were 423 Dutch respondents recruited by a market research agency. The sample comprised 212 males and 211 females, with a mean age of 47.9 years ( $SD = 14.6$ ).

#### *Design*

The respondents were approached online by a market research agency in two waves. Respondents were not informed on the link between the two waves. In the first wave, 617 respondents were approached to indicate their baseline levels of anticipated pride and guilt regarding the environment. The second wave was completed by 68.8% of the respondents<sup>9</sup>. These respondents were randomly assigned to a 3 (emotion: pride versus guilt versus control)  $\times$  3 (relatedness: related versus unrelated versus control) between-subjects design. The number of respondents for each condition is shown in Table 2.5.

#### *Procedure and measures*

To account for order effects due to the presentation order of the items, we randomised all the items within the blocks.

*Wave 1. Baseline anticipated pride* was measured with five items adapted from Tracy and Robbins' (2007) authentic pride scale. The respondents were asked to answer the following items: "Imagine that you decide to buy an environmentally friendly product. How would you feel?" Answers: "proud/accomplished/confident/satisfied/worthwhile". *Baseline anticipated guilt* was measured with five items adapted and modified from Kugler and Jones' (1992) guilt inventory. The respondents were asked to answer the following items: "Imagine that you decide not to buy an environmentally friendly product. How would you feel?" Answers: "guilty/remorseful/sorry/bad/ashamed". Both were answered on 7-point Likert scales (with labeled endpoints ranging from 1 = "totally not" to 7 = "very much"). Cronbach's alphas were good (pride = .95; guilt = .97).

*Wave 2.* The first question was our emotion-induction manipulation adopted from Ketelaar and Au (2003). In the Pride-unrelated condition, the participants were asked to report

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<sup>9</sup> To determine whether the respondents who completed waves 1 and 2 and the respondents who completed only wave 1 showed similar answering patterns, we compared the mean scores on pride and guilt. The results revealed that neither guilt ( $F(615) = 1.513$ ;  $p = n.s.$ ) nor pride ( $F(615) = 3.237$ ;  $p = n.s.$ ) differed significantly between the groups.

a recent personal experience in which they felt very proud. In the Pride-related condition, the participants were asked to report a recent personal experience in which they felt very proud due to acting in an environmentally friendly manner. For guilt, we used a similar design; the participants were asked to report a recent personal experience in which they felt very guilty in general (Guilt-unrelated condition) or due to not acting in an environmentally friendly manner (Guilt-related condition). In the Control condition, the participants were asked to describe a regular weekday.

*Manipulation check.* To check whether our manipulation worked as expected we asked respondents to report the amount of experienced pride for the pride conditions (related and unrelated), experienced guilt for the guilt conditions (related and unrelated), or both for the control condition. *Pride* and *Guilt* were measured with the same items as baseline anticipated pride and guilt. Cronbach's alpha were good ( $\alpha^{\text{guilt}} = .92$ ;  $\alpha^{\text{pride}} = .94$ ).

*Environmentally friendly intentions.* The respondents were asked to indicate their *intention* for performing specific environmentally friendly behaviours in the upcoming three weeks (e.g., Ajzen, 1991). The participants were asked to answer six items on 7-point Likert scales (with labeled endpoints ranging from 1 = "never" to 7 = "very often"). The items were "to behave myself in an environmentally friendly manner", "to separate my waste", "to buy organic products the next time I go to the supermarket", "to buy environmentally friendly products the next time I go to the store", "to travel if possible with public transport", and "to travel if possible by bike." Cronbach's alpha was .78.

*Environmentally friendly choices.* The respondents were asked to read eight short scenarios in which they were asked to choose between an environmentally friendly and a less environmentally friendly (regular) option (Appendix A). The items involved choices between buying organic versus regular wine/chocolate/shower gel, using the train versus a car for a day out, using one's bike versus a car for a trip to the nearby supermarket, buying energy-saving versus regular light bulbs, investing in green versus regular electricity, and recycling versus not recycling plastic. All the choices were presented in a randomised order (across and within the scenarios). We calculated one environmentally friendly choice score by computing the number of environmentally friendly choices for each respondent.

The participants completed the questionnaires online in their own environment. Therefore, we were unable to control the environment. To account for unreliable answers on the emotion-induction task, we deleted the respondents who reported no past emotional experiences or who reported to never feel guilty or proud. We also checked for respondents who reported emotions related to the environment in the unrelated-Pride and unrelated-Guilt condition. In total, we removed 135 respondents who did not answer the emotion-induction task

following the above-mentioned criteria. In the guilt conditions, a substantially larger number of respondents were unable to report past emotions compared to the pride conditions (Table 2.5).

### 2.14. Results

ANOVA was estimated with the manipulations of emotion and relatedness and their interaction as independent variables and intention as dependent variable. Means and standard deviations are shown in Table 2.5. Baseline anticipated pride and guilt were included as covariates. Results showed that the emotion manipulation worked as expected. The respondents in the emotion conditions experienced more pride ( $F(2,208) = 5.017$ ;  $p < .01$ ;  $\eta^2 = .046$ ) and guilt ( $F(2,150) = 25.137$ ;  $p < .001$ ;  $\eta^2 = .251$ ) than the respondents in the control condition, when controlling for baseline anticipated pride ( $F(1,208) = 1.927$ ;  $p = \text{n.s.}$ ;  $\eta^2 = .009$ ) and baseline anticipated guilt ( $F(1,150) = 2.135$ ;  $p = \text{n.s.}$ ;  $\eta^2 = .014$ ). Moreover, post hoc tests showed that there were no significant differences between the related and unrelated conditions, such that subjects reported similar levels of pride or guilt for the unrelated and related conditions.

Table 2.5. Means (standard deviations) of the ANOVA's for the experiment of Study 3

	Manipulation check				Pro-environmental intention		Pro-environmental choices	
	Pride		Guilt		Pride	Guilt	Pride	Guilt
	<i>N</i>	<i>M</i> ( <i>SD</i> )	<i>N</i>	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )	<i>M</i> ( <i>SD</i> )
Unrelated emotions	69	5.29 (1.23) <sup>b</sup>	43	3.40 (1.56) <sup>b</sup>	4.07(1.27) <sup>a</sup>	3.95(1.12) <sup>a</sup>	4.84(1.61)	4.79(1.32)
Related emotions	65	5.13 (1.12) <sup>b</sup>	33	3.51 (1.45) <sup>b</sup>	4.64(1.00) <sup>b</sup>	4.32(1.01) <sup>b</sup>	5.35(1.33)	5.09(1.18)
Control	78	4.70 (1.12) <sup>a</sup>	78	1.95 (0.98) <sup>a*</sup>	4.00(1.24) <sup>a</sup>		4.80(1.49)	
Total	212	5.02 (1.18)	154	2.69 (1.47)	4.24(1.17)	4.09(1.12)	5.04(1.48)	4.89(1.33)

Note. Different superscripts indicate whether the conditions significantly differ from each other at the .05 level within columns according to post hoc tests; *N* = amount of respondents; *M* = mean; *SD* = standard deviation.

Then, we tested our hypotheses. The results showed that when controlling for baseline anticipated pride ( $F(1,288) = 35.087$ ;  $p < .001$ ;  $\eta^2 = .111$ ) and baseline anticipated guilt ( $F(1,288) = 12.508$ ;  $p < .001$ ;  $\eta^2 = .043$ ), both the manipulation of emotions ( $F(1,288) = 5.466$ ;  $p < .05$ ;  $\eta^2 = .019$ ) and relatedness ( $F(1,288) = 5.360$ ;  $p < .05$ ;  $\eta^2 = .019$ ) showed a significant main effect on environmentally friendly intentions. There was no significant interaction effect between emotions and relatedness ( $F(1,288) = .158$ ;  $p = \text{n.s.}$ ;  $\eta^2 = .001$ ). Post hoc tests show that respondents in the pride and guilt condition had higher environmentally friendly intentions than respondents in the control condition (Hypothesis 1). Furthermore, pride has a larger impact on environmentally friendly intentions than guilt. Finally, related emotions have a larger impact on environmentally friendly intentions than unrelated emotions (Hypothesis 2).

For environmentally friendly choices, we performed Kruskal-Wallis tests because the number of reported environmentally friendly choices was not a continuous scale, but a count

score. The results showed a nonsignificant main effect of emotions ( $\chi^2(2) = 1.311; p = \text{n.s.}$ ) and a marginally significant effect of relatedness ( $\chi^2(2) = 5.183; p < .10$ ). Post hoc Mann-Whitney tests showed (marginally) significant differences between related pride and unrelated pride ( $Z = 2.059; p < .05$ ) and between related pride and the control condition ( $Z = 1.701; p < .10$ ). These effects were not present for guilt. There were no significant differences between related guilt and unrelated guilt ( $Z = 0.769; p = \text{n.s.}$ ), and between related guilt and the control condition ( $Z = 0.237; p = \text{n.s.}$ ). These results imply that respondents in the related pride condition make more subsequent pro-environmental choices than respondents in the unrelated pride condition (Hypothesis 2).

### 2.15. Discussion

Study 3 confirmed Hypothesis 1 for experienced emotions by showing that manipulating feelings of pride and guilt can increase environmentally friendly intentions. In line with the findings of Study 1 and Study 2, Study 3 indicated that pride was more effective in stimulating environmentally friendly intentions than guilt. Additionally, the results provided a first indication that pride was also more often experienced by consumers compared to guilt in the context of the environment. The results showed that a substantially larger number of respondents in the guilt conditions did not report a past experience in which they felt very guilty compared to the pride conditions.

Moreover, Study 3 extended the findings of Study 2 by confirming Hypothesis 2 for experienced emotions; pride and guilt only stimulated environmentally friendly intentions and pro-environmental choices when the felt emotions were *related* to environmentally friendly behaviour. The results showed that although a comparable level of pride and guilt was reported in the unrelated and related conditions, only related (endogenous) pride and guilt resulted in more environmentally friendly intentions than the control condition, and more environmentally friendly choices for related pride than the control condition. The results of this study implied that pride and guilt had function-related effects on environmentally friendly intentions, such that experienced emotions that were related to personal standards informed and reinforced individuals to act in a way that was in line with their personal standards.

## 2.16. General discussion

The present study showed that pride and, to a lesser extent, guilt affected environmentally friendly behaviour (Hypothesis 1) and that these effects were only present for endogenous or related emotions towards environmentally friendly decision making and not for exogenous emotions (Hypothesis 2). We thereby expanded on previous research in several ways.

### *Anticipated and experienced pride and guilt affect subsequent pro-environmental behaviour*

First, the present study is among the first to provide evidence for the effects of pride and guilt on subsequent environmentally friendly behaviour. The findings imply that anticipated pride (Studies 1 and 2) and guilt (Study 1) affect subsequent pro-environmental behaviour. Study 3 provides the most direct evidence for Hypothesis 1a and 1b; manipulating feelings of pride and guilt guides subsequent pro-environmental intentions.

The effects of guilt were smaller than the effects of pride. A possible explanation for this difference between the effects pride and guilt is provided by cognitive dissonance theory. Cognitive dissonance theory states that negative emotional experiences are aversive. Individuals are prone to resolve these negative states by either adapting one's behaviour in such a way that future behaviour is in accordance with one's standards, or adapting cognitions such that the standards are adapted to match past behaviour (e.g., I think environmental behaviour is not that important, or the government and not consumers are responsible for the environment) (Festinger, 1957). Thus aversive negative emotions such as guilt, might in contrast to positive emotions such as pride, result in adapted cognitions instead of adapted behaviour. This might explain the smaller effects of experienced guilt compared to pride. This reasoning is underscored by the finding that respondents found it easier to recall or report emotional experiences of pride compared to guilt. This finding suggests that individuals are activated to get rid of negative emotions such as guilt. Pride is either experienced more often than guilt or remains more salient in memory and is easier to recall.

Previous research in the context of environmentally friendly behaviour primarily focused on guilt (e.g., Bamberg et al., 2007) and positive emotions remained an understudied topic (Corral-Verdugo, 2012), the present study reveals the relevance of pride. The current findings regarding the relevance of pride over guilt are not fully in accordance with multiple researchers who stated that individuals are more sensitive to avoiding negative experiences (i.e. costs) compared to seeking positive experiences (Tversky & Kahneman, 1991) and avoiding negative emotions (Baumgartner et al., 2008). The present study thereby underscores the importance of including specific or discrete emotions (Zeelenberg et al., 2008). Although clusters of negative emotions might result in stronger effects on decision making compared to clusters of

positive emotions (Bagozzi et al., 2003), the present study shows that this pattern might differ for specific positive and negative emotions, such as pride and guilt.

We would like to note that the effect sizes of pride and guilt are small. The effects are generally smaller than reported findings of other studies that report the effects of anticipated emotions on pro-environmental intentions (e.g., Steenhaut & Van Kenhove, 2006). The small effects of anticipated pride and guilt can be the result of measuring behaviour at a later moment in time (Studies 1 and 2). By measuring these constructs at different moments in time we overcome common method variance (Podsakoff et al., 2003), such that measuring emotions and behaviour at the same moment in time increases the association between these constructs which may lead to an overestimation of the effects. Another possibility is that we controlled for past environmental behaviour. By including past behaviour we could rule out that the effects of anticipated pride and guilt on behaviour simply show that people care about the environment. However, past behaviour might have reduced the effects of anticipated emotions. Past emotional experiences affect which emotions one expects to experience in the future (Mellers & McGraw, 2001). In accordance with this reasoning past behaviour might affect the effects of anticipated emotions on subsequent behaviour via a third (not included) variable; past emotional experiences. Additional analyses<sup>10</sup> show that the influence of anticipated pride and guilt on saving and recycling behaviour ( $\beta^{\text{pride}} = .193$ ;  $p < .001$ ;  $\beta^{\text{guilt}} = .172$ ;  $p < .001$ ;  $F(7,1930) = 47.898$ ;  $p < .01$ ;  $\Delta R^2 = .099$ ) and buying environmentally friendly products ( $\beta^{\text{pride}} = .353$ ;  $p < .001$ ;  $\beta^{\text{guilt}} = .168$ ;  $p < .001$ ;  $F(7,1930) = 81.338$ ;  $p < .01$ ;  $\Delta R^2 = .209$ ) is indeed much larger when we exclude past behaviour. Additionally, these findings indirectly show that anticipated and experienced emotions are related to each other. The findings of Study 3 further underscore this reasoning by showing that anticipated pride and guilt affect experienced emotions at time 2. Moreover, Study 3 shows preliminary indications that anticipated emotions have a greater effect on environmentally friendly intentions than experienced emotions. These findings underscore the findings of Mellers and McGraw (2001) that anticipated emotions have a larger effect on decision making than experienced emotions, because individuals have a tendency to overestimate the emotions they will experience. Future research is necessary to further explore how anticipated and experienced emotions, and their interrelation affects pro-environmental behaviour.

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<sup>10</sup> Hierarchical regression analyses with the measurements of Study 1 of Chapter 2 were performed. Buying environmentally friendly products and saving and recycling measured at wave 2 were dependent variables. The independent variables were included consecutively in four blocks. In the first block, all countries were included as dummy variables to control for country differences. Germany was used as reference category. In the second block, anticipated pride and guilt were included to explore whether these anticipated self-conscious emotions predicted subsequent environmentally friendly behaviour. In the third block, environmentally friendly behaviour measured at wave 1 was included to control for past environmentally friendly behaviour. In the fourth block, we included interaction effects between anticipated pride and guilt, on the one hand, and country, on the other hand.

*Only related pride and guilt affect pro-environmental behaviour*

The present study shows that pride and guilt are only effective in stimulating environmentally friendly behaviour when they are formed by evaluations on personal or social standards *related* (endogenous) to the specific environmentally friendly behaviour and not when they are formed by evaluations on standards unrelated (exogenous) to the specific behaviour. The present findings are in accordance with the findings of De Hooge et al. (2008) who demonstrate that only endogenous shame stimulated pro-social behaviour. We extend previous research by showing that these effects are also present for pride and guilt. Pride and guilt seem to function in a comparable manner. Thus, a similar mechanism holds for positive feelings of pride, such that this emotion only affects behaviour when it provides feedback, and these emotions of pride do not result in a spill-over effect towards unrelated behaviour.

Although we hypothesized that endogenous pride and guilt have a stronger effect on environmentally friendly behaviour than exogenous guilt, we did not expect that exogenous pride and guilt would not affect subsequent behaviour at all. Our findings are not in accordance with previous research on guilt. Previous studies showed in separate experiments that exogenous guilt and endogenous guilt can activate cooperative (Ketelaar & Au, 2003) and pro-social (Hoffman, 1982) decision making. De Hooge et al. (2011) show in a single experiment that there is no difference between endogenous and exogenous guilt in the amount of money that individuals keep for themselves, but that it did influence to whom the money was given. These findings implied that both endogenous and exogenous guilt can result in pro-social behaviour. The present study, however, shows that exogenous guilt (and pride) did not activate environmentally friendly behaviour. Thus, unexpectedly, exogenous pride and guilt did not affect subsequent decision making at all. It is interesting for future research to explore why exogenous guilt seems to affect cooperation behaviour, but not environmentally friendly behaviour. For example, it is possible that exogenous guilt (and pride) only activate social and altruistic acts or behaviours that result in personal feedback or behaviour which is related to social goals, such as maintaining relationships and social status.

The present findings imply that self-conscious emotions influence behaviour not only on a fundamental tendency to feel good but also on an information function that provides feedback on whether one's behaviour matches one's personal standards (Baumeister et al., 2007). If experiences of pride and guilt motivate environmentally friendly behaviour out of a fundamental tendency to feel good, such that one strives to maintain a positive emotion or to get rid of a negative emotion, then exogenous pride and guilt would affect environmentally friendly intentions. The results of the present study imply that in the context of pro-environmental behaviour self-conscious emotions might activate behaviour via a feedback system. However, it is not yet clear how this feedback system specifically functions. Possibly these emotions guide

behaviour via a self-regulatory function (Hynie et al., 2006; Su et al., 2011). Self-regulation denotes monitoring one's own behaviour and adapting the behaviour to reflect one's standards or goals (Carver & Scheier, 1998). Furthermore, the present findings indicate the importance for future research to make a deliberate choice in exploring exogenous or endogenous emotions (Zeelenberg et al., 2008). Although exogenous emotions give insights in interesting spillover effects, they do not provide information regarding the specific functions of an emotion. We believe that the study of the influence of endogenous emotions is important because this influence is related to the nature of emotions and what they signal to the decision maker.

### *Limitations and suggestions for future research*

The findings of the present study should be considered in light of several limitations, which may also offer interesting research opportunities. The present study measured pride regarding acting in an environmentally friendly way and guilt regarding *not* acting in an environmentally friendly way. Subsequently, the measurement has a moral character and social-answering tendencies might have influenced the results. Measurement methods, such as observation studies and field studies, might account for this limitation in future research. These measurement methods might also account for self-selection bias. Respondents were approached in two waves. As such, respondents that are willing to fill out a survey on environmentally friendly behaviour twice in one month might be respondents that are more concerned about the environment. Moreover, there are limitations regarding the comparability of the effects of pride and guilt on environmentally friendly behaviour. Richetin, Conner, and Perugini (2011) show that performing a behaviour is not the opposite of not performing. Subsequently, comparing the effects of pride and guilt has several limitations. Future research might compare the effects of pride and guilt for the same pro-social behaviour. For example, ambivalent behaviours, which can be regarded as environmentally friendly or not (e.g., imported organic products, which are environmentally friendly produced but not environmentally friendly transported).

Furthermore, future research might explore whether these findings can be replicated for other pro-social behaviours, such as donating, volunteering or cooperation. Furthermore, a recent study in the context of risky decision making shows that individuals also use immediate emotions (i.e. 'hot' feelings individuals experience as they deliberate a specific decision option) to guide their choices (Schlösser et al., 2013). Future research is necessary to explore whether these immediate emotions are also used in the context of pro-social decision making, and how these relate to the function of self-conscious emotions.

Finally, the present study included a range of Western countries, thereby providing the first indication of the stability of emotional effects on environmentally friendly behaviour across Western cultures. Future research might explore the generalisability of the present findings by



exploring whether the effects of pride and guilt on environmentally friendly behaviour are similar across individualistic (Western) and collectivistic (Eastern) cultures (Markus & Kitayama, 1991).

### *Practical implications*

The findings imply that policymakers and marketing managers can use pride and guilt to stimulate environmentally friendly behaviour among civilians and consumers, e.g., by using affective communication messages. Moreover, campaigns that focus on positive feelings of pride seem to be more promising than the commonly used negative approaches that focus on diminishing environmentally unfriendly behaviour. Additionally, the present study underlines the importance of being specific as to which form of pride and guilt one evokes within civilians and consumers. Pride and guilt are only effective in stimulating environmentally friendly behaviour when they are matched to personal standards that are informative for the specific behaviour. Campaigns should therefore be targeted at specific environmentally friendly behaviours, for example: *Be proud to be organic! Be green, feel green and travel by bus. By using the train, you have saved 20% CO<sub>2</sub>.*

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## Chapter 3

### **The Norm Activation Model: An exploration of the functions of anticipated pride and guilt in environmental behaviour**

The Norm Activation Model (NAM; Schwartz, 1977) is a vested model that explains altruistic and environmentally friendly behaviour. Although research states that anticipated pride and guilt are associated with the NAM, these associations are not yet fully understood. The current study provides an overview of the literature that refers to anticipated pride and guilt within the NAM. Moreover, we aim to increase our understanding of these associations through theoretical arguments and a study conducted in the Netherlands. We hypothesised that anticipated pride and guilt cause individuals to behave themselves in a manner that is in line with personal norms. This proposition regarding the self-regulatory function of anticipated pride and guilt was confirmed by our study; anticipated emotions mediate the effects of personal norms on behaviour. These associations remained after including the Theory of Planned Behaviour in the NAM, although in the integrated NAM-TPB model, anticipated emotions affected behaviour via behavioural intentions. Implications regarding these findings are discussed.

This chapter is based on:

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Onwezen, M. C., Antonides, G., & Bartels, J. (2013). Emoties en het activeren van milieuvriendelijke persoonlijke en sociale normen. *Economisch Statistische Berichten*, <http://www.economie.nl/artikel/emoties-en-het-activeren-van-milieuvriendelijke-persoonlijke-en-sociale-normen>

### 3.1. Introduction

Western societies face increasing environmental problems, such as climate change and environmental, water, and air pollution. Although it can be safely assumed that most people prefer to have a clean and healthy environment, there are temptations to act in environmentally unfriendly ways (e.g., wasting energy and littering). Because these environmental issues are associated with individual lifestyles (Carlsson-Kanayma, 1998), it is important to understand people's decision-making processes regarding consumption behaviours related to the environment.

This paper aims to contribute to this understanding by assessing the role of anticipated pride and guilt within the Norm Activation Model (NAM) (Schwartz, 1977). Previous research underscores the importance of activated personal norms for understanding people's pro-environmental behaviour (e.g., Thøgersen, 2006). Several studies (e.g., Schwartz, 1977; Thøgersen, 2009) have proposed that anticipated pride and guilt are associated with these personal norms within the NAM; however, this research specifies the relationship between anticipated emotions and personal norms in different ways. Because these proposed associations are rarely tested, it remains unknown precisely how these anticipated emotions are related to personal norms and behaviours within the NAM. The present study contributes to the understanding of the influence of anticipated emotions on norm activation and individual decision making. We provide an overview of the existing literature and formulate and test a proposition regarding the function of anticipated emotions within the NAM. Moreover, a stream of research integrates the NAM with the Theory of Planned Behaviour (TPB). The current study therefore also explores how anticipated pride and guilt relate to personal norms and behaviour within the integrated NAM-TPB model.

To summarise, we aim to provide an overview of the different ways in which the association between anticipated emotions and the NAM is specified by previous studies. Moreover, we aim to clarify how anticipated pride and guilt are related to the NAM theoretically and in an empirical study.

### 3.2. Theoretical framework

#### *Norm Activation Model (NAM)*

Schwartz (1977) originally developed the NAM in the context of altruistic behaviour. Personal norms form the core of this model. Schwartz (1977) states that these norms are actively experienced "as feelings of moral obligation not as intentions" (p. 227). These personal norms are used in the NAM to predict individual behaviour. The model states that these personal norms are determined by two factors: the awareness that performing (or not performing) the particular behaviour has certain consequences, and the feeling of responsibility for performing

the specific behaviour (Schwartz, 1977). Most studies interpret the NAM as either a mediator model or a moderation model. The mediator model suggests that awareness of consequences influences personal norms via ascribed responsibility. The moderation model suggests that the influence of personal norms on behaviour is moderated by both awareness of consequences and ascribed responsibility. We interpret the NAM as a mediator model because De Groot and Steg (2009) recently compared these two interpretations in five studies and provided strong evidence that the NAM is a mediator model. Their findings show that an individual must be aware of the consequences of a behaviour before feeling responsible for it. In turn, feelings of responsibility activate personal norms, and these personal norms induce individual behaviour (De Groot & Steg, 2009). See Figure 3.1 for a representation of the NAM as a mediator model. We use this model as our basic model to explore how anticipated pride and guilt are associated with personal norms and behaviour within the original NAM.



Figure 3.1. Graphical representation of the Norm Activation Model adapted from De Groot and Steg (2009)

#### *NAM and TPB*

Some studies (Bamberg, Hunecke, & Blöbaum, 2007; Bamberg & Möser, 2007) have integrated the NAM with the Theory of Planned Behaviour (TPB, Ajzen, 1991). The TPB is one of the most influential theories in social and health psychology (Armitage & Conner, 2001) and has also been validated in the context of pro-environmental behaviour (Arvola et al., 2008). The TPB states that intentions are determined by attitudes, subjective norms, and perceived behavioural control; behaviour is, in turn, determined by intentions and perceived behavioural control.

Previous studies that have integrated the NAM and the TPB have found that the influence of personal norms on behaviour is mediated by intentions. Moreover, these studies have found that including intentions in the NAM substantially increases the explained variance in behaviour (by approximately 17%, see Bamberg & Möser, 2007; Bamberg et al., 2007). This finding underlines Ajzen's (1991) views that intention is the most immediate and important predictor of behaviour, and that intention mediates the influence of other variables, even affective ones. Additionally, studies that include personal norms within the TPB show that personal norms increase the explained variance of behavioural intentions and behaviour in the TPB (Harland, Staats, & Wilke, 1999). Taken together, these findings imply that an integrated NAM-TPB model can best explain pro-environmental behaviour. Therefore, the current study not only explores

how anticipated pride and guilt relate to personal norms and behaviour within the NAM, but also within an integrated NAM–TPB model.

### *Anticipated emotions*

Individuals do not only experience emotions, they are also capable of anticipating which emotions they will experience in anticipation of future outcomes. Anticipated emotions are often overestimated, such that the emotions one anticipates are more extreme than the emotions actually experienced after the event (e.g., Mellers & McGraw, 2001). These anticipated emotions, which have not been experienced yet, have been found to influence behaviour. They guide decision making (Mellers & McGraw, 2001) because individuals strive to experience positive emotions and avoid negative emotions (Frijda, 2007). Anticipated emotions are therefore highly relevant for understanding individual decision making. Studies on the effects of anticipated emotions on individual decision making have mainly been conducted in the context of rational choice models, such as the TPB (Ajzen, 1991). These studies show that anticipated emotions do not affect behaviour directly but via volitional variables, such as intentions, behavioural expectations, or desires to act, even after controlling for other determinants of behaviour such as attitudes, social norms, perceived behavioural control, or past behaviour (e.g., Bagozzi, Baumgartner, & Pieters, 1998; Baumeister, Vohs, DeWall, & Zhang, 2007).

### *Pride and guilt*

Self-conscious emotions of pride and guilt seem especially relevant in understanding pro-environmental behaviour within the NAM. These emotions are evoked by evaluations of one's self after following (or failing to follow) personal or social standards (Lewis, 1993; Tracy & Robins, 2004a). These personal and social standards are often based on moral conduct and subsequently the self-conscious emotions evoked by these standards stimulate altruistic behaviour (e.g., Ketelaar & Au, 2003). The NAM was designed to explain altruistic behaviour, and environmentally friendly behaviour can be regarded as a specific form of altruistic behaviour. Self-conscious emotions are therefore relevant to understand pro-environmental behaviour within the NAM.

There is a range of self-conscious emotions that includes shame, hubris and embarrassment. Lewis (1993) categorised self-conscious emotions based on the circumstances that evoke these emotions. Pride and guilt seem especially relevant in the context of environmentally friendly behaviour because these emotions are evoked after evaluations of specific behaviour, and they subsequently focus individual attention on specific behaviour (instead of the entire self). Studies that mention anticipated emotions and the NAM mainly focused on guilt and to a lesser extent pride, and not to other emotions. Additionally, pride and

guilt have indeed been found to be associated with environmentally friendly behaviour (Harth, Leach, & Kessler, 2013). Harth et al. (2013) showed that pride and guilt are related to distinct behavioural intentions in the context of the environment. The current study therefore maintains a discrete-emotion perspective (Lerner & Keltner, 2000) and measures pride and guilt separately, rather than using a valence-based approach, which refers to positive and negative emotions as extremes of the same continuum.

*Norm Activation Model and anticipated pride and guilt: Overview of previous studies*

Anticipated emotions are often discussed in studies concerning the NAM. However, the role of anticipated pride and guilt within this model is not yet fully understood. Studies have proposed that anticipated pride and guilt are associated with personal norms within the NAM (e.g., Hopper & Nielsen, 1991; Thøgersen, 2009); however, these emotions are rarely included in studies on the NAM, so these proposed associations remain untested. Moreover, research has specified the associations of these emotions within the NAM differently. Thus, the NAM literature does not provide a clear view of the function of anticipated pride and guilt within this model. Below, we give a brief overview of the different specifications of the associations of pride and guilt within the NAM mentioned in the literature. Thereafter, we theorise how anticipated pride and guilt affect personal norms and behaviour within the NAM, and we test this proposition in a preliminary study.

Some studies specify anticipated emotions as a *part of personal norms*. These studies integrate anticipated feelings of pride or guilt into their definitions of personal norms (e.g., Harland et al., 1999; Vining & Ebreo, 1992). For example, feelings of guilt are included as an item in the measurement of personal norms in some studies (De Groot & Steg, 2009; Steg & De Groot, 2010; Wiidegren, 1998). These studies do not differentiate between these anticipated emotions and personal norms and state that these emotions are part of a process in which personal norms influence behaviour. Other studies, however, suggest that pride and guilt are constructs that are independent of personal norms. Some studies show evidence for this statement by demonstrating that guilt and personal norms have distinct impacts on behaviour (e.g., Bamberg et al., 2007; Hunecke, Blöbaum, Matthies, & Höger, 2001). However, as already mentioned, the available studies specify the associations of these emotions within the NAM in different ways. These studies can be divided into three broad categories, as explained below.

First, pride and guilt are understood to have *direct effects* in the NAM. For example, guilt is defined as an aversive feeling that leads individuals to compensate for past behaviours that induced guilty feelings. Consequently, guilty feelings activate altruistic and pro-social behaviour directly (see Model 2 in Fig. 3.2). These direct effects are in line with a body of research that states that experienced emotions activate motivational functions towards goal-directed

behaviour (feeling-is-for-doing; Zeelenberg, Nelissen, Breugelmans, & Pieters, 2008). Although evidence can be found in support of the direct effects of pride and guilt on pro-social behaviour (Baumeister, Stillwell, & Heatherton, 1994; Ketelaar & Au, 2003), these effects have not yet been tested within the NAM. Notably, these studies refer to experienced emotions, whereas the current study focuses on anticipated emotions. Other research on the NAM states that a violation of personal norms evokes feelings of guilt, whereas compliance evokes feelings of pride (Fransson & Gärling, 1999; Hopper & Nielsen, 1991; Thøgersen, 2009), although these studies did not test these associations. These suggestions are in line with the body of research on self-conscious emotions, which states that these emotions arise when people reflect upon themselves and compare their behaviour with a set of personal or social norms that determine whether their actions are right or wrong (e.g., Tracy & Robins, 2004a).

Second, studies refer to different *mediation effects* of these anticipated emotions within the NAM. Some studies have proposed that the effects of anticipated pride and guilt on behaviour are mediated by personal norms (see Models 3 and 4 in Fig. 3.2). Schwartz (1977) refers to a few studies (Fellner & Schwartz, 1971; Pomazal, 1974 as cited in Schwartz, 1977, p. 240) that show that for a range of pro-social behaviours, the influences of anticipated guilt on behaviour are no longer significant when personal norms are included in multiple regression analyses. Furthermore, Hunecke et al. (2001) show that personal ecological norms are formed by, among other factors, feelings of guilt for using cars and that these personal norms, in turn, predict subway use. They state that these findings show that personal norms and guilt are distinct constructs. Furthermore, they state that these findings imply that feeling guilty for what you do or fail to do makes you feel more morally responsible for the environment (Kaiser & Shimoda, 1999). Other researchers have described different mediational roles of these emotions in the NAM. These studies refer to anticipated pride and guilt as mediators between social norms<sup>11</sup> and personal norms. Two studies have found evidence for this mediating role of guilt in the association between social norms and personal norms within the integrated NAM-TPB model (Bamberg & Möser, 2007; Bamberg et al., 2007). One study included anticipated guilt in the context of public transportation (Bamberg et al., 2007), and the other included experienced guilt in the context of pro-environmental behaviour (a meta-analysis by Bamberg & Möser, 2007). Bamberg et al. (2007) refer to Schwartz (1977) and describe his reasoning that the effects of social norms on behaviour is based on social pressure (i.e. fear of social sanctions), whereas the effects of personal norms on behaviour are based upon anticipated emotions (i.e. anticipation of negative self-related feelings). This reasoning implies that personal norms affect

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<sup>11</sup> Some studies include social norms in the NAM (e.g., Bamberg et al., 2007). We did not include social norms in the present study. Although Schwartz (1977) clearly distinguished between personal and social norms, he states that it is not yet clear how social norms and personal norms complement each other. Furthermore, social norms were not included in the recent study of De Groot and Steg (2009), which we used as our basic NAM model.



anticipated emotions which in turn influence behaviour. However, Bamberg et al. (2007) also state that an observed mismatch between one's own behaviour and perceived social norms results in feelings of guilt which in turn activate personal norms. They provide evidence for this statement by showing that guilt is determined by both social norms and awareness of consequences. Guilt in turn activates personal norms. Then, a third mediation effect can be distinguished. A different line of research outside the NAM literature shows that self-conscious emotions such as pride and guilt are formed by self-evaluations regarding personal norms and standards. These emotions in turn influence behaviour (e.g., Tracy & Robins, 2004a). Subsequently, it is also possible that the personal norm-behaviour relationship is mediated by anticipated pride and guilt (see Models 5 and 6 in Fig. 3.2). This mediation effect is in line with the thoughts of the group of researchers that have implied a direct effect of personal norms on pride and guilt that were described earlier (e.g., Fransson & Gärling, 1999). Although this body of research did not explicitly describe the subsequent effects on behaviour, it does refer to the first part of this mediation effect.

A third line of research refers to the *moderating roles* of anticipated pride and guilt in the personal norm-behaviour association (see Model 7 in Fig. 3.2) (e.g., De Ruyter & Wetzels, 2000). This research hypothesizes that anticipated guilt can motivate an individual to avoid breaking personal norms ("I will behave in line with my personal norms because otherwise I will feel guilty") and that the anticipation of positive feelings of pride can stimulate compliance with personal norms ("If I behave in accordance with my personal norms, I will be proud of myself") (e.g., Schwartz, 1977). Thøgersen (2006) also points to feelings of pride and guilt as motivational components of personal norms. He distinguishes between two types of personal norms, integrated and introjected norms. Integrated norms are integrated into the individual's self-concept, whereas introjected norms are social norms that are only superficially incorporated. Thøgersen (2006) states that introjected norms require enforcement via pride or guilt, whereas integrated norms do not require this enforcement. Although he proposes that introjected norms have a motivational underpinning that is formed by anticipated pride and guilt, he does not specifically measure anticipated pride and guilt.

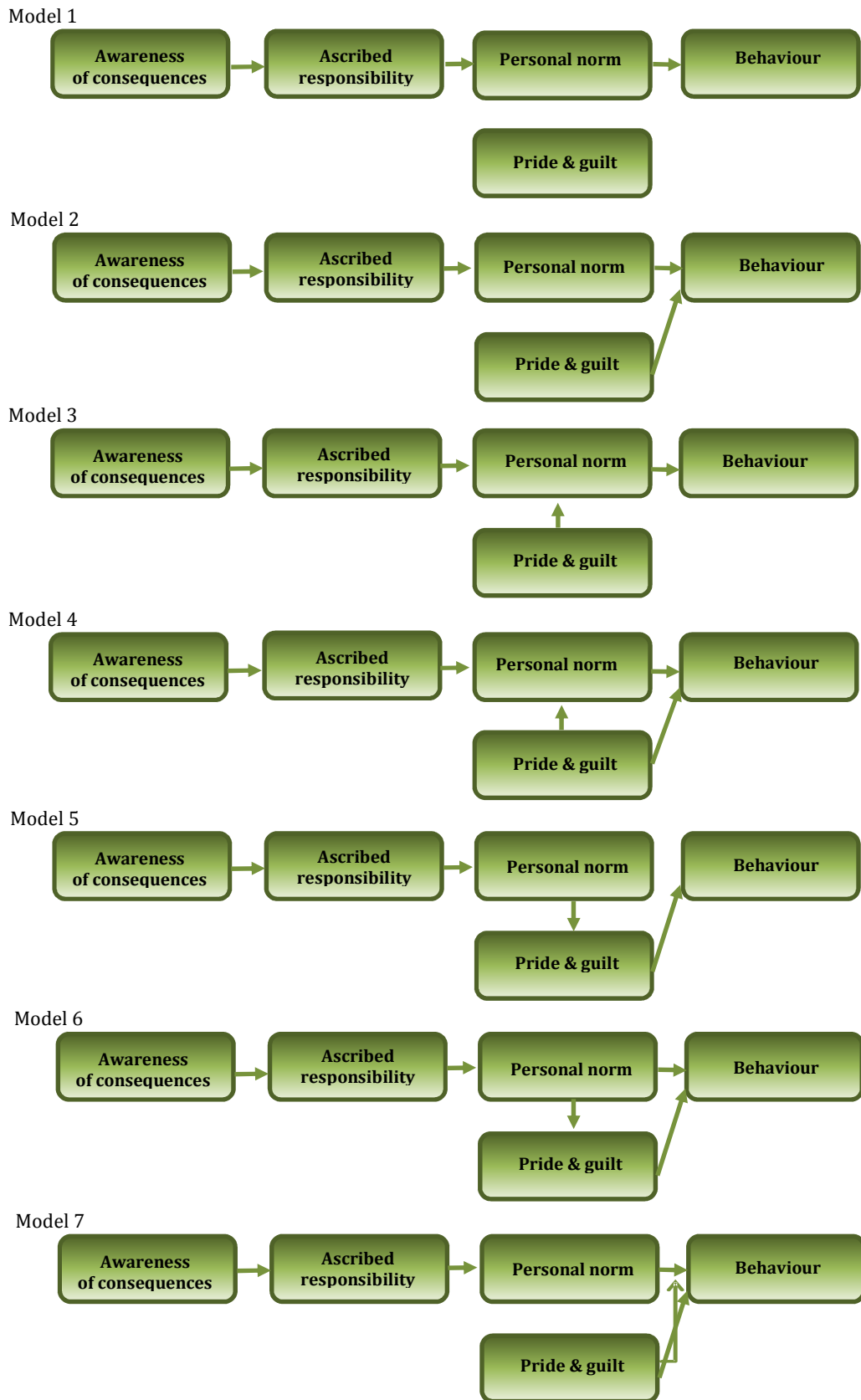


Figure 3.2. Graphical representation of the seven alternative models showing how the functions of anticipated pride and guilt within the NAM can be specified

In short, several researchers have described an association between personal norms and anticipated pride and guilt within the NAM; however, these researchers have specified the nature of this association in different ways. Some researchers have implied direct effects, and others have referred to mediating or moderating effects of anticipated pride and guilt within the NAM. Moreover, these proposed associations have rarely been tested. A few studies have considered guilt in the context of the NAM. However, each of these studies focused only on one of the proposed mechanisms and thereby neglected the other proposed mechanisms in the literature. Additionally, previous studies have not included anticipated pride in their models; thus, guilt has received more attention than pride in previous research. The current study addresses this gap in knowledge in the field regarding the associations of these emotions within the NAM. Here, we formulate propositions regarding the associations of anticipated pride and guilt with personal norms and behaviour within the NAM and test these associations in an empirical study. Furthermore, we address the gap in knowledge about pride by exploring the positions of both anticipated pride and guilt within the NAM.

#### *Proposed associations*

The above-mentioned different specifications of the roles of anticipated pride and guilt within the NAM seem to arise from different perceptions of the function of emotions. Some research has explained emotions as personal convictions (i.e. personal norms) that certain behaviours are right or wrong (e.g., Harland et al., 1999), a second line of research perceives the function of emotions as a formation and activation process of personal norms (Bamberg & Möser, 2007; Bamberg et al., 2007; Hunecke et al., 2001), and a third line of research perceives emotions as a mechanism through which individuals are encouraged to follow personal norms (Fransson & Gärling, 1999; Thøgersen, 2006).

Based on the emotion literature, we present several propositions regarding the function of anticipated emotions within the NAM and the integrated NAM-TPB model. Notably, we focus on descriptions of propositions related to anticipated pride and guilt because these associations are our main object of study. We propose that similar mechanisms hold for anticipated pride and guilt because both emotions are evoked by an advance evaluation of oneself after following (or deviating from) personal norms, standards or goals (Lewis, 1993; Tracy & Robins, 2004a). Therefore, “anticipated self-conscious emotions” refer to both anticipated pride and guilt.

First, we will describe the propositions regarding the function of anticipated self-conscious emotions within the NAM. Anticipated self-conscious emotions are based on evaluations of future behaviour in terms of personal and social standards (Tracy & Robins, 2004a). Personal norms are individual moral convictions, which might be used as personal standards to evaluate behaviour. Therefore, we propose that individuals use personal norms to

evaluate whether their future behaviour is right or wrong and subsequently anticipate which emotions they will experience in the future (Models 5 and 6 Figure 3.2). Additionally, emotions can function as feedback mechanisms, in such a way that they can promote learning and alter guidelines for future behaviour. Behaviour is guided toward pursuing (or avoiding) anticipated emotional outcomes because individuals ultimately aim to feel good (Baumeister et al., 2007). Therefore, anticipated self-conscious emotions have been found to guide future behaviours (e.g., Steenhaut & Van Kenhove, 2006). We subsequently propose a mediating effect with which individuals use personal norms to anticipate emotions that, in turn, affect behaviour. This mediation effect can be regarded as a self-regulatory function of anticipated emotions. In this respect, self-regulation denotes the monitoring of one's own behaviour and adapting that behaviour so that it reflects one's standards or goals (Carver & Scheier, 1998).

Second, we aimed to explore whether these associations remained present when the variables of the TPB were included. Regarding the integrated NAM-TPB model, previous studies have clearly established that affective forecasts influence behaviour via volitional variables, such as behavioural intentions (e.g., Bagozzi et al., 1998). Therefore, we propose that anticipated emotions do not have a direct effect on behaviour when intentions are included in the model, but that these effects are mediated by intentions. Then, we propose that anticipated emotions are not only evoked by personal norms, but also by attitudes and social norms. Recent studies show evidence for a mediating role of anticipated emotions in the TPB. Anticipated negative emotions (i.e. shame and guilt) have been found to partially mediate the effects of social norm and attitudes on intentions (Hynie, MacDonald, & Marques, 2006). These results indicate that anticipated negative emotions have a self-regulatory function; i.e. they motivate individuals to behave in accordance with their attitudes and the perceived norms of different relevant groups such as relatives and friends. Thus, we propose that attitudes and social norms affect anticipated emotions, which, in turn, affect intentions.

Finally, we propose a range of additional relationships regarding the integration of NAM and TPB variables. Personal norms have been found to be determined by social norms; i.e. personal norms reflect internalised social norms (Bamberg et al., 2007; Thøgersen, 2006). Therefore, we propose that social norms affect personal norms. In line with the findings of previous studies (e.g., Bamberg et al., 2007), we propose that personal norms in turn affect behaviour through intentions. Furthermore, we propose that individuals feel an increased responsibility for their behaviour when they perceive themselves to be in control of their behaviour (Smith, 2008). We therefore propose that perceived behavioural control affects responsibility. Feelings of responsibility have, in turn, been proposed to activate attitudes and social norms in a manner analogous to the activation of personal norms described in the NAM (Schwartz, 1977).

### 3.3. Method

#### *Participants*

A research agency selected a sample of respondents that was nationally representative in terms of age, gender and educational level. In total, 617 Dutch respondents completed an online survey. The sample comprised 316 males and 301 females with a mean age of 46.8 years ( $SD = 15.0$ ). Overall, 22.7% of the participants had achieved a low educational level (less than secondary education), 38.6% had a moderate educational level (finished intermediate vocational education) and 38.7% had a high educational level (finished higher professional education or higher).

#### *Measures*

*NAM variables.* Items by which we measured NAM variables were selected from previous research in the context of the NAM (Bamberg et al., 2007; Gärling, Fujii, Gärling, & Jakobsson, 2003). The items measuring *awareness of consequences*, *ascribed responsibility* and *personal norms* were similar to those of Gärling et al. (2003) who measured these factors in the context of general pro-environmental behaviour. The items and their accompanying Cronbach's alphas are shown in Table 3.1.

Table 3.1. *Items of the NAM variables*

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*Awareness of consequences* ( $\alpha = .77$ )

1. The effects of pollution on public health are worse than we realise
2. Pollution generated in one country harms people all over the world
3. The balance in nature is delicate and easily upset
4. Over the next several decades, thousands of species will become extinct

*Ascribed responsibility* ( $\alpha = .65$ )

1. Every citizen must take responsibility for the environment
2. I feel partly responsible for the environmental problems on our planet

*Personal norm* ( $\alpha = .95$ )

1. I feel a moral obligation to protect the environment
  2. I feel that I should protect the environment
  3. I feel it is important that people in general protect the environment
  4. Because of my own values/principles, I feel an obligation to behave in an environmentally friendly way
- 

*Note.* All items were measured with Likert scales with labelled end-points (1 = "totally disagree" and 7 = "totally agree").

*Anticipated pride and guilt.* Anticipated pride and guilt were measured in comparable ways on 7-point scales (with labelled end-points of 1 = “not at all” and 7 = “very much”). *Anticipated guilt* was measured with five items that were adapted and modified from Kugler and Jones’ (1992) guilt inventory. The respondents were asked to answer the following items: “Imagine that you are in a store and decide not to buy an environmentally friendly product. How would you feel? guilty; remorseful; sorry; bad; ashamed.” Cronbach’s alpha was high at .97. *Anticipated pride* was measured with five items adapted from Tracy and Robins’ (2007) authentic pride scale. The respondents were asked to answer the following items: “Imagine that you are in a store and decide to buy an environmentally friendly product. How would you feel? proud; accomplished; confident; satisfied; worthwhile.” Cronbach’s alpha was high at .95. Although the measures of anticipated emotions refer to somewhat more specific behaviour than the NAM variables, we prefer using tested and validated scales from the NAM-literature to adapting the scales to a more specific level. Furthermore, we conducted a first-order confirmatory factor analysis that revealed that anticipated pride and guilt were perceived as two different constructs. The fit indices used are explained in detail in the analysis section. The two-dimensional model ( $\chi^2/df = 206.441/34$ ,  $p < .001$ ; RMSEA = .091; SRMR = .024; CFI = .977; TLI = .970) provided an adequate fit that was significantly better than the fit of the one-dimensional model ( $\chi^2/df = 2536.300/35$ ,  $p < .001$ ; RMSEA = .340; SRMR = .215; CFI = .667; TLI = .571) as indicated by a Chi-square difference test ( $\Delta\chi^2 (1) = 2329.859$ ,  $p < .001$ ).

*Self-reported environmentally friendly behaviour.* Self-reported environmentally friendly behaviour was measured in two dimensions: buying environmentally friendly products and travelling in environmentally friendly ways. These dimensions were derived from Thøgersen and Ölander (2003) who subcategorised pro-environmental behaviour into three dimensions. The third dimension, recycling of glass and kitchen compost, was excluded from the present study because these specific recycling behaviours do not discriminate environmentally friendly behaviour across Dutch citizens. The European glass federation (FEVE) recently showed that 92% of the glass in the Netherlands is recycled (FEVE, 2011). The buying of environmentally friendly products was measured with four items that asked respondents to indicate how frequently they bought the following: organic meat; organic milk; organic fruit; and environmentally friendly shampoo. Cronbach’s alpha was high at .87. Travelling in an environmentally friendly way was measured with three items that asked respondents to indicate how frequently they did the following: travelled by bike to work; travelled by bike to stores; and used public transport when possible. Cronbach’s alpha was high at .74. All items were answered on scales with labelled end-points of 1 = “never” and 7 = “very often”.

*TPB variables.* TPB variables were measured following the work of Ajzen (1991). *Attitudes* towards environmentally friendly behaviour were measured using multiple evaluative

semantic differential scales. The respondents provided ratings for the following three items: “I think environmentally friendly behaviour is.....: bad/good, stupid/wise, and pleasant/unpleasant.” Cronbach’s alpha was high at .90. *Social norms* were measured using four Likert scale items (ranging from 1 = “completely disagree” to 7 = “completely agree”) that asked the respondents whether they thought that their family and friends wanted them to perform the following actions: buy environmentally friendly products; behave in environmentally friendly ways; travel by public transport; and protect the environment. Cronbach’s alpha was high at .91. *Perceived behavioural control* was assessed by asking respondents to estimate the perceived difficulty of behaving in environmentally friendly ways and the perceived difficulty of buying environmentally friendly products (both items ranged from 1 = “very difficult” to 7 = “very easy”). The internal consistency was adequate ( $r = .71$ ). *Intention* was measured with three items. Respondents were asked to answer, on 7-point Likert scales (ranging from 1 = “completely disagree” to 7 = “completely agree”), whether they intended to behave in an environmentally friendly manner, buy environmentally friendly products and travel by public transport in the next 2 weeks. Cronbach’s alpha was high at .85.

### *Analysis*

Analyses were divided in two phases. The first phase explores the function of anticipated pride and guilt within the NAM. The second phase explores whether the found associations in phase 1 remain present after including variables of the TPB in an integrated NAM-TPB model.

*Phase 1: Explore function of anticipated pride and guilt within the NAM.* To specify the roles of anticipated pride and guilt within the NAM, we estimated seven alternative structural regression models (see Fig. 3.2) and compared their fits to determine which model best fit the data. The alternative models were selected based on the three categories of previous research that differ in their suggestions regarding how the relations of anticipated pride and guilt within the NAM should be specified; i.e. direct effects, mediation effects, or moderation effects.

For each category, one model or multiple alternative models were considered. All models included the original NAM (De Groot & Steg, 2009; Schwartz, 1977) and anticipated pride and guilt. In Model 1, associations between anticipated pride and guilt and the NAM variables were restricted to zero. Model 2 included a direct effect of anticipated emotions on environmentally friendly behaviour. We also included models measuring a mediation effect of anticipated emotions within the NAM. Initially, we included models that measured whether the effects of anticipated emotions on behaviour were fully (Model 3) or partially mediated (Model 4) by personal norms. Then, we included two models that measured a different mediation effect. These models measured whether the effects of personal norms on behaviour were fully (Model 5) or partially mediated (Model 6) by anticipated pride and guilt. Finally, Model 7 measured the

moderation effects of anticipated pride and guilt within the NAM. This model considered pride and guilt as moderators of the personal norm–behaviour association. Note that latent variable interaction is a relatively novel application within structural equation modelling. This application is complex due to the fact that the indicators of the latent variables are used to create the interaction term. One subsequent difficulty of including interaction terms are the consequences for the normality distribution of the included variables (Jöreskog & Yang, 1996). In structural equation modelling the latent variables are usually linearly related. However, even if all latent exogenous variables are normally distributed, the products of latent endogenous variables and their indicator variables are non-normal. Mplus explicitly takes the non-normal distribution of the latent interaction term into account because it automatically handles latent variable interactions using a modified version of the Klein and Moosbrugger (2000) LMS approach (QLM; Klein & Muthén, 2007). We therefore decided to use this approach to estimate the moderation effects of Model 7. Moreover, including interaction terms in one’s analysis might cause problems because predictors are often highly correlated. This problem is increased when exploring interaction effects using multiplication. The interaction term may be highly correlated with the predictor variables from which it is derived. The risk of multicollinearity is commonly reduced by centring the independent variables before multiplying them. The latent variable interactions using the LMS approach has been found to perform as well as the mean-centred (and orthogonalised) approach (Little, Bovaird, & Widaman, 2006).

*Comparison of alternative NAM models.* The analyses were performed with Mplus version 6.11. All estimated alternative models are fully latent structural regression models (Kline, 2011). To allow for comparisons in model fit, independent variables were not allowed to co-vary. The amount of independent variables differs across models, correlations between these variables would result in unfair comparisons across models. However, all models did allow for a correlation between anticipated pride and guilt.

Chi-square difference tests were used to compare alternative models. Because not all alternative models were nested (i.e. models that can be derived by placing restrictions on the more general model), chi-square difference tests were not always feasible. Therefore, consistent with previous research on the comparison of non-nested models, AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) values were compared to determine which model had the lowest value and best suited the data. AIC and BIC values adjust the model log-likelihoods for model complexity and can therefore be used to compare competing models (Henson, Reise, & Kim, 2007). For the moderation model, the significance of the interaction terms was also used as an indicator of model performance (Klein & Moosbrugger, 2000).

Furthermore, several model fit indices are reported to show model fit. The relative chi-square equals the chi-square index divided by the degrees of freedom (Kline, 2011). Relative chi-



squares of less than 5 indicate adequate model fits, relative chi-squares less than 3 indicate good model fits. A RMSEA of .07 (Steiger, 2007) and a SRMR below .08 indicate a satisfactory model fit (Hu & Bentler, 1999). Finally, CFI and TLI indices of at least .90 indicate a satisfactory model fit (Hu & Bentler, 1999).

*Phase 2: Explore function of anticipated pride and guilt within integrated NAM-TPB model.*

In this phase of the analysis, we aimed to explore whether the associations of anticipated emotions within the NAM that were found in the previous phase also held when we included TPB variables. We used the best fitting NAM model from the previous stage as our starting point. We followed a stepwise procedure to test whether including variables of the TPB improved model fit. Chi-square difference tests were used to test for the significance of improved model fit of the alternative nested models.

### 3.4. Results

Table 3.2 shows the correlation coefficients of all included constructs. These correlation coefficients show that all constructs were substantively and positively related.

*Phase 1: Anticipated pride and guilt within the NAM*

Our results (Table 3.3) revealed that Model 6 had the best model fit in terms of the AIC and BIC scores. Chi-square difference tests reveal that Model 6 was statistically better fitting than the nested models (Models 1, 2, and 5). Furthermore, we checked the significance of the moderating effects of anticipated pride and guilt in Model 7 as an indication of model performance.

The results showed insignificant interaction effects of pride and guilt with personal norms on behaviour. This result indicates that model 7 does not adequately specify the relations of anticipated pride and guilt within the NAM. Finally, we estimated the seven models separately for anticipated pride and guilt to ascertain whether the function of these anticipated emotions could be specified in a similar way (Table 3.3). The results were comparable for anticipated pride and guilt; i.e. both emotions seemed to partially mediate the effects of personal norms on behaviour. These results indicate that anticipated pride and guilt influence the NAM via mediation. Model 6 showed a good fit to the data (relative chi-square = 2.76; RMSEA = .053; SRMR = .066; CFI = .961; TLI = .956).

Table 3.2. Correlation table of used constructs for environmentally friendly behaviour

	<i>M</i>	<i>SD</i>	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Awareness of consequences	4.83	1.03	1									
2. Ascribed responsibility	4.94	1.15	.531**	1								
3. Personal norm	5.14	1.26	.487**	.647**	1							
4. Anticipated pride	4.40	1.31	.505**	.554**	.576**	1						
5. Anticipated guilt	3.15	1.36	.291**	.307**	.333**	.487**	1					
6. Self-reported environmentally -friendly buying behaviour	3.08	1.51	.289**	.269**	.383**	.437**	.420**	1				
7. Self-reported travelling behaviour	4.37	1.81	.247**	.243**	.285**	.332**	.122**	.280**	1			
8. Intention	4.05	1.35	.444**	.479**	.594**	.602**	.495**	.716**	.306**	1		
9. Social norm	4.07	1.54	.297**	.356**	.437**	.379**	.328**	.288**	.140**	.391**	1	
10. Attitude	5.52	1.23	.421**	.492**	.535**	.429**	.153**	.230**	.254**	.431**	.248**	1
11. PBC	4.55	1.12	.267**	.354**	.483**	.378**	.233**	.439**	.162**	.557**	.282**	.341**

Note. \*\* =  $p < .001$ ; *M*=mean; *SD*= standard deviation; PBC = Perceived Behavioural Control.

Table 3.3. AIC and BIC scores of eight alternative NAM models and anticipated pride and guilt

Alternative models	Pride & Guilt		Pride	Guilt
	AIC	BIC	AIC	AIC
1. No associations between P&G**and the NAM variables	48065.959	48450.922	41520.366	40094.630
2. Direct effect of P&G on behaviour	47989.843	48383.656	41464.823	40043.605
3. Full mediation of the effect of P&G on behaviour by personal norms	48006.216	48400.029	41462.385	40074.559
4. Partial mediation of the effect of P&G on behaviour by personal norms	47934.164	48336.827	41410.479	40025.482
5. Full mediation of the effect of personal norms on behaviour by P&G	48130.955	48533.619	41217.958	40029.844
6. Partial mediation of the effect of personal norms on behaviour by P&G	47721.119*	48123.782*	41196.880*	39969.631*
7. Impact of personal norms on behaviour moderated by P&G	47993.330	48395.993	41204.752	40045.613

Note. \*Denotes lowest value;\*\* P&G refers to anticipated pride and guilt; For the models including pride and guilt, Chi-square difference tests show that Model 6 shows a significantly better fit than the nested models: Model 1 ( $\Delta\chi^2(4) = 352.84, p < .001$ ), Model 2 ( $\Delta\chi^2(2) = 272.725, p < .001$ ), and Model 5 ( $\Delta\chi^2(1) = 20.684, p < .001$ ). Furthermore, the results show that the interaction terms for Model 7 ( $\beta^{\text{pride}} = -0.020; p = \text{n.s.}; \beta^{\text{guilt}} = 0.057; p = \text{n.s.}$ ) were insignificant.

Figure 3.3 shows all of the standardised path coefficients of Model 6. These results support the NAM because awareness of consequences has a positive impact on ascribed responsibility, which, in turn, influences personal norms. Personal norms affect pro-environmental behaviour. Anticipated pride and guilt were found to mediate the impact of personal norms on behaviour. The indirect effects of personal norms via pride ( $\beta = .234, p < .001$ ) and guilt ( $\beta = .105, p < .001$ ) were both significant.

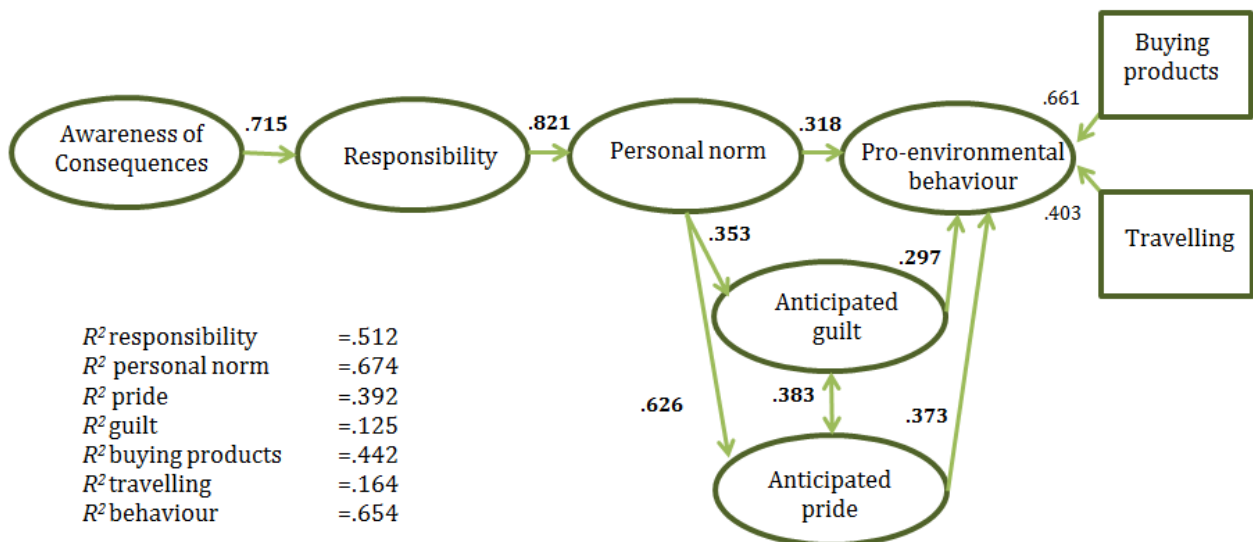


Figure 3.3. Structural regression model of the NAM with mediating effects of anticipated pride and guilt

Note. All standardised path coefficients are shown. All item loadings and standardized path coefficients were significant. For reasons of clarity we decided to not report the item loadings and standardized error variances.

*Phase 2: Anticipated pride and guilt within the integrated NAM-TPB model*

With a stepwise procedure, we checked whether we could improve the NAM-model that included the mediating effects of anticipated pride and guilt by including the variables of the TPB. The results are shown in Table 3.4. Chi-square difference tests showed that the TPB-variables further improved the model fit. The final model showed a good fit (relative chi-square = 2.83; RMSEA = .054; SRMR = .069; CFI = .940; TLI = .935).

Table 3.4. *Chi-square difference tests of including TPB-variables in the NAM*

<b>Improved model fit by sequentially including:</b>	<b>Chi-square difference test</b>
<i>Intention has no association with variables in model</i>	Chi-square = 1906.956; <i>df</i> = 395
Mediation between personal norms and behaviour	$\Delta\chi^2(2) = 491.538, p < .001$
Anticipated pride and guilt on intentions <sup>1</sup>	$\Delta\chi^2(2) = 145.251, p < .001$
<i>Social norm has no association with variables in model</i>	Chi-square = 1648.499; <i>df</i> = 516
Social norms on intentions	$\Delta\chi^2(1) = 2.892, p = \text{n.s.}$
Social norms on personal norms	$\Delta\chi^2(1) = 57.302, p < .001$
Social norms on anticipated guilt	$\Delta\chi^2(1) = 17.244, p < .001$
Social norms on anticipated pride	$\Delta\chi^2(1) = 11.309, p < .001$
Responsibility on social norms	$\Delta\chi^2(1) = 89.648, p < .001$
Perceived consequences on social norms	$\Delta\chi^2(1) = 0.925, p = \text{n.s.}$
<i>Attitude has no association with variables in model</i>	Chi-square = 1923.263; <i>df</i> = 614
Attitudes on intentions	$\Delta\chi^2(1) = 3.279, p = \text{n.s.}$
Attitudes on personal norms	$\Delta\chi^2(1) = 44.517, p < .001$
Attitudes on anticipated pride	$\Delta\chi^2(1) = 18.735, p < .001$
Attitudes on anticipated guilt	$\Delta\chi^2(1) = 1.800, p = \text{n.s.}$
Responsibility on attitudes <sup>2</sup>	$\Delta\chi^2(1) = 211.021, p < .001$
Perceived consequences on attitudes	$\Delta\chi^2(1) = 1.555, p = \text{n.s.}$
<i>PBC has no association with variables in model</i>	Chi-square = 2095.961; <i>df</i> = 684
PBC on intentions <sup>3</sup>	$\Delta\chi^2(1) = 111.748, p < .001$
PBC on behaviour	$\Delta\chi^2(1) = 0.047, p = \text{n.s.}$
PBC on responsibility	$\Delta\chi^2(1) = 55.981, p < .001$

Note. <sup>1</sup>The effects of anticipated pride and guilt on behaviour became insignificant after including intentions in the model. These effects were therefore deleted from the model; <sup>2</sup>Note that the effects of attitudes on personal norms becomes insignificant after including the effects of responsibility on attitudes. These effects were therefore deleted from the model; <sup>3</sup>Note that we allowed perceived behavioural control to covary with awareness of consequences; PBC= Perceived Behavioural Control; *df*= degrees of freedom.

Because we used De Groot and Steg's version of the NAM and only investigated the role of anticipated guilt and pride in this connection, one might argue that awareness of consequences can be left out of the analyses for reasons of simplicity. Therefore, we also estimated the model without awareness of consequences. That model also resulted in a good fit (relative chi-square = 3.12; RMSEA = .059; SRMR = .069; CFI = .942; TLI = .936) and in comparable associations between the constructs. Figure 3.4 shows all standardised path coefficients of this integrated NAM-TPB model.

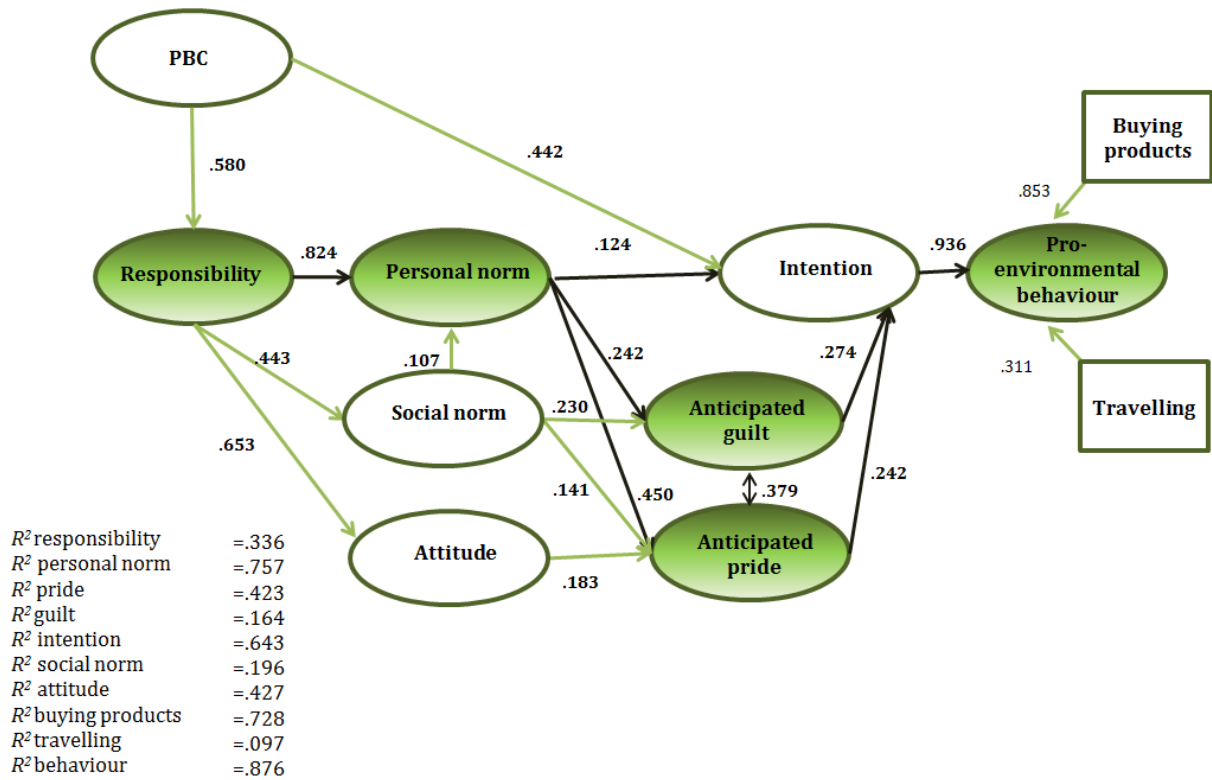


Figure 3.4. Structural regression model of the integrated NAM-TPB-model with mediating effects of anticipated pride and guilt

Note. All standardised path coefficients are shown. All item loadings and standardized path coefficients were significant. For reasons of clarity we decided to not report the item loadings and standardized error variances. The shaded constructs belong to the original NAM; PBC = Perceived Behavioural Control.

These results confirm our propositions. The results are generally supportive of both the NAM and the TPB. After including the TPB variables, personal norms affected pro-environmental behaviour via intentions. Anticipated pride mediated the impact of personal norms, social norms and attitudes on intentions. Anticipated guilt mediated the impact of personal norms and social norms on intentions. The indirect effects of anticipated emotions between personal norms ( $\beta^{\text{pride}} = .109, p < .001$  and  $\beta^{\text{guilt}} = .066, p < .001$ ), social norms ( $\beta^{\text{pride}} = .034, p < .01$  and  $\beta^{\text{guilt}} = .063, p < .001$ ), attitudes ( $\beta^{\text{pride}} = .033, p < .001$ ), and intentions were all significant. Responsibility had a significant effect on social norms, attitudes and personal norms. Perceived behavioural control affected responsibility and intentions.

### 3.5. General discussion

Our study expands the previous research on the Norm Activation Model (NAM; Schwartz, 1977) by providing an overview of how the associations of anticipated pride and guilt are specified by different scholars in the field. Previous research has proposed various paths through which anticipated pride and guilt are associated with the NAM (e.g., Harland et al., 1999; Thøgersen, 2006) but has rarely tested the function of these emotions within the NAM. The current study

responds to this gap in knowledge by discussing these different interpretations and formulating a proposition. In this respect, this study responds to the call for more research on anticipated emotions (Baumeister et al., 2007) and to the function of anticipated emotions within the NAM. Based on the emotion literature, we propose that anticipated pride and guilt modulate individual behaviour towards aligning with one's personal norms. We provide preliminary evidence for this proposition by showing that anticipated pride and guilt mediate the effects of personal norms on behaviour. Moreover, we show that these self-regulatory functions of anticipated pride and guilt remain present in an extended NAM that includes TPB variables. In this integrated NAM-TPB model, anticipated pride and guilt no longer directly affected behaviour; rather, these effects were mediated by intentions. The implications of these findings are discussed in detail below.

The results of the current study have implications for the NAM. Most importantly, we find support for the reasoning that individual personal norms regarding the environment are used to evaluate whether personal behaviour is right or wrong and are subsequently used to forecast which emotions one will experience. These anticipated emotions in turn guide behavioural choices. This mediating effect of anticipated emotions is in line with previous studies that show the self-regulatory function of self-conscious emotions within the TPB (Hynie et al., 2006). We provide initial evidence that this self-regulatory function is also present within the NAM. This evidence implies that anticipated emotions partly form the underlying mechanism through which personal norms guide behaviour. Furthermore, by integrating the NAM and the TPB we report support for the reasoning that the effects of personal norms and anticipated emotions on behaviour are mediated by behavioural intentions; this reasoning has been established in previous research (Bamberg & Möser, 2007; Bamberg et al., 2007). We show that the self-regulatory functions of anticipated pride and guilt remain after controlling for TPB variables. Moreover, anticipated pride and guilt also mediate the effects of attitudes and social norms on intentions, which supports the findings of Hynie et al. (2006). These findings imply that anticipated emotions influence behaviour via feedback mechanisms (Baumeister et al., 2007) in such a way that these emotions provide feedback whether one's behaviour is in accordance with personal (personal norms and attitudes) and social standards (social norms) and subsequently form intentions rather than directly affecting behaviour. The current study furthermore shows the importance of exploring different possible associations between constructs. A good model fit does not necessarily show the true relationships between constructs. We therefore formulated theoretically based hypotheses and explored these by estimating several alternative models.

The current study also has implications for research on self-conscious emotions. Previous studies have underlined the self-regulatory function of negative self-conscious

emotions (e.g., Hynie et al., 2006). Here, we showed that anticipated emotions motivated individuals not only to behave themselves in accordance with their standards to avoid negative emotions such as guilt but also to strive for positive emotions such as pride. Moreover, we are among the first to show initial evidence that these emotions also partly regulate the effects of personal norms on behaviour. Though these personal standards are based upon social norms, they are more personally based because they refer to individual convictions about whether personal behaviours are right or wrong. This finding extends the results of previous studies of self-conscious emotions that have mainly stressed the social nature of self-conscious emotions (e.g., Baumeister et al., 1994). It seems that these emotions are formed on evaluations of personal behaviour based upon both personal and social standards. Moreover, we are among the first to address the issue that specific anticipated self-conscious emotions are formed by different standards. We show preliminary evidence that pride is more strongly formed by personal norms and attitudes than guilt. This finding has theoretical implications. These emotions are referred to as a category of self-conscious emotions (e.g., Lewis, 1993; Tracy & Robins, 2004a). The current study underscores the importance of investigating specific and discrete emotions (e.g., Roseman, 2011) and suggests that not all self-conscious emotions have similar functions within the integrated NAM-TPB model. Future research should explore how a larger range of self-conscious emotions fits the integrated NAM-TPB model.

Finally, the current study shows the importance of positive emotions. Whereas previous research has mainly focused on guilt (e.g., Hunecke et al., 2001), the present study reveals the relevance of including pride in future research. We show that pride and guilt have equally strong effects on behavioural intentions and behaviour<sup>12</sup>. This finding emphasises the statements from previous studies regarding the importance of positive emotions in the context of sustainable behaviour (Corral-Verdugo, 2012).

#### *Limitations and suggestions for future research*

The findings of this study should be considered in light of its limitations, which may also offer future research opportunities. First, the results of the current study are based on cross-sectional data; we cannot draw conclusions regarding the causality of the effects. We cannot decipher whether anticipated pride and guilt were formed by these personal norms or whether these emotions formed personal norms or activated them. There are several arguments that underlie the idea that personal norms affect anticipated emotions; these arguments include the following: (1) previous research describes personal norms as rather stable constructs that are individually constructed based on moral convictions, (2) the findings indicate that personal norms affect

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<sup>12</sup> A constrained model with equal effects for pride and guilt on behaviour within the original NAM ( $\Delta\chi^2(1) = .061$ ;  $p = \text{n.s.}$ ) and on intentions within the integrated NAM-TPB model ( $\Delta\chi^2(1) = .081$ ;  $p = \text{n.s.}$ ) did not significantly differ from the models in which pride and guilt were free to vary.

anticipated emotions and not the other way around, and (3) these findings are in line with a body of research on the self-regulatory function of anticipated emotions. However, future research is needed to verify the directions of these associations for example by longitudinal, cross-lagged, and experimental research.

Second, although previous research indicates the universal applicability of the NAM across cultural groups (e.g., Milfont, Sibley, & Duckitt, 2010), future research is necessary to replicate the current findings across multiple countries.

There are some limitations regarding the measurements. The present study is based on self-reports. Subsequently, social desirability may have influenced the answers. Specifically, environmentally friendly behaviour can be regarded as a socially desirable behaviour. Furthermore, we did not measure all variables at the same level of specificity. The NAM-measures were operationalised at a rather general level following the example of Gärling et al. (2003), whereas anticipated pride and guilt were measured at a more specific level. Previous studies refer to the importance of measuring constructs at a specific level (Steg & de Groot, 2010). Thus, our results would likely have been stronger if the variables were measured at the same levels. To draw solid conclusions regarding the function of anticipated self-conscious emotions within the NAM future research on a more specific level is necessary to replicate our findings.

Finally, Thøgersen (2006) stated that personal norms can be divided into personal norms that are fully internalised into the self (integrated norms) and norms that are only partially internalised into the self (introjected norms). He states that only partially internalised norms need reinforcement of punishments and rewards formed by anticipated pride and guilt. Although Thøgersen (2006) did find two types of personal norms, he did not include anticipated pride or guilt in his research. Future research might explore whether the associations we found between anticipated pride and guilt and personal norms in the NAM are only present for introjected, and not for integrated, personal norms as suggested by Thøgersen (2006).

In spite of these limitations, the current study extends the results of previous studies by showing implications that anticipated pride and guilt have a self-regulatory function within the NAM and within an integrated NAM-TPB model; anticipated pride and guilt seem to guide individuals to form intentions that are in accordance with one's personal norms, attitudes, and social norms regarding the environment.







## Chapter 4

### **The self-regulatory function of anticipated pride and guilt in a sustainable and healthy consumption context**

Although individuals generally value health and sustainability, they do not always behave in a manner that is consistent with their standards. The current study examines whether attitudes and social norms (i.e. descriptive and injunctive norms) can evoke anticipated pride and guilt, which, in turn, guide behavioural intentions. This self-regulatory function of anticipated pride and guilt is examined in the Theory of Planned Behaviour (TPB) extended with descriptive norms. Study 1 ( $N = 944$ ) was a cross-sectional study in a sustainable (organic) behaviour context, and Study 2 ( $N = 990$ ) was a study with a delayed outcome measure in a sustainable (fair trade) and a healthy (fruit consumption) behaviour context. We demonstrate that both negative and positive self-conscious emotions guide behaviour because they mediate the effects of both attitudes and social norms on intentions. Furthermore, the results show that the mediating effects of anticipated pride and guilt significantly improve the explanatory power of the extended TPB in all contexts, however, there are differences in the size of the effects, such that the mediating effect of emotions is larger in a sustainable compared to a healthy context. Theoretical implications of our findings are discussed.

This chapter is based on:

Onwezen, M. C., Bartels, J., & Antonides, G. (2013b). The self-regulating function of anticipated pride and guilt in sustainable and healthy consumption. *European Journal of Social Psychology, 44*, 53-68.

#### 4.1. Introduction

Western societies are currently confronted with significant decreases in public health, steeply increasing obesity rates (Hossain, Kavar, & Nahas, 2007; Ogden, Carroll, Curtin, McDowell, Tabak, & Flegal, 2006), growing environmental problems (Stern, 2006; Zimmer, Stafford, & Stafford, 1994), and a growing awareness of the unfair distributions of wealth (De Pelsmacker, Driesen, & Rayp, 2005). All of these issues are related to consumption patterns (Egger, 2008; McCartney, Hanlon, & Romanes, 2008), underscoring the importance of stimulating both healthy and sustainable consumer behaviour.

Although individuals generally value health (Stephoe, Pollard, & Wardle, 1995) and sustainable production methods (Laroche, Bergeron, & Barbaro-Forleo, 2001), they do not always behave in a manner that is consistent with their ideals (Schwarzer, 2008; Vermeir & Verbeke, 2006) or socially accepted norms. We propose that anticipated pride and guilt might guide individuals to follow their existing attitudes and norms via a self-regulatory function. These emotions are evoked by negative or positive evaluations of the self with regard to personal or social standards and, in turn, guide behaviour. In this respect, the current study responds to the call for further research on emotions as determinants of sustainable and healthy behaviour (e.g., Aertsens et al., 2009; King & Meiselman, 2010) and the call for further research on the role of anticipated emotions in directing individual intentions and behaviour (Arvola et al., 2008; Baumgartner, Pieters, & Bagozzi, 2008; Lench, Safer, & Levine, 2011).

Previous studies have clearly established the role of anticipated emotions in the Theory of Planned Behaviour (TPB; Ajzen, 1991). These studies show that anticipated emotions make a unique contribution to the explanation of intentions beyond the TPB variables (e.g., Rivis, Sheeran, & Armitage, 2009). Furthermore, studies show that negative self-conscious emotions (i.e. shame and guilt) mediate the effect of injunctive norms and attitudes on intentions within the TPB (Hynie, MacDonald, & Marques, 2006). A recent study (Onwezen, Antonides, & Bartels, 2013a) showed evidence of the self-regulatory function of pride and guilt within a different model, the Norm Activation Model (NAM; Schwartz, 1977). That study included TPB variables in this model and provided an initial indication that anticipated pride and guilt mediate the effects of attitudes and injunctive norms on intentions. However, previous studies show mixed findings of the self-regulatory function of self-conscious emotions. Moreover, these studies do not test multiple associations regarding how self-conscious emotions are related to the other constructs within the models. As such, it is not yet clear whether anticipated pride and guilt have a self-regulatory function or a different function within the TPB.

We extend previous findings in several ways. First, previous findings (Hynie et al., 2006; Su et al., 2011) on the mediating effects of guilt on the relation between injunctive norms and intentions within the TPB are limited and mixed. We extend these findings by distinguishing

between injunctive (i.e. norms regarding what should be done) and descriptive norms (i.e. norms regarding how other people behave) in the TPB. We show that the effects of both injunctive norms and descriptive norms on intentions are mediated by anticipated pride and guilt. Second, one could reason that the limited and mixed findings of previous studies are the result of the different contexts used. Hynie et al. (2006) explored the mediating role in the context of condom use, whereas Su et al. (2011) used textbook piracy. The current study extends previous findings by preliminarily exploring whether the self-regulatory function of self-conscious emotions differs across contexts.

Third, one could also argue for a moderating effect of anticipated pride and guilt within the TPB, such that anticipated emotions increase the impact of social norms and attitudes on intentions. To confirm that these emotions affect the TPB via a self-regulatory function, we compare competing moderation and mediation models. Previous findings by Onwezen et al. (2013a) provide an initial indication that both anticipated negative and positive emotions (i.e. guilt and pride) have a self-regulatory function within a model that includes TPB-variables. However, they do not test multiple possible associations of pride and guilt within the TPB. We extend previous findings by showing that pride has a mediating effect, not a moderating effect, within the TPB, by using multiple contexts, and a delayed outcome measure. As such, we increase our theoretical insights and explore whether positive self-conscious emotions function in a way comparable to negative self-conscious emotions.

We first provide an overview of the relevant literature. Then, we present two studies that were conducted with a sample of Dutch respondents to examine the self-regulatory function of anticipated self-conscious emotions within the extended TPB. Study 1 ( $N = 944$ ) was a cross-sectional study in the context of organic food. Study 2 ( $N = 992$ ) was a survey with a delayed outcome measure in the context of fair trade products and fruit consumption. Finally, the implications of the results are discussed.

## **4.2. Theoretical framework**

### *Anticipated emotions and behaviour*

Individuals tend to forecast how their decisions will make them feel in the future. These anticipated emotions are the present imagination of future emotions conditional on the occurrence of certain desirable or undesirable events. Previous studies show that individuals base their actions, at least in part, on these anticipated emotions (Baumgartner et al., 2008; Mellers & McGraw, 2001). Most of the literature that examines the behavioural effects of anticipated emotions has been conducted within the context of Azjen's Theory of Planned Behaviour (TPB; 1991).

*TPB.* The TPB (Ajzen, 1991) states that intentions (i.e. the inclination to perform a specific behaviour) are determined by three constructs: attitudes, injunctive norms (i.e. subjective norms), and perceived behavioural control. Attitudes refer to positive or negative evaluations of the performance of a specific behaviour. Injunctive norms reflect perceptions of relevant others' beliefs that one should or should not perform a specific behaviour. Perceived behavioural control refers to the degree of control that a person believes he/she has with regard to the performance of a specific behaviour. The strength of one's intentions predicts the likelihood of performing a specific behaviour. Furthermore, because perceived behavioural control reflects a person's actual control over his/her performance of a specific behaviour, it directly affects behaviour. The TPB is one of the most influential theories for predicting social and health behaviours (Armitage & Conner, 2001; Godin & Kok, 1996) and has successfully predicted sustainable behaviour, such as organic (Arvola et al., 2008) and fair trade (Ma, Littrell, & Niehm, 2012) food consumption.

*Anticipated emotions and the TPB.* Several studies have extended the TPB with anticipated affect, which refers to general positive or negative affective reactions. These studies show that anticipated emotions affect behaviour not directly but rather via intentions (e.g., Abraham & Sheeran, 2004; Richard, Van der Pligt, & De Vries, 1996; Wang, 2011). Ravis, Sheeran, and Armitage's (2009) meta-analysis shows that specific measures of anticipated regret were stronger predictors of intentions than were generally positive or generally negative affect. These results suggest that specific anticipated emotions might be more useful as additional variables in the TPB than general anticipated affect. Previous studies on specific anticipated emotions mainly focused on anticipated regret (Abraham & Sheeran, 2004; Sandberg & Conner, 2008; Sheeran & Orbell, 1999), but studies have also examined other emotions, such as guilt (Kaiser, Schultz, Berenguer, Corral-Verdugo, & Tankha, 2008; Su et al., 2011). Far fewer studies have focused on the role of anticipated positive emotions within the TPB.

### *Self-regulatory function of anticipated emotions and the TPB*

In addition to the abovementioned direct effects of anticipated emotions, recent studies have addressed the mediating role of anticipated emotions in the TPB (Hynie et al., 2006; Su et al., 2011). Hynie et al. (2006) showed that clustered anticipated negative emotions (i.e. shame and guilt) partly mediate the effects of injunctive norms and attitudes on intentions to use condoms. These results indicate that anticipated negative emotions regulate individuals to behave in accordance with their attitudes and the perceived norms of various relevant groups, such as relatives and friends. Su et al. (2011) focused specifically on guilt. Similar to Hynie et al. (2006), they showed that guilt partly mediates the relation between attitudes and intentions within the TPB; however, they found no significant mediation effect of anticipated guilt on the effect of the

injunctive norms of peers (e.g., family and friends) on intentions and a marginally significant mediation effect of anticipated guilt on the effect of injunctive (society) norms on intentions. These studies thus show mixed results regarding the mediating effect of anticipated guilt on the relation between injunctive norms and intentions.

In the current paper, we aim to increase our knowledge of the mediating effect of self-conscious emotions. We therefore use the vested framework of the TPB. As such, we build on existing knowledge and increase the probability that the findings are valid in other contexts, and we decrease the possibility of excluding important variables. Below we provide a detailed description of our propositions.

### *Anticipated pride and guilt*

Pride and guilt as well as a range of other emotions including shame, hubris, and embarrassment are referred to as self-conscious emotions (Tracy & Robins, 2004a). These emotions are evoked by evaluations of one's self after following or failing to follow personal or social standards (Tracy & Robins, 2004a). Lewis (1993) used the circumstances that evoke self-conscious emotions to categorise these emotions. Pride and guilt seem especially relevant in the context of sustainable and healthy behaviour because these emotions are evoked after evaluations of specific behaviour and subsequently focus individual attention on specific behaviour (rather than on the entire self).

However, these emotions do not only concern the self. Several researchers note that personal standards and goals are partially derived from social standards (Beer & Keltner, 2004; Tangney, Stuewig, & Mashek, 2007), and others even refer to the main function of self-conscious emotions as facilitating people's social interactions and relations (Leary, 2007). Thus, self-conscious emotions are based on an interplay between personal and social aspects. The current study explores this dynamic interplay by examining how attitudes and social norms affect anticipated emotions. Below, we describe the two relevant emotions of pride and guilt and their proposed self-regulatory functions within the extended TPB.

*Pride.* Pride is a positive and pleasant feeling that is associated with autonomy and self-achievement (Rodriguez Mosquera, Manstead, & Fischer, 2000). It can be considered an emotion with a dual nature; it is referred to as either a 'deadly sin' or a positive and pleasant emotion. A recent study shows that there are two distinct forms of pride, hubristic pride and authentic pride (Tracy & Robins, 2007). In the remainder of the paper, we focus on authentic pride because it is formed from evaluations of specific behaviour ('I did a good job because I worked hard') rather than evaluations of the total self ('I did a good job because I am great').

Pride has been studied much less extensively than other self-conscious emotions (Tangney et al., 2007). Previous studies state that pride arises when achievements are attributed

to the self and evaluated positively regarding personal standards and social standards (Exline & Lobel, 2001; Williams & DeSteno, 2008; Tracy & Robins, 2004b), such as the personal achievement of receiving a discount after negotiating in a store (Louro, Pieters, & Zeelenberg, 2005), achieving socially valued outcomes (Mascolo & Fischer, 1995), or receiving public praise (Webster, Duvall, Gaines, & Smith, 2003).

*Self-regulatory function of pride.* Pride thus seems to be anticipated based on evaluations of personal and social standards. Pride can be considered a desired end state that individuals strive to reach and maintain. Subsequently, pride affects behaviour. Anticipated pride increases self-control (Katzir, et al., 2010; Page Winterich & Haws, 2011) and affects behaviour over time (Patrick et al., 2009). Additionally, pride encourages pro-social behaviour because it motivates an individual's perseverance with regard to his/her personal goals (Williams & DeSteno, 2008), care-giving activities (Tracy & Robbins, 2004b), development of social capital by being a more likeable interaction partner (Williams & DeSteno, 2009), and in-group favouring of environmental protection (Harth et al., 2013).

We propose that pride has a similar self-regulatory function as negative self-conscious emotions (e.g., Hynie et al., 2006). In line with the abovementioned studies, we propose that pride is anticipated based on self-evaluations of individual future behaviour regarding both attitudes and social norms. Anticipated pride, in turn, increases sustainable and healthy consumption intentions because it encourages individuals to commit to personal goals. We therefore propose the following: *Anticipated pride mediates the effects of attitudes and social norms on intentions.*

*Guilt.* Individuals experience guilt as a negative feeling that includes feelings of being tense, remorseful, and worried (Ferguson, Stegge, & Damhuis, 1991). Guilt arises when one feels personally responsible for violating a personal, social, or moral standard (Berndsen & Manstead, 2007; Kugler & Jones, 1992; Tangney, Miller, Flicker, & Barlow, 1996). Baumeister, Stillwell, and Heatherton (1994) underlined the importance of social influence. They stated that guilt is most often formed in interpersonal contexts; thus, these feelings arise in relation to others, serve relation-enhancing functions, and vary significantly across interpersonal contexts. Moreover, guilt is closely related to social norms, such that guilt results from a perceived mismatch between social norms and one's own behaviour (Bamberg, Hunecke, & Blöbaum, 2007; Baumeister, 1998).

*Self-regulatory function of guilt.* Previous studies thus underline the importance of both personal and social aspects in evoking guilt. The feeling of guilt is not a negative end state; rather, it is a negative feeling that individuals actively wish to eliminate or avoid (e.g., Burnett & Lunsford, 1994). Consequently, guilt often motivates active behaviour to remove the aversive



feelings, for example, by behaving more cooperatively (De Hooge, Zeelenberg, & Breugelmans, 2007; Ketelaar & Au, 2003; Nelissen, Dijk, & De Vries, 2007). Although little research addresses the effect of anticipated guilt in the context of healthy and sustainable food consumption, some evidence is available. People's avoidance of risky health behaviours is related to their assessment of how guilty they would feel if they committed the behaviour (Birkimer, Johnston, & Berry, 1993). Furthermore, guilt affects sustainable behaviour, such as organic meat consumption (Verhoef, 2005) and pro-environmental behaviour (Bamberg et al., 2007; Ferguson & Branscombe, 2010; Harth et al., 2013). Taken together, in line with the findings of Hynie et al. (2006), we propose that the effects of personal and social standards on healthy and sustainable consumption are mediated by anticipated guilt. We propose the following: *Anticipated guilt mediates the effects of attitudes and social norms on intentions.*

#### *Descriptive norms within the TPB*

The limited and mixed evidence regarding the mediating effects of guilt on social norms and intentions may be explained by the fact that social norms can be divided into injunctive (i.e. perceptions of significant others' approval/disapproval) and descriptive (i.e. perceptions of the quantity and frequency of a specific behaviour) norms (Cialdini, Reno, & Callgren, 1990). A recent meta-analysis reveals that descriptive norms have a greater effect on behaviour than do injunctive norms (Melnik, Van Herpen, & Van Trijp, 2010). Thus, these norms seem to have a distinct impact on behaviour. Moreover, Cialdini et al. (1990) stated that the force and influence of social norms on behaviour can only be understood when one distinguishes between these two types of social norms. This assertion implies that it is important to distinguish between injunctive and descriptive norms when exploring the mediating effects of anticipated pride and guilt.

Injunctive norms were included in the original TPB, but descriptive norms were not. Hynie et al. (2006) and Su et al. (2011) used the original TPB and subsequently explored the mediating effect of negative self-conscious emotions on the relation between injunctive norms and intentions. We include descriptive norms within the model to explore whether the relation between these specific social norms and intentions is mediated by anticipated pride and guilt and whether the mediating effect of anticipated guilt between injunctive norms and intentions remains present when controlling for the effects of descriptive norms. We therefore use an extended TPB model with descriptive norms, as proposed by Ravis and Sheeran (2003). Below, we provide a short description of the association between anticipated emotions and injunctive and descriptive norms.

Injunctive norms force individuals to follow them via explicit feedback on how one should behave in a 'correct' way. They entail a person's perception of how others think he/she

should behave. Previous studies imply that these norms guide behaviour through cognitive components as well as emotional components (Heywood, 2002). The internal emotional reward system is formed by either the threat of self-imposed feelings of guilt and shame (Grasmick & Bursik, 1990) or the positive possibility of feeling guiltless and proud (Heywood & Aas, 1999). Thus, the perceptions of injunctive norms influence the pride and guilt one anticipates experiencing after following or not following these norms. These anticipated emotions, in turn, guide behavioural choices because individuals have a tendency to feel good about themselves, which builds on a basic premise of mood regulation (e.g., Isen, 2000; Larsen, 2000).

Descriptive norms do not include the explicit feedback of injunctive norms. Descriptive norms provide information regarding people's actions. Individuals use this information to identify societally correct behaviour (Cialdini et al., 1991). As a result, the processes that guide the impact of descriptive norms may not be the same as those that guide injunctive norms (Jacobson et al., 2010). However, previous studies show that both types of norms affect self-evaluation and behaviour in a comparable manner when these norms are associated with one's social identity. Both injunctive and descriptive norms are used to form personal standards that serve as a self-standard to evaluate individual behaviour (Christensen et al., 2004; Turner, 1991). In addition, Christensen et al. (2004) showed that both identity-relevant injunctive and descriptive norms resulted in more experienced positive emotions after following versus violating these norms. They stated that these emotions guide behaviour because acting according to these norms make people feel good about themselves. These findings indicate that the effects of both injunctive and descriptive norms on intentions are mediated by anticipated emotions.

Taken together and in line with findings of Christensen et al. (2004), we reason that injunctive and descriptive norms are only perceived in one's own social environment when these norms are relevant for one's identity. Thus, we propose the following: *Anticipated pride and guilt mediate the effects of both injunctive and descriptive norms on behavioural intentions.*

*Moderating effect: Enforcing function of anticipated emotions and the TPB*

We propose that pride and guilt increase sustainable and healthy consumption intentions via a self-regulatory function. However, one can also hypothesise that anticipated pride and guilt influence the TPB via a moderating effect, such that they strengthen the influence of attitudes and social norms on behavioural intentions. Self-conscious emotions can be regarded as individually administered sanctions and rewards (Lewis, 1993; Tracy & Robbins, 2004a) that are evoked after self-evaluations of whether individual behaviour is in accordance with one's attitudes and norms (Bamberg et al., 2007; Baumeister, 1998). Due to a desire to avoid punishments and retain rewards, the effect of attitudes and social norms on individual

behaviour may increase if individuals anticipate feelings of guilt as a result of breaking these norms (i.e. the threat of sanction) or anticipate feelings of pride as a result of following these norms (i.e. the promise of reward). Although theorists suggest that pride and guilt can function as enforcers of internalised and social norms (e.g., Bamberg et al., 2007; Schwartz, 1977; Thøgersen, 2006), this statement has not yet been tested thoroughly. The current study explores whether anticipated pride and guilt affect behavioural intentions via a mediating or a moderating effect. It is important to explore different possible associations between constructs because models are, by definition, only approximations of unknown reality or truth; there are no true models that perfectly reflect full reality (Burnham & Anderson, 2004). Therefore, a good model fit does not necessarily show the true relations between constructs. As such, we estimate competing models to explore whether these emotions affect the TPB via a moderating or a mediating effect. Figure 4.1 shows the proposed relations.

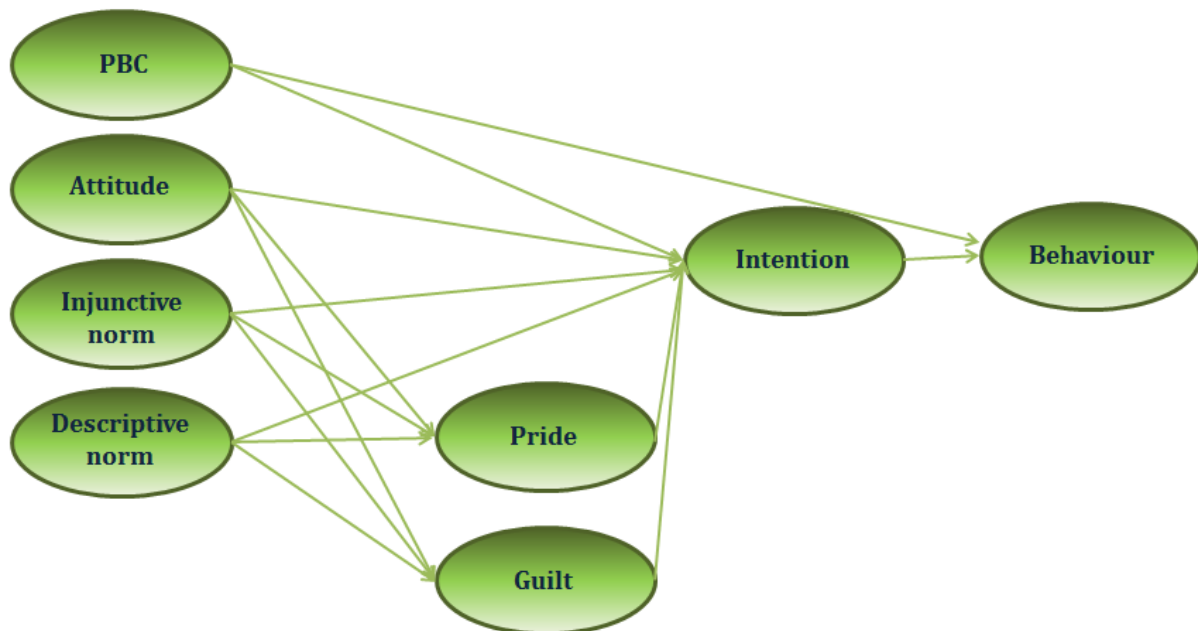


Figure 4.1. Proposed theoretical model

Note. PBC= Perceived Behavioural Control.

### 4.3. Study 1

This study tests our propositions regarding the self-regulatory function of pride and guilt within the TPB. Organic products were used to study sustainable consumption because the purchase of these products can be regarded as an environmentally friendly act. These products are purchased as a result of environmental, health, or justice concerns (Lockie, Lyons, Lawrence, & Mummery, 2002; Magnusson et al., 2003).

### *Participants*

Respondents were recruited by a research agency and completed an online questionnaire. The sample consisted of 944 Dutch respondents and was nationally representative in terms of age, gender, and geographic distribution. The sample consisted of 50.2% males, with a mean age of 44.9 years ( $SD = 14.7$ ).

### *Measures*

All selected measures were answered on 7-point scales with labelled endpoints and are described in detail below.

*Self-conscious emotions.* Because we aimed to compare the effects of pride and guilt, we selected items from the work of Holbrook and Batra (1987), who developed items that measure pride and guilt in comparable ways. For the measure of anticipated pride, the respondents rated the following item: "If I were to buy environmentally friendly food, then I would feel proud/worthy/exceptionally good". For the measure of anticipated guilt, the respondents rated the following item: "If I were to buy environmentally unfriendly food, then I would feel guilty/feel remorseful/have a bad conscience." All emotion items ranged from "not at all" to "very much." Cronbach's alphas of the scales were high for anticipated pride (.96) and guilt (.98).

*Descriptive norms.* Descriptive norms were measured following the work of Nolan et al. (2008). The respondents provided ratings for three items regarding the frequency with which they believed that their family/friends/colleagues purchased organic products (ranging from 1 = "never" to 7 = "very often"). Cronbach's alpha was .87.

*TPB-variables.* The variables of the TPB were measured following the work of Ajzen and Fishbein (1980).

*Attitude* towards buying organic products was measured using multiple evaluative semantic differential scales. The respondents provided ratings for six items with the following labelled endpoints: bad/good, unhealthy/healthy, unfavourable/favourable, distasteful/pleasant, stupid/wise, and harmful/beneficial. Cronbach's alpha was .90.

*Injunctive norms* were measured using three Likert scale items that asked the respondents whether they believed that their family/friends/colleagues wanted them to buy organic products (ranging from 1 = "completely disagree" to 7 = "completely agree"). The Cronbach's alpha was .93.

*Perceived behavioural control* is normally assessed with multiple items. Because buying organic products at different times (e.g., weekends or winter) did not seem applicable, we used one general item that asked respondents to estimate the perceived difficulty of buying organic products (ranging from 1 = "very difficult" to 7 = "very easy").

*Intention* was measured with two items (“I intend to buy organic products” and “I am sure that I will buy organic products”) on 7-point Likert scales (ranging from 1 = “completely disagree” to 7 = “completely agree”). The internal consistency was high ( $r = .95$ ).

*Self-reported behaviour.* Consumer behaviour regarding organic products was measured by asking the respondents to indicate how often they ate organic meat, vegetables, fruit, and dairy products during the previous two months on a 7-point scale (ranging from 1 = “never” to 7 = “always”). These categories are the largest product categories of organic food in the Netherlands (Monitor Sustainable Food, 2012). The Cronbach’s alpha was .92.

Table 4.1. *Descriptive statistics and correlation coefficients for the context-specific measures of organic food consumption (N = 944)*

	<i>M</i>	<i>SD</i>	<b>1.</b>	<b>2.</b>	<b>3.</b>	<b>4.</b>	<b>5.</b>	<b>6.</b>	<b>7.</b>
1. Attitude	5.09	1.05	1						
2. PBC	4.57	1.46	.171**	1					
3. Injunctive norm Descriptive	2.93	1.51	.344**	.228**	1				
4. norm	2.94	1.29	.367**	.275**	.560**	1			
5. Pride	3.70	1.58	.452**	.139**	.401**	.409**	1		
6. Guilt	2.93	1.46	.313**	.107**	.399**	.395**	.583**	1	
7. Intention	3.50	1.88	.561**	.185**	.524**	.576**	.480**	.454**	1
8. Behaviour	2.63	1.64	.420**	.185**	.421**	.508**	.357**	.354**	.657**

*Note.* Scales ranging from 1 to 7; \*\*  $p < .01$ ; PBC = Perceived Behavioural Control.

### *Analysis*

Mplus version 6.11 was used to estimate a partially latent model (Kline, 2011) because perceived behavioural control was measured with a single item. The estimation results of the model include the following fit indices: relative chi-square ( $\chi^2/df$ ), RMSEA (Root Mean Square Error of Approximation), SRMR (standardized Root Mean Square Residual), CFI (Comparative Fit Index) and TLI (Tucker Lewis Index). For  $\chi^2/df$ , a value of less than 3 indicates a good model fit, and less than 5 indicates an adequate fit (Kline, 2011). For RMSEA, a value below .07 indicates a good model fit (Steiger, 2007). For SRMR, a value below .08 indicates a good model fit (Hu & Bentler, 1999). Finally, CFI and TLI indices of .90 or higher indicate a satisfactory model fit (Bhattacharjee, 2002; Hu & Bentler, 1999).

The analyses consisted of several steps. To specify the function of anticipated pride and guilt within the TPB, we first estimated two alternative structural regression models, a mediation model and a moderation model. Attitudes, perceived behavioural control, injunctive norms, and descriptive norms were free to co-vary with one another, as were anticipated pride and guilt. For the mediation model, we included our conceptual model. For the moderation model, we included six interaction terms of anticipated pride and guilt with attitudes, injunctive

norms, and descriptive norms on intentions. The inclusion of interaction terms using multiplication in an analysis might cause problems because predictors are often highly correlated (Aiken & West, 1991). To avoid the risk of multicollinearity, we centred the independent variables before multiplying them. Moreover, all associations of the TPB and the direct effects of anticipated emotions were included in the moderation model.

We compared the moderation model and the mediation model to determine which model best fits the data. Because the alternative models were not nested (i.e. nested models can be derived by placing restrictions on the more general model), chi-square difference tests were not feasible. We therefore used AIC (Akaike Information Criterion) and BIC (Bayesian Information Criterion) values to determine which model best suited the data (i.e. showed the lowest value; Rigdon, 1999). AIC (Akaike, 1974) and BIC (Schwartz, 1978) values adjust the model log-likelihoods for model complexity and can be used to compare alternative not nested models (Henson, Reise, & Kim, 2007). Additionally, we used the significance of the interaction terms and the indirect effects as indicators of model performance (Klein & Moosbrugger, 2000).

After identifying whether anticipated pride and guilt affect the TPB via mediation or moderation, we can further explore this mediation or moderation effect. We can explore whether including the effects of anticipated pride and guilt in the extended TPB-model significantly improves the model.

#### **4.4. Results**

Respondents reported relatively high levels of attitudes and perceived behavioural control and moderate levels of descriptive norms, injunctive norms, anticipated pride and guilt, and intentions to buy organic food products (see Table 4.1).

Table 4.2 shows that the mediation model had a lower AIC and BIC score compared to the moderation model. Moreover, all interaction terms were insignificant, with the exception of the product term of descriptive norms and guilt, which unexpectedly resulted in a negative interaction effect. All indirect effects showed significant effects on intentions, with the exception of the mediating effect of anticipated pride between injunctive norms, descriptive norms, and intentions. Taken together, the results are in favour of a mediation model.

Table 4.2. AIC and BIC scores of moderation and mediation model for organic consumption (Study 1)

	AIC	BIC	Effects of pride on intention		Effects of guilt on intention	
Moderation model	62893.787	63330.773	Attitude × Pride :	$\beta = .059; p = n.s$	Attitude × Guilt:	$\beta = -.004; p = n.s$
			IN × Pride:	$\beta = -.009; p = n.s$	IN × Guilt:	$\beta = -.002; p = n.s$
			DN × Pride:	$\beta = .015; p = n.s$	DN × Guilt:	$\beta = -.104; p < .01$
Mediation model	62518.665	62955.652	Attitude	$\beta = .018; p < .05$	Attitude	$\beta = .020; p < .001$
			IN	$\beta = .010; p = n.s$	IN	$\beta = .029; p < .001$
			DN	$\beta = .010; p = n.s$	DN	$\beta = .029; p < .001$

Note. IN = injunctive norm; DN = descriptive norm.

The proposed mediation model resulted in an adequate fit ( $\chi^2/df = 4.47, p < .001$ ; RMSEA = .060; SRMR = .059; CFI = .961; TLI = .955). Figure 4.2 shows all standardised path coefficients of this model. In general, the results support the extended TPB and our propositions. Intention was predicted by attitudes, injunctive norms, and descriptive norms. Intentions, in turn, predicted organic food consumption. Perceived behavioural control had a significant and direct effect on organic food consumption; however, it did not have a significant effect on intentions. Furthermore, anticipated pride and guilt were both predicted by attitudes, injunctive norms, and descriptive norms. Anticipated guilt predicted intentions to buy organic food. Anticipated pride, however, did not have a significant effect on intentions.

We also computed the significance of the indirect effects (Table 4.2). The PM (Proportion Mediated) indicates what proportion of the total effect is mediated by the intervening variable (e.g., Fairchild et al., 2009). The results revealed evidence of partial mediation of anticipated pride (PM = 5.0%) and guilt (PM = 5.6%) on the effects of attitudes on intentions. Anticipated guilt partially mediated the effects of descriptive norms (PM = 9.5%) and injunctive norms (PM = 17.8%) on intentions. Anticipated pride did not show a significant mediating effect on the relation between injunctive and descriptive norms, on the one hand, and intention, on the other hand.

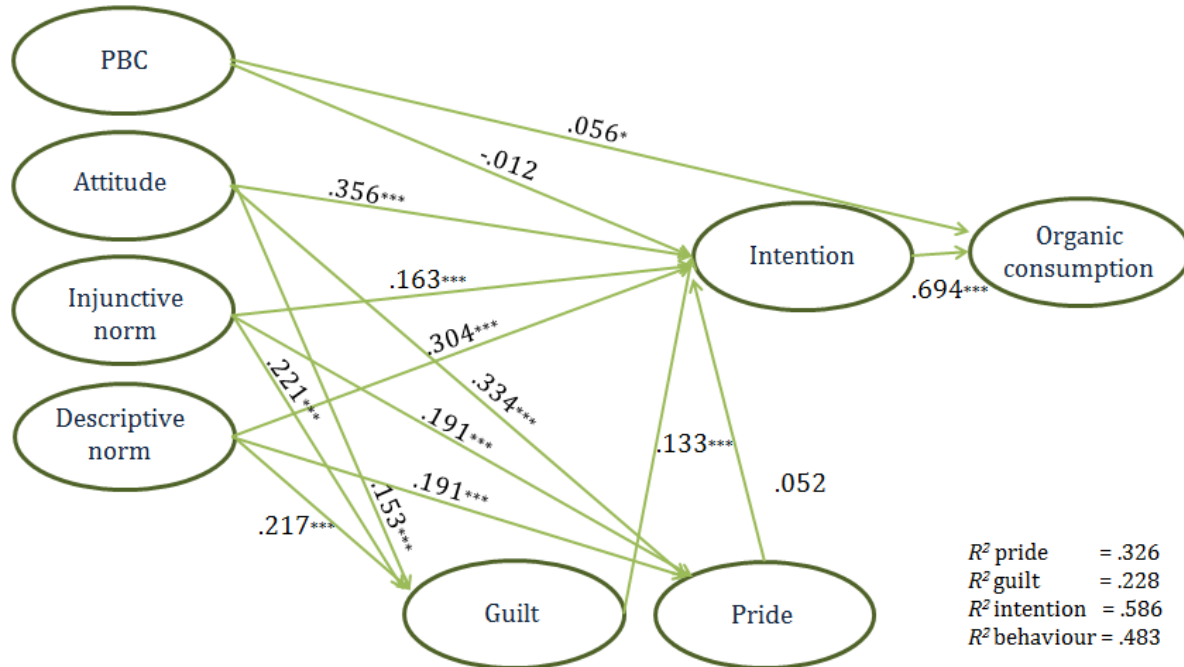


Figure 4.2. Structural regression model of the extended Theory of Planned Behaviour with mediating effects of anticipated pride and guilt for organic food consumption

Note. All standardised path coefficients are shown. All item loadings were significant. For reasons of clarity, we decided to not report the item loadings and standardised error variances; PBC = Perceived Behavioural Control; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; The model included the following correlations: anticipated pride with guilt ( $r = .46$ ), descriptive social norms with injunctive social norms ( $r = .59$ ), descriptive social norms with attitudes ( $r = .41$ ), attitudes with injunctive social norms ( $r = .35$ ).



To assess whether including anticipated pride and guilt in the extended TPB model significantly improved the TPB model, chi-square difference tests were conducted. We conducted a structural regression model in which we fixed the mediating effects of anticipated pride and guilt at 0. This model resulted in a poor fit ( $\chi^2/df = 6.00, p < .001$ ; RMSEA = .073; SRMR = .179; CFI = .942; TLI = .935). We then compared this model with our conceptual model that included the mediating effects of anticipated pride and guilt. The chi-square difference test revealed that the mediating effects of anticipated pride and guilt significantly improved the model ( $\Delta\chi^2(8) = 443.198, p < .001$ ). Moreover, the explained variance of intention was improved by 2% after including anticipated pride and guilt in the extended TPB model.

#### 4.5. Discussion

This study is among the first to provide evidence of the mechanisms underlying the influence of social norms and attitudes on the formation of intentions, such that they partially mediate the effects of social norms and attitudes. We show that adding this self-regulatory function of pride and guilt to the TPB significantly improves the model, with an additional explained variance of 2%. The current findings provide insight into the function of self-conscious emotions. Anticipated guilt seems to function as an expected emotional punishment that enforces behaviour in accordance with attitudes and social norms, whereas anticipated pride seems to function as an expected emotional reward that enforces behaviour in accordance with personal values, such as attitudes.

The indirect effects are small. Anticipated pride and guilt together explain 10% of the effect of attitudes on intentions, and guilt explains 10-17% of the effect of norms on intentions. Notably, anticipated emotions were measured with regard to buying environmentally friendly products, whereas the other constructs were measured with regard to organic products. Measuring these emotions at the same level might have increased the size of the effects. However, we decided to measure anticipated emotions regarding buying environmentally friendly products because emotions are anticipated by self-evaluations of one's standards. Because organic products are bought due to multiple motives (e.g., environment, justice, and health), we reasoned that it would be difficult for respondents to report anticipated emotions regarding buying organic products.

Furthermore, the results are a first indication that specific self-conscious emotions might be anticipated in self-evaluations with different standards. The results also provide an initial indication that although these standards might be used to form anticipated emotions, they do not always affect subsequent intentions. Pride mediates only the effects of attitudes on intentions, whereas guilt mediates the effects of both attitudes and social norms on intentions.

The results imply that anticipated guilt has a stronger effect on intentions than does anticipated pride. However, a chi-square difference test reveals that a constrained model with equal effects of pride and guilt on intentions does not significantly differ from a model in which the effects of pride and guilt are free to vary ( $\Delta\chi^2(1) = 2.73, p = \text{n.s.}$ ). The effects of anticipated pride and guilt on behaviour are not significantly different.

The TPB posits that perceived behavioural control is associated with intentions, but in the present study, the relation between perceived behavioural control and intention was non-significant. Several meta-analyses have shown that PBC predicted intention in approximately 85% of studies (Armitage & Conner, 2001; Godin & Kok, 1996). Ajzen (1991) argued that in situations in which attitudes or social norms are strong, perceived behavioural control may be less predictive of intentions. The current findings imply that organic consumption behaviour is under an individual's control and is strongly affected by attitudes and norms, such that perceived behavioural control does not affect a person's intentions.

In Study 2, we intend to replicate and extend the findings of Study 1. We aim to explore whether the findings hold in a different context. Moreover, we aim to compare two contexts. Previous research on the mediating effects of guilt on the association between social norms and intentions provides mixed evidence. Therefore, we distinguished between injunctive and descriptive norms in Study 1. However, our results show that anticipated guilt mediates the effects of both norms on intentions. Previous studies have been conducted in different contexts, including condom use (Hynie et al., 2006) and textbook piracy (Su et al., 2011). Thus, the self-regulatory function of anticipated guilt (and pride) might vary across contexts; textbook piracy is more closely related to personal motives than condom use, which might affect the mediating impact of anticipated emotions between norms and intentions. By including two distinct contexts in Study 2, we conducted a preliminary and explorative study on whether the function of anticipated emotions varies across contexts. We selected fair trade consumption, which is more closely related to altruistic motives, and fruit consumption, which is more closely related to personal motives.

Furthermore, we increased the quality of the measurement of behaviour. In Study 1, behaviour was measured in a cross-sectional design. These cross-sectional measures might cause problems of common method variance (Podsakoff et al., 2003) or overly self-aware responding. Critics state that the quality of a measure can be improved by assessing behaviour at a later moment in time (e.g., Zapf, Dormann, & Frese, 1996). Furthermore, individuals tend to experience difficulty in accurately reporting their past behaviour (Hill & Davies, 2001). By using a delayed outcome measure, we accounted for these problems and avoided overestimations of the predictive validity of a specific behaviour in Study 2. In addition, we assessed behaviour in a

second wave with the Food Frequency Questionnaire. This scale has been shown to be successful in estimating typical food intake (Schatzkin et al., 2003).

#### 4.6. Study 2

Study 2 was conducted in an altruistic and a personally oriented context: fair trade and healthy consumption. Fair trade refers to the fair treatment of producers and workers within farming systems (Browne, Harris, Hofny-Collins, Pasiecznik, & Wallace, 2000). In the present study, it is referred to as sustainable behaviour because consumers buy fair trade products out of concern for others (de Pelsmacker et al., 2005). Fruit consumption is referred to as healthy behaviour. Fruit consumption contributes to one's health (e.g., Trichopoulou, Naska, Antoniou, Friel, Trygg, & Turrini, 2003; Van Duyn & Pivonka, 2000) and can lead to a lower risk of diseases such as coronary heart disease and even premature death (e.g., Gerster, 1991).

##### *Participants*

A research agency approached 1,845 Dutch participants in two waves. In the first wave, the respondents answered questions regarding the independent variables with items comparable to those used in Study 1. In the second wave, two weeks after the first questionnaire, the respondents completed the Food Frequency Questionnaire. The second questionnaire was completed by 53.8% of the first wave participants, resulting in 992 respondents (fair trade  $n = 501$ ; fruit  $n = 491$ ). Analyses were performed<sup>13</sup> to determine whether the respondents who completed waves 1 and 2 and the respondents who only completed wave 1 were comparable. In general, the associations and absolute scores did not differ across groups, implying that these groups did not differ substantially, with the exception of two differences: respondents who completed only wave 1 were more prone to follow normative standards and more proud of behaving in a healthy manner. This difference should be acknowledged when interpreting the results. The sample consisted of 49.8% males, with a mean age of 44.7 years ( $SD = 14.9$ ).

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<sup>13</sup> First, correlation coefficients of the proposed associations were computed and compared with Fisher Z tests. We compared whether pride, guilt, descriptive norms, injunctive norms, attitude, and PBC had similar associations with consumer intentions for these two groups. The results revealed that all of these associations were statistically similar except for the association between injunctive norms and consumer intentions (fair trade  $Z = 2.672$ ,  $p < .05$ ; fruit  $Z = 2.414$ ,  $p < .05$ ); injunctive norms had a larger influence on consumer intentions for respondents who completed only wave 1 than for those who completed both waves.

Second, ANOVA's showed no significant differences in mean scores between individuals who completed only wave 1 and individuals who completed waves 1 and 2 for guilt (fair trade  $F(1,948) = .002$ ;  $p = \text{n.s.}$ ; fruit  $F(1,894) = .00$ ;  $p = \text{n.s.}$ ), pride (fair trade  $F(1,948) = 2.286$ ;  $p = \text{n.s.}$ ), attitudes (fair trade  $F(1,948) = .756$ ;  $p = \text{n.s.}$ ; fruit  $F(1,894) = 1.311$ ;  $p = \text{n.s.}$ ), injunctive norms (fair trade  $F(1,948) = .887$ ;  $p = \text{n.s.}$ ; fruit  $F(1,894) = .041$ ;  $p = \text{n.s.}$ ), descriptive norms (fair trade  $F(1,948) = .516$ ;  $p = \text{n.s.}$ ; fruit  $F(1,894) = .024$ ;  $p = \text{n.s.}$ ), and intentions (fair trade  $F(1,948) = 1.847$ ;  $p = \text{n.s.}$ ; fruit  $F(1,894) = .046$ ;  $p = \text{n.s.}$ ), with the exception of pride for fruits ( $F(1,894) = 4.045$ ;  $p < .05$ ), such that respondents who only completed wave 1 were prouder ( $M = 4.74$ ;  $SD = 1.36$ ) than respondents who completed waves 1 and 2 ( $M = 4.55$ ;  $SD = 1.42$ ).

### *Measures at wave 1*

The variables were measured using 7-point scale items that were similar to those used in Study 1. For the measure of fair trade consumption, all items were adapted to buying fair trade products and showed good reliability: attitudes (6 items,  $\alpha = .91$ ), injunctive norms (3 items,  $\alpha = .94$ ), descriptive norms (3 items,  $\alpha = .91$ ), anticipated pride (3 items,  $\alpha = .95$ ), anticipated guilt (3 items,  $\alpha = .98$ ), and intentions (2 items,  $r = .94$ ). For the measure of fruit consumption, the items were adapted to the consumption of (at least) two pieces of fruit per day, as advised in the Dutch guidelines for a healthy diet (Health Council of the Netherlands, 2006). The scales showed good reliability for attitudes (4 items,  $\alpha = .89$ ), perceived behavioural control (4 items,  $\alpha = .89$ ), injunctive norms (3 items,  $\alpha = .90$ ), descriptive norms (3 items,  $\alpha = .90$ ), anticipated pride (3 items,  $\alpha = .90$ ), anticipated guilt (3 items,  $\alpha = .95$ ) and intentions (2 items,  $r = .93$ ). Notably, attitude was measured with four items for fruit consumption and six for fair trade consumption. In the context of fruit, the items regarding favourability and tastefulness referred to the tastiness of fruits rather than the general positive or negative evaluations of fruit consumption; therefore, these items were not included in the measurement of attitude toward fruit. Furthermore, for fruit consumption, perceived behavioural control was measured with four items, which asked respondents to estimate the perceived difficulty of eating at least two fruits per day during the weekend/during the week/during periods of emotional stress/during periods of sickness. For fair trade, we used one general item to measure perceived behavioural control because buying fair trade products at different times does not apply to self-control.

### *Self-reported behaviour in wave 2*

The Food Frequency Questionnaire was used to measure respondents' self-reported behaviour (Hu, Rimm, & Smith-Warner, 1999). For fair trade product consumption, the categories of bananas, tea, coffee, juice, chocolate, and other foods (for example, dried fruit and sugar) were used. For fruit consumption, the categories of tangerines, citrus fruits (e.g., oranges, lemons), apples or pears, and other fruits (e.g., strawberries, grapes) were used.

Respondents were asked to indicate the frequency with which they consumed foods from the previously mentioned categories within the previous week (1 = "not at all" to 7 = "every day"). If the respondents had consumed a product, they were asked to estimate the amount that they consumed each day in terms of a standard portion size, such as a glass (of tea) or a piece (of fruit). These results were combined into one score by multiplying the frequency and amount of consumption for the different categories.

The analyses were performed analogously to the analyses for Study 1. The results are reported separately for the purchase of fair trade consumption (Study 2a) and fruit consumption (Study 2b).

#### 4.7. Study 2a: Fair trade consumption

Respondents reported relatively high levels of attitudes, perceived behavioural control, and anticipated pride. Furthermore, moderate levels of descriptive and injunctive norms, anticipated guilt, and intention were reported (see Table 4.3).

Table 4.4 shows that the AIC and BIC scores of the mediation model were lower compared to the moderation model. Moreover, the interaction effects were insignificant, with the exception of an unexpected negative product term of guilt and descriptive norms. The indirect effects of the mediation model were small but significant.

Taken together, the results are in favour of the mediation model. The proposed mediation model resulted in a model with a good fit ( $\chi^2/df = 2.63$ ,  $p < .001$ ; RMSEA = .057; SRMR = .067; CFI = .957; TLI = .951). Figure 4.3 shows all standardised path coefficients of this model. The results support the TPB in that intention was predicted by attitudes, perceived behavioural control, injunctive norms, and descriptive norms. These intentions, in turn, predicted fair trade consumption as measured two weeks later. Perceived behavioural control also had a direct influence on fair trade consumption. Figure 4.3 shows that anticipated pride and guilt were both predicted by attitudes, injunctive norms, and descriptive norms. Furthermore, anticipated pride and guilt predicted intentions to buy fair trade products.

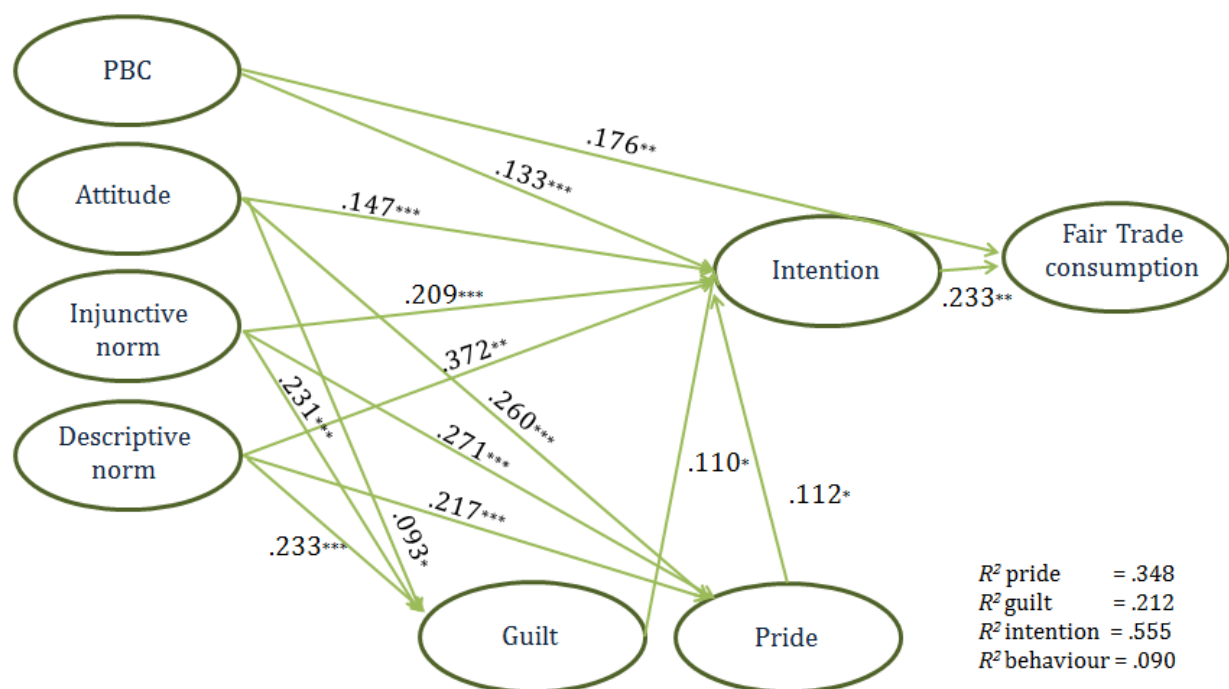


Figure 4.3. Structural regression model of the extended Theory of Planned Behaviour with mediating effects of anticipated pride and guilt for fair trade consumption

Note. All standardised path coefficients are shown. All item loadings were significant. For reasons of clarity, we decided to not report the item loadings and standardised error variances; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; PBC= perceived behavioural control; The model included the following correlations: anticipated pride with guilt ( $r = .54$ ), descriptive social norms with injunctive social norms ( $r = .62$ ), descriptive social norms with attitudes ( $r = .37$ ), and attitudes with injunctive social norms ( $r = .33$ ).

Table 4.3. Descriptive statistics and correlation coefficients for the context-specific measures of fair trade product ( $N = 501$ ; lower triangular matrix) and fruit ( $N = 491$ ; upper triangular matrix) consumption

	Fair trade		Fruits		1.	2.	3.	4.	5.	6.	7.	8.
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>								
1. Attitude	4.96	1.02	6.02	0.94	1	.405**	.279**	.365**	.308**	.123**	.480**	.059
2. PBC	4.39	1.35	5.07	1.51	.334**	1	.370**	.347**	.305**	.135**	.681**	.054
3. Injunctive norm	2.94	1.51	4.38	1.84	.307**	.247**	1	.404**	.319**	.180**	.413**	.055
4. Descriptive norm	2.79	1.28	4.01	1.37	.327**	.320**	.592**	1	.284**	.133**	.454**	.084
5. Pride	3.68	1.52	4.56	1.42	.387**	.163**	.486**	.457**	1	.463**	.384**	.054
6. Guilt	2.96	1.44	3.72	1.59	.241**	.130**	.408**	.403**	.626**	1	.244**	.093*
7. Intention	3.27	1.7	4.98	1.93	.421**	.358**	.574**	.616**	.502**	.439**	1	.107*
8. Behaviour	2.95	7.16	8.89	9.78	.129**	.160**	.132**	.117**	.054	.018	.195**	1

Note. PBC = Perceived Behavioural Control; Behaviour is measured with the Food Frequency Questionnaire. Note that these measurements are based on computed scores; all other scales range from 1 to 7; \*\* $p < .001$ , \* $p < .05$ .

The indirect effects (see Table 4.4) revealed evidence of partial mediation of anticipated pride and guilt on the effects of descriptive norms ( $PM^{\text{pride}} = 6.5\%$ ;  $PM^{\text{guilt}} = 7.0\%$ ), injunctive norms ( $PM^{\text{pride}} = 14.4\%$ ;  $PM^{\text{guilt}} = 12.0\%$ ), and attitudes ( $PM^{\text{pride}} = 19.7\%$ ) on intentions. The indirect effect of anticipated guilt between attitudes and intentions was insignificant.

Next, we explored whether including anticipated pride and guilt in the extended TPB model significantly improved the model. We first created a model in which we fixed the mediating effects of anticipated pride and guilt at 0. This model resulted in an adequate fit ( $\chi^2/df = 3.38$ ,  $p < .001$ ; RMSEA = .069; SRMR = .179; CFI = .936; TLI = .928). We then compared this model with our conceptual model. The chi-square difference test revealed that including the mediating effects of anticipated pride and guilt significantly improved the model ( $\Delta\chi^2(8) = 238.344$ ,  $p < .001$ ). Moreover, the explained variance of intention was improved by 2% after including anticipated pride and guilt in the extended TPB model.

#### 4.8. Study 2b: Fruit consumption

Respondents reported relatively high attitudes, levels of perceived behavioural control, anticipated pride, perceived injunctive norms, and intentions. Moderate levels of perceived descriptive norms and anticipated guilt were reported (see Table 4.3).

Table 4.5 shows that the AIC and BIC scores of the mediation model were lower compared to the moderation model. Moreover, the interaction effects were insignificant, whereas the indirect effects of the mediation model were small but (marginally) significant. Taken together, the results are in favour of a mediation model. The mediation model resulted in good fit ( $\chi^2/df = 2.77$ ,  $p < .001$ ; RMSEA = .060; SRMR = .048; CFI = .944; TLI = .934). Figure 4.4 shows all standardised path coefficients of this model. The results replicate the extended TPB. Furthermore, anticipated pride was predicted by attitudes, injunctive norms, and descriptive norms. Anticipated guilt was predicted by descriptive norms but not by attitudes and injunctive norms. Anticipated pride and guilt had marginally significant and small effects on intention, respectively. The indirect effects revealed small, marginally significant evidence for partial mediation of anticipated guilt on the effect of descriptive norms ( $PM^{\text{guilt}} = 22.1\%$ ) (see Table 4.5) on intentions. Anticipated pride significantly mediated the effect of attitudes ( $PM^{\text{pride}} = 8.3\%$ ) and descriptive norms ( $PM^{\text{pride}} = 23.5\%$ ) on intentions. All other mediating effects were insignificant.

Table 4.4. *AIC and BIC scores of moderation and mediation model for fair trade consumption (Study 2a)*

	<b>AIC</b>	<b>BIC</b>	<b>Effects of pride on intention</b>		<b>Effects of guilt on intention</b>	
Moderation model	34907.632	35286.947	Attitude × Pride:	$\beta = -.012; p = \text{n.s.}$	Attitude × Guilt:	$\beta = .040; p = \text{n.s.}$
			IN × Pride:	$\beta = .032; p = \text{n.s.}$	IN × Guilt:	$\beta = .036; p = \text{n.s.}$
			DN × Pride:	$\beta = .016; p = \text{n.s.}$	DN × Guilt:	$\beta = -.135; p < .01$
Mediation model	34734.065	35113.380	Attitude	$\beta = .029; p < .05$	Attitude	$\beta = .018; p = \text{n.s.}$
			IN	$\beta = .030; p < .05$	IN	$\beta = .025; p < .05$
			DN	$\beta = .024; p < .05$	DN	$\beta = .026; p < .05$

Note. IN = injunctive norm; DN = descriptive norm.

Table 4.5. *AIC and BIC scores of moderation and mediation model for fruit consumption (Study 2b)*

	<b>AIC</b>	<b>BIC</b>	<b>Effects of pride on intention</b>		<b>Effects of guilt on intention</b>	
Moderation model	42482.566	42893.818	Attitude × Pride:	$\beta = -.056; p = \text{n.s.}$	Attitude × Guilt:	$\beta = .018; p = \text{n.s.}$
			IN × Pride:	$\beta = -.008; p = \text{n.s.}$	IN × Guilt:	$\beta = -.008; p = \text{n.s.}$
			DN × Pride:	$\beta = -.029; p = \text{n.s.}$	DN × Guilt:	$\beta = -.013; p = \text{n.s.}$
Mediation model	42406.522	42809.381	Attitude	$\beta = .016; p < .100$	Attitude	$\beta = .006; p = \text{n.s.}$
			IN	$\beta = .009; p = \text{n.s.}$	IN	$\beta = .002; p = \text{n.s.}$
			DN	$\beta = .016; p < .100$	DN	$\beta = .015; p < .100$

Note. IN = injunctive norm; DN = descriptive norm.



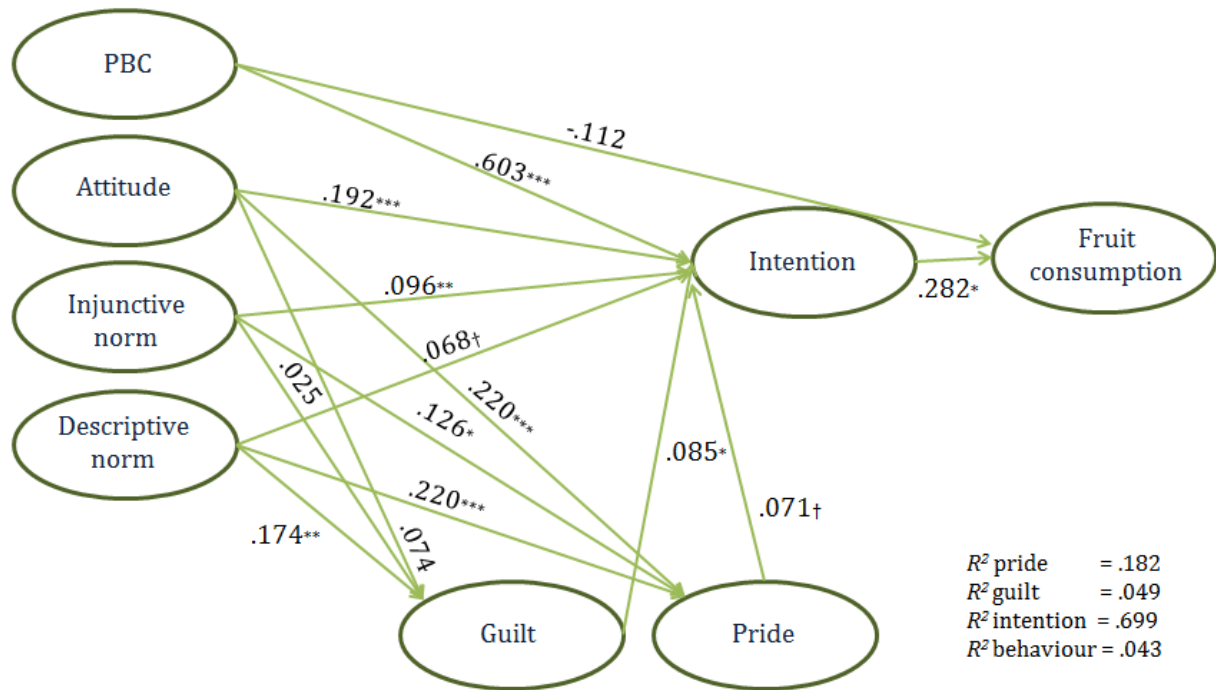


Figure 4.4. Structural regression model of the extended TPB with mediating effects of anticipated pride and guilt for fruit consumption

Note. All standardised path coefficients are shown. All item loadings were significant. For reasons of clarity we decided to not report the item loadings and standardized error variances; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; † $p < .10$ ; PBC = Perceived Behavioural Control; The model included the following correlations: anticipated pride with guilt ( $r = .46$ ), descriptive social norms with injunctive social norms ( $r = .42$ ), descriptive social norms with attitudes ( $r = .29$ ), attitudes with injunctive social norms ( $r = .34$ ).

We explored whether including anticipated pride and guilt significantly improved the extended TPB model by conducting a structural regression model in which the mediating effects of anticipated pride and guilt were fixed at 0. The model resulted in adequate fit ( $\chi^2/df = 3.08$ ,  $p < .001$ ; RMSEA = .065; SRMR = .115; CFI = .933; TLI = .923). Chi-square difference tests revealed that including the mediating effects of anticipated pride and guilt in the extended TPB model significantly improved the model ( $\Delta\chi^2(8) = 103.278$ ,  $p < .001$ ). Moreover, the explained variance of intention was improved by 1% after including anticipated pride and guilt in the model.

#### 4.9. Discussion

Study 2 replicated the main findings of Study 1 for fair trade products and fruits. The results were generally supportive of the TPB but underscore the importance of including anticipated pride and guilt. We show that including anticipated pride and guilt significantly improved the model, with an explained variance of 1%-2%. The indirect effects were small and explained between 7% and 23% of the effects of attitudes and norms on intentions. The findings show that both anticipated pride and guilt regulate individuals to behave in line with attitudes and social norms. Additionally, the mediating effects were less clear in the context of fruit consumption compared with the context of fair trade consumption. This is a first indication that the context

may result in distinct functions of anticipated pride and guilt. The effects of norms and attitudes on behaviour guided by personal motives seem to be less regulated by anticipated emotions than the effects on behaviour guided by altruistic motives. However, future research is necessary to explore these contextual differences.

Anticipated guilt again appeared to have a stronger influence on consumer intentions than anticipated pride. However, chi-square difference tests revealed that the effects of anticipated pride and guilt on intentions did not differ significantly.<sup>14</sup>

For fruit consumption, perceived behavioural control did not have a significant effect on behaviour, which is not in accordance with the statements of the TPB. However, this direct effect on behaviour is only found when the behaviour being predicted is not completely under motivational control (Madden, Scholder, & Ajzen, 1992). The current findings imply that fruit consumption refers to a behavioural context that is under control. In the Netherlands, consumers can buy fruits in many places, which might result in a perception of high behavioural control ( $M^{\text{fruit}} = 5.07$  versus  $M^{\text{organic}} = 4.57$  and  $M^{\text{fair trade}} = 4.39$ ).

Finally, behaviour was assessed cross-sectionally in Study 1, whereas a delayed behavioural measure was used in Study 2. Consequently, the explained variance decreased in Study 2, resulting in less predictive power for the constructs. We argue that these different results underline the importance of measuring the dependent variables at a later moment in time because cross-sectional designs may lead to 'false' indications regarding the ability to accurately predict future behaviour.

#### 4.10. General discussion

The current study explored whether an anticipated negative and an anticipated positive self-conscious emotion – guilt and pride, respectively – stimulate sustainable and healthy consumption. We show that these emotions affect the TPB not via a moderating effect but via a mediating effect. Anticipated pride and guilt guide behaviour via a self-regulatory function, such that they are formed by attitudes and social norms and, in turn, guide behaviour to be in accordance with these attitudes and norms. This study extends previous research by showing that in addition to the negative emotion of guilt, the anticipated positive emotion of pride has a self-regulatory function. Furthermore, we provide an initial indication that this function of emotions might vary across emotions and contexts. Moreover, we include descriptive norms in the TPB model and demonstrate that anticipated self-conscious emotions mediate the effect of social norms on intentions. We now discuss the current results in greater detail.

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<sup>14</sup> A constrained model with equal effects for pride and guilt on intentions does not significantly differ from a model in which pride and guilt are free to vary (fair trade  $\Delta\chi^2(1) = .02$ ;  $p = \text{n.s.}$ ; fruit  $\Delta\chi^2(1) = .02$ ;  $p = \text{n.s.}$ ).

*Pride and guilt have a self-regulatory function in the Theory of Planned Behaviour*

The present study supports the TPB but emphasises the importance of adding affective elements to this theory, which is in line with previous suggestions (e.g., Abraham & Sheeran, 2004; Conner & Armitage, 1998; Ravis et al., 2009). We increase knowledge of the underlying mechanisms of the TPB by showing that attitudes and descriptive and injunctive norms affect intentions, at least partially, via anticipated self-conscious emotions. This finding confirms our propositions regarding the self-regulatory function of pride and guilt within the extended TPB. The current study only included measures of pride and guilt. Because we did not measure a range of emotions, we cannot draw solid conclusions regarding the specific effects of pride and guilt. Pride and guilt might serve as proxies for more general positive and negative affect factors. Because previous studies show that basic emotions and self-conscious emotions, such as pride and guilt, are judged on different neural basis levels (Takahashi et al., 2008), the current findings show evidence regarding the self-regulatory function of both anticipated negative and positive self-conscious emotions. We extend previous studies (Beer et al., 2003; Hynie et al., 2006; Onwezen et al., 2013a; Su et al., 2011) by revealing that an anticipated positive emotion (i.e. pride) influences the TPB via a mediation effect, not via a moderation effect, and by showing that this function is present in multiple contexts. Although it remains difficult to infer mediation effects from two-wave designs, the current study implies that individuals regulate their behaviour not only to avoid the experience of negative self-conscious emotions but also to promote positive self-conscious emotions. Therefore, this study increases our understanding of the function of self-conscious emotions within the TPB.

Furthermore, we show that these mechanisms do not function in the same manner for pride and guilt within the TPB. Although both attitudes and social norms are used to form anticipated emotions, they do not necessarily affect subsequent intentions. The present results show that anticipated pride is affected by both attitudes and social norms but merely enhances the effects of attitudes on intentions. Anticipated guilt is more strongly affected by social norms compared to attitudes but enhances the effects of both attitudes and social norms on intentions. These findings imply that the mechanisms through which these emotions influence behaviour differ for personal and social standards. For example, one might anticipate feeling proud about choosing an apple over a Twix candy bar because this choice fits one's personal diet and because a friend might praise this healthy choice. However, the anticipation of feeling proud because this choice fits one's diet seems more effective in increasing intentions to choose the apple than the anticipation of feeling proud because a friend praises the choice. This finding implies that emotions may be differentiated in social versus personal dimensions (Dahl et al., 2003), which are formed and guide behaviour in distinct ways. Future research is necessary to further explore this issue.

These findings also have implications for the formation of anticipated emotions. Research regarding the formation of pride and guilt has mainly focused on experienced emotions elicited by behaviour that previously occurred (e.g., Dahl et al., 2003; Tangney et al., 1996). Therefore, it has not been clear how these emotions are anticipated (Bagozzi et al., 2003). We show, similar to Onwezen et al. (2013a), that social norms are used in the formation of anticipated guilt, whereas attitudes are used far less often. Pride, in contrast, is influenced by both attitudes and social norms. This finding has some theoretical implications. A stream of research has discussed these emotions as a category of self-conscious emotions (Lewis, 1993; Tangney & Fischer, 1995; Tracy & Robins, 2004a), and some researchers stress the social nature of self-conscious emotions (e.g., Leary, 2007). The current study underscores the importance of investigating specific emotions, or discrete emotions (e.g., Roseman, 2011), and suggests that not all self-conscious emotions have an exclusively social nature.

Having assessed the significance of anticipated emotions, one may question the extent to which explaining increments of 1% to 2% of the variance in behavioural intentions warrants the inclusion of anticipated pride and guilt within the TPB. We claim that even small effects are important in the context of sustainability and health because they might have large implications for public health and a sustainable planet. In addition, previous studies warrant the inclusion of variables in the TPB with similar small percentages of increased explained variance of intentions, such as moral norms (4%) and self-identity (1%) (Conner & Armitage, 1998). Notably, the indirect effects have a small effect on intentions; the findings show that these account for 5%-23% of the effects of attitudes and norms on intentions. Effect sizes likely increase when multiple emotions are included. However, the current study aimed to demonstrate that attitudes and social norms are regulated by both positive and negative emotions. We therefore included one specific negative emotion and one specific positive emotion.

### *Contextual Differences account for the Different Function of Anticipated Pride and Guilt*

We included descriptive norms in the TPB model because we proposed that distinguishing between injunctive and descriptive norms might explain the mixed evidence regarding the mediating effect of guilt on social norms and intentions (Hynie et al., 2006; Su et al., 2011). The results show that anticipated guilt mediated the effect of descriptive norms on intentions. Therefore, one might argue that previous research (Hynie et al., 2006; Su et al., 2011) found mixed results because it focused on injunctive norms and did not control for descriptive norms.

The current results also show, however, that the effects of injunctive norms on intentions for organic and fair trade consumption are mediated by anticipated guilt. These findings are not in line with those of Su et al. (2011). We argue that these differences might occur because of the

contexts used. Social norms are often regarded as information functions for socially significant behaviours (e.g., Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Textbook piracy does not refer to socially significant behaviour because it is performed out of self-interest. This might explain why social norms were less effective in the context of textbook piracy (Su et al., 2011) than in the context of condom use (Hynie et al., 2006). This reasoning was preliminarily tested in Study 2 by including a socially motivated consumption behaviour and a personally motivated consumption behaviour.

Several findings of the present study underscore our reasoning. First, a comparison of the findings for health and sustainability reveals that the effects of descriptive and injunctive norms on consumer intentions were greater for sustainable intentions than for healthy intentions. Second, the explained variance in anticipated pride and guilt was much greater in the context of sustainable consumption than healthy consumption. Third, the mediating effects of anticipated pride and guilt were greater for the sustainable context compared to the health consumption context. These different findings across contexts might be explained by the abovementioned reasoning that social norms are especially effective for socially approved behaviour. Sustainable behaviour can be considered socially significant behaviour (e.g., Granzin & Olsen, 1991; Hopper & Nielsen, 1991), whereas healthy behaviour is more closely related to personal benefits. Thus, although existing research documents the effects of norms on healthy intentions (e.g., Borsari & Carey, 2003), the present results indicate that descriptive and injunctive norms are more effective in influencing intentions, partly via anticipated pride and guilt, in the context of sustainable behaviour than in the context of healthy behaviour. However, this remains a post hoc explanation, and future research is necessary to further explore this reasoning.

#### *Limitations and future research*

Despite the significant results of this study, some limitations must be mentioned. First, both studies were conducted within the Netherlands. Future research could provide international validity for the present finding by including multiple countries. Another possible research direction involves the examination of differences in the self-regulatory role of anticipated pride and guilt between collectivistic and individualistic cultures. Self-conscious emotions are based upon the self (Tracy & Robins, 2004a). Because individuals from individualistic and collectivistic cultures differ in their construal of the self (Markus & Kitayama, 1991), the function of these emotions might be sensitive to cultural differences across individualistic and collectivistic cultures (Tracy & Robins, 2007).

Second, the measurement of the constructs could be improved. The constructs were not measured at an identical level; some constructs were measured at a more specific level than

others (anticipated emotions regarding buying environmentally friendly products versus norms, attitudes, and intentions regarding organic products). Measuring these constructs at a similar level might have strengthened the findings. Future research could also include experienced emotions. Previous findings show that consumers may use their feelings to make decisions (e.g., Slovic, Finucane, Peters, & MacGregor, 2002). By comparing differences between anticipated and experienced emotions, it would be possible to explore the extent to which behavioural intentions are formed by following one's gut feeling or the more evaluative process of anticipating emotions. Finally, a focus on specific emotions is needed to explore how emotions influence behavioural decision making according to the appraisal tendency framework (Han, Lerner, & Keltner, 2007; Lazarus, 1991). This study focused on pride and guilt, but we did not include a range of emotions and therefore cannot determine whether the results account specifically for pride and guilt or apply to all positive and negative emotions. Future research would benefit from including comparisons among specific self-conscious positive and negative emotions, such as happiness, contentment, love, regret, and shame. This type of research could compare differences in the functions of these discrete emotions.

Third, future research is necessary to further understand the mechanism through which existing attitudes and norms affect intentions. The mediating effect of anticipated pride and guilt only explained a small amount of the variance. Future research could include a range of emotions, which would likely increase the total effect size of indirect effects. In addition, the low explained variance implies that other mechanisms might predict behavioural intentions and enforce the effects of attitudes and social norms on intentions. Previous research showed that mechanisms such as habits, past behaviour, personal norms, and social identification increase the explained variance within the TPB (Conner & Armitage, 1998). For example, previous findings show that social norms are only predictive of intentions when individuals strongly identify with the group's norms (Christensen et al., 2004; White et al., 2009). The mediating effects of anticipated pride and guilt between social norms and intentions might become stronger when a person strongly identifies with these norms. Future research may further explore this mediated moderation effect. Finally, the findings show differences between the examined contexts in the mediating effects of anticipated pride and guilt. Future research could further explore why anticipated pride and guilt were formed by different standards in different contexts. Different behaviours that vary in the extent of altruism, social interaction, or personal relevance may explain differences in the self-regulatory function of anticipated emotions across contexts. Self-conscious emotions may, for example, consist of different dimensions, such as a social and a private dimension that are evoked at different moments (e.g., Dahl et al., 2003) and that function in different ways.

Fourth, the current study used the TPB-model; however, future research could explore the self-regulatory function of self-conscious emotions within other theoretical frameworks, such as the model of effortful decision making and enactment (Bagozzi et al., 2003) or the Value Belief Norm (VBN) theory of environmentalism (Stern, 2000). As such, future research could further disentangle how self-conscious emotions function and how they might enforce different mechanisms in different frameworks. We propose that the self-regulatory function of anticipated pride and guilt is a basic mechanism that can be found in multiple theoretical frameworks.

Finally, future researchers are advised to employ experimental methods, multiple time lags, or a combination of these to conduct more rigorous tests of the mediating effect of self-conscious emotions within the TPB. At this moment, the direction of the effects is not fully clear. One example that would further clarify the mediating effect of self-conscious emotions is a longitudinal experiment in which norms and attitudes are assessed at a first wave and self-conscious emotions are manipulated at a second wave. In such a design, researchers could explore the causality of the mediating effect of anticipated emotions more rigorously.

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## Chapter 5

### **Environmentally friendly consumer choices:**

#### **Cultural differences in the self-regulatory function of anticipated pride and guilt**

A significant body of consumers has positive personal and social standards towards the environment, however these consumers do not always behave in an environmentally friendly manner. Anticipated self-conscious emotions, such as pride and guilt, help individuals to behave in line with their personal and social standards. We seek to explore whether this self-regulatory role of anticipated pride and guilt functions similarly across individuals from different cultures ( $N = 3,854$ ). We show that there are no differences across countries in the self-regulatory function of anticipated pride and guilt *within* collectivistic and individualistic cultures but that there are differences *between* collectivistic and individualistic cultures. For individuals from collectivistic countries, anticipated emotions are more strongly affected by descriptive social norms and less so by attitudes than they are for individuals from individualistic countries. Anticipated pride has a stronger impact on environmentally friendly purchase intentions for individuals from collectivistic countries than those from individualistic countries. The results provide a first indication that the function of emotions is more social in nature for individuals from collectivistic than individualistic cultures. These findings imply that cultural differences in the function of emotions are associated with cultural differences in self-construal.

This chapter is based on:

Onwezen, M.C., Bartels, J., & Antonides, G. Environmentally friendly consumer choices: Cultural differences in the self-regulatory function of anticipated pride and guilt. *Manuscript resubmitted after revision was asked for.*

### 5.1. Introduction

Western societies face environmental issues such as climate change, air and water pollution, and loss of biodiversity. Many of these problems are caused by human behaviour (DuNann Winter & Koger, 2004; Gardner & Stern, 2002) and therefore can be managed by guiding consumer behaviour in a way that reduces environmental impact (Steg & Vlek, 2009). Consumers do not always behave in a manner that is consistent with their standards regarding the environment (Grunert & Juhl, 1995; Thøgersen, 1999; Vermeir & Verbeke, 2006). Self-conscious emotions, – which are evoked when people evaluate their behaviour with respect to a set of personal or social standards (Lewis, 1993; Tracy & Robins, 2004a) – have a self-regulatory function, such that they guide individuals to behave themselves in accordance with social norms and attitudes (Hynie, MacDonald, & Marques, 2006; Onwezen et al., 2013a; Su et al., 2011). These emotions are therefore important in guiding pro-environmental behaviour.

In the current study, we aim to explore the self-regulatory function of anticipated pride and guilt across individualistic and collectivistic cultures. Based on previous studies (Mesquita, 2001), we suggest that cultural differences in the functions of emotions are primarily caused by differences in the construal of the self. Previous research has shown that self-conscious emotions are sensitive to cultural differences because these emotions are based upon the self (Tracy & Robins, 2007), and individuals from individualistic and collectivistic cultures differ in their construal of the self (Markus & Kitayama, 1991; Triandis, 1995).

We aim to extend previous studies by exploring whether the self-regulatory function of self-conscious emotions can be validated across a range of countries, and by conducting a first test of whether this self-regulatory function differs between individuals from collectivistic and individualistic cultures. Accordingly, we offer theoretical insights into the nature and functioning of self-conscious emotions, respond to the call for research on emotions in the context of environmentally friendly behaviour (Kals & Maes; Vining & Ebreo, 2002), and provide practical insights into ways of stimulating pro-environmental behaviour cross-culturally. We focus on environmentally friendly purchases such as organic products because they are among others purchased out of concern for the environment (Lockie, Lyons, Lawrence, & Mummery, 2002; Magnusson, Arvola, Hursti, Åberg, & Sjöden, 2003).

We first provide an overview of the literature on the self-regulatory function of anticipated pride and guilt and on the proposed differences between individualistic and collectivistic cultures. Next, we report on our study procedures and results and discuss their implications.

## 5.2. Theoretical framework

### *Self-regulatory function of anticipated pride and guilt*

The current study focuses specifically on two self-conscious emotions, pride and guilt, which seem to be especially relevant in the context of pro-environmental behaviour. *Pride* is a positive emotion that is experienced as a pleasant feeling and that often accompanies feelings of self-worth (Tracy & Robins, 2007; Rodriguez Mosquera, Manstead, & Fischer, 2000). *Guilt* is a negative emotion that leads to feeling tense, remorseful, and worried (Baumeister et al., 1994; Ferguson, Stegge, & Damhuis, 1991). Pride (Lewis, 1993; Mascolo & Fischer, 1995; Tangney, 1999; Tracy & Robins, 2004b) and guilt (Kugler & Jones, 1992; Tangney et al., 1996) have some common characteristics. Both arise when one feels responsible for an individual act and evaluates this act with respect to personal or social standards. Individuals tend to strive towards and maintain pride and to avoid and get rid of guilt. Subsequently, these emotions guide behaviour in accordance with personal and social standards. A limited body of recent research shows evidence for a self-regulatory function of self-conscious emotions (e.g., Hynie et al., 2006; Su et al., 2011). Self-regulation entails monitoring and adapting one's own behaviour such that it reflects one's standards or goals (Carver & Scheier, 1998). These studies show that anticipated negative self-conscious emotions mediate the relationship between attitudes and social norms on intentions in the context of condom use (Hynie et al., 2006) and in the context of textbook piracy (Su et al., 2011).

In the context of environmentally friendly behaviour, previous studies show that pride (Harth et al., 2013) and guilt (Arvola et al., 2008; Bamberg et al., 2007; Bamberg & Möser, 2007; Carrus, Passafaro, & Bonnes, 2008; Harth et al., 2013; Ferguson & Branscombe, 2010; Kaiser et al., 2008; Verhoef, 2005) are associated with pro-environmental behaviour. In addition, Onwezen et al. (2013a) recently explored the function of pride and guilt in the context of the environment. They show evidence for a self-regulatory function of anticipated pride and guilt, such that they mediate the effects of personal norms, attitudes and social norms on environmentally friendly intentions. We therefore hypothesise the following:

*Hypothesis 1: Anticipated pride and guilt regarding the environment mediate the effects of attitudes and descriptive social norms on environmentally friendly purchase intentions.*

Figure 5.1 shows a graphical representation of the conceptual model. Next, we describe the proposed differences between individualistic and collectivistic cultures and subsequently refine this basic proposition.

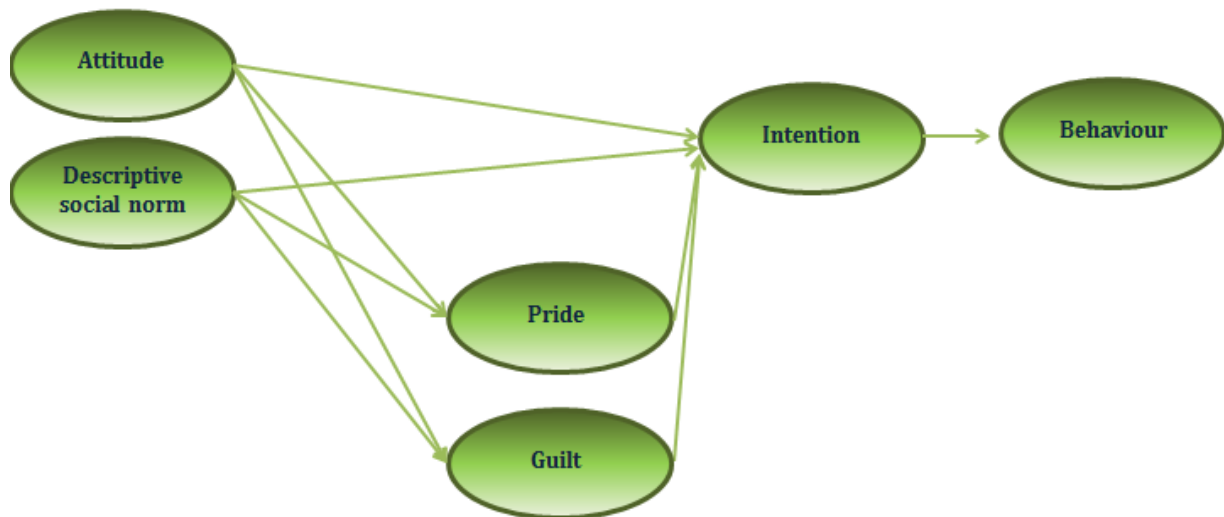


Figure 5.1. Proposed conceptual model

*Similarities within individualistic and collectivistic cultures in the self-regulatory function of anticipated pride and guilt*

Studies show that the proposed basic mechanism (Hypothesis 1) exists across a range of cultures such that the self-regulatory function of guilt is found in both individualistic (i.e. Canada; Hynie et al., 2006) and collectivistic (i.e. Taiwan; Su et al., 2011) countries. Mesquita (2001), furthermore, states that although multiple differences in emotions (e.g., concerns, appraisals and action readiness) exist between individualistic and collectivistic cultures, individuals within individualistic and collectivistic cultures have comparable emotions and functions of emotions. We therefore hypothesize that:

*Hypothesis 2: The mediating effects of anticipated pride and guilt on the effects of attitudes and descriptive social norms on organic purchase intentions do not differ within individualistic or within collectivistic cultures.*

*Differences between individualistic and collectivistic cultures in the self-regulatory function of anticipated pride and guilt*

Although we propose that anticipated pride and guilt have a self-regulatory-function in both individualistic and collectivistic cultures (Hypothesis 2), we propose that the strength of the associations differs *across* individualistic and collectivistic cultures. Several researchers suggest that a different construal of the self – how individuals see themselves in relation to others (Markus & Kitayama, 1991)– leads to different self-conscious emotions, as these emotions rely on self-awareness and self-evaluations (Tracy & Robins, 2004a; Tracy, Robins, & Tangney, 2007). Because individuals from different cultures have a different construal of the self, self-conscious emotions are sensitive to cross-cultural differences (Eid & Diener, 2001; Tangney & Fischer, 1995).

In cross-cultural psychology, two prototypical types of self-construal have been distinguished by several authors: the independent self and the interdependent self (e.g., Markus & Kitayama, 1991). An independent self is associated with individual goals, attributes, abilities, and preferences, independent from others. An interdependent self encompasses larger social groups (e.g., family, neighbourhood, or a sports team) and is associated with a self that is regulated by the emotions, thoughts, and actions of other people (Markus & Kitayama, 1991). Although Markus and Kitayama do not explicitly link the differences in independent and interdependent types of self-construal to different cultures, the connection is clear and is often made by other researchers (Cross et al., 2011). The independent self is emphasised more in individualistic cultures, while the interdependent self is represented more often in collectivistic cultures. Previous findings have shown that self-construal plays an important role in predicting thoughts and behaviours related to the environment (Arnocky, Stroink, & DeCicco, 2007; McCarty & Shrum, 2001).

Previous studies show that individuals from collectivistic and individualistic cultures differ in their sensitivity to social norms and attitudes. Individuals from collectivistic cultures are shown to be more inclined to follow social norms and less inclined to follow attitudes in their green purchasing behaviour compared to individuals from individualistic cultures (Chan & Lau, 2002). We propose that these differences occur due to cultural differences in the underlying emotional mechanism, such as collectivistic and individualistic cultures differ in the mediating effects of self-conscious emotions between the norm-intention and attitude-intention association. Additionally, we propose that these cultural differences occur due to differences in the cultural self-construal, as that we expect to find differences between collectivistic and individualistic cultures, and not within these cultures. Below we formulate specific propositions based on previous research findings.

Research on cross-cultural differences in the self-regulatory function of anticipated pride and guilt is lacking. However, previous studies do compare cultural differences in the effects of personal and social standards in evoking pride and guilt (i.e. first part of mediation effect) and in the effects of pride and guilt on intentions or behaviour (i.e. second part of mediation effect). Regarding the first part of the mediation effect two studies indicate that social norms have a larger effect on emotions in collectivistic compared to individualistic cultures. Norm violations related to social acceptance had stronger effects on guilt (and shame) for individuals from collectivistic cultures than for those from individualistic cultures (Bierbrauer, 1992; Ersoy et al., 2012). We propose that individuals from collectivistic, who are more likely to develop an interdependent self which encompasses important groups and includes norms and goals of these groups, are proposed to be more sensitive to social standards. On the other hand, individuals from individualistic cultures, who are more likely to develop an independent self

which relates to uniqueness and individual goals, are more sensitive to personal standards. We therefore hypothesise the following:

*Hypothesis 3: Attitudes have a stronger, and descriptive social norms a weaker, impact on anticipated pride and guilt regarding the environment for individuals from individualistic cultures than for individuals from collectivistic cultures.*

Regarding the second part of the mediation effect — the influence of anticipated emotions on behavioural intentions — several studies indicate that pride has a stronger effect on behaviour in individualistic cultures, whereas guilt has a stronger effect in collectivistic cultures (Lee, Aaker, & Gardner, 2000; Markus & Kitayama, 1991). We distinguish two arguments supporting this proposition. First, ego-focused emotions such as pride tend to be associated with internal attributions, uniqueness and individual awareness and therefore have a stronger impact on behaviour within individualistic cultures. Other-focused emotions such as guilt tend to be associated with a social context or with relying on others and therefore have a stronger impact on behaviour within collectivistic cultures (Markus & Kitayama, 1991).

Second, people with an independent self-construal are generally more promotion focused (reinforced by individual aspirations and wishes) and therefore more sensitive for positive emotions such as pride, while people with an interdependent self-construal are generally more prevention focused (reinforced by preventing the violation of social norms) and therefore more sensitive to negative emotions such as guilt (Lee et al., 2000). Kim and Johnson (2013) underscore this reasoning. They show that the influence of pride on purchase intentions was stronger for US than for Korean participants, whereas the influence of guilt was weaker for US than for Korean participants. However, in the context of environmentally friendly behaviour a study of Kaiser et al. (2008) shows no cultural differences between collectivistic and individualistic countries in the effects of guilt (and embarrassment) on intentions. As such, it remains unclear whether previous findings on cultural differences in the effects of pride and guilt on intentions are applicable to the context of environmental behaviour. We therefore aim to test the following hypothesis:

*Hypothesis 4: Anticipated pride regarding the environment has a stronger and anticipated guilt has a weaker impact on environmentally friendly purchase intentions for individuals from individualistic cultures than individuals from collectivistic cultures.*

### 5.3. Study overview

We first aim to validate the self-regulatory function of anticipated pride and guilt (e.g., Onwezen et al., 2013a) across a range of individualistic and collectivistic countries. We expect that the effects of attitudes and descriptive social norms on intentions to buy organic products are mediated by both anticipated pride and guilt (Hypothesis 1). Then we explore whether these effects are comparable *within* individualistic countries, and *within* collectivistic countries (Hypothesis 2). Finally, we explore whether the self-regulatory function of pride and guilt, as expected, differs *across* individualistic and collectivistic countries (Hypotheses 3 & 4).

### 5.4. Method

#### *Participants*

Participants were selected online by a research agency in December 2010. The research agency selected representative samples of respondents in terms of age, gender and educational level. In total, the sample consisted of 3,854 respondents. We used the individualism dimension of Hofstede's framework (Hofstede centre; Hofstede & Bond, 1984) to select individualistic and collectivistic countries. For individualistic countries we selected: the Netherlands (score = 80;  $n = 507$ ), Germany (score = 67;  $n = 514$ ), the United Kingdom (score = 89;  $n = 503$ ), the United States (score = 91;  $n = 507$ ), Canada (score = 80;  $n = 510$ ), and Australia (score = 90;  $n = 507$ ). The sample was 49.6% male and 50.4% female, and the mean participant age was 46.6 years ( $SD = 15.6$ ). For collectivistic countries we selected: Malaysia (score = 26;  $n = 403$ ) and Singapore (score = 20;  $n = 403$ ). The sample was 54.2% male and 45.8% female, and the mean age was 37.4 years ( $SD = 11.9$ ).

#### *Measures*

All items were translated by the research agency into the native languages of the selected countries: Dutch, German, and English (English is one of the most commonly spoken languages in Singapore and Taiwan). These translations were checked by native speakers.

*Attitudes.* Attitudes were measured following the Theory of Planned Behaviour (Ajzen, 1991). Respondents answered four items indicating on a 5-point scale to what degree they associated the following attributes with organic products from their own country: Nice, Friendly, Reliable, and Successful. Cronbach's alpha for these items was .94 for individualistic and .91 for collectivistic countries.

*Descriptive social norms.* An existing scale from the work of Nolan, Schultz, Cialdini, Goldstein, and Griskevicius (2008) was used to measure perceived descriptive social norms around buying organic products. The respondents rated three items (ranging from 1 = "never" to 5 = "very often") regarding the frequency with which they believe that their

relatives/friends/average people from their country buy organic products. Cronbach's alpha for this scale was .72 for individualistic and .69 for collectivistic countries.

*Anticipated pride and guilt.* Anticipated pride and guilt were each measured with three items selected from Holbrook and Batra's inventory (1987). To measure anticipated pride, the respondents were asked to rate the following items: "If I would behave in an environmentally friendly way, then I feel: proud/worthy/extremely good." To measure anticipated guilt, the respondents were asked to rate the following items: "If I would behave in an environmentally unfriendly way, then I: feel guilty/feel remorseful/have a bad conscience." All items were rated on 5-point scales (ranging from 1 = "not at all" to 5 = "very much"). Cronbach's alphas for the scales were high for both anticipated pride ( $\alpha = .86$ ) and guilt ( $\alpha = .96$ ) in individualistic and collectivistic ( $\alpha^{\text{pride}} = .88$  and  $\alpha^{\text{guilt}} = .96$ ) countries.

*Intention to buy organic products.* The intention to buy organic products was measured following the Theory of Planned Behaviour (Ajzen, 1991). The respondents rated on a 5-point scale the likelihood of their buying organic products in the next two weeks (ranging from 1 = "extremely likely" to 5 = "extremely unlikely").

The overall measurement model showed an adequate fit for individualistic (relative  $\chi^2 = 441.0/59 = 7.5$ ;  $p < .001$ ; RMSEA = .046; SRMR = .024; CFI = .987; TLI = .983) and collectivistic countries (relative  $\chi^2 = 242.6/59 = 4.11$ ;  $p < .001$ ; RMSEA = .063; SRMR = .025; CFI = .975; TLI = .967). The fit indices are described in detail in the analysis section.

### *Analysis*

Mplus (version 6.11) was used to estimate structural regression models with latent variables. The data analyses consisted of three parts. Part 1 tested our conceptual model by estimating a structural regression model across all countries (Hypothesis 1). The next two parts involve comparisons across countries. Part 2 explored differences within individualistic and within collectivistic countries (Hypothesis 2). Part 3 explored differences across individualistic and collectivistic countries (Hypotheses 3 & 4). Analyses that include comparison across countries (Parts 2 and 3) consisted of two main steps: preparing the data by establishing measurement invariance across countries and testing the structural regression model across countries.

*Testing for measurement invariance across countries.* Differences in structural relations between groups only have meaning when the constructs used are similar for all included groups. Establishing the invariance of the measurement model was therefore an essential step in our analysis. Different forms of invariance have been identified by previous research. In the current study, we tested for configural, metric and scalar invariance, which are necessary conditions for testing for differences in structural relations (Vandenberg & Lance, 2000).



*Configural invariance* is observed when a similar factor structure holds across the identified groups. We therefore tested the proposed measurement model for each of the groups separately. If the measurement models show a good fit for all identified groups, there is configural invariance (Van de Schoot et al., 2012). We used the following fit indices to explore model fit: relative  $\chi^2$ , RMSEA, SRMR, CFI, and TLI. A good model fit is indicated by an insignificant  $\chi^2$  value of less than 3 (Kline, 2011), a RMSEA value below .07 (Steiger, 2007), a SRMR value below .08 (Hu & Bentler, 1999), and CFI and TLI indices of at least .90 (Hu & Bentler, 1999).

*Metric and scalar invariance* refer to whether the meaning of the construct (metric invariance), the level of the underlying items, or both (scalar invariance) are equal across groups. This implies that the scores on specific constructs have the same meaning for each group. Following Van de Schoot et al. (2012), we estimated a baseline model (all parameters, including regression slopes and intercepts, varied freely across groups), and three models in which respectively factor loadings (Model 1), intercepts (Model 2), or both (Model 3) were assumed equal across groups.

Chi-square difference tests were used to assess whether the models in which the parameters are assumed equal across groups differ significantly from the baseline model. Measurement invariance is affirmed if differences in the fit statistics indicate no significant differences between the constrained model (Model 1, 2 or 3) and the unconstrained model (Baseline model). Chi-square difference test is most often used by previous research. Although Vandenberg and Lance (2000) mention limitations of this test, they also recommend to use the chi-square difference tests because other tests only provide critical values and not a test of significant difference across models. We will also discuss the critical values of Cheung and Rensvold (1999; 2002) because these values provide an indication of differences in overall model fit. However, we will use the chi-square difference test to make a final decision.

*Testing structural regression models across countries.* If measurement invariance is shown, we can explore differences in structural relations between countries. The mediating effects of anticipated pride and guilt as described in the conceptual model were estimated with structural equation modelling (Iacobucci, Saldanha, & Deng, 2007). Two multi-group structural regression models with latent variables were estimated. First, all parameters in the structural part of the model were constrained to be equal across groups (universal model). Second, all parameters in the structural part were estimated freely (country-specific model). Model comparisons with chi-square difference tests were used to test whether the structural relationships between the latent variables differ across countries.

### 5.5. Results

As already noted in the analysis section, the analysis consisted of three main parts. The results are described separately for the three parts. Table 5.1 shows means, standard deviations, and correlation coefficients for all of the included variables. All correlations are moderate to strong and in the expected directions.

Table 5.1. Means, standard deviations and correlations for all included variables within individualistic ( $N = 3,048$ ; lower triangular matrix) and collectivistic ( $N = 806$ ; upper triangular matrix) countries

	Individualistic countries		Collectivistic countries		1.	2.	3.	4.	5.
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>					
1. Anticipated pride	3.06	1.05	3.81	0.89	-	.431**	.398**	.305**	.458**
2. Anticipated guilt	2.85	1.18	3.40	1.09	.509** <sup>a</sup>	-	.288**	.237**	.345**
3. Attitude	3.20	0.92	3.23	0.82	.506**	.370**	-	.455**	.479**
4. Descriptive social norm	2.43	0.67	2.73	0.71	.286**	.222**	.386**	-	.435**
5. Intention	2.62	1.35	3.20	1.18	.433**	.371**	.558**	.416**	-
6. Purchase of products	2.42	1.00	-	-	.429**	.320**	.469**	.429**	.639**

Note. <sup>a</sup>\*\* $p < .001$ ; *M* = mean; *SD* = standard deviation.

### 5.6. Part 1: Self-regulatory function of pride and guilt

We first estimated a general structural regression model based on our conceptual model (Figure 5.1) across all countries. This model showed good fit (relative  $\chi^2 = 688.149/68 = 10.12$ ;  $p < .001$ ; RMSEA = .049; SRMR = .021; CFI = .985; TLI = .979). The standardised path coefficients for the overall model are reported in Figure 5.2. The results show that descriptive social norms and attitudes influenced intentions. Furthermore, the *indirect* effects reveal that anticipated pride and guilt partially mediated the effects of attitude ( $\beta_{\text{pride}} = .072$ ,  $p < .001$  and  $\beta_{\text{guilt}} = .033$ ,  $p < .001$ ) and descriptive social norms ( $\beta_{\text{pride}} = .027$ ,  $p < .01$  and  $\beta_{\text{guilt}} = .018$ ,  $p < .01$ ) on buying intentions toward organic products. These results confirm Hypothesis 1. Anticipated pride and guilt have a self-regulatory function in the context of organic buying behaviour, such that they mediate the effects of descriptive social norms and attitudes on intentions.

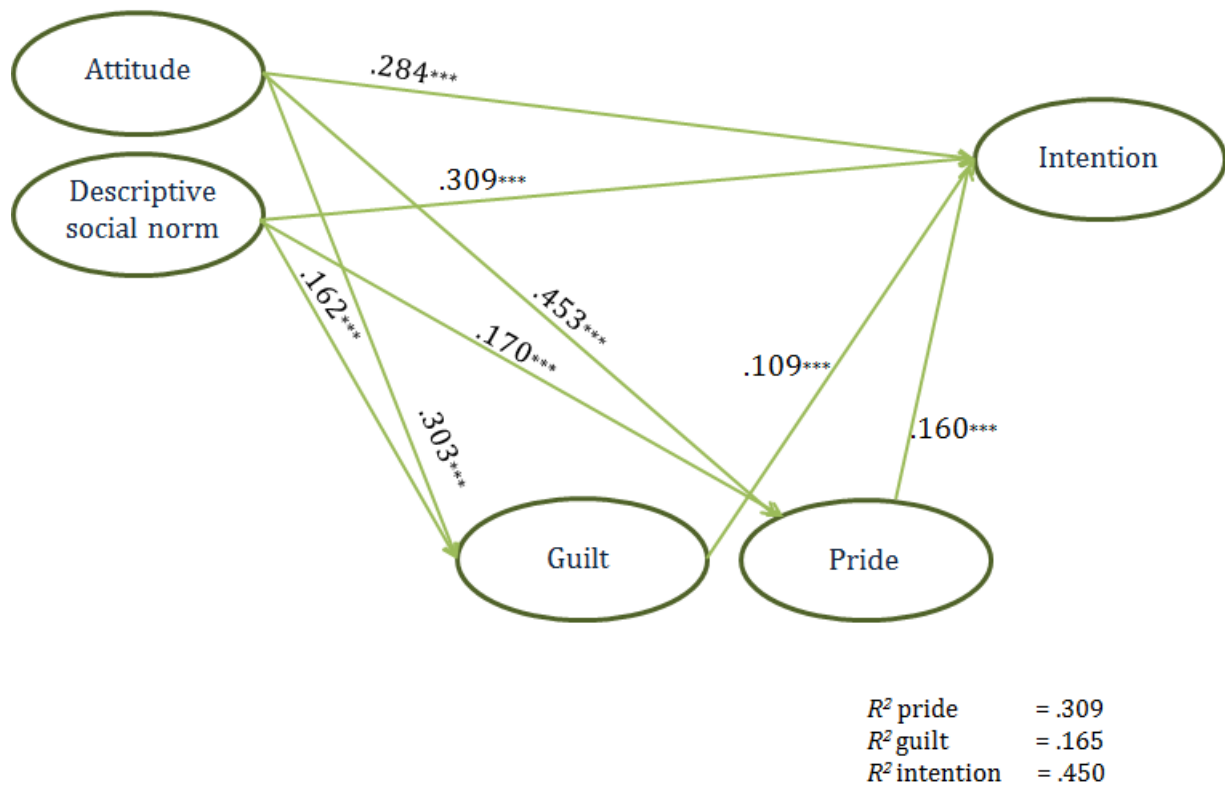


Figure 5.2. Structural regression model across all countries

Note. All standardised path coefficients are shown; All item loadings were significant. For reasons of clarity, we do not report the item loadings or standard errors; \*\*\* $p < .001$ ; the underlined standardised path coefficients differ significantly across individualistic and collectivistic countries; Anticipated pride and guilt ( $r = .46$ ) and attitudes and descriptive norms were allowed to correlate ( $r = .48$ ).

### 5.7. Part 2: Comparing differences in the self-regulatory function within individualistic and within collectivistic countries

To explore difference between countries we first have to assess measurement invariance. In turn we can explore whether there are differences in the structural relations within individualistic and within collectivistic countries. The results are reported separately for individualistic and collectivistic countries.

#### Testing for invariance across individualistic countries<sup>15</sup>

Configural invariance was observed based on the acceptable fit of the measurement models of all the included countries: the Netherlands (relative  $\chi^2 = 147.198/94 = 1.59$ ;  $p < .001$ ; RMSEA = .040; SRMR = .030; CFI = .987; TLI = .984), Germany (relative  $\chi^2 = 231.887/94 = 2.30$ ;  $p < .001$ ; RMSEA = .061; SRMR = .037; CFI = .970; TLI = .962), the United Kingdom (relative  $\chi^2 = 215.262/94 = 2.59$ ;  $p < .001$ ; RMSEA = .059; SRMR = .044; CFI = .970; TLI = .961), the United

<sup>15</sup> Note that we assessed measurement invariance across individualistic countries for a measurement model which included a measurement of behaviour. We included behaviour to ascertain that our conceptual model follows the reasoning of vested theories, such as the Theory of Planned Behaviour (Ajzen, 1991), positing that intentions are the main predictors of behaviour. The results of the model including behaviour are reported later in this paper.

States (relative  $\chi^2 = 173.797/94 = 1.83$ ;  $p < .001$ ; RMSEA = .050; SRMR = .041; CFI = .978; TLI = .972), Canada (relative  $\chi^2 = 186.592/94 = 2.05$ ;  $p < .001$ ; RMSEA = .063; SRMR = .052; CFI = .961; TLI = .950), and Australia (relative  $\chi^2 = 144.042/94 = 1.47$ ;  $p < .001$ ; RMSEA = .048; SRMR = .039; CFI = .980; TLI = .975).

*Metric and scalar invariance.* Chi-square difference tests (Table 5.2) show that the measurement model was not fully invariant across countries, such that Models 1, 2, and 3 had a significantly lower fit compared to the baseline model. A detailed analysis, however, revealed that the factor loadings were clearly significant for all countries (all in the expected direction) and that the magnitude of the differences in parameter estimates between the countries was modest. The results thus show neither perfect invariance nor evidence of complete inequality. This situation is termed partial measurement invariance (Byrne, Shavelson, & Muthén, 1989). No explicit guiding rules decide which level of partial invariance is acceptable, although it is important that the observed degree of invariance is reported with the results (e.g., Byrne et al., 1989).

Table 5.2. *Fit indices for measurement invariance across six individualistic countries*

	$\chi^2$	$df$	$\Delta\chi^2$	$\Delta df$	RMSEA; SRMR; CFI; TLI
Baseline model	1098.779	564			RMSEA = .054; SRMR = .043; CFI = .975; TLI = .968
Model 1	1279.581	644	180.802; $p < .001$	80	RMSEA = .055; SRMR = .081; CFI = .970; TLI = .967
Model 2	1713.761	619	614.982; $p < .001$	55	RMSEA = .074; SRMR = .153; CFI = .949; TLI = .940
Model 3	2174.851	699	1076.072; $p < .001$	135	RMSEA = .081; SRMR = .089; CFI = .931; TLI = .929
Model 4 <sup>a</sup>	1186.205	619	87.426; $p = n.s.$	55	RMSEA = .054; SRMR = .080; CFI = .970; TLI = .966.

*Note.* <sup>a</sup>This is a partially invariant model in which the items "I feel superior"; "How often did you buy organic food/organic cotton the last two weeks"; "I associate organic products with being successful"; and "How often do you think the average person from your country buys organic?" were free to vary;  $df$  = degrees of freedom.

We aimed to assess partial metric invariance, because constraining factor loadings across groups is particularly desirable when modelling multi-group structural relations. We checked the modification indices to identify which items differed substantially across the six countries. To ascertain that we did not free too many items, we used a step-by-step procedure such that we allowed the factor loadings to vary across countries one by one. Eventually, we estimated a model in which we freed 5 out of 17 items (see Table 5.2). This partially invariant model had an excellent fit and did not differ significantly in model fit from the baseline model. According to the critical values of the CFI and RMSEA (Cheung & Rensvold, 2002) the results show metric invariance and partial metric invariance, such that the difference between the baseline model and model 1 and model 4 does not pass the critical value ( $\Delta CFI = .10$  and  $\Delta RMSEA = .15$ ). The chi-square difference test seems more rigorous than the critical values. As mentioned earlier, we

follow the chi-square difference tests and therefore used the partially invariant model in further analyses.

*Testing structural regression models across individualistic countries*

The partially invariant model was used as the measurement model and was extended with structural correlations. To assess whether the proposed structural relations differed across individualistic countries, we estimated two multigroup structural regression models. In the first model, all of the parameters in the structural part of the model were constrained to be equal across the six countries (universal model). In the second model, all of the parameters in the structural part were estimated freely (country-specific model). Chi-square difference tests show that the country-specific model (relative  $\chi^2 = 934.543/458 = 2.04$ ;  $p < .001$ ; RMSEA = .057; SRMR = .082; CFI = .976; TLI = .976) and the universal model (relative  $\chi^2 = 964.484/498 = 1.94$ ;  $p < .001$ ; RMSEA = .054; SRMR = .084; CFI = .977; TLI = .974) were not significantly different in model fit ( $\Delta\chi^2 (40) = 29.941$ ;  $p = \text{n.s.}$ ). These results confirm Hypothesis 2, indicating that the structural relations do not differ significantly across individualistic countries.

*Testing for measurement invariance between collectivistic countries*

The results reveal a model with an acceptable fit for individuals from Singapore (relative  $\chi^2 = 2.78$ ;  $p < .001$ ; RMSEA = .067; SRMR = .024; CFI = .973; TLI = .965) and from Malaysia (relative  $\chi^2 = 2.33$ ;  $p < .001$ ; RMSEA = .058; SRMR = .033; CFI = .977; TLI = .970). These results indicate configural invariance, such that both groups had a similar factor structure.

Table 5.3 shows that the measurement model was not fully invariant across the groups: Models 1, 2, and 3 had a significantly lower fit compared to the baseline model. Subsequently, we aimed to assess partial metric invariance. We used the same step-by-step procedure as for individualistic countries and eventually estimated a model in which we freed 2 out of 17 items. This model had an excellent fit and did not differ significantly in model fit from the baseline model, which indicated partial metric invariance. According to the critical values of the CFI and RMSEA (Cheung & Rensvold, 2002) the results show metric invariance and partial metric invariance. We follow the chi-square difference tests and used the partially invariant model for further analyses.

Table 5.3. *Fit indices for measurement invariance across two collectivistic countries*

	$\chi^2$	<i>df</i>	$\Delta \chi^2$	$\Delta df$	RMSEA; SRMR; CFI; TLI
Baseline model	301.255	118			RMSEA = .063; SRMR = .031; CFI = .975; TLI = .967
Model 1	347.856	131	46.601; $p < .001$	17	RMSEA = .065; SRMR = .056; CFI = .971; TLI = .965
Model 2	354.909	127	53.654; $p < .001$	9	RMSEA = .067; SRMR = .036; CFI = .969; TLI = .962
Model 3	401.847	140	100.592; $p < .001$	22	RMSEA = .069; SRMR = .064; CFI = .964; TLI = .960
Model 4 <sup>a</sup>	329.749	129	28.494; $p = n.s.$	11	RMSEA = .063; SRMR = .050; CFI = .973; TLI = .967

Note. <sup>a</sup>This is a partially invariant model in which the items "I feel worthy" and "How often do you think the average person from your country buys organic?" were free to vary; *df* = degrees of freedom.

### *Testing structural regression models between collectivistic countries*

The partially invariant model was used as measurement model and was extended to include structural relations. To explore whether there were differences in the structural relations between individuals from the two collectivistic countries, we estimated a country-specific and a universal model. The group-specific model (relative  $\chi^2 = 2.43$ ;  $p < .001$ ; RMSEA = .060; SRMR = .050; CFI = .973; TLI = .966) and the universal model (relative  $\chi^2 = 2.33$ ;  $p < .001$ ; RMSEA = .058; SRMR = .048; CFI = .973; TLI = .969) showed no significant differences in model fit ( $\Delta\chi^2(8) = 4.471$ ;  $p < .001$ ). These results confirm Hypothesis 2: the self-regulatory function of anticipated pride and guilt did not differ across the two collectivistic countries.

### **5.8. Part 3: differences between individualistic and collectivistic countries.**

In this phase, the self-regulatory function of anticipated pride and guilt was compared across individualistic and collectivistic countries. The six Western countries (the Netherlands, Germany, UK, US, Canada, and Australia) were grouped together as individualistic countries, and the two Eastern countries (Malaysia and Singapore) were grouped together as collectivistic countries.

### *Testing for measurement invariance between collectivistic and individualistic countries*

The results reveal a model with an acceptable fit for individuals from individualistic countries (relative  $\chi^2 = 7.36$ ;  $p < .001$ ; RMSEA = .046; SRMR = .024; CFI = .988; TLI = .984) and for individuals from collectivistic countries (relative  $\chi^2 = 4.07$ ;  $p < .001$ ; RMSEA = .062; SRMR = .025; CFI = .976; TLI = .968). These results indicate configural invariance, such that both groups had a similar factor structure.

We then aimed to assess metric or scalar invariance. Table 5.4 shows that the measurement model was not fully invariant across the two groups. We used the same method as mentioned in Part 2 of the results section. We found a partially invariant model in which 6 items that differed substantially across groups were free to vary (see Table 5.4). According to the

critical values of the CFI and RMSEA (Cheung & Rensvold, 2002) the results show scalar, metric and partial metric invariance. We decided to use the partially metric invariant measurement model for our further analyses.

Table 5.4. *Fit indices for measurement invariance across individuals from collectivistic versus individualistic countries*

	$\chi^2$	Df	$\Delta\chi^2$	$\Delta df$	RMSEA; SRMR; CFI; TLI
Baseline model	683.637	118			RMSEA = .050; SRMR = .026; CFI = .985; TLI = .980
Model 1	790.702	131	107.065; $p < .001$	13	RMSEA = .051; SRMR = .074; CFI = .982; TLI = .979
Model 2	749.762	127	66.125; $p < .001$	9	RMSEA = .051; SRMR = .026; CFI = .984; TLI = .980
Model 3	839.995	140	156.358; $p < .001$	22	RMSEA = .051; SRMR = .069; CFI = .981; TLI = .979
Model 4 <sup>a</sup>	707.411	125	23.744; $p = n.s.$	10	RMSEA = .049; SRMR = .043; CFI = .984; TLI = .981

*Note.* <sup>a</sup>This is a partially invariant model in which the items “I feel proud/worthy”; “I feel guilty”; “I associate organic products with being successful/reliable”; and “How often do you think the average person from your country buys organic?” were free to vary; *df* = degrees of freedom.

#### *Testing structural regression models between individualistic and collectivistic countries*

To explore whether there were differences in the structural relations between individuals from collectivistic and individualistic countries, we estimated a group-specific and a universal model. The group-specific model (relative  $\chi^2 = 5.99$ ;  $p < .001$ ; RMSEA = .051; SRMR = .039; CFI = .982; TLI = .977) had a significantly better fit ( $\Delta\chi^2 (8) = 30.053$ ;  $p < .001$ ) compared to the universal model (relative  $\chi^2 = 5.87$ ;  $p < .001$ ; RMSEA = .050; SRMR = .054; CFI = .981; TLI = .978). Taken together, the associations in the conceptual model thus significantly differed in strength across individualistic and collectivistic cultures, as expected. The standardised path coefficients for the group-specific models are reported in Figures 5.3 and 5.4.

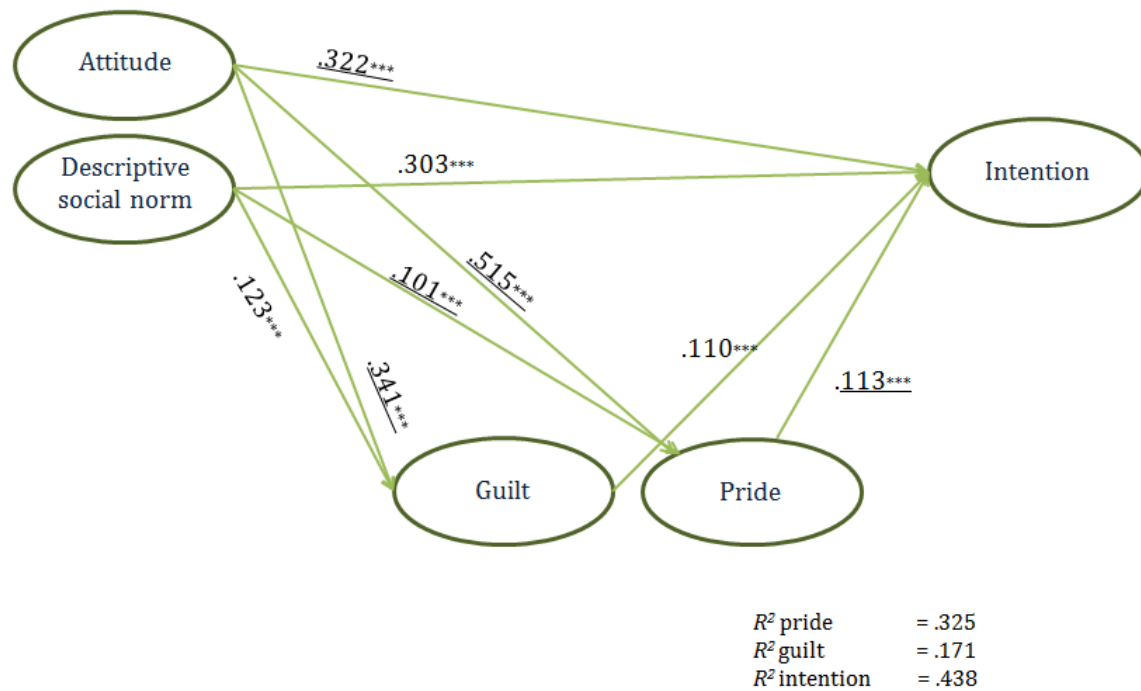


Figure 5.3. Group-specific structural regression model for individuals from individualistic countries

Note. All standardized path coefficients are shown; All item loadings were significant. For reasons of clarity, we do not report the item loadings or standard errors; \*\*\* $p < .001$ ; the underlined standardized path coefficients differ significantly across individualistic and collectivistic countries; Anticipated pride and guilt ( $r = .45$ ) and attitudes and descriptive norms were allowed to correlate ( $r = .47$ ).

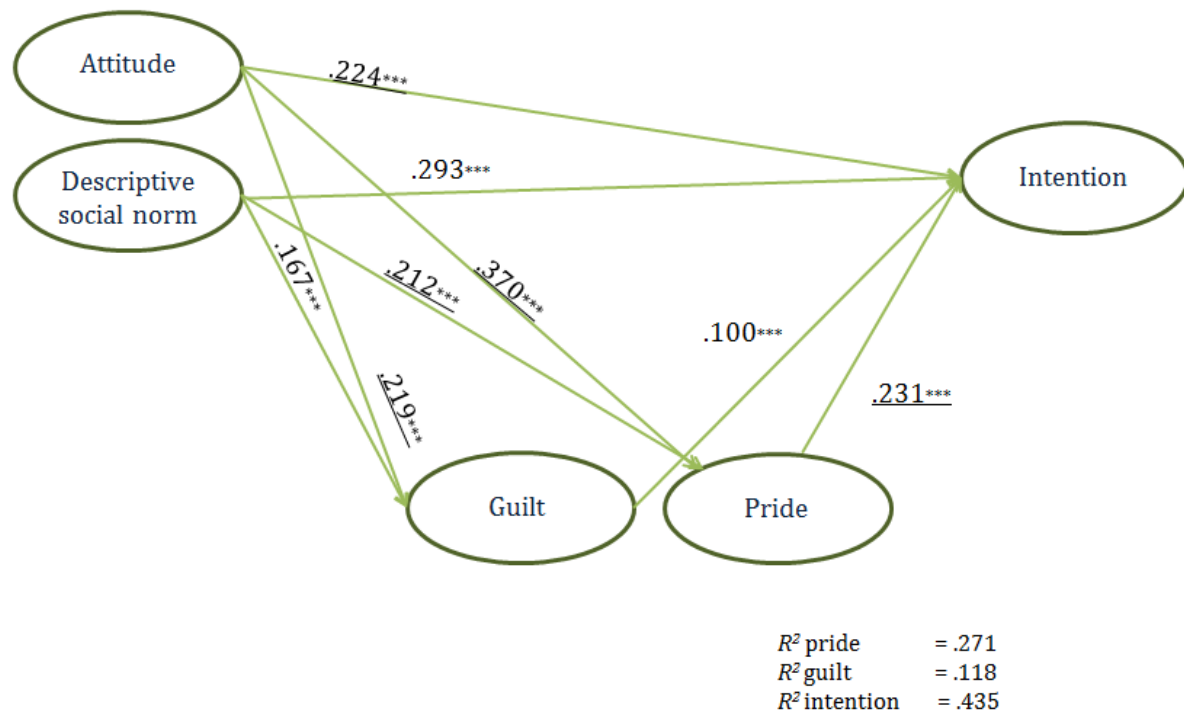


Figure 5.4. Group-specific structural regression model for individuals from collectivistic countries

Note. All standardized path coefficients are shown; All item loadings were significant. For reasons of clarity, we do not report the item loadings and standard errors; \*\*\* $p < .001$ ; the underlined standardized path coefficients differ significantly across individualistic and collectivistic countries; Anticipated pride and guilt ( $r = .38$ ) and attitudes and descriptive norms were allowed to correlate ( $r = .57$ ).



The results show that descriptive social norms and attitudes influenced the intentions of individuals from both individualistic and collectivistic cultures. Moreover, the effects of descriptive social norms and attitudes on intentions were partially mediated by anticipated pride and guilt regarding the environment. For individualistic cultures, the indirect effects reveal that anticipated pride and guilt partially mediated the effects of attitudes ( $\beta^{\text{pride}} = .058, p < .001$  and  $\beta^{\text{guilt}} = .038, p < .001$ ) and descriptive social norms ( $\beta^{\text{pride}} = .011, p < .001$  and  $\beta^{\text{guilt}} = .014, p < .001$ ) on intentions. For collectivistic cultures, the results also reveal that anticipated pride and guilt partially mediated the effects of attitudes ( $\beta^{\text{pride}} = .085, p < .001$  and  $\beta^{\text{guilt}} = .022, p < .05$ ) and descriptive social norms ( $\beta^{\text{pride}} = .049, p < .001$  and  $\beta^{\text{guilt}} = .017, p < .05$ ) on intentions.

Then we used a stepwise procedure to explore which relations differed significantly across the two groups (see Table 5.5). We started with a model in which all of the relations were free to vary across the two groups. We then estimated models in which each time one of the associations was fixed across the two groups. We checked which model (and thus which association) resulted in the lowest and insignificant decrease of the chi-square statistic. This association did not differ significantly across the groups and was therefore fixed. In the next step, we explored whether we could fix one of the remaining associations without a significant reduction in model fit. We followed this procedure until we could no longer fix a relationship without significantly reducing the model fit.

Table 5.5. *Chi-square values from the stepwise procedure to test the significance of the structural relations between individuals from collectivistic versus individualistic countries within a multi-group structural regression model*

Associations in structural regression model	Chi-square values				
Attitude on guilt	1.493.843	1.493.911	1.494.993	1.495.706	
Attitude on pride	1.496.763	1.496.895	1.498.012	1.498.444	
Descriptive social norms on guilt	1.486.897	1.486.978	<u>1.488.005</u>		
Descriptive social norms on pride	1.490.307	1.490.438	1.491.557	1.492.008	
Guilt on intention	<u>1.485.741</u>				
Pride on intention	1.491.549	1.491.681	1.491.785	1.493.560	
Descriptive social norms on intention	1.486.370	<u>1.486.676</u>			
Attitude on intention	1.494.221	1.494.557	1.502.301	1.503.903	
Chi-square value when all structural relations free to vary	<u>1485.563</u>				
Df	145	146	147	148	149

*Note.* We fixed the associations one by one, resulting in nested models that were compared to the underlined models with +1 degrees of freedom. Chi-square difference tests were used to check whether the nested models resulted in a significant difference in model fit, allowing us to explore which associations differed significantly across individualistic and collectivistic countries. The underlined scores show the lowest chi-square value in each column.

The results (Table 5.5 and Figures 5.3 and 5.4) partially support Hypothesis 3. As predicted, anticipated emotions were more strongly affected by attitudes for individualistic cultures than for collectivistic cultures. Furthermore, anticipated pride was more strongly affected by descriptive social norms for collectivistic than individualistic cultures. There were no significant differences between cultures in the effects of descriptive social norms on anticipated guilt.

Anticipated pride showed stronger effects on the intentions of individuals from collectivistic cultures than on those from individualistic cultures. There were no significant differences across cultures in the effects of anticipated guilt on intentions (Hypothesis 4 was rejected). To assure that language does not affect our results, we also performed the analyses with the two collectivistic versus two English speaking individualistic countries (i.e. Australia and US). These additional analyses show comparable results<sup>16</sup>.

### 5.9. Additional analyses: How about behaviour?

Finally, purchase behaviour was included for individualistic countries. We used this measure to ascertain that our conceptual model follows the reasoning of vested theories, such as the Theory of Planned Behaviour (Ajzen, 1991), positing that intentions are the main predictors of behaviour. We would like to ascertain whether our findings remain the same after including purchasing behaviour. We did not expect any direct effects of anticipated pride and guilt after including behaviour, because the effects of emotions on behaviour are generally mediated by motivational variables such as behavioural intentions (e.g., Bagozzi & Pieters, 1998; Baumgartner, Pieters, & Bagozzi, 2008).

#### *Design and measurement*

The respondents were approached in two waves to measure their behaviour longitudinally. In the first wave, the respondents answered questions regarding attitudes, social norms, anticipated pride and guilt, and intentions. In the second wave, two weeks after the first questionnaire, the respondents answered questions regarding their behaviour in buying environmentally friendly products. The second questionnaire was completed by 63.62% of the first wave participants<sup>17</sup>, resulting in 1,939 respondents.

<sup>16</sup> The results show partial invariance, such that the partially invariant model (relative  $\chi^2 = 438.891/124 = 6.44$ ;  $p < .001$ ; RMSEA = .053; SRMR = .048; CFI = .982; TLI = .978) and baseline model (relative  $\chi^2 = 417.442/118 = ; p < .001$ ; RMSEA = .053; SRMR = .027; CFI = .983; TLI = .978) do not differ significantly in model fit ( $\Delta\chi^2(6) = 21.449$ ;  $p = n.s.$ ).

Furthermore, the country-specific model (relative  $\chi^2 = 541.133/150 = ; p < .001$ ; RMSEA = .054; SRMR = .071; CFI = .979; TLI = .975) and the universal model (relative  $\chi^2 = 509.440/142 = ; p < .001$ ; RMSEA = .054; SRMR = .046; CFI = .980; TLI = .975) show to differ significantly ( $\Delta\chi^2(8) = 31.693$ ;  $p < .001$ ). A step by step procedure was used to check which associations differ significantly. The results show that the effects of attitudes on pride and guilt, the effects of norms on pride, and the effects of pride and attitude on intention differ significantly across individualistic and collectivistic countries.

<sup>17</sup> To determine whether the respondents who completed waves 1 and 2 and the respondents who only completed wave 1 showed similar relations among the variables of interest, we performed Fisher Z tests. We compared the two

*Self-reported purchase of environmentally friendly products.* Purchasing behaviour regarding organic products was assessed by asking respondents to indicate how often they bought organic food products, organic cotton, and organic personal care products during the last two weeks (following the first wave of the survey) on a 5-point scale (ranging from 1 = “never” to 5 = “very often”). Cronbach’s alpha for this scale was .83.

The overall measurement model showed an adequate fit (relative  $\chi^2 = 433.711/94 = 9.20$ ;  $p < .001$ ; RMSEA = .043; SRMR = .028; CFI = .983; TLI = .979).

#### *Testing structural regression models between individualistic countries*

Measurement invariance was already assessed (see Table 5.2). To assess whether the proposed structural relations differed across individualistic countries, we estimated two multigroup structural regression models. In the first model, all of the parameters in the structural part of the model were constrained to be equal across the six countries (universal model). In the second model, all of the parameters in the structural part were estimated freely (country-specific model). Chi-square difference tests show that the country-specific model (relative  $\chi^2 = 1599.213/709 = 2.20$ ;  $p < .001$ ; RMSEA = .062; SRMR = .095; CFI = .961; TLI = .955) and the universal model (relative  $\chi^2 = 1632.051/754 = 2.12$ ;  $p < .001$ ; RMSEA = .059; SRMR = .095; CFI = .960; TLI = .957) were not significantly different in terms of model fit ( $\Delta\chi^2 (45) = 32.838$ ;  $p = \text{n.s.}$ ). These findings underscore the comparability across individualistic countries of the hypothesised self-regulatory function of anticipated pride and guilt.

### **5.10. General discussion**

The current study shows that both anticipated pride and guilt have a self-regulatory function in the context of environmentally friendly consumer behaviour. Anticipating that one will experience these emotions causes individuals to form intentions that are in accordance with one’s attitudes and social norms towards the environment. In addition, we have shown that this function differs *across* individuals from individualistic versus collectivistic countries but not between individuals *within* individualistic and *within* collectivistic countries. This finding indicates that individuals who differ in cultural self-construal, such that they employ independent versus interdependent concepts of themselves, have different underlying emotional mechanisms that cause their pro-environmental purchasing choices to align with their attitudes and social norms. The implications of the current study are discussed in detail below.

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groups on correlation coefficients of the hypothesised relations. The results reveal that there are no significant differences between these two groups in the association between anticipated pride and guilt and attitudes (pride  $Z = -1.47$ ,  $p = \text{n.s.}$ ; guilt  $Z = -1.19$ ,  $p = \text{n.s.}$ ), social norms (pride  $Z = -1.65$ ,  $p = \text{n.s.}$ ; guilt  $Z = -1.19$ ,  $p = \text{n.s.}$ ), and intentions of buying environmentally friendly products (pride  $Z = -1.13$ ,  $p = \text{n.s.}$ ; guilt  $Z = -1.42$ ,  $p = \text{n.s.}$ ).

*A self-regulatory function is present for both negative and positive self-conscious emotions*

We confirm the findings of previous studies that have shown that the effects of attitudes and social norms on intentions are partially mediated by negative self-conscious emotions within the Theory of Planned Behaviour (Hynie et al., 2006; Onwezen et al., 2013a; Su et al., 2011). However the current findings are not fully in accordance with the findings of Bamberg and Möser (2007). They include guilt, variables of the Theory of Planned Behaviour and variables of the Norm Activation Model in a meta analyses. They show in accordance with the current findings that guilt was influenced by social norms. However, they also show that guilt influenced attitudes. To ascertain that the direction of the reported effects is correct, we compared our conceptual model with alternative models in which emotions affect attitudes and norms<sup>18</sup>. The findings confirm our hypotheses, such that the mediating effect of pride and guilt on the effects of social norms and attitudes on intentions provides the best model fit. This provides an indication of the direction of the effects, however longitudinal data or experiments are necessary to explore the causality of these effects.

We confirm Hypothesis 1 and provide relevant insights into the function of self-conscious emotions. Emotions thus guide pro-environmental behaviour by promoting both the avoidance of negative emotions and the pursuit of positive emotions. The findings of the current study regarding the self-regulatory function of pride support the importance of positive emotions in future research about pro-environmental consumer behaviour (Corral-Verdugo, 2012; Frederickson, 2001). We show that anticipated pride affects pro-environmental purchase intentions for individuals from a range of individualistic and collectivistic cultures and that pride has a larger effect than guilt on pro-environmental intentions for individuals from collectivistic cultures<sup>19</sup>. An interesting question that remains is whether these positive and negative mechanisms manifest themselves on separate occasions, coexist or even reinforce one another.

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<sup>18</sup> Chi-square difference tests can only be used to compare model fit between nested models. Models that differ in the direction of effects cannot be regarded as nested models. As such we used AIC and BIC scores to compare model fit. For individualistic countries the hypothesized mediating effect (AIC = 77168.833; BIC = 77508.567) shows a better model fit compared to a model in which guilt affects attitudes and social norms (AIC = 77327.538; BIC = 77661.702). For collectivistic countries, the hypothesized mediating effect also (AIC = 23721.579; BIC = 23959.982) shows a better model fit compared to a model in which guilt affects attitudes and social norms (AIC = 23815.954; BIC = 24049.682).

<sup>19</sup> Chi-square difference tests were used to test whether constraining pride and guilt to be equal would result in a significantly reduced model fit compared to a model in which these emotions were free to vary. For individualistic countries, there was no significant difference between the effects of anticipated pride and guilt on intentions ( $\Delta\chi^2(1) = 0.05, p = n.s.$ ). For collectivistic countries, there was a significant difference between the effects of anticipated pride and guilt on intentions ( $\Delta\chi^2(1) = 5.415, p < .05$ ), as that pride had a larger effect on intentions than guilt.

*Differences across collectivistic and individualistic cultures in the self-regulating function of anticipated pride and guilt*

The current study shows that the self-regulatory function of anticipated pride and guilt is present in both individualistic and collectivistic cultures. We furthermore show that there are no country differences within individualistic and within collectivistic cultures, which confirms Hypothesis 2. This result implies that the basic function of anticipated pride and guilt to make consumer behaviour consistent with one's (perceived) environmental standards can be generalised across countries having the same type of culture (either individualistic or collectivistic).

However, although the self-regulatory function of anticipated pride and guilt is present across cultures, some differences in the strength of these effects exist between individualistic and collectivistic cultures, as expected. Previous studies have already shown cultural differences in the effects of attitudes and social norms on intentions (Chan & Lau, 2002). Our results provide a first indication that the underlying mechanism through which attitudes and social norms affect pro-environmental intentions also differs between individuals from individualistic and collectivistic cultures. Attitudes, as a reference to which individuals evaluate individual behaviour, are more important in evoking self-conscious emotions for individuals from individualistic cultures than for individuals from collectivistic cultures. Descriptive social norms are more important in evoking pride for individuals from collectivistic cultures than for individuals from individualistic cultures. The effects of descriptive social norms on anticipated guilt did not differ between individuals from individualistic and collectivistic cultures (Hypothesis 3 was partially confirmed). Altogether, the self-regulatory function of anticipated pride and guilt is more social in nature for individuals from collectivistic cultures than for those from individualistic cultures, such that the former group relies more on social standards and less on personal standards to anticipate emotions. This finding indicates that individuals with a different concept of the self use different standards to evaluate their behaviour and subsequently anticipate which emotions they will experience as a result. This finding implies that the way one sees the self affects the formation and function of self-conscious emotions (Tracy & Robins, 2004a). Future research is necessary to explore these relations directly, as the current study did not include a measure of self-construal.

In addition, we have shown that anticipated pride has a stronger effect on purchasing intentions in collectivistic cultures than it does in individualistic cultures, whereas we unexpectedly did not find differences between cultures in the effects of anticipated guilt (Hypothesis 4 was rejected). We found two studies that report comparable results. Below, we elaborate on these two studies which might provide a possible explanation for the unexpected findings.

Similarly to the current study, the findings of Neumann (2009) indicate that individuals from collectivistic cultures are more affected by pride than individuals from individualistic cultures when these emotions are based upon social achievements. If we follow this reasoning, we can argue that pro-environmental behaviour, such as making organic purchases, can be regarded as a social achievement that contributes to a societal goal of preserving the planet. Individuals from collectivistic cultures might be more sensitive to personal achievements that have a social goal than individuals from individualistic cultures.

Aaker and Williams (1998) show that the relative novelty of thoughts can account for differences in the effects of emotions (e.g., pride and guilt) between individualistic and collectivistic cultures. Uncommon thoughts such as 'the self as a unique person' for collectivistic cultures, or 'the self in relation to others' in individualistic cultures increases the effects of emotional advertisement. Subsequently, one could reason that pro-environmental behaviour was more uncommon for collectivistic compared to individualistic countries, which increased the effectiveness of pride on intentions. Future research is necessary to explore whether this explanation could account for our findings.

Studies of self-conscious emotions mainly focus on Western countries (e.g., Hynie et al., 2006; Tracy & Robins, 2007). The current findings underline the importance of including broad cross-cultural samples and cross-cultural comparisons in future research. In addition, these findings have implications for a related body of research on private versus social selves. Individuals can also vary on self-construal on an individual level within countries (Triandis, 1995) or on a situational level, such that private versus social frames can be activated within individuals. Future research could explore whether the current findings also exist on the individual or situational levels, such that the self-regulatory function of emotions might also vary within countries, or even within individuals at different moments in time.

### *Limitations*

At first, the current study shows that collectivistic and individualistic countries differ in the function of self-conscious emotions. We reason, based on previous research, that differences in the construal of the self account for these findings. However, we do not directly test this reasoning. Although a large body of studies shows that these countries differ in self-construal (e.g., Markus & Kitayama, 1991) it remains possible that other differences between collectivistic cultures and individualistic cultures account for the present findings, such as differences in emotional display rules (Matsumoto et al., 2008), environmental attitudes (Sarigöllü, 2009), or environmental motive concerns (Milfont et al., 2006). Future research, might include measures of independent versus interdependent self (e.g., Brewer & Gardner, 1996) to directly test whether self-construal accounts for the differences in the function of self-conscious emotions

across cultures. The findings of this study show rather small differences between collectivistic and individualistic cultures in the function of pride and guilt. We propose that measuring independent and an interdependent self-construals across countries probably results in larger differences in the function of self-conscious emotions.

The current study included two collectivistic countries and six individualistic countries. The sample was large enough to draw conclusions regarding cultural differences between collectivistic and individualistic countries. However, one might question the external validity of the results concerning the collectivistic countries. We only selected two countries to obtain a first indication of the differences between collectivistic and individualistic cultures. It would be worthwhile to include a broader range and multiple collectivistic countries in future research.

Furthermore, we obtained partial invariance. As such not all factor loading were equal across countries. Although partial invariance allowed us to compare structural relations, it does imply that the constructs are not fully equivalent across collectivistic and individualistic countries. Future research might further elaborate on differences between cultures in anticipated emotions in the context of pro-social behaviour. Our findings imply that individuals from collectivistic cultures anticipate more pride and guilt regarding the environment (see means in Table 5.1).

We performed additional analyses to ascertain that this reported differences in means are not the result of answering tendencies<sup>20</sup>. These additional analyses also imply that individuals from Singapore and Taiwan have higher anticipated pride, anticipated guilt and intentions than individuals from individualistic countries. However, descriptive norms and attitudes are higher in individualistic compared to collectivistic cultures. This implies that the 'gap' between standards and intentions is higher in individualistic compared to collectivistic cultures. The current findings imply that pride plays a larger role in closing the 'gap' in collectivistic compared to individualistic countries. Because all our items refer to environmental behaviour they are not a strong indicator of answering tendencies. Future research is necessary to further explore this interesting line of research.

The present study selected one positive emotion and one negative emotion. However, we did not include a range of emotions and therefore cannot rule out whether the results account specifically for pride and guilt or whether these results apply to positive (e.g., affective

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<sup>20</sup> We standardized the constructs at respondent level. We used the means and standard deviations of all answers for each respondent to compute standardized scores. ANOVA's were conducted with the standardized constructs as dependent variables and collectivistic versus individualistic countries as independent variable. The results show that collectivistic countries score lower on attitudes ( $M^{col} = -.047$ ;  $M^{indv} = .342$ ;  $F(1,3717) = 281.68$ ;  $p < .01$ ) and descriptive social norms ( $M^{col} = -.626$ ;  $M^{indv} = -.518$ ;  $F(1,3717) = 14.037$ ;  $p < .01$ ), and higher on anticipated pride ( $M^{col} = .584$ ;  $M^{indv} = .205$ ;  $F(1,3717) = 193.124$ ;  $p < .01$ ), anticipated guilt ( $M^{col} = .137$ ;  $M^{indv} = -.031$ ;  $F(1,3717) = 24.902$ ;  $p < .01$ ), and intentions ( $M^{col} = -.098$ ;  $M^{indv} = -.336$ ;  $F(1,3717) = 26.7$ ;  $p < .01$ ) compared to individualistic countries.

connection; see Hinds and Sparks, 2008) and negative valence. Future research might further explore whether a range of distinct emotions lead to similar or diverse effects. Anticipated pride and guilt were measured regarding environmentally (un)friendly behaviour whereas the other variables were measured at a more specific level regarding organic purchases. Future research might strengthen the current findings by measuring all variables at the same level of specificity. Moreover, future research might differentiate between environmentally friendly and environmentally unfriendly behaviour. Sheikh and Janoff-Bulman (2010) show that different emotions (i.e. shame and guilt) have different moral underpinnings. Future research might therefore include multiple contexts to ascertain whether our findings still hold in different moral and non-moral domains.

Christensen et al. (2004) show that it is important to distinguish between descriptive norms (i.e. norms regarding what relevant others typically do) and injunctive norms (i.e. norms regarding what relevant others think you should do), as that these norms have a different effect on the experience of emotions. The current study only included descriptive social norms. Future research might include injunctive norms and more differentiating descriptive norms to further explore differences between individualistic and collectivistic cultures in the self-regulatory function of anticipated pride and guilt.

### *Conclusions*

The present study shows that there are differences between, and not within, collectivistic and individualistic cultures in how emotions are evoked (i.e. a self-evaluation on different standards) and how they affect intentions. Attitudes have a stronger effect on anticipated pride and guilt emotions in individualistic cultures, and descriptive social norms have a stronger effect on pride in collectivistic cultures. Self-conscious emotions thus seem more social in nature in collectivistic compared to individualistic cultures. The results of the current study imply that differences in the cultural concept of the self result in a different function of self-conscious emotions.







## Chapter 6

### **Why activating different self-construals can increase the effects of self-conscious emotions on pro-environmental intentions**

Pride and guilt both have a self-regulatory function in the context of the environment; these emotions guide consumers to behave themselves in accordance with existing personal and social standards. This study aims to explore whether this self-regulatory function of pride and guilt differs when different employments of the self are activated. We show in three experiments that activating the social self increases the effects of guilt on pro-environmental intentions, whereas activating the private self increases the effects of pride on pro-environmental intentions. Furthermore, we show that these effects occur because the activation of private versus social selves results in different self-evaluations. Activating the social self makes individuals more sensitive to social norms in the formation of guilt, whereas activating the private self makes individuals more sensitive to attitudes in the formation of pride. Finally, we show that contextual cues such as information channels (mail versus Facebook) can activate different construals of the self. Theoretical and practical implications are discussed.

This chapter is based on:

Onwezen, M.C. & Antonides, G. Why activating different self-construals can increase the effects of self-conscious emotions on pro-environmental intentions. *Manuscript was submitted and there is asked for revision.*

### 6.1. Introduction

Self-conscious emotions, such as pride, hubris, shame, and guilt, have been found to guide pro-social decision making (e.g., Dickert et al., 2011; Eisenberg, 2000). These emotions are elicited after a self-evaluation of personal behaviour, such that one evaluates whether one's behaviour complies with a set of personal and social standards (Tangney et al., 2007; Tangney & Fischer, 1995; Tracy & Robins, 2004a). Because this set of standards often has a moral character with which individuals want to comply, self-conscious emotions guide decision making that involves the well-being of others (i.e. pro-social decision making).

We aim to explore whether the effects of the self-conscious emotions of pride and guilt on pro-social decision making can be strengthened by activating different construals of the self. Several researchers suggest that a different construal of the self—how individuals see themselves in relation to others—leads to different self-conscious emotions because these emotions rely on evaluations of the self (Camras & Fatani, 2004; Tracy & Robins, 2007). In addition, previous studies show that different construals of the self can be activated within an individual at different moments in time (e.g., Oyserman & Lee, 2008; Trafimow et al., 1991; Verplanken et al., 2009). Taken together, this implies that different construals of the self can be activated within individuals, which, in turn, affect the function of self-conscious emotions.

We study these effects in the context of environmentally friendly decision making. The decision to act in an environmentally friendly manner can be regarded as a specific form of pro-social behaviour (e.g., Granzin & Olsen, 1991). Individuals must go beyond immediate self-interest (e.g., expend energy or money) to gain benefits for the planet. This context is of high practical relevance because humankind is facing a number of global environmental issues, such as climate change, resource depletion, biodiversity loss, and air and water pollution. Many of these problems are caused by human behaviour, in which food, housing, and transport are the most important factors (Hertwich & Peters, 2009). To manage environmental issues, it is important to find ways to stimulate consumers' pro-environmental decision making (Steg & Vlek, 2009).

This study explores whether the effects of pride and guilt on pro-environmental intentions can be increased by activating the social self. Hynie et al. (2006) show that negative self-conscious emotions have a stronger impact on intentions when the social self (i.e. the self as a part of significant social groups) rather than the private self (i.e. the self as a unique individual differentiated from all others) is activated. We aim to extend previous findings in four ways. First, we intend to show these findings in a pro-social context; the context of the environment. We propose that self-conscious emotions have an increased impact on intentions when the social self is activated. Second, we include a positive self-conscious emotion (i.e. pride). As such, we explore whether a comparable mechanism occurs for both positive and negative self-

conscious emotions. Third, we explore how the increased impact of self-conscious emotions on intentions occurs. We propose that when the social self is activated, individuals are more prone to use social standards (instead of personal standards) to evaluate their own behaviour. Thus, emotions have a more social character when the social self is activated and have an increased impact on intentions that involve social behaviour, such as environmentally friendly behaviour. Finally, we explore whether social media activates the social self. We propose that information messages via social media enable social processes (Kietzmann, Hermkens, McCarthy, & Silvestre, 2011), activating the idea that the self is part of a group of family and friends (i.e. the social self).

## 6.2. Theoretical framework

### *Pride, guilt, and pro-environmental behaviour*

Previous studies show the relevance of a range of emotions in the context of environmentally friendly consumer choices, such as anger, guilt, pride (Harth et al., 2013), pleasure, arousal, happiness (Hartmann & Apaolaza-Ibáñez, 2010), and more general categories of positively and negatively anticipated emotions (Carrus et al., 2008). We reason, in accordance with previous studies (Onwezen et al., 2013a; 2013b), that in comparison with other emotions, pride and guilt are especially relevant in the context of the environment. We will explain our reasoning below.

Pride and guilt belong to a specific group of emotions called self-conscious emotions (Tracy & Robins, 2004a). Self-conscious emotions are categorized based on evaluations of events that evoke these emotions (Tracy & Robins, 2004a). First, events can result in positive or negative evaluations of the self, which result in positive and negative emotions, respectively. Second, events can result in global or specific evaluations of the self. For global evaluations, the self as a whole person is evaluated (e.g., I used the car to go to the nearby supermarket because I am a lazy person). For specific evaluations, only specific aspects of the self or specific situations are evaluated (e.g., I used the car to go to the nearby supermarket because I had to buy many heavy products). We propose that self-conscious emotions evoked after specific evaluations (i.e. pride and guilt) are especially relevant in the context of pro-environmental decision making because these emotions focus individual attention on specific behaviour and activate specific action tendencies toward this behaviour, whereas global evaluations direct attention to the whole self.

*Pride* is experienced as a positive and pleasant feeling that often accompanies feelings of self-worth (Tracy & Robins, 2007; Rodriguez Mosquera, Manstead, & Fischer, 2000). *Guilt* is experienced as a negative feeling that leads one to feel tense, remorseful, and worried (Baumeister et al., 1994; Kugler & Jones, 1992). Pride and guilt are associated with pro-environmental behaviour (e.g., Bamberg et al., 2007; Harth et al., 2013). Recent studies show that anticipated self-conscious emotions regulate individuals to follow their personal and social

standards, such as attitudes and social norms (Beer et al., 2003; Hynie et al., 2006; Su et al., 2011). Moreover, Onwezen et al. (2013a; 2013b) find that pride and guilt mediate the effects of social norms and attitudes on intentions in the context of the environment. Taken together, we propose that pride and guilt, in comparison with other emotions, are the most relevant in the context of pro-environmental consumer choices.

*Self-construal and self-conscious emotions*

The self refers to our individual beliefs of who we are. It is typically defined as how individuals see themselves in relation to others (Brewer, 1991; Markus & Kitayama, 1991). Fundamental differences exist between individuals' self-construals, and multiple distinctions have been made in previous research (Cross et al., 2011). In general, all theories regarding the construal of the self distinguish between a private self, which differentiates the self from all others, and a social self, which reflects assimilation to others or significant social groups (Oyserman et al., 2002; Trafimow, Triandis, & Goto, 1991; Triandis, 1989). The private and social self can vary within an individual as a function of contextual cues, such that a private or a social construal of the self can be activated at different moments in time (Triandis, 1995; Verplanken et al., 2009).

Previous studies show that the social self guides altruistic, pro-social (Vos & Van der Zee, 2011; Utz, 2004), ethical (Cojuharenco, Shteynberg, Gelfand, & Schminke, 2012), and environmental conservation behaviour (Arnocky et al., 2007). Moreover, previous studies show that activating the social self makes individuals more prone to follow social norms, whereas activating the private self makes individuals more prone to follow personal standards (i.e. attitudes or values) (Verplanken et al., 2009; Ybarra & Trafimow, 1998). These findings imply that individuals become more social when activating a social self-construal compared to a private self-construal, such that pro-environmental intentions and the effects of social norms on intentions increase.

The current study aims to explore whether the underlying emotional mechanism through which social norms and attitudes affect intentions also differs when a social self-construal is activated compared to a private self-construal. Self-conscious emotions are shown to have a self-regulatory function; they force individuals to behave in accordance with existing social norms and attitudes (e.g., Hynie et al., 2006; Onwezen et al., 2013a). Previous studies reason that the function of self-conscious emotions might differ when a different construal of the self is activated because these emotions are evoked after self-evaluation (Camras & Fatani, 2004; Tracy & Robins, 2007). Hynie et al. (2006) underscore these statements by showing that negative self-conscious emotions have a stronger impact on intentions when the social self rather than the private self is activated. They reason that this is the case because self-conscious emotions are at least partly social in nature, such that individuals who are made aware of their

social self may be more aware of the social consequences of their behaviour and therefore more sensitive to following their anticipated emotions.

The current study aims to replicate the findings of Hynie et al. (2006) regarding negative self-conscious emotions in the context of the environment. Furthermore, we propose to find similar effect for the positive self-conscious emotion of pride. Pride (i.e. authentic pride) is referred to as a social emotion. One of the primary functions of pride is to motivate costly effortful behaviour that increases one's status and value to one's social group (Williams & DeSteno, 2009). We propose that activating the social self makes individuals not only more sensitive to avoiding negative feelings of guilt but also more sensitive to attaining social rewards, such as feelings of pride. We hypothesize the following:

*Hypothesis 1: Activating the social compared to the private self increases the impact of pride and guilt on pro-environmental intentions.*

In addition, we aim to explore why the effects of self-conscious emotions on intentions increase when the social self (compared to the private self) is activated. Previous studies show that activating the social self makes individuals more sensitive to their social environment and less sensitive to their own standards (e.g., Verplanken et al., 2009). Because individuals are sensitive to different standards when the social versus the private self is activated, we propose that they also use different standards in the formation of emotions. We propose that social standards are used more, and personal standards are used less, when the social self is activated. Self-conscious emotions evoked when the social self is activated have more social characteristics, and individuals are more sensitive to these emotions when the social self is activated; thus, these emotions have a larger impact on intentions. We therefore hypothesize the following:

*Hypothesis 2: Activating the social compared to the private self increases the impact of social norms and decreases the impact of attitudes on pride and guilt.*

### 6.3. Overview of studies

This study aims to explore whether the functions of pride and guilt can differ within individuals by activating different construals of the self. We first aim to ensure that pride and guilt are relevant emotions in the context of pro-environmental behaviour. A representative Dutch sample ( $N = 685$ ) was asked to answer a survey to explore whether pride, guilt, and a range of related emotions affect pro-environmental consumer behaviour. These respondents were approached two weeks later to answer a second questionnaire. This second wave consisted of three consecutive experiments (Studies 1-3) and was answered by 64.2% of the respondents<sup>21</sup>.

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<sup>21</sup> To assess whether the respondents who completed waves 1 and 2 and the respondents who completed only wave 1 showed similar answering patterns, we compared the mean scores on the variables of interest. The results revealed

In Study 2 ( $n = 108$ ), we aimed to explore whether the effects of pride and guilt on pro-environmental intentions can be increased by activating a social compared to a private self-construal. In Study 3 ( $n = 116$ ), we aimed to explore whether activating different construals of the self might also affect the way in which emotions are evoked. Furthermore, we aimed to explore whether it was possible to activate the social self via social media. Study 4 ( $n = 217$ ) aimed to replicate the findings of Studies 2 and 3 for a different product. Furthermore, this study explored whether the effects existing social norms (regarding the environment) on pride and guilt can be further increased by providing normative information messages.

#### 6.4. Study 1: Survey of wave 1

The current study aimed to explore which emotions are the most relevant in the context of environmentally friendly consumer choices. We propose, as noted, that pride and guilt are highly relevant emotions in the context of environmentally friendly behaviour. To the best of our knowledge, this proposition has not been tested by previous studies. We conducted a survey in which we measured a range of emotions and self-reported pro-environmental behaviour. In addition to pride and guilt, we selected the two closely related self-conscious emotions of shame and hubris that are evoked after global evaluations of the self (Lewis, 1993), the two basic emotions of anger and joy that subsume these self-conscious emotions (Shaver et al., 1987; Tracy & Robins, 2004a), and the more general categories of positive and negative affect. In addition, based on the findings of Onwezen et al. (2013a; 2013b), we propose that emotions mediate the effects of descriptive social norms and attitudes on environmentally friendly intentions. Descriptive social norms refer to what important others actually do, and they powerfully influence decision making regarding the environment (Cialdini, 2007). Therefore, we also included descriptive social norms and attitudes.

##### *Measurements*

*Demographics.* Respondents were asked to indicate their *gender*, *year of birth*, and *educational level* (answers ranging from primary school to PhD).

*Descriptive social norms.* The items were based upon the work of Nolan, Schultz, Cialdini, Goldstein, and Griskevicius (2008). The respondents provided ratings for four items regarding the frequency with which they believed that their family/friends/colleagues/ average Dutch person purchased environmentally friendly products (ranging from 1 = “never” to 7 = “very often”). Cronbach’s alpha was .84.

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that environmentally friendly consumption ( $F(1, 685) = .126; p = \text{n.s.}$ ), descriptive social norms ( $F(1, 685) = 1.093; p = \text{n.s.}$ ), attitudes ( $F(1, 685) = 2.070; p = \text{n.s.}$ ), hubris ( $F(1, 685) = 1.884; p = \text{n.s.}$ ), pride ( $F(1, 685) = .730; p = \text{n.s.}$ ), joy ( $F(1, 685) = .636; p = \text{n.s.}$ ), guilt ( $F(1, 685) = 1.504; p = \text{n.s.}$ ), shame ( $F(1, 685) = .062; p = \text{n.s.}$ ), anger ( $F(1, 685) = .043; p = \text{n.s.}$ ), positive affect ( $F(1, 685) = 1.585; p = \text{n.s.}$ ), and negative affect ( $F(1, 685) = 2.628; p = \text{n.s.}$ ) did not differ significantly between the groups.



*Attitude.* The scale of Crites et al. (1994) was used to measure attitudes. Respondents were asked to answer 10 items on 7-point Likert scales. Some examples are “I think buying environmentally friendly products is... worthless/valuable, useless/useful, unattractive/attractive, bad/good.” Cronbach’s alpha was .94.

*Emotions.* The respondents were asked to anticipate how they feel when they think of their own buying behaviour of environmentally friendly products. Answering scales were 7-point scales (with labelled end-points of 1 = “not at all” and 7 = “very much”). We asked them to report guilt, pride, conceited (hubris), ashamed, happy, and feeling positive and negative.

*Self-reported environmentally friendly behaviour.* We asked respondents to report their past buying behaviour of environmentally friendly products. Four items asked respondents whether they buy organic fruit, vegetables, meat, and dairy, on 7-point scales (with labelled end-points of 1 = “not at all” and 7 = “very much”). Cronbach’s alpha was .93.

### *Analysis*

We performed a hierarchical regression analysis with self-reported environmentally friendly buying behaviour as the dependent variable. Independent variables were entered in three blocks. The first block included demographic control variables, the second block included descriptive social norms and attitudes, and the third block included the range of emotions.

## **6.5. Results and discussion**

Table 6.1 shows that past buying behaviour was significantly predicted by gender and educational level. Woman and higher-educated respondents bought environmentally friendly products more often. Age was not a significant predictor of environmentally friendly behaviour.

Descriptive social norms and attitudes were included in the second block. The results show that descriptive social norms and attitudes had a significant positive impact on the purchase of environmentally friendly products.

Emotions were included in the third block. The results show that the impact of descriptive social norms and attitudes decreased when emotions were included. These findings are in accordance with previous findings (Hynie et al., 2006; Onwezen et al., 2013a), implying that emotions partially mediate the effects of social norms and attitudes on intentions<sup>22</sup>. However, a large direct effect of attitudes and descriptive social norms remains after including these emotions.

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<sup>22</sup> To ascertain that pride (which is the only significant predictor) mediates the effects of social norms and attitudes on behaviour, we performed a structural regression model with latent variables in Mplus. The model showed good model fit (relative  $\chi^2 = 967.468/243 = 3.98$ ;  $p < .001$ ; RMSEA = .066; SRMR = .051; CFI = .927; TLI = .917). Furthermore, the model showed significant indirect effects of the effects of attitudes on behaviour via pride ( $\beta = .092$ ;  $p < .001$ ) and the effects of social norms on behaviour via pride ( $\beta = .075$ ;  $p < .001$ ).

The results show that pride has a significant effect on the past buying behaviour of environmentally friendly products. Positive affect has a marginally significant effect, whereas the other emotions do not have a significant impact. These findings partly confirm our proposition, pride is the most relevant emotion in the context of the environment. However, guilt did not affected the purchase of environmentally friendly products.

Table 6.1.<sup>23</sup> *Hierarchical regression analysis of the effects of emotions on self-reported buying of organic products in Study 1*

Independent variables		$\beta$	<i>t</i> -value	F(df1, df2); <i>p</i> -value; <i>R</i> <sup>2</sup>		
Block 1	(Constant)		6.504***			
	Gender	.078	2.036*			
	Age	-.044	-1.144	<i>F</i> (3, 682) = 7.599; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .032		
	Education	.156	4.111***			
Block 2	Gender	.025	.772			
	Age	-.046	-1.409			
	Education	.103	3.180**			
	Descriptive norm	.190	5.556***	<i>F</i> (5, 680) = 61.710; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .312		
	Attitude	.435	12.600***			
Block 3	Gender	.037	1.149			
	Age	-.050	-1.567			
	Education	.129	4.0457***			
	Descriptive norm	.126	3.580***			
	Attitude	.389	10.140***			
<b>Analyses for each emotion separately</b>						
	Hubris	.045	1.049	.085	2.549*	
	Pride	.124	2.566**	.192	5.601***	
	Joy	.014	.291	.150	4.266***	
	Guilt	-.004	-.078	.027	.852	
	Shame	.014	.301	.040	1.246	
	Anger	.051	1.117	.067	2.011*	
	Positive	.090	1.905 <sup>†</sup>	<i>F</i> (13, 672) = 27.993; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .339	.167	4.637***
	Negative	-.018	-.416		.030	.899

Note. Dependent variable was self reported buying of organic products; \*\*\**p* < .001; \*\**p* < .01; \**p* < .05; Gender (0 = male and 1 = female).

Multicollinearity might occur because positive and negative affect subsume all other included emotions. Variance inflation factor (VIF) statistics indicated that there were no problems with multicollinearity. No VIF statistics exceeded 10.0 (O'Brien, 2007). To ascertain that our findings were not affected by intercorrelations, we decided to perform the analyses separately for all emotions. The results show that hubris, pride, joy, and positive affect explain a significant part of

<sup>23</sup> We also performed the analysis without attitudes and descriptive social norms. The results show that pride ( $\beta = .235$ ;  $p < .001$ ) remains the strongest significant predictor followed by positive affect ( $\beta = .205$ ;  $p < .001$ ) and joy ( $\beta = .146$ ;  $p < .05$ ). All other emotions have an insignificant effect.

the variance in past environmentally friendly consumer choices, and only one negative emotion (i.e. anger) shows a significant effect. Thus, in contrast to our predictions guilt does not show a significant effect on pro-environmental intentions.

Taken together, these findings underscore the importance of positive emotions in the context of environmentally friendly consumer behaviour. Moreover, when accounting for the effects of all positive and negative emotions, pride seems to be the most relevant emotion in the context of the environment.

## 6.6. Study 2

Study 2 aims to explore whether the effects of emotions on intentions can be enforced by activating different construals of the self. Hynie et al. (2006) explore the moderating impact of self-construal on the effects of guilt on intentions in the context of condom use. Study 2 therefore includes guilt. Moreover, Study 2 includes pride because Study 1 shows the relevance of pride in the context of the environment. We extend the findings of Hynie et al. (2006) by exploring whether the positive self-conscious emotion of pride functions in a manner comparable to guilt in a different context; environmentally friendly consumer choices. We propose that the effects of pride and guilt in the context of environmentally friendly behaviour can be strengthened by activating the social construal of the self (Hypothesis 1) in a scenario-based experiment.

## 6.7. Methods

### *Participants*

The participants were 108 Dutch respondents recruited by a market research agency. These respondents were randomly drawn from an online representative research panel. The sample comprised 53 males and 55 females, with a mean age of 45.0 years ( $SD = 12.4$ ).

### *Procedure and measures*

The respondents were randomly assigned to one of three conditions (social self ( $n = 35$ ) versus private self ( $n = 37$ ) versus control condition ( $n = 36$ )) of a between-subjects design. The participants were asked to complete an online questionnaire.

The first question was our *manipulation* to activate different self-construals adopted from Verplanken et al. (2009) and Trafimow et al. (1991). The first two conditions represent a manipulation of the private versus the social self. Respondents were asked to take a moment to think about which aspects made them different from (private self condition) or the same as (social self condition) their friends and family. They were asked to write these aspects down in a few key words. Respondents in the control condition were asked to report a regular weekday in a few key words.

*Manipulation check.* To check whether our manipulation worked as expected, we measured the private and social self based on the questions of Brewer and Gardner (1996). Brewer and Gardner asked individuals to answer open questions starting with 'I am...'. Answers can be categorized into independent, relational, and collective self dimensions. To decrease the cognitive load of our questionnaire, we used a closed-ended question. Respondents were asked to answer who they are by selecting characteristics from a list. We included 35 possible answers. Of these, 12 characteristics referred to a description of the self that was not related to other persons (private self; e.g., intelligent, creative, pragmatic), and 12 characteristics referred to a description of the self in relation to others in all types of ways except family relations (social self; e.g., a good colleague, civilian of a country). The other answers were fillers, including descriptions that fall in between abovementioned categories such that they describe personal characteristics that relate to other persons (e.g., social, open, nice) or the self in relation to family members (e.g., father/mother, brother/sister, grandfather/mother). These answers were not included in the current study.

*Pride and guilt.* After the manipulation all respondents were asked to report how their own behaviour regarding buying environmentally friendly products made them feel. Guilt was measured with three items that were adapted and modified from Kugler and Jones' (1992) guilt inventory: guilty; remorseful; sorry. Cronbach's alpha was high at .90. Pride was measured with three items adapted from Tracy and Robins' (2007) authentic pride scale: proud; accomplished; worthwhile. Cronbach's alpha was high at .87. Answering scales were 7-point scales (with labelled end-points of 1 = "not at all" and 7 = "very much").

*Intention to buy environmentally friendly products.* Next, participants were asked to read an informational message regarding a new environmentally friendly product, Lovechock chocolate, which was made of organic cocoa, produced at a lower temperature, and had a more environmentally friendly recyclable package than regular chocolate. The respondents were asked to indicate their *intention* to buy this product (Ajzen, 1991; Schlegelmilch et al., 1996). The participants were asked to answer three items on 7-point Likert scales (with labeled endpoints ranging from 1 = "not at all" to 7 = "very much"): When I go to the supermarket I plan to ...choose Lovechock chocolate when the price is comparable with alternatives/...choose Lovechock chocolate irrelevant of the alternatives/...buy Lovechock chocolate products. Cronbach's alpha was .85.

### 6.8. Results

#### *Manipulation check*

To test whether our manipulation worked as expected, we performed Kruskal-Wallis tests. We used these tests because the number of reported choices is not a continuous but an ordinal scale.

The results show that the conditions differed significantly in terms of activating a private self (Kruskal Wallis  $H(2) = 8.820$ ;  $p < .05$ ) and marginally significantly in activating a social self (Kruskal Wallis  $H(2) = 4.757$ ;  $p < .10$ ). Respondents in the private self condition scored higher on the private self compared to the other conditions ( $M^{\text{private}} = 3.34$  ( $SD = 1.43$ );  $M^{\text{social}} = 2.54$  ( $SD = 1.41$ );  $M^{\text{control}} = 2.44$  ( $SD = 1.34$ )), whereas respondents in the social self condition score higher on the social self compared to the private condition ( $M^{\text{private}} = 1.42$  ( $SD = 1.36$ );  $M^{\text{social}} = 2.51$  ( $SD = 1.56$ );  $M^{\text{control}} = 2.03$  ( $SD = 1.10$ )). These findings imply that our manipulation worked as expected.

#### *Dependent variables*

ANOVAs show that there are no significant differences in the means of pride ( $F(2, 107) = 1.663$ ;  $p = \text{n.s.}$ ) and guilt ( $F(2, 107) = .645$ ;  $p = \text{n.s.}$ ). There are significant differences in respondents' intentions to buy an environmentally friendly Lovechoc chocolate bar ( $F(2, 107) = 3.148$ ;  $p < .05$ ). Respondents in the social self condition are more prone to buy these products compared to respondents in the private self and control conditions ( $M^{\text{private}} = 3.69$  ( $SD = 1.51$ );  $M^{\text{social}} = 4.33$  ( $SD = 1.34$ );  $M^{\text{control}} = 3.52$  ( $SD = 1.55$ )).

#### *Regression analysis to test Hypothesis 1*

We did not expect to find any differences in the means of pride and guilt. Following the findings of Hynie et al. (2006), we proposed that the influence of emotions on environmentally friendly intentions increases when the social self compared to the private self is activated (Hypothesis 1). We therefore performed a hierarchical regression analysis with the intention to buy Lovechoc chocolate as a dependent variable. The independent variables were included in four blocks. Demographic variables (age, gender, and educational level) were included in the first block. Feelings of pride and guilt were included in the second block. In the third block, we included the private and the social self conditions as dummy-coded variables (with the private self coded as 1 and the other two conditions as 0 and with social self coded as 1 and the other two conditions as 0). Finally, the four interaction terms of pride and guilt with our manipulation of the private versus the social self were included.

The first block of demographic variables ( $F(3, 104) = 1.313$ ;  $p = \text{n.s.}$ ;  $R^2 = .036$ ) shows that age and gender do not significantly affect the intention to buy Lovechoc chocolate. Educational level has a marginally significant impact on intention ( $\beta = .172$ ;  $p < .10$ ), such that higher-educated individuals are more prone to buy the environmentally friendly chocolate. The second block, which included emotions, significantly increases the explained variance in the intention to buy Lovechoc chocolate ( $F(5, 102) = 2.870$ ;  $p < .05$ ;  $\Delta R^2 = .087$ ). Pride has a significant positive effect on intentions ( $\beta = .298$ ;  $p < .01$ ), whereas the effect of guilt is not significant ( $\beta = .029$ ;  $p =$

n.s.). The third block ( $F(7, 100) = 2.829; p < .05; \Delta R^2 = .042$ ) shows an insignificant effect of the manipulation of private self ( $\beta = .075; p = \text{n.s.}$ ) and a significant effect of the manipulation of social self ( $\beta = .235; p < .05$ ) on intention.

Finally, the fourth block ( $F(11, 96) = 2.632; p < .01; \Delta R^2 = .066$ ) shows, as expected, that the effects of guilt are (marginally significantly) moderated by the social self condition ( $\beta = .221; p < .10$ ) and not by the private self condition ( $\beta = -.096; p = \text{n.s.}$ ). However, the effects of pride are not moderated by the social self condition ( $\beta = .040; p = \text{n.s.}$ ). Unexpectedly, the effects of pride on intentions are (marginally significantly) moderated by the private self condition ( $\beta = .271; p < .10$ ). A detailed look at the interaction effects reveals that pride has a significant effect ( $\beta = .546; p < .01$ ) on the intention to buy Lovechock chocolate in the private self condition, whereas the effect becomes insignificant ( $\beta = .187; p = \text{n.s.}$ ) in the other conditions. For guilt, the additional analyses show that the effect is marginally significant ( $\beta = .290; p < .10$ ) for the social self condition, whereas it becomes insignificant ( $\beta = .055; p = \text{n.s.}$ ) in the other conditions<sup>24</sup>.

## 6.9. Discussion

Study 2 shows that activating the social versus the private self does not affect the mean levels of experienced pride and guilt. However, the effects of these emotions on environmentally friendly intentions are affected by activating different construals of the self. Similar to the findings of Hynie et al. (2006), we find that the effects of guilt on intentions become stronger when the social self is activated. We extend their findings by showing that this mechanism works differently for the positive self-conscious emotion of pride. The effects of pride on intentions become stronger when the private self is activated. These findings imply that positive and negative self-conscious emotions function in different ways, such that feelings of guilt are more important in guiding intentions when the social environment is salient, whereas feelings of pride are more important in guiding intentions when individual uniqueness is salient. These findings are in accordance with the indications of Onwezen et al. (2013a) that pride and guilt are evoked by different standards. Onwezen et al. show preliminary evidence that pride is more strongly formed by personal norms and attitudes than guilt, whereas guilt is more strongly formed by social norms. Moreover, Patrick, Chun, and Macinnis (2009) also imply that pride is an emotion that centers on the self. They show that anticipated pride, in comparison to shame, helps individuals to focus on the self instead of a temptation (i.e. cake) and, subsequently, to eat less cake. Thus, previous studies and the current findings imply that guilt is more social in nature than pride.

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<sup>24</sup> Note that the interaction effect of pride with the private self ( $\beta = .291; p < .05$ ) becomes stronger when we perform the regression analyses separately for pride. The interaction effect of guilt with the social self remains marginally significant ( $\beta = .213; p < .10$ ) when we perform the regression analyses separately for guilt.

The current study also shows that activating the social self increases pro-environmental intentions. This finding is not in accordance with the findings of Hynie et al. (2006). However, the current findings are in accordance with other studies that show that the social self increases environmentally friendly behaviour (Arnocky et al., 2007) and ethical behaviour (Cojuharenco et al., 2012) compared to the private self. These findings imply that activating the social self has a positive effect on intentions in pro-social contexts, and not in contexts that also include personally oriented motives, such as the use of condoms.

In Study 3, we aim to extend Study 2 by exploring *how* the increased effectiveness of self-conscious emotions on intentions occurs after activating a different self-construal (Hypothesis 2). Study 2 used a standard manipulation of activating the social versus the private self. In Study 3, we explore whether activating the social and private self can also occur by contextual cues, such as providing information via different information channels.

### 6.10. Study 3

Study 3 is a scenario-based experiment that aims to replicate the findings of Study 2. Furthermore, we aim to explore *how* these effects occur. We explore whether activating different construals of the self might also affect the way in which emotions are evoked. Previous studies have shown that attitudes and social norms affect the formation of pride and guilt (Onwezen et al., 2013a; 2013b). We propose that different standards are used to evaluate personal behaviour and subsequently evoke emotions when different construals of the self are activated. Based on the findings of Study 2, we adapt Hypothesis 2 and propose that different mechanisms occur for pride and guilt. Pride seems to be more strongly related to self-evaluations of personal standards, whereas guilt seems more strongly related to self-evaluations of social standards. We therefore propose that the effects of descriptive social norms on guilt can be increased by activating the social self, whereas the effects of attitudes on pride can be increased by activating the private self. To overcome common-method variance (Podsakoff et al., 2003), existing descriptive social norms and attitudes regarding the environment are measured at wave 1, and the other variables are measured two weeks later (wave 2).

Furthermore, Study 3 explores whether information channels can activate different construals of the self. Kietzmann et al. (2011) state that in comparison with traditional media, social media enable more social processes because they have a social character and affect the way information is processed. We therefore propose that social media can be used to activate the social self, such that one no longer evaluates the self as an individual but includes friends and family as a part of the self. Email is a media channel that focuses on the individual; email is sent to individuals personally. We propose that email thus activates the idea that one is a unique individual (i.e. the private self).

Finally, Study 3 explores whether the increased effects of emotions on intentions to purchase Lovechock chocolate have a spill-over effect on the intention to purchase related environmentally friendly products. Therefore, we include the intention to buy a range of environmentally friendly products (for example personal care products and detergents).

### 6.11. Methods

#### *Participants*

The participants were 116 Dutch respondents recruited by a market research agency. The sample comprised 53 males and 63 females, with a mean age of 45.56 years ( $SD = 13.0$ ).

#### *Procedure and measures*

As noted, the respondents were approached in two waves. The second wave was completed by 67.8% of the respondents. These respondents were randomly assigned to one of three conditions (mail versus Facebook versus control condition) of a between-subjects design. See Table 6.2 for the number of respondents for each condition. The participants were asked to complete an online questionnaire.

*Wave 1. Descriptive social norms, and attitudes* were measured as described in Study 1.

*Wave 2.* The first question was our manipulation of the information channel to activate different self-construals. Respondents in the mail condition received the following scenario: *Imagine that you receive a personal email directed to you. Imagine that the creators of a new environmentally friendly product have personally sent this information to you. You find this email so interesting that you click on a link to win a free product. It involves the following message regarding Lovechock chocolate.*

Respondents in the Facebook condition received the following scenario: *Imagine that you receive the following message via Facebook. Facebook is a free social networking site to maintain online contact with family, friends, and/or acquaintances. Users may create a personal profile and place information and interests on a so-called 'bulletin board'. Imagine that some of your friends and acquaintances 'like' the message shown below. This message appears on their 'bulletin board' where you can see it. You find this message so interesting that you 'like' this page. You can win a free product, and the message appears on your bulletin board so all your friends and acquaintances can see the message. It involves the following message regarding Lovechock chocolate.*

Respondents in the *control condition* did not receive any extra information regarding the media channel through which they saw the message. All respondents were asked to read the same information message regarding Lovechock chocolate (see Study 2).

*Manipulation check.* We asked respondents to indicate from which media channel they received the message: supermarket, newspaper, advertisement folder, Facebook, Twitter, email,



LinkedIn, an informational book, or Google. We included a range of filler answers and the answering possibility ‘I don’t know’ to measure whether respondents were aware of the media channel. Furthermore, to explore whether different media channels activate a private versus a social self, we used the same manipulation check as described in Study 2.

*Dependent variables* regarding experiences of *pride* ( $\alpha = .87$ ), *guilt* ( $\alpha = .90$ ), and *intention to buy Lovechock chocolate* ( $\alpha = .85$ ) were similar to Study 2. We included a measure of *intention to buy environmentally friendly products* based on the items of Pickett-Baker and Ozaki (2008). Two adaptations were made because we aimed to measure the intention to buy a diverse range of environmentally friendly products. Respondents were asked to indicate their willingness to buy environmentally friendly personal care products/ detergents/ large machines (e.g., vacuum cleaner, dishwasher), products made from recycled material, products in packages that can be refilled, and to avoid buying products from companies that were not environmentally responsible. Items were 7-point Likert scales (with labeled endpoints ranging from 1 = “not at all” to 7 = “very much”). Cronbach’s alpha was .91.

## 6.12. Results

### *Manipulation check*

Table 6.2 shows that the manipulation of the information channel worked as expected. Respondents in the mail condition reported significantly more often that they received the message by mail, whereas respondents in the Facebook condition reported significantly more often that they received the message via Facebook.

Additionally, we checked whether, as proposed, providing information via Facebook activates the social self, whereas a personal message via email activates the private self (Table 6.2). The Kruskal-Wallis tests show that individuals in the mail condition scored higher on the private self compared to the Facebook condition. Furthermore, the results show that individuals in the Facebook condition and the Control condition scored higher on the social self compared to the mail condition. The Facebook condition and the Control condition do not differ significantly on the social self score.

### *Dependent variables*

Table 6.2 shows that the respondents do not differ in mean scores of pride and guilt between conditions. Furthermore, there is no significant difference between conditions for the intention to buy environmentally friendly products. There is a significant difference between conditions in the intention to buy Lovechock chocolate. However, this difference is not in the expected direction. Respondents in the Facebook condition are less likely to buy Lovechock chocolate than respondents in the mail condition.

Table 6.2. Scores on dependent variables of Study 3 across conditions of our manipulation of information channel

Condition	N	Manipulation check			Self-construal		Emotions				Intention to buy			
		Email	Facebook	Don't know/ Not available	Private self	Social self	Pride		Guilt		Lovechock chocolate		Environmentally friendly products	
							M	(SD)	M	(SD)	M	(SD)	M	(SD)
Mail	44	27	0	13	3.75	1.98	4.57	(1.28)	2.28	(1.23)	4.16	(1.45)	4.15	(1.55)
Facebook	36	5	15	14	3.11	2.31	4.14	(1.25)	2.69	(1.46)	3.42	(1.69)	3.69	(1.24)
Control	36	3	1	29	3.22	2.64	4.22	(1.34)	2.31	(1.22)	3.79	(1.36)	3.74	(1.24)
Total	116	35	16	56	3.39	1.96	4.33	(1.29)	2.42	(1.30)	3.81	(1.52)	3.88	(1.37)
		$\chi^2(12,1)70.462; p < .001$			Kruskal Wallis H (2)5.214; $p < .10$	Kruskal Wallis H (2)6.334; $p < .05$	$F(2, 115) =$ 1.274; $p = \text{n.s.}$	$F(2, 115) =$ 1.115; $p = \text{n.s.}$	$F(2, 115) =$ 2.412; $p = .094$	$F(2, 115) =$ 1.398; $p = \text{n.s.}$				

Note. N = amount of respondents ; M = mean; SD = standard deviation.

*Regression analyses to test Hypothesis 1*

Regression analyses with the intention to buy Lovechock chocolate and the intention to buy environmentally friendly products as dependent variables were performed similar to Study 2. However, because our manipulation of information channel did not result in a difference between the Facebook and the control conditions in the social self scores, we decided to include one dummy variable that distinguished between the mail and the Facebook condition.

The results show that the demographic variables gender, age, and educational level do not have a significant impact on the intention to buy Lovechock chocolate (see Table 6.3). The second block shows that pride has a larger effect than guilt on the intention to buy Lovechock chocolate. There is a main effect of the manipulation of the information channel (Block 3), such that individuals in the Facebook condition are less willing to buy Lovechock chocolate compared to individuals in the mail condition.

Finally, the interaction terms were included. The results show that the effects of pride on intention are not moderated by the manipulation of information channel, whereas there is a marginally significant interaction effect between guilt and the manipulation of information channel. Respondents in the Facebook condition are more sensitive to the feeling of guilt, such that the effects of guilt on intention are significant ( $\beta = .430$ ;  $p < .05$ ) for the Facebook condition and insignificant ( $\beta = .053$ ;  $p = \text{n.s.}$ ) for the mail condition.

For buying intentions regarding environmentally friendly products, the results are slightly different. In short, the second block shows that guilt has no significant effect on the intention to buy environmentally friendly products. Furthermore, similar to the ANOVAs (Table 6.2), the main effect of our manipulation of the information channel is not significant for the intention to buy environmentally friendly products. The final block shows that including the interaction terms significantly increases the explained variance of the buying intention. The effects of guilt are stronger when the social self is activated, and the effects of pride are stronger when the private self is activated.

**Table 6.3.**<sup>25</sup> Hierarchical regression analyses of the effects of emotions on intentions

	Intention to buy Lovechock chocolate		<i>F</i> ( <i>df</i> 1, <i>df</i> 2); <i>p</i> -value; <i>R</i> <sup>2</sup>	Intention to buy environmentally friendly products		<i>F</i> ( <i>df</i> 1, <i>df</i> 2); <i>p</i> -value; <i>R</i> <sup>2</sup>
	$\beta$	<i>t</i> -value		$\beta$	<i>t</i> -value	
1	(Constant)	1.745 <sup>†</sup>		2.884 <sup>**</sup>		
	Gender	.164	<i>F</i> (3, 76) = .769; <i>p</i> = n.s.; <i>R</i> <sup>2</sup> = .029	.008	.067	<i>F</i> (3, 76) = .353; <i>p</i> = n.s.; <i>R</i> <sup>2</sup> = .014
	Age	.077		.117	1.014	
	Education	.078		.026	.223	
2	(Constant)	-1.082			.427	
	Gender	.154	<i>F</i> (5, 74) = .772; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .314	.038	.399	<i>F</i> (5, 74) = 8.760; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .372
	Age	.106		.099	1.049	
	Education	.082		.044	.462	
	Pride	.486		.588	6.379 <sup>***</sup>	
	Guilt	.237		-0.099	-1.050	
3	(Constant)	-1.271			.391	
	Gender	.179	<i>F</i> (6, 73) = 6.662; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .354	.043	.442	<i>F</i> (6, 73) = 7.246; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .373
	Age	.081		.094	.986	
	Education	.075		.042	.445	
	Pride	.453		.582	6.189 <sup>***</sup>	
	Guilt	.261		-0.094	-0.990	
	MoIC <sup>a</sup>	.209		.040	.410	
4	(Constant)	-1.519			.800	
	Gender	.203	<i>F</i> (8, 71) = 5.428; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .379	.082	.880	<i>F</i> (8, 71) = 7.264; <i>p</i> < .001; <i>R</i> <sup>2</sup> = .450
	Age	.111		.126	1.365	
	Education	.032		-.017	-.181	
	Pride	.440		.329	2.407 <sup>*</sup>	
	Guilt	.426		.138	1.071	
	MoIC	.221		.061	.665	
	Guilt X MoIC	-.237		-.298	-2.286 <sup>*</sup>	
	Pride X MoIC	-.014		.297	2.190 <sup>*</sup>	

Note. <sup>a</sup>MoIC = Manipulation of Information Channel (1 = mail; 0 = Facebook); \*\*\**p* < .001; \*\**p* < .01; \**p* < .05; Gender (0 = male and 1 = female).

### Regression analyses to test Hypothesis 2

Hierarchical regression analyses were performed with pride and guilt as the dependent variables. Independent variables were included in four blocks. We included demographics (Block 1), descriptive social norms and attitudes (Block 2), the dummy variable of our manipulation of the information channel (Block 3), and interaction terms between descriptive social norms, attitudes, and the manipulation of the information channel (Block 4). Table 6.4 shows that the demographic variables of gender, age, and educational level do not have a significant impact on experienced pride and guilt. For pride, the second block shows that both attitudes and descriptive social norms have a significant impact, whereas these effects are not significant for guilt. The manipulation of the social versus the private self via the information

<sup>25</sup> We also performed the analyses separately for pride and guilt, because these emotions might affect each other. For pride the results show no significant interaction effect of pride with MoIC on intention to buy Lovechock chocolate ( $\beta = .291$ ; *p* = n.s.) and a significant effect of pride with MoIC on intention to buy environmentally friendly products ( $\beta = .306$ ; *p* < .05). For guilt the results show a significant interaction effect of guilt with MoIC on intention to buy Lovechock chocolate ( $\beta = -.324$ ; *p* < .05) and also a significant interaction effect on intention to buy environmentally friendly products ( $\beta = -.407$ ; *p* < .05).

channel is included in the third block. In accordance with the previously presented ANOVAs (see Table 6.3), there is no main effect of the manipulation of the information channel on experienced pride and guilt. The results show that manipulating the information channel does result in an interaction effect (Block 4). A detailed look on the interaction effects shows a significant effect of baseline attitudes on pride ( $\beta = .526$ ;  $p < .001$ ) in the mail condition and an insignificant effect ( $\beta = -.002$ ;  $p = \text{n.s.}$ ) in the Facebook condition. For guilt, a detailed look at the interaction effects reveals a significant effect of baseline descriptive social norms on guilt ( $\beta = .414$ ;  $p < .05$ ) in the Facebook condition and an insignificant effect ( $\beta = -.092$ ;  $p = \text{n.s.}$ ) in the mail condition.

Table 6.4. Hierarchical regression analysis of the effects of descriptive social norms and attitudes on pride and guilt in Study 3

	Pride		F(df1, df2); p-value; R <sup>2</sup>	Guilt		F(df1, df2); p-value; R <sup>2</sup>
	$\beta$	t-value		$\beta$	t-value	
1 (Constant)		4.396***		2.482*		
Gender	-.013	-.107		.094	.798	
Age	.020	.168	F(3, 75) = .026;	-.147	-1.272	F(3, 75) = .914;
Education	-.021	-.179	p = n.s.; R <sup>2</sup> = .001	.031	.268	p = n.s.; R <sup>2</sup> = .035
2 (Constant)		.948		1.826 <sup>†</sup>		
Gender	-.044	-.431		.113	.957	
Age	-.002	-.023		-.143	-1.242	
Education	-.086	-.822		.067	.556	
Attitude	.365	3.390**	F(5, 73) = 6.112;	-.114	-.918	F(5, 73) = 1.001;
DN	.306	2.912**	p < .001; R <sup>2</sup> = .295	.173	1.432	p = n.s.; R <sup>2</sup> = .064
3 (Constant)		.885		1.866 <sup>†</sup>		
Gender	-.028	-.275		.100	.833	
Age	-.018	-.178		-.130	-1.112	
Education	-.085	-.820		.066	.552	
Attitude	.350	3.229**		-.101	-.805	
DN	.310	2.955**	F(6, 72) = 5.324;	.170	1.399	F(6, 72) = .947;
MoIC	.114	1.128	p < .001; R <sup>2</sup> = .307	-.098	-.835	p = n.s.; R <sup>2</sup> = .073
4 (Constant)		2.189*		.083		
Gender	-.047	-.456		.085	.723	
Age	-.031	-.318		-.111	-.990	
Education	-.078	-.763		.037	.322	
Attitude	.051	.279		.060	.290	
DN	.328	1.938*		.432	2.244*	
MoIC	.140	1.411		-.118	-1.039	
SN X MoIC	.020	.123	F(8, 70) = 4.849;	-.365	-1.950 <sup>†</sup>	F(8, 70) = 1.760;
Attitude X MoIC	.362	2.073*	p < .001; R <sup>2</sup> = .357	-.217	-1.091	p < .05; R <sup>2</sup> = .167

Note. \*\*\*p < .001; \*\*p < .01; \*p < .05; <sup>†</sup>p < .10; Gender (0 = male and 1 = female); MoIC = Manipulation of Information Channel; DN = descriptive social norm; SN = manipulation of social norm.

### 6.13. Discussion

Similar to Study 2, the findings of Study 3 imply that activating the social versus the private self does not affect the experienced mean level of pride and guilt, but it does influence the effects of these emotions on intentions. Study 3 also shows these effects for buying intentions for a range of environmentally friendly products. The current findings show similar to Study 2 that the mechanism through which pride and guilt affect intentions differs between these emotions. The findings imply that the effects of guilt on the intention to buy environmentally friendly products increase by activating the social self, whereas the effects of pride on the intention to buy environmentally friendly products increase by activating the private self. The interaction effect of pride with the private self was not present for the intention to buy Lovechoc chocolate. However, Study 3 shows that increasing the effects of self-conscious emotions on intentions via self-construal not only occurs for specific products that are made highly salient but also for a range of other environmentally friendly products.

In addition, Study 3 shows a first indication of *how* the increased effect of emotions on intentions when activating different construals of the self can be explained. We show that the mechanism through which these emotions are evoked also differs when a different construal of the self is activated. We find that baseline descriptive social norms have a larger effect on guilt in the Facebook condition (measured two weeks later), whereas baseline attitudes have a larger effect on pride in the mail condition. These findings imply that pride and guilt function in a different manner. Compared to pride, guilt is an emotion based on social evaluations, whereas pride is more related to individual evaluations than guilt is. Moreover, we show that the effects of norms and attitudes on emotions can be enforced by activating the social versus the private self. Again, guilt seems to be more social in nature than pride. We propose that these emotions, in turn, become salient for buying intention when the private versus the social self is activated, such that individuals are more sensitive to following these emotions. We do note that the differences in self-construal are mainly present in the mail condition.

The current findings also result in range of unanswered questions. For example, respondents who received information via Facebook showed a higher score on the measure of social self than the mail condition, however the social self score did not differ from the control condition. Our findings might therefore also refer to a decreased social self in the mail condition instead of an increased social self in the Facebook condition. Furthermore, it remains unclear why the Facebook condition resulted in a lower intention to buy Lovechoc chocolate compared to the mail condition. This finding contrasts with the findings of Study 2. It is possible that our Facebook scenario was perceived as an egoistic act by respondents. By placing a message on Facebook, respondents could win a free Lovechoc chocolate bar. This information was visible to all of their family and friends. This might have triggered an egocentric motive among

respondents, which, in turn, lowered the intention to act in an environmentally friendly way. This explanation is in accordance with our previously mentioned reasoning that the social self seems to mainly increase intentions in pro-social contexts, and not personally oriented contexts. In Study 4, the possibility to win a product was excluded.

'Liking the Lovechock chocolate on Facebook' might also activate social norms regarding a healthy diet. One might for example become afraid that family and friends think they eat too much unhealthy food, such as chocolate. Subsequently, these respondents are less inclined to buy the chocolate bar. Furthermore, this reasoning might account for the finding that the effects of attitudes on pride were not enforced by the manipulation of self-construal, whereas this effect occurred for the intention to buy environmentally friendly products. Individuals might have become less sensitive to their own standards regarding the environment. Moreover, a related limitation refers to the fact that the intention to buy chocolate also involves other motives, such as tastiness, health and price. One could question to what extent buying a Lovechock chocolate bar is an environmentally friendly act. Study 4 therefore includes a less hedonic product. We used milk, which is in the Netherlands perceived as a necessary part of one's diet.

Finally, the current findings show that the effects of descriptive social norms on guilt become stronger when the social self compared to the private self is activated. These findings are based on existing social norms regarding the environment. In Study 4, we aim to explore whether these effects also occur when providing normative information.

#### **6.14. Study 4**

Study 4 aims to replicate the findings of Study 3 for a different environmentally friendly product (i.e. milk). Study 4 also aims to explore whether the finding that social norms have a larger impact on emotions when the social self is activated (Hypothesis 2) can be found when providing normative information. Study 3 explores Hypothesis 2 for existing descriptive social norms. Study 4 aims to explore this hypothesis by manipulating normative information. Furthermore, we propose that providing normative information can increase the salience of existing norms, which increases their effects on emotions. Based on the findings of Studies 2 and 3, we expect that the effects of social norms and the interaction with the manipulation of self-construal and normative information are larger for guilt than for pride.

## 6.15. Methods

### *Participants*

The participants were 217 Dutch respondents recruited by a market research agency. The sample comprised 104 males and 113 females, with a mean age of 45.5 years ( $SD = 12.3$ ).

### *Procedure and measures*

As mentioned, the respondents were approached in two waves. The respondents were randomly assigned to one of six conditions of a three (mail versus Facebook versus control condition) by two (high versus low normative information) between-subjects design.

*Wave 1. Social norms and attitudes* were measured similar to the measures in Study 1. Moreover, social identification was included because previous studies indicate that descriptive social norms affect intentions and emotions only when individuals identify themselves with the group that shows this behaviour (e.g., Christensen et al., 2004). Social identification was measured using the visual scale for cognitive identification based on Bergami and Bagozzi (2000). The scale was successfully used in the context of environmentally friendly consumption (Bartels & Reinders, 2010). The item was 'Please indicate to what degree your self-image overlaps with the environmentally friendly consumer's image'.

*Wave 2.* The first question was our manipulation to activate different self-construals via a manipulation of an information channel (mail versus Facebook versus control; see Study 3). Note that respondents no longer had the opportunity to win a product. By placing the message on their wall or returning the mail, the respondents only informed the producers that they 'liked' their initiative. Then, all respondents read the same information message regarding GoGreen milk, in which the normative information was manipulated by randomly placing respondents in two conditions: *There is a new organic milk in the supermarket: GoGreen milk. This milk is produced with less antibiotics and is therefore more healthy. In addition, this milk is more environmentally friendly than other milk. For example, the milk is processed at a low temperature, and this process uses less emissions. The packaging is environmentally friendly. The casing of cardboard and compostable film are both made of wood from sustainably managed forests. The whole package can be regarded as organic waste. Additionally, during transport, the environment is taken into account, such that the transport is limited by using as many local products (e.g., animal food) as possible and by using environmentally friendly fuel, such as solar energy. Research shows that **23% (low normative information)/82% (high normative information)** of Dutch consumers plan to buy this product.*

*Manipulation check.* We used the same manipulation check as described in Study 3 to measure whether respondents were aware of different media channels, and whether providing information via these different channels activates the private self versus the social self.



*Dependent variables* regarding experienced *pride* ( $\alpha = .88$ ), *guilt* ( $\alpha = .82$ ), and *intention to buy GoGreen milk* ( $\alpha = .87$ ) were similar to the measures used in Studies 2 and 3.

## 6.16. Results

### *Manipulation checks*

The results show that our manipulation of the media channel worked as expected. Respondents in the Facebook condition reported significantly ( $\chi^2(14)121.291$ ;  $p < .001$ ) more often that they received the message via Facebook (33 times versus 1 and 3), whereas respondents in the mail condition reported significantly more often that they received the message via mail (46 times versus 7 and 7).

We checked whether this manipulation activated different *construals of the self*. The results show that there is no significant difference between the conditions in activating the private (Kruskal Wallis  $H(2) = 1.825$ ;  $p = \text{n.s.}$ ) or social self (Kruskal Wallis  $H(2) = 1.825$ ;  $p = .129$ ). The means are in the expected direction, such that respondents in the mail condition reported a higher private self ( $M^{\text{mail}} = 3.65$  ( $SD = 1.41$ );  $M^{\text{Facebook}} = 3.36$  ( $SD = 1.36$ );  $M^{\text{control}} = 3.43$  ( $SD = 1.35$ )), and respondents in the Facebook condition reported a higher score on social self ( $M^{\text{mail}} = 1.51$  ( $SD = 1.12$ );  $M^{\text{Facebook}} = 1.79$  ( $SD = 1.15$ );  $M^{\text{control}} = 1.42$  ( $SD = 1.08$ )).

The manipulation of *social norms* worked as expected. The ANOVA ( $F(1,216) = 4.807$ ;  $p < .05$ ) shows that individuals in the high social norm condition ( $M^{\text{high sn}} = 3.54$  ( $SD = 1.22$ )) perceived higher descriptive norms compared to individuals in the low social norm condition ( $M^{\text{low sn}} = 3.17$  ( $SD = 1.29$ )).

### *Intention to buy GoGreen milk*

An ANOVA was conducted with the intention to buy GoGreen milk as the dependent variable and the manipulation of the information channel, the manipulation of social norms, and their interaction as independent variables. The results show ( $F(5,216)1.625$ ;  $p = \text{n.s.}$ ) that there is an insignificant main effect of social norms ( $F(5,216) = .327$ ;  $p = \text{n.s.}$ ), an insignificant main effect of information channel ( $F(5,216) = 1.363$ ;  $p = \text{n.s.}$ ), and a marginally significant interaction effect ( $F(5,216) = 2.520$ ;  $p = .083$ ). Figure 6.1 shows that there is no difference between the means of intention for the information channel conditions in the low social norm condition, whereas there are differences in the high social norm condition. Individuals in the Facebook condition are less inclined to buy GoGreen milk compared to the other conditions.

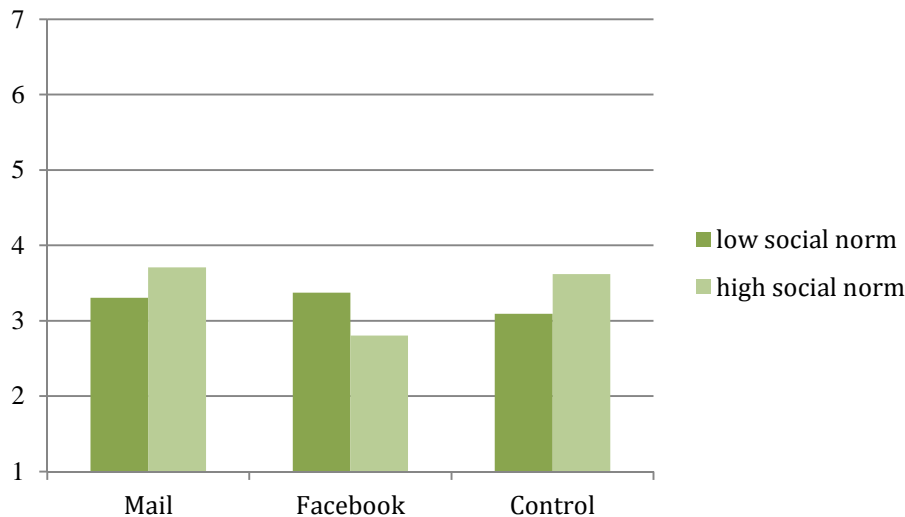


Figure 6.1. Means of intention to buy GoGreen milk across conditions

#### Regression analysis to test Hypothesis 1

A regression analysis was performed with the intention to buy GoGreen milk as the dependent variable and demographics and social identification (Block 1), pride and guilt (Block 2), manipulation of the information channel (Block 3), and the interaction between emotions and the manipulation of information channel (Block 4). The results<sup>26</sup> did not confirm Hypothesis 1. Because our manipulation did not work as expected, we decided to also use our measure of the private and the social self to explore whether the effects of pride and guilt on intentions increase when a different construal of the self is activated. We therefore performed the same regression analysis as described above, but the manipulation of the information channel was replaced by the measures of private and social self. In accordance with the findings of Studies 2 and 3, the results show that the effects of pride are moderated by the private self ( $\beta = .520$ ;  $p < .01$ ) and not by the social self ( $\beta = .088$ ;  $p = \text{n.s.}$ ), such that a stronger private self results in increased effects of pride on intentions. However, the effects of guilt on intention are not moderated by private ( $\beta = -.170$ ;  $p = \text{n.s.}$ ) or social ( $\beta = -.137$ ;  $p = \text{n.s.}$ ) self construal.

#### Regression analyses to test Hypothesis 2

Finally, hierarchical regression analyses were performed to explore whether manipulating normative information can increase the impact of baseline descriptive social norms on intentions. We included pride and guilt as dependent variables. Independent variables were

<sup>26</sup> The results show that the demographic variables (age, gender, and education) do not have a significant effect on the intention to buy GoGreen milk ( $F(3,146) = .739$ ;  $p = \text{n.s.}$ ;  $R^2 = .015$ ). The second block ( $F(5,144) = 2.206$ ;  $p = .057$ ;  $R^2 = .071$ ) shows that pride has a significant effect on intention ( $\beta = .240$ ;  $p < .01$ ), whereas the effects of guilt ( $\beta = .033$ ;  $p = \text{n.s.}$ ) are not significant. Block 3 ( $F(6,143) = 2.722$ ;  $p < .05$ ;  $R^2 = .103$ ) shows a significant effect of the manipulation of the information channel ( $\beta = .185$ ;  $p < .05$ ). The final block ( $F(8,141) = 2.111$ ;  $p < .05$ ;  $R^2 = .107$ ), including the interaction terms, shows that the interaction effects of our manipulation with pride ( $\beta = .011$ ;  $p = \text{n.s.}$ ) and guilt ( $\beta = -.105$ ;  $p = \text{n.s.}$ ) do not have a significant effect on the intention to buy GoGreen milk.

included in six blocks, such that demographic variables and social identification (Block 1), baseline descriptive norms (Block 2), manipulation of social norms and manipulation of the information channel (Block 3), the interaction between baseline descriptive social norms and the manipulation of the information channel (Block 4), the interaction between baseline descriptive social norms and the manipulation of social norms (Block 5), and the three-way interaction between baseline descriptive social norms, the manipulation of social norms, and the information channel (Block 6) were included.

For pride, the results show (Table 6.5) that the demographic variables do not have a significant effect on feeling proud. Social identification has a positive impact, such that individuals who identify themselves as green people feel more pride. Furthermore, all independent variables are insignificant, with the exception of the three-way interaction. The three-way interaction shows a marginally significant effect. A closer look shows that the interaction effect of baseline descriptive social norms and the manipulation of social norms is marginally significant in the Facebook condition ( $\beta^{pride} = -.716$ ;  $p = 0.66$ ) but not in the mail condition ( $\beta^{pride} = .055$ ;  $p = n.s.$ ). These findings imply that normative information impairs the positive effects of baseline descriptive social norms in the Facebook condition.

Table 6.5. Hierarchical regression analyses of the effects of attitudes and social norms on pride and guilt in Study 4

	Pride			Guilt		
	$\beta$	<i>t</i> -value	<i>F</i> ( <i>df</i> 1, <i>df</i> 2); <i>p</i> -value; <i>R</i> <sup>2</sup>	$\beta$	<i>t</i> -value	<i>F</i> ( <i>df</i> 1, <i>df</i> 2); <i>p</i> -value; <i>R</i> <sup>2</sup>
1 (Constant)		1.319			.004	
Gender	.115	1.425		-.078	-.933	
Age	-.083	-.972		-.031	-.368	
Social identification	-.233	-2.922**	<i>F</i> (3, 146) = 3.893; $p < .001$ ; <i>R</i> <sup>2</sup> = .074	.087	1.053	<i>F</i> (3, 146) = .660; $p = n.s.$ ; <i>R</i> <sup>2</sup> = .013
2 Baseline descriptive norms	-.128	-1.477	<i>F</i> (4, 145) = 3.489; $p < .001$ ; <i>R</i> <sup>2</sup> = .088	.151	1.699 <sup>†</sup>	<i>F</i> (4, 145) = 1.223; $p = n.s.$ ; <i>R</i> <sup>2</sup> = .033
3 MoIC	-.122	-1.452		.019	.217	
MoSN	.105	1.306	<i>F</i> (6, 143) = 2.949; $p < .01$ ; <i>R</i> <sup>2</sup> = .110	-.163	-1.967 <sup>†</sup>	<i>F</i> (6, 143) = 1.472; $p = n.s.$ ; <i>R</i> <sup>2</sup> = .058
4 Baseline descriptive norms X MoIC	-.067	-.560	<i>F</i> (7, 142) = 2.560; $p < .01$ ; <i>R</i> <sup>2</sup> = .112	.209	1.715 <sup>†</sup>	<i>F</i> (7, 142) = 1.699; $p = n.s.$ ; <i>R</i> <sup>2</sup> = .077
5 Baseline descriptive norms X MoSN	-.173	-.676	<i>F</i> (8, 141) = 2.289; $p < .01$ ; <i>R</i> <sup>2</sup> = .115	-.048	-.183	<i>F</i> (8, 141) = 1.481; $p = n.s.$ ; <i>R</i> <sup>2</sup> = .078
6 Baseline descriptive norms X MoSN X MoIC	.639	1.645 <sup>†</sup>	<i>F</i> (9, 140) 4.645; $p < .01$ ; <i>R</i> <sup>2</sup> = .132	.848	2.147*	<i>F</i> (9, 140) 1.862; $p < .05$ ; <i>R</i> <sup>2</sup> = .107

Note. MoSN (Manipulations of Social Norms; 1 = low; 2 = high); MoIC (Manipulation of Information Channel; 0 = mail; 1 = Facebook); Gender (0 = male and 1 = female); \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; <sup>†</sup> $p < .10$ .

As expected, we see that baseline descriptive social norms have a larger impact on guilt compared to pride. Baseline descriptive norms (Block 2) and the manipulation of social norms (Block 3) significantly affect the experience of guilt. Individuals who experience higher baseline descriptive social norms experience more guilt, whereas the manipulation of social norms has a negative effect on the experience of emotions, such that higher normative information results in less guilt. Block 4 shows that the effects of baseline descriptive social norms increase when information is provided via Facebook compared to when the information is provided via email. Finally, the results show a significant three-way interaction. A closer look shows that, similar to the findings for pride, the interaction effect of baseline descriptive social norms and the manipulation of social norms is significant in the Facebook condition ( $\beta^{guilt} = -.736$ ;  $p = .058$ ) but not in the mail condition ( $\beta^{guilt} = .436$ ;  $p = n.s.$ ). These findings imply that the positive effects of baseline descriptive social norms become negative when providing high normative information via Facebook.

### 6.17. Discussion

Study 4 shows, similar to Studies 2 and 3, that different construals of the self moderate the effects of emotions on intentions. However, the findings of Study 4 only provide small indications for this effect. Study 4 only shows these effects for pride; the effects of pride on intentions are stronger for individuals who score higher on the private self. Study 4 does not replicate the findings of Studies 2 and 3 for guilt. Moreover, in Study 4, the manipulation of the information channel did not result in significant differences in the activation of the social versus the private self, which contradicts the findings of Study 3. In Study 4, we also manipulated descriptive normative information. Varying the normative information might have impaired the effects of the information channel on activating different construals of the self.

The findings of Study 3 and the current study show that baseline descriptive norms have a positive impact on guilt and that providing information via Facebook increases these effects. These findings imply that activating the social self increases the social nature of guilt, such that social norms are used more to evoke guilt. Study 4 provides valuable information regarding the possibilities to affect the influence of existing descriptive social norms. The results show several indications that providing normative information can have a counter effect. Providing high normative information results in a counter effect in the Facebook condition: the effects of existing descriptive norms on guilt become negative. Moreover, Study 4 shows that these effects also occur for pride and for the intention to buy GoGreen milk. The positive effects of baseline descriptive social norms on pride and intention become negative when respondents receive high normative information via Facebook.

Note that our manipulation of normative information might have been perceived as unrealistic. Previous studies show that when advertising is too negative, consumers may infer a manipulative intent by the marketer. Subsequently, consumers do not feel guilty, but they form negative attitudes toward the source of the advertisement (Cotte, Coulter, & Moore, 2005; O’Keefe, 2002). Similarly, the current results show that high normative information had a negative effect on guilt. We extend previous studies by showing that high normative information can also counter the positive effects of baseline descriptive social norms. These effects only occur for individuals who are more sensitive to social information (i.e. individuals in the Facebook compared to the mail condition).

### 6.18. General discussion

The current study shows that the effects of pride and guilt on pro-environmental intentions can be enforced by activating different construals of the self. We show that the function of these self-conscious emotions differs when the social versus the private self is activated. Our findings imply that guilt is more social in nature than pride, such that guilt has a larger effect on pro-environmental purchase intentions when the social self is activated (Hypothesis 1), whereas pride has a larger impact on intentions when the private self is activated. Additionally, we show that guilt becomes a more social emotion when the social self is activated, such that the effects of social norms on guilt become larger (Hypothesis 2). In contrast, pride seems to be a more privately experienced emotion, such that attitudes have a larger impact on pride when the private self is activated. These findings imply that these positive and negative self-conscious emotions function in different manners. The implications of the current study are discussed in detail below.

#### *The importance of pride and guilt in the context of pro-environmental behaviour*

The findings of this study show that pride is the most relevant emotion in explaining pro-environmental behaviour. A range of other emotions, such as guilt, shame, anger, hubris, joy, and positive and negative affect, were shown to be less relevant. The importance of pride in affecting environmentally friendly intentions confirms previous studies (Cavanaugh et al., 2007; Frederickson, 2001) who state that positive emotions are often overlooked but are highly relevant in explaining and understanding consumer choices. Furthermore, we confirm the findings of previous studies that have shown that pride partly mediates the effects of attitudes and social norms on intentions (Hynie et al., 2006; Onwezen et al., 2013a; 2013b; Su et al., 2011). However, these studies also show a mediating effect of guilt, whereas the present study did not always show the effects of guilt on environmentally friendly intentions. One could reason that our measurement accounts for the small effects of guilt (and other negative emotions) on

environmentally friendly intentions. We asked respondents to report their emotional feelings on personal purchasing behaviour for environmentally friendly products, whereas previous studies by Onwezen et al. (2013a; 2013b) differentiated between environmentally unfriendly and environmentally friendly behaviour. This study provides a first indication that individuals experience more positive ( $M_{pride} = 4.58$ ;  $M_{positive} = 4.93$ ) than negative ( $M_{guilt} = 2.45$ ;  $M_{negative} = 2.27$ ) emotions regarding past environmentally friendly behaviour. It is possible that a positive selection bias occurred, such that respondents selected personal purchase behaviours that made them feel good. Subsequently, positive emotions might have had larger effects compared to negative emotions. Social desirability might also play a role here, such that respondents are more likely to report past behaviour which they perceive as environmentally friendly. The current measurement method also has several advantages. All emotions are reported regarding the same behaviour. Because not performing a behaviour is not the opposite of performing a behaviour (Richetin, Conner, & Perugini, 2011) one could question whether comparing the effects of positive and negative emotions regarding environmentally friendly and unfriendly behaviour is a fair comparison. Moreover, our measurement might be a good reflection of how persons use emotions in real-life consumer purchase situations. Individuals do not like the experience of incongruency between one's standards and personal behaviour (cognitive dissonance theory; Festinger, 1957) which results in experiences of guilt. As a result individuals try to reduce this state, for example by ignoring responsibility (it was not my fault) or add justifications (e.g., I made up for my mistake by giving a donation).

*Activating the social versus the private self increases the effects of self-conscious emotions on intentions*

The current study shows that the effects of self-conscious emotions on intentions can be enforced by activating different construals of the self. Interestingly, we show that this mechanism works differently for pride and guilt. The effects of guilt on environmentally friendly intentions are increased by activating the social self, whereas the effects of pride are increased by activating the private self. These findings imply that guilt is more social in nature than pride. These findings are in favor of a discrete emotion perspective (Han, Lerner, & Keltner, 2007). Researchers sometimes discuss self-conscious emotions as a group of emotions (Lewis, 1993; Tangney & Fischer, 1995; Tracy & Robins, 2004a). The current study underscores the importance of investigating specific emotions, or discrete emotions (e.g., Roseman, 2011), and suggests that not all self-conscious emotions have a comparable social nature (e.g., Leary, 2007). We provide theoretical insights into the function of self-conscious emotions and underscore that self-conscious emotions are based upon the self (Tracy & Robins, 2004a). Differences in the

construal of the self affect the function of these emotions (Camras & Fatani, 2004; Tracy & Robins, 2007).

The current study shows that activating different construals of the self can also directly affect environmentally friendly intentions. Previous studies present mixed evidence regarding these effects; activating the social compared to the private self did not affect the intention to use condoms (Hynie et al., 2006), whereas it did affect altruistic, pro-social (Vos & Van der Zee, 2011; Utz, 2004), ethical (Cojuharenco, Shteynberg, Gelfand, & Schminke, 2012), and environmental conservation intentions (Arnocky et al., 2007). Our findings regarding the effect on intentions of activating the private versus the social self also show mixed effects. Study 2 showed that activating the social self increases environmentally friendly intentions, whereas Study 3 showed that respondents who received a message via Facebook and scored higher on the social self showed decreased environmentally friendly intentions. Most likely, our manipulation of the information channel affected not only the activation of the social self but also some intervening variables. We decided to use a real-life contextual cue to manipulate self-construal in Study 3 because Study 2 replicated the findings of Hynie et al. (2006), and it is valuable to explore the external validity of these findings. Our manipulation of information channel might have activated egocentric motives (via a public egocentric act of trying to win a product). A post hoc explanation regarding the contrasting findings in our study (and previous studies) is that the social self only increases intentions in the context of pro-social behaviour, and not in the context of personally oriented behaviour. Study 4 showed that the main effect of the information channel is no longer significant when the behaviour becomes less personally oriented because persons no longer imagine a scenario in which they publicly state that they aim to win a specific product. However, future research is necessary to explore why these effects occurred.

In addition, the current findings have implications for two related bodies of research. First, there is a body of research that shows that individuals from individualistic and collectivistic cultures differ in their construals of the self (Markus & Kitayama, 1991; Triandis, 1995). Previous studies show that differences in cultural construals of the self mirror differences in activated construals of the self (Gardner, Gabriel, & Lee, 1999). This implies that our findings are applicable to differences between collectivistic and individualistic cultures. However, future research is necessary to explore whether the current findings can be validated across countries. Second, there is a body of research on social identification. Brewer and Gardner (1996) state that the social self corresponds to the concept of social identity as represented in social identity theory. Social identification refers to the extent to which an individual's self-concept is derived from being a member of a specific group (Tajfel & Turner, 1979). We propose that it matters with which group an individual identifies with. More specifically we propose, that self-conscious

emotions such as guilt only become more social in nature when the group with which individuals identify themselves increases one's sensitivity to pro-social standards (such as family and friends) and not when the group increases sensitivity to egocentric standards (such as competitiveness at work). However, future research is necessary to explore this reasoning.

### *Activating different construals of the self affects the self-evaluation process which evokes self-conscious emotions*

Hynie et al. (2006) reason that self-conscious emotions mediate the effects of social norms and attitudes because they draw people's attention to the negative (and positive) social reactions they may experience when failing to conform or conforming to the standards of important others. Their finding that the effects of guilt on intentions increase when the social self is activated compared to the private self underscores this reasoning. The findings of this study furthermore imply that individuals indeed use more social norms to evaluate their own behaviour when the social self is activated. Additionally we show that the effects of pride on intentions do not increase when the social self is activated compared to the private self. The effects of pride are enforced by activating the private self. This finding implies that different mechanisms occur for pride and guilt. Activating the social self makes individuals more sensitive to guilt and increases the impact of social norms in the self-evaluation process that evokes guilt. Activating the private self makes individuals more sensitive to pride and increases the impact of one's own attitudes on the self-evaluation process that evokes pride.

Our findings furthermore show that social norms do not always have a positive effect on self-conscious emotions. Study 4 shows that a backlash effect can occur if normative information is included in the message. These findings imply that when consumers are sensitive to normative information (i.e. Facebook condition), the positive effects of descriptive norms on intentions, pride, and guilt become negative when they are confronted with highly normative information. We reasoned that these effects might occur because the provided normative information was unrealistic. As such, consumers do not use this information and may even become negative toward all normative information that is presented. Thus, our findings clearly show that the findings regarding baseline social norms cannot be compared with providing normative information. Future research is necessary to further identify why these effects occur.

### *Practical implications*

Investigating the motives behind organic purchasing behaviour has become an important marketing research issue (Baker et al., 2004). Although marketing and policy makers often use negative emotions in interventions and campaigns, positive emotions may be more effective in the context of the environment. These emotions not only have a larger effect on intentions, but



they are also recalled more often by individuals. In addition, the current findings show that pride is the most effective emotion. As such, the most prosperous route seems to be to focus interventions specifically on pride, such as through a competition that increases pride among winners or by enhancing national pride regarding pro-environmental behaviour by proclaiming that we perform better than neighboring countries.

Moreover, differences in self-construal are frequently altered in laboratory setting using a variety of priming tasks (Brewer & Gardner, 1996; Oyserman & Lee, 2008). The current study implies that contextual cues, such as the media channel through which information is provided, can also cause the activation of different selves. This implies that different cues in one's daily life can increase the effects of self-conscious emotions on intentions. In addition to the information channel, one can, for example, use individual chairs or group tables in a room or use different job tasks to activate individual uniqueness (give a presentation or develop individual differentiating competences) or activate being part of a group (working together and representing an organization). Thus, self-construal can be altered by features of the situation that persons face in their daily life. It is important to note that this mechanism works differently for pride and guilt: the effectiveness of pride can be increased by activating the private self, whereas the effectiveness of guilt can be increased by activating the social self. Our findings imply that messages that aim to guide environmentally friendly decision making via pride can best be provided through personalized media channels such as mail, whereas messages that aim to guide decision making via guilt can best be provided through social media channels such as Facebook.

### *Limitations*

First, we would like to note that the findings in our studies show rather small effects (i.e. marginally significant effects). We used online representative samples, which increases the generalizability of our findings. The participants completed the questionnaires online in their own environment. Therefore, we were unable to control all distractions in the environment, such as checking mail and Facebook during the experiment. Furthermore, the effect sizes of the present findings were small. We claim that even small effects are important in the context of the environment because they might have large implications for a sustainable planet. Future research might use different measurement methods, such as laboratory experiments, to rule out noise and potentially increase the size of the effects. Furthermore, the dependent variables of buying products which are more environmentally friendly than comparable alternatives are not fully pro-social acts. These behaviours are also performed out of egocentric motives such as tastiness and convenience. Future research might increase the size of the effects by including environmentally friendly behaviour which is mainly performed out of environmentally friendly

motives. For example, donating money towards Greenpeace or buying a part of the rainforest in Costa Rica. Furthermore, the current study focused on intentions to behave in an environmentally friendly manner. Future research might explore whether these effects also occur for real behavioural choices, such as donations or volunteer work.

The manipulation to activate the social versus private self did not work fully as expected. We used social media versus mail to activate the private versus social self. Future research is necessary to explore which aspects of social media activate the social self. Moreover, although we found differences between conditions, not all respondents noticed the information channel. It is possible that different information channels unconsciously affect the activation of self-construals. We do not have enough respondents to perform the analyses separately. Future research might further explore whether and how these effects occur.

Several researchers underscore the importance of distinguishing between descriptive norms (i.e. norms regarding what relevant others typically do) and injunctive norms (i.e. norms regarding what relevant others think one should do) (Christensen et al., 2004; Smith et al., 2012). These norms have different effects on the experience of emotions (Christensen et al., 2004), and the interplay between these different norms affects environmentally friendly intentions (Smith et al., 2012). The current study only included descriptive social norms. Future research might include injunctive norms to further explore the effects of social norms on pride and guilt when activating different construals of the self.





## General discussion

This thesis started with the observation that although several scholars refer to the importance of self-conscious emotions in guiding behaviour, and to the importance of emotions in guiding environmentally friendly behaviour, not all complexities regarding the function of these emotions have been resolved. This thesis explores the fundamental ways in which pride and guilt affect pro-environmental behaviour via self-reflection. Our goal was to increase understanding in the function of emotions by exploring whether pride and guilt influence pro-environmental behaviour via a self-regulatory function and what the role of the self is in this process. Six empirical chapters show that pride and guilt occur after a self-reflection on both personal and social standards related to the environment and that the way one perceives the self influences this self-reflective process. Pride and guilt in turn guide pro-environmental behaviour. This thesis integrates research on the determinants of environmentally friendly consumer behaviour and research on self-conscious emotions. We thereby provide implications regarding the role of emotions in the specific context of environmentally friendly consumer behaviour and regarding the understanding of the function of self-conscious emotions in general.

The final chapter of this thesis first presents the main outcomes of our studies and how we propose that our findings contribute to the understanding of the questions raised in the introduction. We discuss how the individual chapters contribute to: the understanding of whether pride and guilt affect subsequent behaviour, whether the function of pride and guilt can be specified as a self-regulatory function, whether personal or social standards are used for the self-evaluation process that evokes pride and guilt, whether the function of pride and guilt differs across contexts and due to differences in self-construal. Then, theoretical implications, practical implications, limitations, and directions for future research are discussed. Finally, the conclusions of this thesis are provided.

### Main findings

We tested the model shown in Figure 7.1. Chapter 2 tested whether and how anticipated and experienced pride and guilt affect subsequent behaviour. Chapters 3 and 4 tested whether anticipated pride and guilt mediate the effects of personal and social standards on intentions (i.e. self-regulation) in two vested models; the NAM (Norm Activation Model), the TPB (Theory of Planned Behaviour), and an integrated NAM-TPB model. Furthermore, Chapter 4 preliminarily explored whether the self-regulatory function of pride and guilt differs for different types of consumption contexts. Finally, we tested if cultural (Chapter 5) and activated (Chapter 6) self-

construal affects the self-regulatory function of pride and guilt. Below we discuss the findings of the chapters presented in this thesis by reflecting upon the identified research gaps in the literature.

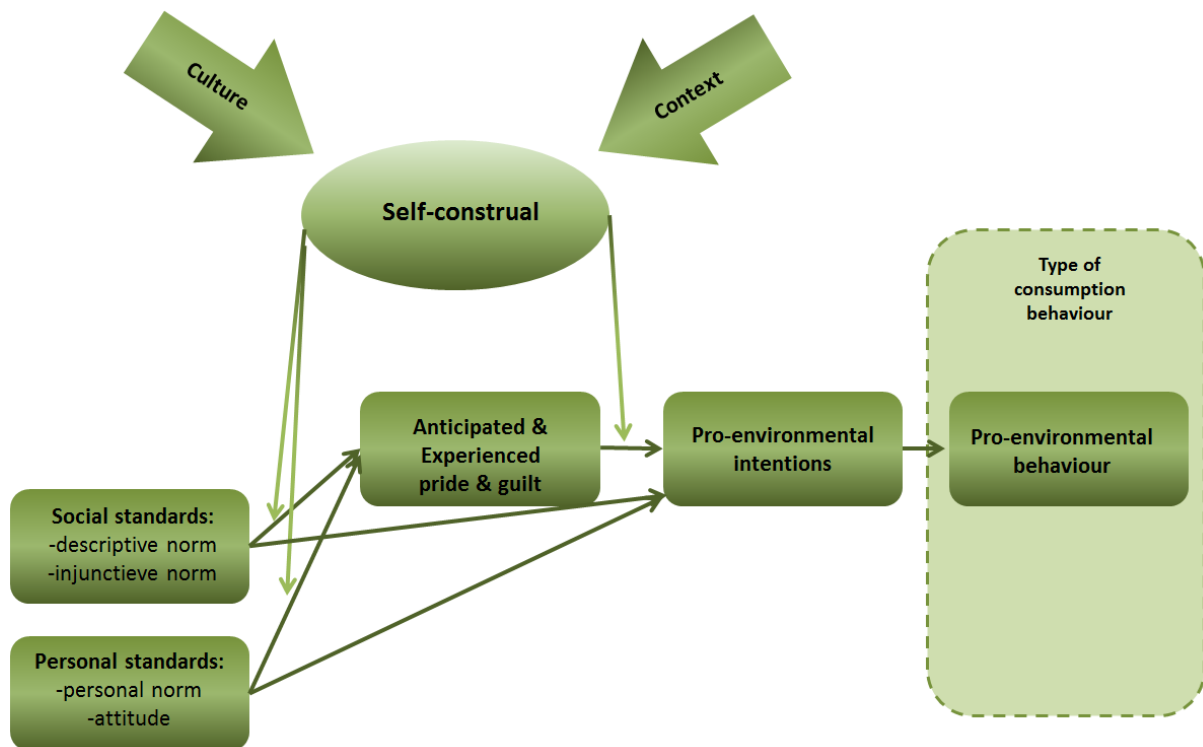


Figure 7.1. Conceptual model

*Pride and guilt affect subsequent pro-environmental behaviour*

The findings of this thesis indicate that pride and, to a lesser extent, guilt guide subsequent pro-environmental behaviour. We show that both *experiencing* (Study 3 of Chapter 2; Studies 2, 3, and 4 of Chapter 6) and *anticipating* feelings of pride and guilt (Studies 1 and 2 of Chapter 2; Chapters 3, 4, and 5; Study 1 of Chapter 6) affect environmentally friendly intentions, which in turn affect environmentally friendly behaviour (Chapters 3, 4, and 5). Below we elaborate on this finding by discussing the differences between pride and guilt, and the differences between anticipated and experienced effects. We conclude with some remarks regarding causality and the question whether our findings refer specifically to pride and guilt.

Although positive emotions remain an understudied topic, in general (Cavanaugh et al., 2007) and in the context of sustainable behaviour (Corral-Verdugo, 2012), the present study reveals the relevance of the positive emotion of pride in guiding pro-environmental choices. Previous studies that measured general positive or negative anticipated emotions found that negative emotions are more effective than positive emotions in stimulating behaviour (Bagozzi et al., 2003; Carrus et al., 2008). The current findings regarding the effectiveness of pride compared with guilt are accordance with previous studies that compare the effects of pride and

guilt (Van leeuwen, Van Dijk, & Kaynak, 2013). This implies that a discrete emotional approach is necessary to understand which specific positive and negative emotions are most effective in guiding decision making.

The effects of anticipated pride and experienced pride on environmentally friendly intentions are comparable (Chapters 3 and 4, and individualistic countries in Chapter 5) or greater (Chapter 2, collectivistic countries in Chapters 5, and Chapter 6) than the effects of guilt. If we take a closer look, these findings imply that for individualistic countries<sup>27</sup> *experienced* pride has a larger impact on pro-environmental intentions than guilt, whereas the effects of *anticipated* pride and guilt are comparable. Cognitive dissonance theory might explain these findings. This theory states that negative emotional experiences are aversive. Individuals are prone to resolve these states by adapting behaviour or cognition (Festinger, 1957). For example, if an individual feels guilty for not recycling he or she might seek out ways to get rid of this negative emotion by increasing recycling behaviour. An individual might also relieve the feelings of guilt through denial or rationalization (e.g., “I cannot change the world by myself, my behaviour is a drop in the ocean”). This might explain (1) the different findings between experienced pride and guilt, and (2) the different findings between experienced and anticipated emotions. First, negative emotional states such as guilt might, in contrast with the positive experience of pride, result in adapted cognitions instead of adapted behaviour. This might explain the smaller effects of experienced guilt on behavioural intentions compared with pride. Second, cognitive dissonance theory might also explain why we find differences between pride and guilt for experienced and not for anticipated emotions. Anticipated negative emotions are not aversive states yet, as such this is not yet a state of cognitive dissonance and both anticipated pride and guilt guide behaviour in a comparable way.

Then, we would like to make some remarks. At first, we are the first to show experimentally that evoking the *experience* of pride and guilt increases pro-environmental intentions and choices (Study 3 of Chapter 2). This shows that experienced pride and guilt guide subsequent behaviour. For anticipated pride and guilt our thesis provides less strong evidence for causality. We show that *anticipated* pride and guilt affect subsequent pro-environmental intentions (Study 2 of Chapter 3 and Chapter 5) and behaviour (Chapter 2: Studies 1 and 2). However, other research designs are necessary (e.g., cross-lagged survey designs) to explore to what extent these emotions are formed by past behaviour and to what extent they affect future behaviour. We discuss the interrelation between past behaviour, experienced emotions and anticipated emotions later in this chapter.

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<sup>27</sup> We cannot compare the effects of experienced and anticipated emotions across individualistic and collectivistic cultures, because Chapter 5 focusses on anticipated emotions and we did not measure experienced emotions for collectivistic countries. We therefore focus on individualistic countries.

A second remark refers to the fact that we cannot ascertain that especially pride and guilt guide pro-environmental behaviour. Most of our studies (Chapters 2-5) did not include multiple emotions, and pride and guilt might therefore serve as proxies for other emotions or general positive and negative effects. Chapter 6 (Study 1) did include multiple specific emotions, and underscored the relevance of pride in the context of pro-environmental behaviour. In comparison with guilt, shame, hubris, joy, anger, and positive and negative effects, pride was the most relevant emotion in the context of pro-environmental decision making.

### *Pride and guilt have a self-regulatory function*

One of the clearest findings of this thesis is that pride and guilt affect pro-environmental behaviour via a *self-regulatory function* (Carver & Scheier, 1998; Hynie et al., 2006), such that these emotions provide information on whether one's behaviour matches one's personal or social standards, and subsequently guide future behaviour. This thesis provides several indications for this main finding. Chapter 2 shows that pride and guilt only guide pro-environmental behaviour when they are formed by related (and not by unrelated) standards regarding the environment, which implies that these emotions guide behaviour via a feedback function. Chapters 3 and 4 further specify the function of pride and guilt. These chapters show that anticipated pride and guilt have a self-regulatory function, as they mediate the effects of personal and social standards regarding the environment. Chapter 5 validates the self-regulatory function of anticipated pride and guilt across a range of individualistic and collectivistic countries. Below we elaborate how these findings relate to the literature. We conclude with some remarks regarding differences across individual chapters and the question whether our findings refer specifically to pride and guilt.

Chapter 2 (Studies 2 and 3) thus shows that only related (endogenous), and not unrelated (exogenous), pride and guilt are effective in stimulating environmentally friendly behaviour. Most researchers do not take the distinction between endogenous and exogenous emotions into account (Zeelenberg et al., 2008). The current findings show the importance of being specific in which emotions to include when empirically studying the effects of emotions. Researchers that use exogenous versus endogenous emotional effects may find different effects or functions of the same emotion. Or scholars that use exogenous pride or guilt may unjustly conclude that pride and guilt do not affect pro-environmental intentions. Furthermore, the findings of Chapter 2 imply that in the context of the environment, decision making is not guided by the pure feelings of pride and guilt, but rather the information they provide on evaluating one's behaviour. If the pure experience of pride and guilt were used to guide environmentally friendly decision making, then exogenous pride and guilt would have been shown to affect environmentally friendly intentions. The findings of Chapter 2 are not fully in accordance with



the affect-as-information model (Schwartz & Clore, 1983), which states that individuals use the way they feel at the present moment to evaluate events and to guide behaviour. The findings of Chapter 2 imply a feedback function (Baumeister et al., 2007) of pride and guilt. However, other explanations for the difference between endogenous and exogenous effects of pride and guilt are also possible<sup>28</sup>. We therefore further explored the function of pride and guilt in Chapters 3 and 4.

Chapters 3 and 4 show direct evidence for a *self-regulatory function* of pride and guilt in the NAM (Chapter 3), the TPB (Chapter 4), and an integrated NAM-TPB model (Chapter 3). Taken together, these chapters show that attitudes, personal norms, injunctive social norms, and descriptive social norms affect pride and guilt, which in turn guide behavioural intentions to be in accordance with these attitudes and norms. We obtained a first indication that the self-regulatory function of pride and guilt refers to a general applicable mechanism which increases the exploratory value of vested theories. The findings of Chapter 5 imply that the basic function of anticipated pride and guilt to make consumer behaviour consistent with one's (perceived) environmental standards can be generalised across countries with the same type of culture (either individualistic or collectivistic) (e.g., Steenkamp & Baumgartner, 1998). The findings of this thesis contribute to the understanding of the function of self-conscious emotions by showing that anticipated emotions motivate individuals not only to behave themselves in accordance with their standards to avoid negative emotions such as guilt (Hynie et al., 2006; Su et al., 2010) but also to strive for positive emotions such as pride.

Previous studies did not test proposed associations of pride and guilt within the NAM or the TPB, or reported only one possible association (e.g., Bamberg et al., 2007; Hynie et al., 2006). We tested multiple possible associations (Chapters 3 and 4), and compared the model fit of these alternative models to assure that these emotions function via a mediating effect. We show that multiple models can have a good model fit and that comparing competing models and formulating theoretically based hypotheses is necessary to explore which model shows the 'true' relations. We therefore recommend future research to test multiple theory-based associations, because otherwise one might falsely conclude that a particular association explains the predicted behaviour.

Below we elaborate on two important limitations of our findings regarding the self-regulatory function of pride and guilt. First, we find different results across our individual chapters when we compare the function of anticipated pride and guilt in the TPB (Chapter 4) and the integrated NAM-TPB (Chapter 3). First, Chapter 4 shows that attitudes affect anticipated guilt in the TPB, whereas Chapter 3 shows no effects of attitudes on anticipated guilt in the

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<sup>28</sup> For example, pride and guilt might only guide domain-specific behaviour (domain-specific compensations) or by asking how proud or guilty individuals feel regarding their own environmental behaviour (Study 3) related action tendencies are activated, whereas the other respondents did not receive this activation (e.g., focussing illusion; Kahneman et al., 2006).

integrated NAM-TPB model. Additional analyses (see Appendix B for a detailed description) show that personal norms account for the differences in the effects of attitudes. Including both personal norms and attitudes rules out the effects of attitudes, which implies that personal norms are more important for individuals to reflect on their own behaviour. This fits with the view that attitudes are evaluative judgements of a specific object or behaviour (Ajzen, 1991), whereas personal norms are internalised norms that relate to feelings of moral conviction to follow the specific behaviour (Schwartz, 1977).

A second difference refers to the fact that injunctive social norms and attitudes have a direct effect on intentions in the TPB (Chapter 4) and not in the integrated NAM-TPB model (Chapter 3). Anticipated pride and guilt thus fully mediate the effects of injunctive social norms and attitudes in the integrated NAM-TPB model, whereas they partially mediate these effects in the TPB. The differences in the self-regulatory function of emotions (full versus partial mediation) might be explained by the different pro-environmental behaviours used in Chapters 3 and 4. Behaving in an environmental manner is more directly related to pro-environmental purchase motives (Chapter 3) than organic consumption (Chapter 4), which is also influenced by a range of other motives (i.e. health and justice). Anticipated emotions regarding environmental standards fully mediate the effects of injunctive norms when the behaviour relates to pro-environmental motives (Chapter 3) and partially mediates the effects of injunctive norms when the behaviour relates to pro-environmental and other motives (i.e. Organic consumption; Chapter 4).

A second important limitation is that we cannot ascertain that pride and guilt in particular function in a self-regulatory manner or that these measures serve as proxies for other emotions. As already noted, only Chapter 6 includes multiple emotions. We performed additional analyses (see Appendix C) with the data from Chapter 6 to explore whether the underlying mechanism through which descriptive social norms and attitudes affect intentions is mainly mediated by anticipated pride and guilt, or whether other emotions also play a role here. The results show that anticipated pride, anger and, to a lesser extent, joy mediate the effects of attitudes and descriptive social norms on past behaviour. By taking the limitations<sup>29</sup> of these additional analysis into account, these findings indicate that pride is a highly relevant positive emotion in the context of the environment, because this emotion shows the largest direct and indirect effects on pro-environmental behaviour in comparison with the other included emotions. Moreover, these findings imply that other emotions also have a self-regulatory

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<sup>29</sup> We would like to note three important limitations. First, the data does not include intentions but past behaviour, whereas our findings show that anticipated emotions affect behaviour via intentions. Second, the data reflects past behaviour, these analyses therefore test the association between past behaviour and future anticipated emotions and not the other way around. Third, emotions were measured by asking respondents to reflect on their own behaviour regarding the environment, whereas the findings of this thesis imply that individuals are less inclined to experience negative emotions because they do not like this aversive state. These analyses thus do not provide an honest comparison across positive and negative emotions.

function; anger and to a lower extent joy also mediate the effects of existing attitudes and descriptive social norms on pro-environmental (past) behaviour.

*Personal and social standards are used for self-evaluation which evokes pride and guilt*

The findings of this thesis show that both personal and social standards affect pride and guilt (Chapters 3-6). We identified three implications for the understanding of the function of self-conscious emotions that relate to this main finding. First, self-conscious emotions are not purely social in nature, such that they are evoked after self-evaluations on personal *and* social standards. Second, self-conscious emotions differ in the extent to which they are evoked by evaluations on personal versus social standards. Third, the use of personal versus social standards in self-evaluations is not a static process, but differs across contexts. We discuss these implications in more detail below.

First, up until now, it was not fully clear how anticipated emotions are formed (Bagozzi et al., 2003) and, more specifically, whether personal standards, social standards, or both are used for the self-evaluation process that evokes self-conscious emotions. Chapters 3, 4, and 5 show that both personal standards (i.e. personal norms and attitudes) and social standards (injunctive and descriptive social norms) affect anticipated pride and guilt. This contradicts the view that self-conscious emotions are mainly social in nature (e.g., Baumeister et al., 1994; Leary, 2007). Importantly, the abovementioned findings do not provide answers to the question of whether self-conscious emotions mainly serve social goals or all forms of identity-relevant goals. The findings of this thesis do imply that the self-evaluation process is not purely social in nature, such that self-conscious emotions not only regulate relationships with other people and reflections of what other people think of them (Baumeister et al., 1994; Miller & Leary, 1992) but also occur due to private evaluations of the self. The confusion in the literature might be the result of a different view on norms. Some researchers seem to clearly differentiate between personal and social norms, while others see personal norms as internalised social norms and therefore no longer differentiate between these norms. We state that differentiating between personal standards and social standards is relevant, because personal standards reflect standards which are more relevant to and integrated in one's identity than social standards (Thøgersen, 2006). Moreover, not all social standards are used to form personal norms, such that individuals only internalise social norms they believe are important. Personal and social norms guide behaviour via different mechanisms and it is therefore important to differentiate between them.

Second, this thesis is among the first to address the fact that specific anticipated self-conscious emotions are formed by different standards. Taken together, our findings show implications that guilt is more social in nature than pride. Chapters 3, 4, and 5 show that

personal standards have a larger effect on anticipated pride than guilt, and social norms have a larger effect on anticipated guilt than pride (Chapters 3, 4, and individualistic cultures in Chapter 5). These findings underscore the importance of investigating specific emotions or discrete emotions (e.g., Roseman, 2011). One should not theorize or explore these emotions as a group, as each emotion might function in a different manner.

Third, we show evidence that the formation of emotions is not a static process, but a process which differs via the employment of the self. Chapter 6 shows that activating a private versus social construal of the self affects which standards are used for the self-evaluation process that evokes pride and guilt. As such, the same person can use different standards for self-evaluation at different moments in time. These findings underscore our reasoning that self-conscious emotions are based upon the self and evaluations of the self (e.g., Tracy & Robins, 2004a). Implications regarding the construal of the self are discussed in more detail later on.

### *The self-regulatory function of pride and guilt differs across contexts and situations*

This thesis shows that the self-regulatory function of pride and guilt differs across consumption contexts (Chapter 3) and across situations for the same consumption behaviour (Chapter 6). We elaborate on the findings below.

Chapter 3 shows that the mediating effects of emotions are greater in a sustainable decision-making context compared with a healthy decision-making context. Sustainable behaviour can be referred to as pro-social behaviour (e.g., Granzin & Olsen, 1991; Hopper & Nielsen, 1991), whereas healthy behaviour is more related to personal benefits. Thus, pride and guilt seem to have a greater self-regulatory function for pro-socially oriented behaviour compared with personally oriented behaviour. This is in accordance with the reasoning of previous studies (e.g., Haidt, 2003), which state that these emotions are especially relevant in the context of altruistic and pro-social behaviour because the standards that are used to evaluate personal behaviour often have a moral character. This implies that our findings might be applicable to other contexts that relate to pro-social behaviour, including donating, volunteering, or cooperative behaviour.

Besides a difference in the function of self-conscious emotions for different consumption behaviours, Chapter 6 underscores that the self-regulatory function of pride and guilt might differ across situations for the same consumption behaviour. Chapter 6 shows that the function of self-conscious emotions differs when different construals of the self are activated. We extend previous studies by showing that providing information via social media compared with mail can activate the social self, which in turn results in a different function of pride and guilt. These findings imply that different contextual cues can affect the function of self-conscious emotions by activating different construals of the self.

*The self-regulatory function of pride and guilt differs for private versus social construals of the self*

This thesis shows that the way how one sees the self (i.e. self-construal) affects the formation and behavioural influence of emotions. Chapter 5 implies that cultural differences in self-construal affect the self-regulatory function of anticipated pride and guilt. Chapter 6 shows that also activating different construals of the self affects the function of these emotions. Although there are differences, both cultural and contextual private self-construals increase the personal character of self-conscious emotions, and social self-construals increase the social character of self-conscious emotions. Below we elaborate on the findings of the individual chapters. Additionally we discuss the similarities and differences between Chapters 5 and 6.

We argued that self-conscious emotions are sensitive to differences in self-construal because these emotions are based upon the self and formed by evaluations of the self (Camras & Fatani, 2004; Leary, 2007; Tracy & Robins, 2004a). Chapter 5 shows that the self-regulatory function of pride and guilt differs *between* and not *within* individualistic and collectivistic cultures. Markus and Kitayama (1991) state that individuals from collectivistic have distinct construals of the self than individuals from individualistic cultures, which affects their cognition, emotion, and motivation because individuals fundamentally differ in their relation to others. Our findings underscore this reasoning, and we show that individuals from collectivistic cultures are indeed more sensitive to the social environment, and use this environment (i.e. descriptive social norms) more to anticipate pride, whereas individuals from individualistic cultures are more prone to use their own standards (attitude) to anticipate pride and guilt. Chapter 6 shows that the function of pride and guilt can also be varied by activating the social versus the private self-construal within individuals from an individualistic culture. Activating the social self increases the effects of social norms on feelings of guilt, which in turn results in an increased effect of guilt on environmentally friendly intentions. For pride, a different mechanism occurs. Activating the private self increases the effects of attitudes on pride, which in turn results in an increased effect of pride on environmentally friendly intentions.

How about similarities and differences between the findings of Chapters 5 and 6? Taken together, these findings imply that cultural and activated construals of the self affect the self-evaluation process that evokes pride and guilt and one's sensitivity for emotions in forming intentions. However, the current thesis shows that differences in the function of self-conscious emotions between cultural employments of the self do not exactly mirror differences in the function of self-conscious emotions after activating social versus private self-construals. This is not in accordance with the findings of Gardner, Gabriel, and Lee (1999), who show that activating independent or interdependent self-construals within a culture results in comparable differences in important evaluations of individualistic and collectivistic values that are

traditionally found between cultures. The findings of this thesis for example show that for individualistic compared with collectivistic countries the effects of attitudes are larger on both pride and guilt, whereas activating the private compared with the social self only increases the effects of attitudes on pride. The effects of pride on intentions are larger for collectivistic compared with individualistic countries, whereas pride has a larger effect on intentions when activating the private compared with the social self.

These different findings can be explained by the fact that we activated the social and private self-construal within an individualistic culture. These individuals are already more prone to use attitudes when anticipating emotions. As such, there is less variation left and the self-conscious emotions only vary due to differences in self-construal that relate to the specific emotions. Guilt, which seems more social in nature due to one's sensitivity for the social environment in self-evaluations, therefore responds to activation of the social self, whereas pride, which seems more private in nature as individuals more often use personal standards for self-evaluation, responds to activating the private self. Future research is necessary to further explore this reasoning, for example by following the example of Verplanken et al. (2009) who manipulated the activation of self-construals across both individualistic and collectivistic countries.

### *Experienced pride and guilt are used to anticipate these emotions*

As already noted, the current thesis shows that both *experiencing* (Study 3 of Chapter 2; Studies 2, 3, and 4 of Chapter 6) and *anticipating* feelings of pride and guilt (Studies 1 and 2 of Chapter 2; Chapters 3, 4, and 5; Study 1 of Chapter 6) affect environmentally friendly intentions. This begs the question how these two forms of emotions relate to each other. Below we discuss how the findings of this thesis contribute to this question. We first compare the strength of anticipated and experienced emotional effects on behaviour. Afterwards we discuss how anticipated and experienced emotions might relate to each other.

This thesis offers preliminary indications that anticipated emotions have a greater effect on environmentally friendly intentions than experienced emotions (Study 3 of Chapter 2)<sup>30</sup>. These findings underscore previous findings (e.g., Mellers & McGraw, 2001; Van Dijk et al., 2012), who found that anticipated emotions have a larger effect on decision making than experienced emotions, because individuals have a tendency to overestimate the emotions they will experience. We do note that our measure of experienced emotions does not provide an honest comparison with anticipated emotions, because experienced emotions were not evoked

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<sup>30</sup> We measured *anticipated pride and guilt* regarding the imagination of buying or not buying environmentally friendly products in a questionnaire. Two weeks later, we approached the same respondents with an experiment, asking them to recall the last time they *experienced pride or guilt* regarding their own environmental behaviour. In turn, we asked them which emotions they experienced and what their *pro-environmental intentions* were.

due to evaluations of current environmental behaviour, and moreover not regarding the domain-specific environmental context. Future research is necessary to compare the effects of anticipated and experienced emotions in the context of the environment. This asks for complex research designs.

A complexity regarding comparing the effects of anticipated and experienced emotions is that these emotions are related to each other. Emotional experiences regarding past events are used to anticipate which emotions one will experience in the future. This implies that past behaviour regarding the environment affects anticipated emotions via the emotional experiences that are stored in memory. The findings of Chapter 2 (Study 1) imply in accordance with this reasoning that a part of the effects of anticipated emotions is explained by emotional experiences due to past behaviour in the context of the environment. We tested with additional analysis<sup>31</sup> whether past behaviour also moderates the effects of anticipated pride and guilt on subsequent behaviour. These findings imply (indirectly) that one's negative experiences due to past behaviour indeed increase the effects of guilt on subsequent behaviour, so that the individual becomes extra motivated to avoid feelings of guilt. These effects do not occur for pride. This different finding between pride and guilt might be explained by Frijda's "Law of Hedonic Asymmetry" (1986), which implies that positive emotional experiences (i.e. pleasure) are subject to change, so that one adapts to positive circumstances (e.g., winning the lottery), whereas negative emotions (i.e. shame) may continue under persisting adverse conditions. Frijda further states that emotions exist because they signal to individuals when behavioural change is required. As positive settings do not need change or a specific response, the emotional signalling system can be switched off. Frijda's reasoning implies that past negative experiences such as guilt might be more useful in guiding individuals in their future choices than past positive experiences. Future research is necessary to test this reasoning.

### Theoretical implications

#### *Function of self-conscious emotions*

This dissertation provides implications for research on self-conscious emotions in general. This thesis shows how the self-conscious emotions of pride and guilt guide behaviour, such that they are the emotional feedback-mechanism that guide individuals to follow personal and social standards. We state that future research on self-conscious emotions would not only benefit a

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<sup>31</sup> Hierarchical regression analyses with the measurements of Study 1 of Chapter 2 were performed. Buying environmentally friendly products and saving and recycling measured at wave 2 were dependent variables. The independent variables were included consecutively in five blocks. The first four blocks are similar to the analyses reported in Study 1 of Chapter 2. In the fifth block, we included interaction effects between anticipated pride and guilt, on the one hand, and past behaviour, on the other hand. The results of the fifth block show that past behaviour moderated the effects of guilt on recycling behaviour ( $\beta^{\text{guilt}} = -.029^*$ ) and buying environmentally friendly products ( $\beta^{\text{guilt}} = .062^{**}$ ), these interaction effects were not significant for anticipated pride (saving and recycling  $\beta^{\text{pride}} = .009$ ;  $p = \text{n.s.}$ ; buying environmentally friendly products  $\beta^{\text{pride}} = .030$ ;  $p = \text{n.s.}$ ).

model of how self-conscious emotions are evoked (Tracy & Robins, 2004a), but also a model that shows how self-conscious emotions guide behaviour. We attempted to use the findings of this thesis to provide a model of the behavioural effects of self-conscious emotions. We propose the model in Figure 7.2. It is important to note that although we used the findings of this thesis to develop this model, not all associations described in the model are tested yet<sup>32</sup>. Additionally, we note that we do not aim to refine the model of Tracy and Robins (2004a). The model presented below can best be seen as an extension or a separate model. Below we provide an explanation of the model.

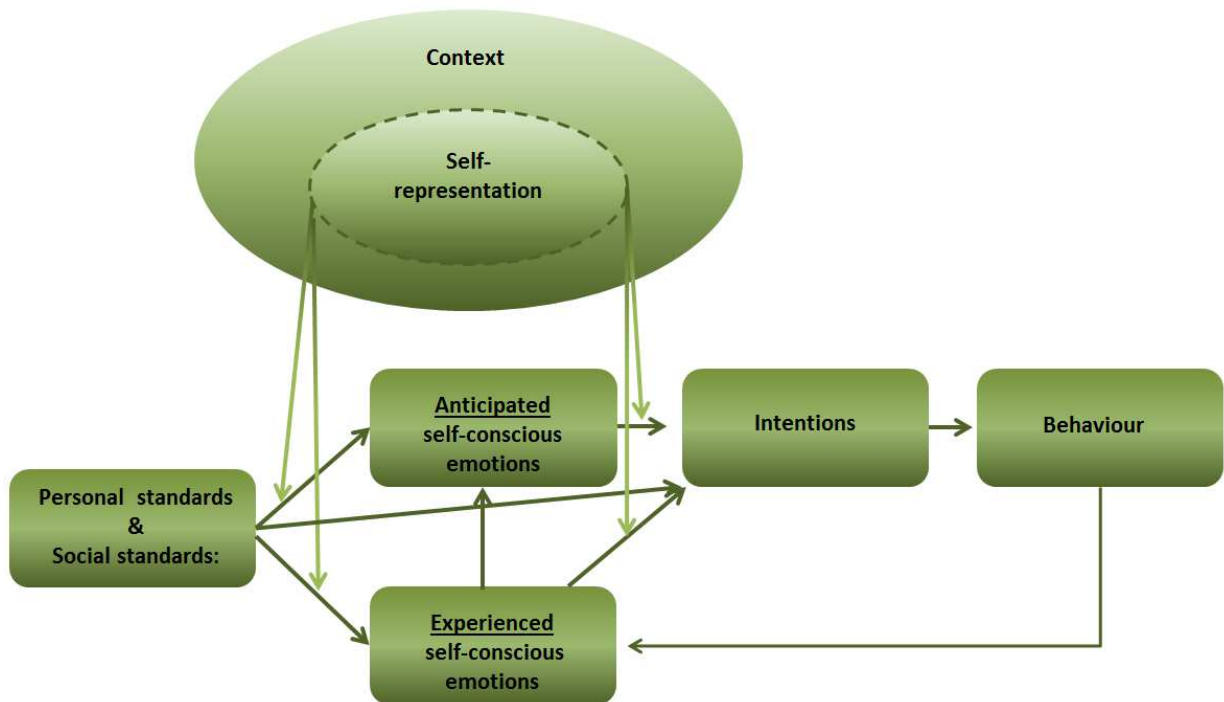


Figure 7.2. Model of behavioural effects of self-conscious emotions

The model shows that intentions are influenced by personal and social standards. The effects of these personal and social standards are at least partially mediated by anticipated and experienced self-conscious emotions. Individuals evaluate whether their (intended) actions are in accordance with existing personal and social standards, and because individuals aim to experience positive emotions and avoid negative emotions, these emotions guide intentions, which in turn guide behaviour.

We refined our conceptual model (Figure 7.1) by differentiating between anticipated and experienced emotions. The findings of this thesis imply that a self-evaluation of one's past behaviour evokes the experience of emotions, whereas a self-evaluation of future behaviour

<sup>32</sup> We also remark that the actual process presumably includes multiple feedback loops, processes may work simultaneously or in parallel. Our model shows a simplification of reality in order to understand how self-conscious emotions occur and guide behaviour. Additionally, other relevant factors might be important to explain behaviour, this model is conducted to show how self-conscious emotions are evoked and guide behaviour.



results in anticipated emotions. Both experienced and anticipated emotions are shown to guide one's behaviour because one strives to feel good (i.e. self-regulation). Additionally, we included an association between anticipated and experienced emotions. These associations are not directly tested in this thesis. Based on previous studies (Loewenstein & Lerner, 2003) we expect that experienced emotions are used to form anticipated emotions, as they provide information regarding emotional experiences after specific behavioural acts.

We propose that the basic mechanism which we described above – the self-regulatory function of self-conscious emotions– might vary due to several factors, the three most important of which will now be highlighted. First, specific self-conscious emotions might relate to different action tendencies and intentions. Moreover, the findings of this thesis imply that personal versus social standards have different effects on different self-conscious, and that different self-conscious emotions have different effects on intentions. We therefore highlight the importance for future research to include specific emotions.

Second, the current thesis shows that the self that is activated in individuals might influence the function of self-conscious emotions. We explored the effects of private versus social selves, yet multiple different representations of the self might exist (e.g., social identification, present self, future self). We propose that the way one sees the self affects the self-evaluation process and one's sensitivity for self-conscious emotions in the formation of intentions.

Third, we show that the self might depend on the cultural or situational context. Multiple contexts that were not included in this thesis might also affect the self as that different aspects of the self are activated at different moments (you see yourself differently at home, at the supermarket or at work). Future research is necessary to test and validate the proposed model for a range of self-conscious emotions. Furthermore, further research is needed to explore the interplay between context and the self affects the function of self-conscious emotions precisely.

#### *Affective self-regulation is a specific process*

Self-regulation refers to a feedback process in which adjustments are made to reach a goal (Carver, 2004). This thesis has implications for affective self-regulation. Carver and Scheier (1998) previously stated that incongruences between a current self-evaluation and intended future goals result in a negative effect, whereas progress towards one's goals results in a positive effect. Tracy and Robins (2004a) extended this theory by providing a model showing that discrepancies between one's current status and one's ideal status fall apart in different negative emotions, whereas progress towards one's goals falls apart in different positive emotions. We further extend these lines of research by showing a first indication of how this mechanism of self-regulation functions. The current thesis shows that both existing personal and social

standards are used to evaluate one's progress towards one's goals. This self-evaluation evokes pride and guilt, which in turn guide intentions. Moreover, this self-regulatory function differs across pride and guilt, such that personal and social standards have a distinct effect on these emotions. We thereby show the relevance of researching emotional self-regulation by means of specific emotions.

### *Research explaining environmentally friendly behaviour: emotions are forgotten determinants*

In the context of environmentally friendly behaviour, there has been a lack of research on the role of emotions (e.g., Vining & Ebreo, 2002). Recently, there has been an increasing interest in the role of emotions as one becomes increasingly aware of the limitations of relying only on the rational side. This thesis contributes to the research on determinants of pro-environmental behaviour by showing evidence that emotions play a key role in pro-environmental decision making. We show that adding anticipated pride and guilt significantly improves the explained variance of behaviour in vested theories. The evidence given for the additional role of emotions does not discount the impact of rational processes in decision making. More importantly, the findings of this thesis show that emotions can be regarded as the underlying mechanisms through which cognitive variables such as attitudes and personal norms (partially) guide intentions or behaviour. Previous studies (e.g., Bagozzi, 1992) have already noted that theories such as the TPB need refinement. The inclusion of processes that encompass the underlying mechanism through which attitudes and norms affect intentions are necessary to understand how behaviour can be explained.

### **Implications for practice**

This thesis provides suggestions for marketing campaigns and policies aiming to promote pro-environmental behaviour. Although stimulating consumers to behave in a pro-environmental manner is clearly not enough to solve all environmental challenges that we face, it is commonly expected that consumers can play a significant role in challenging environmental issues (Steg & Vlek, 2009). To support pro-environmental consumer behaviour, policy makers and marketers need to understand how consumers make decisions in the context of the environment. Besides increasing the understanding of consumers' environmentally friendly decision making, the current thesis offers several implications of how pro-environmental behaviour among consumers can be stimulated.

We show that pro-environmental intentions are not only cognitively based but also affect-based. This is encouraging for policy interventions and marketing campaigns, in that they can go beyond merely creating awareness via cognitive content. Furthermore, policies to promote environmentally friendly choices are often aimed at changing attitudes and norms, such

as providing information about environmental impacts or emphasizing the importance of environmentally friendly choices. We show that pride and guilt stimulate individuals to follow existing personal and social standards towards the environment. Policies that aim to evoke emotions based upon existing norms and attitudes seem more effective than policies aimed at changing attitudes and norms because they fit with the existing values of citizens. Note that this implication withholds the assumption that there is a group of individuals that already has positive standards regarding the environment. Previous studies indicate that individuals with positive attitudes do not always intend to engage in pro-environmental behaviour (attitude-intention gap; Vermeir & Verbeke, 2006). We state that these consumers are the most easy to reach, as they seem to value the environment, and that this seems a promising route to start with.

Much attention has been paid to guilt in marketing and advertising (Coulter & Pinto, 1995; Huhmann & Brotherton, 1997), yet this thesis shows that pride is comparable or more effective than guilt in guiding pro-environmental behaviour. Additionally, the findings imply that pride is not only more effective in guiding environmentally friendly behaviour than guilt, but is also more often experienced by consumers<sup>33</sup>. This implies that it is more promising to focus on pride compared with guilt. Moreover, previous studies show that guilt is not always effective in stimulating desired consumer behaviour. Advertisements can be too negative, which might result in perceptions of a manipulative intent by the creator and negative attitudes towards the source of the message (Cotte, Coulter & Moore, 2005; O'Keefe, 2002). Furthermore, some consumers can develop resistance to negatively framed messages and subsequently do not engage in the desired behaviour (Brennan & Binney, 2010). Taken together, it seems fruitful to also use positive emotions in marketing and policy. Moreover, our findings imply that emotions of pride are more effective than other related positive emotions. As such, interventions that focus specifically on pride might be the most effective in guiding environmentally friendly behaviour. For example, designing a website which allows individuals to set personal targets (e.g., travel one time a week by bike to work or decrease energy bill by 10%) or evoking national pride by showing at which aspects of environmentally friendly the Netherlands is performing/ or can perform better than other countries.

Our research has implications regarding how pride and guilt can be evoked most effectively. Feelings of pride and guilt are only effective in guiding pro-environmental behaviour when these are evoked after evaluating one's behaviour towards standards related to the

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<sup>33</sup> Chapter 2 shows that respondents found it easier to recall emotional experiences of pride compared with guilt. This finding suggests that pride is either experienced more often than guilt or remains more salient in memory and is easier to recall. It seems that individuals appraise events in such a way that they experience the least possible negative emotions (Frijda, 2007). Moreover, Chapter 6 shows that when respondents are asked to report their feelings regarding past environment-related purchasing behaviour, they are more likely to recall prideful experiences (and other positive emotions) compared with guilty ones (and other negative emotions).

environment (endogenous emotions). Successful interventions thus focus specifically on the environment; slogans such as 'Be proud to be green!', a bike with the message 'proud traveler', or a guilt-free shopping experience with organic clothes are notable examples. Furthermore, marketers and policy makers can best evoke feelings of pride and guilt in various ways. Interestingly, individuals feel pride because one's behaviour matches one's *own* standards. For example, if I think it is important to decrease emissions, then I would be proud to take the train instead of the car to work. However, individuals feel rather guilty that one's own behaviour does not comply with the standards of *others*. For example, I feel guilty because I bought a Hummer and my social environment perceives this car to be an environmentally unfriendly gas-guzzling vehicle. Furthermore, this thesis underscores the relevance of anticipated emotions. Our findings suggest that anticipated emotions may be more important than felt emotions. Moreover, anticipated emotions might be of higher practical relevance. For example, guilt can be a powerful guide to behaviour, even for someone who rarely feels guilty, simply because that person anticipates the potential guilt and therefore takes steps to prevent it.

Our research additionally implies that cultural differences should be taken into account. Marketing communication and interventions stimulating pro-environmental behaviour for individualistic cultures might be more effective when positioned towards individual attitudes regarding the environment. For collectivistic cultures, consumers can best be approached by targeting social norms and underlining the positive emotions one will experience after behaving pro-environmentally.

Finally, one can further increase the effectiveness of one's message by activating different construals of the self. Again, a specific approach is warranted, such that the effectiveness of guilt increases when activating the social self, whereas the effectiveness of pride increases when activating the private self. Providing information via different media channels is a possible route to activate a social versus private self, such that messages that focus on pride seem most effective via mail, whereas messages that focus on guilt seem most effective via Facebook.

### **Limitations and suggestions for future research**

This thesis is a setup of individual chapters based on journal articles. The limitations of each study are already discussed in the individual chapters. This section will therefore provide limitations and directions for future research that account for the whole thesis.

The current thesis used multiple methodologies: cross-sectional surveys, surveys with a delayed outcome measure, and experimental designs. This multi-method approach is a strength, though several limitations regarding our methodology remain. In our studies we strongly focused on self-reports. Future research is needed to test if our model can be replicated with actual behaviour, for example by measuring actual energy consumption or by observing

purchase behaviour in the supermarket. Additionally, we used self-report and measurement scales to assess pride and guilt. One could argue that measurement scales broaden the emotional experience one is measuring, whereas single items refer to the specific emotion including all affective associations. For example, a measurement scale of guilt includes the items guilty, sorry, and remorseful, whereas a single-item measure only includes guilt. We state that measurement scales provide a more valid measurement of the underlying construct because it might be difficult for respondents to report exactly how they (will) feel. Moreover, the high Cronbach's alphas of our measurement scales indicate that the items we used have high internal consistency. Furthermore, future research might include other measures than self-reported measures to explore emotional experiences, such as facial expressions, brain activity (Beer et al., 2003), motivational states, behaviours, belief changes, autonomic responses, and neural indicants (Frijda, 2009). Self-report is the most often used method and, at this moment, probably the most specific measure, because other measurement methods cannot easily derive the specific nature of the large range of discrete emotions. However, other measurements might overcome side-effects of self-report, such as social desirability or influencing the emotional experience by asking how a person feels. Finally, multiple time lags or experimental designs with a delayed outcome measure can be used to further explore the causality of our associations.

This thesis shows that anticipated pride and guilt improve the explanatory value of two vested theories; the TPB and the NAM. One important limitation regarding our findings is the size of the effects. The original NAM explained 49.9% of the variance in behaviour, including pride, and guilt increased the explained variance by 15.5%. For the TPB the effects were smaller, so that including these anticipated emotions increased the explained variance of intentions by 1% to 2%. We claim that even small effects are important in the context of pro-environmental decision making, since they might have large implications for changing consumer behaviour, and might therefore decrease environmental problems significantly. Furthermore, besides these additional effects, pride and guilt also mediate the effects of other variables. The practical relevance of these findings might therefore be larger, as emotions might be more easily used in interventions than attitudes and social norms. Additionally, we aimed to increase understanding in the function of anticipated emotions. As such, we selected two specific emotions, which we expected to play a role in environmental decision making. Effect sizes likely increase when multiple emotions are included.

A related limitation refers to the duration of the effects of pride and guilt. Although we did use delayed outcome measures, the current thesis did not focus on subsequent effects of self-conscious emotions on behaviour. Previous studies refer to a licensing effect, such that individuals engage in environmentally *unfriendly* behaviour after they temporarily meet their environmental standards (Monin & Miller, 2001). For example, after shopping for green

products in an online store, people were less likely to act moral compared with when they shopped for conventional products (Mazar & Zhong, 2010). Sachdeva and colleagues (2009) showed that after writing a story on one's positive traits, participants were less likely to act pro-environmental. On the other hand, positive spill-over effects might occur, such that environmentally friendly behaviours spread to more areas of the consumption pattern (Thøgersen & Ólander, 2003). Future research is necessary to explore the duration of the emotional effects of pride and guilt. Moreover, it is interesting to explore whether these emotional motivations might result in a moral licensing or a spill-over effect.

We reasoned throughout our thesis that environmentally friendly behaviour is a specific form of pro-social behaviour, with the motivation to conserve the planet a form of altruism. Future research might handle pro-environmental behaviour from a broader perspective, and also include selfish motives to engage in pro-environmental behaviour, for example warm glow (Andreoni, 1990) or increased status. Another interesting line of research is whether a specific behaviour can result in conflicting self-conscious emotions. The function of emotions is to reach goals, yet these goals are not always compatible. The complexity of real life involves situations where conflicting goals are at stake (Frijda, 2007). For example, one aims to save money *and* to protect the environment. This might result in complex dilemmas at the moment of decision making. Another interesting and related line of research is one's suppression of emotions, such that individuals sometimes ignore information because they do not want to experience negative emotions. The denial that animals are used for human consumption is an example of this phenomenon (Bastian et al., 2012).

An important limitation of the current thesis is that we only assessed pride and guilt in most of the studies and did not include other emotions. As such, we cannot ascertain that our findings refer specifically to pride and guilt, or to positive or negative self-conscious emotions. Due to the fact that previous studies show that basic emotions and self-conscious emotions, such as pride and guilt, are judged on different neural basis levels as different parts of the brain are activated (Takahashi et al., 2008), we propose that our findings do refer to self-conscious emotions. Future research is necessary to ascertain whether our findings count specifically for pride and guilt or whether other self-conscious emotions are involved also. We propose that the basic self-regulatory function of self-conscious emotions is applicable to a range of self-conscious emotions, as all these emotions involve a reflection on one's own behaviour dependent on personal and social standards. This opens several interesting lines of research. For example comparing differences in the function of shame and guilt, or pride and hubris. Comparing the effects of related emotions provides the opportunity to explore on which aspects of attributions, experiences, and functions these emotions differ.

A related line of future research refers to regret. We believe regret is understudied in the literature on self-conscious emotions. This emotion is often not mentioned as a self-conscious emotion, or scholars do not differentiate between guilt and regret (Lewis, 1993). Guilt and regret are highly related, but they do differ from each other. Regret occurs when one obtains the less desirable of a set of possible outcomes (Zeelenberg et al., 1999). Similar to guilt, regret it is an aversive state, and people are motivated to avoid it and, once they experience it, to take action to undo it (Zeelenberg, Van Dijk, Manstead, & Van der Pligt, 2000). However, regret is the result of personal harm, whereas guilt is the result of interpersonal harm. The experience of guilt causes one to focus on other people, whereas regret focusses attention on the individual self (Berndsen, Van der Pligt, Doosje, & Manstead, 2004). We propose that regret is less relevant in the context of pro-environmental behaviour than guilt, because regret is mainly related to personal benefits so that it is evoked when a situation is not as positive for oneself as it could have been. Pro-environmental behaviour often reflects a trade-off between personal benefits and benefits for the environment. As such, environmentally unfriendly behaviour results in a situation which is less positive for other people, but most of the time more positive for oneself. We therefore propose that guilt is more often evoked in the context of the environment than regret.

We also note some limitations regarding our measurements of self-construal. Cultural self-construals were not measured in Chapter 5 and we cannot therefore ascertain that our findings are the result of different construals of the self (see Chapter 5). Moreover, in Chapter 6 we manipulated self-construal by activating private versus social selves. However, our manipulations did not work as expected in all studies (Study 3) or did not work at all (Study 4). We therefore recommend future research to further explore the role of the self in the self-evaluation process that precedes self-conscious emotions. Moreover, our findings regarding the role of the self have implications for related research lines. As previously noted, we propose that one's identification with social groups (Brewer, 1991; Tajfel & Turner, 1979) might also affect the function of self-conscious emotions. It would be interesting to explore how identification with different groups affects the function of self-conscious emotions. One might, for example, expect that an identification with pro-environmental consumers increases the experience of emotions regarding the environment, whereas social identification with one's colleagues or one's soccer team might have no effect at all. Furthermore, as already noted, our notion of the self can be expanded to include the social groups to which we belong (Tajfel & Turner, 1979). Consequently, one might not only experience emotions regarding one's own behaviour, but also regarding the behaviour of the groups to which one belongs. These group-conscious emotions (Lickel et al., 2007) may also promote individuals to adapt personal behaviour. For example, collective guilt affects the willingness to conserve energy and pay green taxes (Ferguson & Brascombe, 2010). Since environmental problems refer to a collectively shared problem, group-

based emotions might be highly relevant in the context of pro-environmental behaviour. These emotions provide an interesting line for future research investigating how to stimulate pro-environmental behaviour. One might, for example, compare the effects of collectively experienced and personally experienced emotions.

### **In conclusion**

This thesis aimed to integrate research on self-conscious and research on the determinants of pro-environmental behaviour to explore the fundamental ways in which pride and guilt affect pro-environmental behaviour via self-reflection. We developed and tested the model shown in Figure 7.1. We found support for our model in different pro-environmental domains and across multiple collectivistic and individualistic countries. Our results show that pride and guilt have a self-regulatory function, such that pride and guilt guide individuals to form intentions that match existing personal and social standards regarding the environment. This function differs for social versus private employments of the self. Thus, how you see yourself through your own eyes and through the eyes of others affects the emotions that you experience, and how these emotions affect subsequent pro-environmental decision making. Our results show implications how pride and guilt can be used in environmental policies, as that they can be used to guide individuals to follow existing attitudes and norms regarding the environment. We thereby address some of the issues related to environmentally friendly consumer behaviour. It offers yet another step in improving our understanding of the role of emotions in pro-environmental behaviour.



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## Appendix

### Appendix A. Example of stimulus material of Chapter 2

Which Sanex shower gel do you prefer?

	
<input type="checkbox"/> Sanex shower gel € 2,49	<input type="checkbox"/> Organic zero% Sanex shower gel € 2,99

**Appendix B. Additional analysis of Chapter 3 regarding self-regulatory function of pride and guilt within the TPB**

To test whether including personal norms accounts for the differences across Chapters 3 and 4 we computed the TPB-model with the self-regulatory function of anticipated pride and guilt (i.e. conceptual model of Chapter 4) with the data of Chapter 3 (see Figure Appendix B). These additional analyses partly explain the inconsistency in our findings. Personal norms did not account for the differences between Chapter 3 and 4 in the effects of injunctive social norms, but they did account for the differences in the effects of attitudes. Attitudes have a direct effect on intentions and a (marginally) significant effect on anticipated guilt in the TPB model of Chapter 3. Thus, including both personal norms and attitudes rules out the effects of attitudes, which implies that personal norms are more important for individuals to reflect on their own behaviour. Personal norms might be used in a similar way to attitudes to evaluate whether one's behaviour is in accordance with one's own standards. Including both personal norms and attitudes in the model shows that personal norms are more dominant.

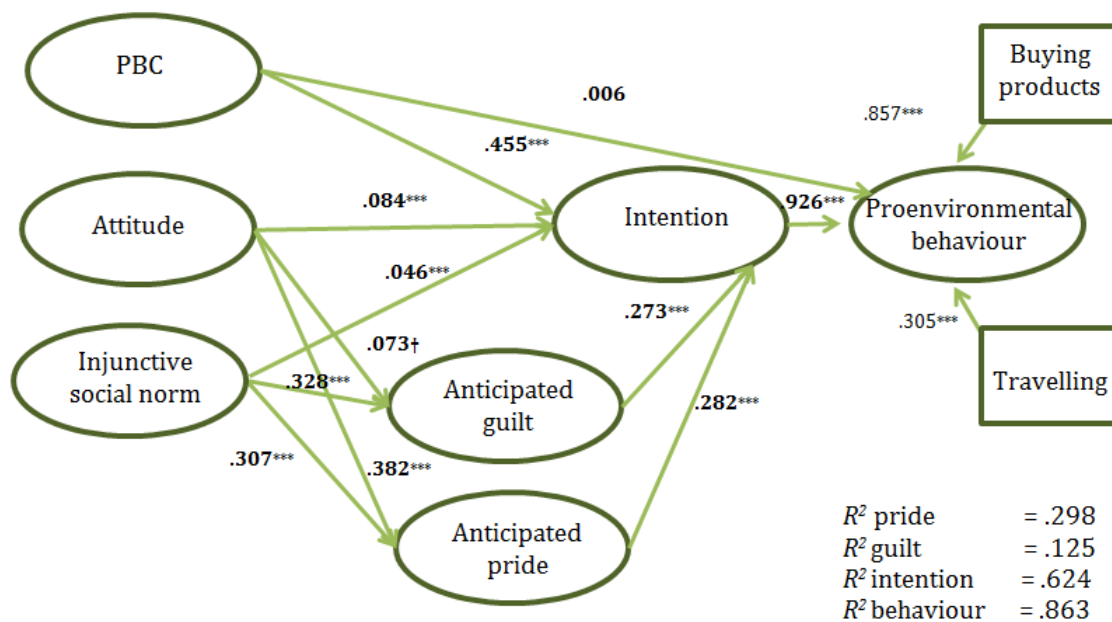


Figure Appendix B. Structural regression model of the TPB with mediating effects of anticipated pride and guilt

Note. All standardised path coefficients are shown. All item loadings and standardized path coefficients were significant. For reasons of clarity we decided to not report the item loadings and standardized error variances; This model shows adequate model fit (relative  $\chi^2 = 1246.350/360$ ;  $p < .001$ ; RMSEA = .063; SRMR = .071; CFI = .944; TLI = .937); \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ ; The model fit can be probably be improved by excluding the insignificant effects; PBC= perceived behavioural control.



### Appendix C. Additional analyses of Chapter 6 regarding self-regulatory function of pride, guilt, hubris, shame, anger, and joy

We started with a model which included descriptive social norms, attitudes and past pro-environmental behaviour (measurements are described in Study 1; Chapter 6), and the emotions pride, guilt, hubris, shame, anger, and joy. We included single-item measures because the measurement scales of emotions resulted in highly related constructs. The problems with multicollinearity were resolved when including single-item emotion measures in the analyses.

At first we computed a model that included all emotions. This model resulted in a poor model fit (relative  $\chi^2 = 1334.154/120$ ;  $p < .001$ ; RMSEA = .121; SRMR = .089; CFI = .801; TLI = .746), as not all emotions had a significant mediating effect. We used a stepwise procedure to exclude emotions which did not have a significant effect on past pro-environmental behaviour. We excluded guilt, shame, and hubris. The resulting model provides good model fit (relative  $\chi^2 = 197.9554/78$ ;  $p < .001$ ; RMSEA = .047; SRMR = .031; CFI = .977; TLI = .969) and is shown below. The results show that pride, anger, and joy mediate the effects of descriptive norms and attitudes on past behaviour. The indirect effects show that pride mediates the effects of attitudes ( $\beta = .031$ ;  $p < .05$ ) and norms ( $\beta = .035$ ;  $p < .05$ ), anger mediates the effects of attitudes ( $\beta = -.054$ ;  $p < .01$ ) and norms ( $\beta = .019$ ;  $p < .05$ ), for joy the indirect effects are only marginally significant for attitudes ( $\beta = .024$ ;  $p < .10$ ) and norms ( $\beta = .026$ ;  $p < .10$ ).

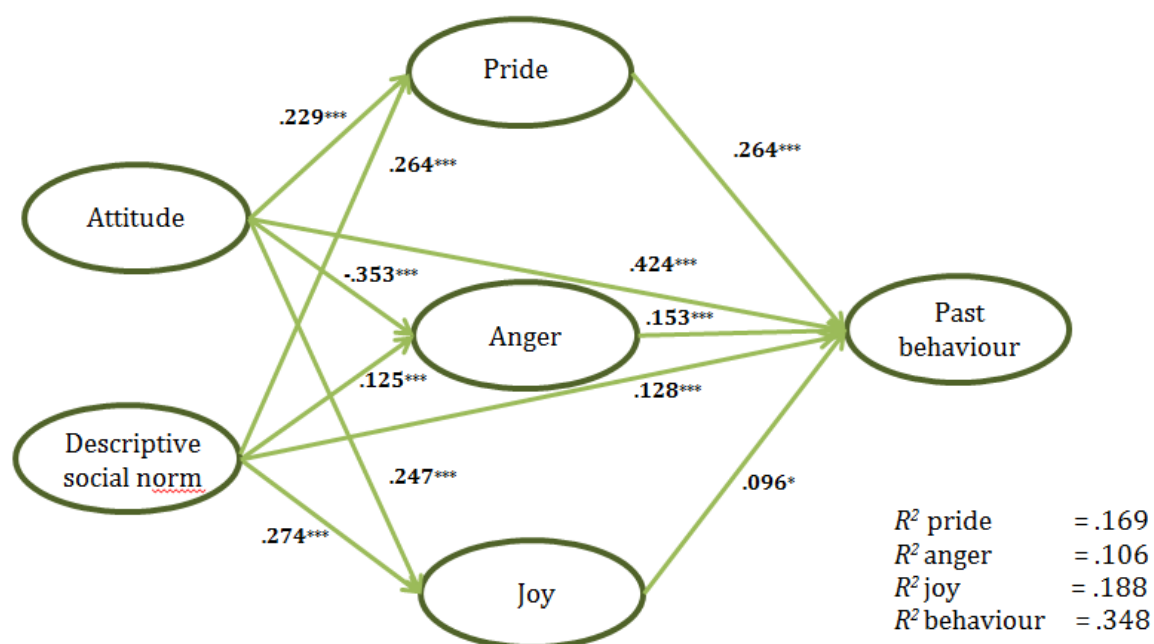


Figure Appendix C. Structural regression model of the mediating effects of pride, anger and joy between the effect of descriptive social norms and attitudes on past pro-environmental behaviour

Note. All standardised path coefficients are shown. All item loadings and standardized path coefficients were significant. For reasons of clarity we decided to not report the item loadings and standardized error variances; \*\*\* $p < .001$ ; \*\* $p < .01$ ; \* $p < .05$ .



## Summary

The world is currently confronted with environmental problems such as water pollution, loss of biodiversity, and air pollution. A promising way to reduce environmental problems is to encourage consumers towards more sustainable consumption patterns. Pro-environmental consumer choices involve a tradeoff between environmental motives and more personally related motives such as healthiness, convenience, and price. In this dissertation we explore how feeling good about oneself influences pro-environmental decision making.

We focus on pride and guilt, which belong to the group of self-conscious emotions. Self-conscious emotions occur when individuals are aware of themselves and reflect on themselves in order to evaluate whether their behaviour is in accordance with their (personal and social) standards. In short, we explore the fundamental way in which pride and guilt guide pro-environmental behaviour via self-reflection. We propose that pride and guilt guide behaviour via a self-regulatory function, meaning that they provide feedback about how one is performing regarding one's own standards and the perceived standards of others. The emotional feedback is used to guide oneself in accordance with these standards (i.e. self-regulation). Furthermore, we propose that the way one sees the self (who am I in relation to others), affects how individuals evaluate themselves, which in turn affects how pride and guilt are formed and guide behaviour.

This thesis has both theoretical implications, as we increase understanding in the function of self-conscious emotions, and practical implications, as understanding the functions of pride and guilt in consumer decision making can be used to develop interventions to promote pro-environmental behaviour among consumers. For a thorough discussion of these implications we refer to the General Discussion. Below we provide a short overview of the findings of the individual chapters.

**Chapter 2** explores whether and how pride and guilt affect pro-environmental behaviour. Previous studies do not provide clear evidence regarding the effects of pride and guilt on subsequent pro-environmental behaviour. Acting or not acting in a pro-environmental way might induce feelings of pride and guilt respectively, which does not necessarily mean that these emotions guide future pro-environmental choices. Three studies show that pride, and to a lesser extent guilt, guide future pro-environmental choices. Chapter 2 additionally explores how pride and guilt affect pro-environmental behaviour. We propose that pride and guilt influence pro-environmental behaviour by providing information about whether the intended behaviour is in line with one's standards, and not out of a basic tendency to feel good. Two studies show indeed that only related (endogenous) and not unrelated (exogenous) emotions affect pro-environmental behaviour. These findings imply that pride and guilt affect pro-environmental behaviour via a feedback-function and not via a basic mechanism to feel good.

**Chapter 3** explores *how* pride and guilt affect pro-environmental behaviour via a feedback-function. Up until now it was not clear how these emotions guide behaviour. The function of pride and guilt is explored in two vested theories: the Norm Activation model (NAM) and the Theory of Planned Behaviour (TPB). Several researchers who use the NAM propose that anticipated pride and guilt are associated with personal norms. However, these researchers have specified the nature of this association in different ways (including direct effects, mediating effects, or moderating effects), and have rarely tested these proposed associations empirically. This chapter shows how the function of pride and guilt within the NAM can be specified. The results support a self-regulatory function of pride and guilt which shows that they mediate the effects of personal norms on pro-environmental behaviour. Anticipated pride and guilt thus guide individuals to behave themselves in accordance with existing standards regarding the environment (i.e. self-regulatory function). Moreover, we integrated the NAM with the TPB and show that the self-regulatory functions of pride and guilt remain present in an integrated NAM-TPB model (Bamberg et al., 2007). Pride and guilt mediate the effects of personal norms, attitudes, and injunctive social norms on intentions. Pride and guilt therefore seem to regulate individual behaviour regarding the environment so as to allow a person to be in accordance with one's personal and social standards towards the environment.

**Chapter 4** initially explores whether the self-regulatory functions of pride and guilt differ across personally oriented versus pro-socially oriented contexts. Previous studies that explore the self-regulatory function of self-conscious emotions within the TPB show mixed findings regarding the mediating effects of these emotions. This chapter distinguishes between injunctive and descriptive social norms and includes multiple contexts to explore whether this accounts for the mixed findings. Three survey studies show that anticipated pride and guilt regulate behavioural intentions to make them in accordance with attitudes and injunctive and descriptive social norms. Additionally, we show that the self-regulatory function of pride and guilt differs across contexts, which may account for the mixed findings of previous studies. We show preliminary evidence that anticipated self-conscious emotions have a larger mediating effect in altruistic (i.e. organic and fair trade consumption) rather than personally oriented (i.e. healthy consumption) contexts.

In **Chapter 5** we explore whether the self-regulatory function of pride and guilt differs across collectivistic and individualistic countries. Based on previous studies (e.g., Mesquita, 2001), we suggest that the function of emotions might differ due to cultural differences in the construal of the self. We propose that the way one sees the self in relation to others (i.e. self-construal) affects the self-regulatory function of anticipated pride and guilt. Individualistic countries are overrepresented by individuals with a private self (i.e. independent self) meaning that the self encompasses unique individuals with their own personal goals. Collectivistic

countries are overrepresented by individuals with a social self (i.e. interdependent self) meaning that the self encompasses family, friends, and important others, and a striving to reach group-based goals. We conducted a survey across eight collectivistic and individualistic countries. As expected the results show that there are no differences across countries in the self-regulatory function of anticipated pride and guilt *within* individualistic and *within* collectivistic cultures, but that there are differences *between* collectivistic and individualistic cultures. Individuals from collectivistic countries use more social standards and less personal standards to anticipate pride and guilt. These findings provide a first indication that the function of emotions is more socially driven for individuals from collectivistic rather than individualistic cultures. These findings imply that cultural differences in the function of emotions are associated with cultural differences in self-construal (i.e. independent and interdependent self).

**Chapter 6** explores whether the function of pride and guilt might also vary within individuals due to activating different construals of the self. Previous studies show that contextual cues can activate private versus social selves within an individual. We show that social media can also act as a contextual cue that activates the social self. Moreover, three experiments show that activating the social self increases the effects of guilt on pro-environmental intentions, whereas activating the private self increases the effects of pride on pro-environmental intentions. This finding implies that activating different construals of the self can increase the effects of emotions on intentions. Furthermore, we show that these effects occur because the activation of private versus social selves results in different self-evaluations. Activating the social self makes individuals more sensitive to social norms in self-evaluations that evoke emotions, whereas activating the private self makes individuals more sensitive to attitudes in self-evaluations that evoke emotions. The findings of this chapter imply that guilt is more social in nature than pride.

*Conclusion.* The current thesis shows that pride and guilt guide pro-environmental consumer behaviour via a self-regulatory function. Pride and guilt occur after a self-reflection on personal and social standards related to the environment, and in turn they guide pro-environmental behaviour. This function differs when different employments of the self are activated or cultivated. Thus how one sees oneself through one's own eyes and through the eyes of others affects the emotions that one experiences, and how these emotions affect subsequent pro-environmental intentions.



## Samenvatting

Op dit moment zijn er verschillende milieuproblemen zoals watervervuiling, verlies van biodiversiteit en luchtvervuiling. Een manier om de druk op het milieu te verlagen is om consumenten te stimuleren tot meer duurzame consumptiepatronen. Milieuvriendelijke consumentenkeuzes zijn het resultaat van een afweging tussen verschillende motieven. Milieuvriendelijke motieven worden afgewogen tegen motieven als gezondheid, prijs en smaak. In dit proefschrift onderzoeken we hoe 'een goed gevoel' milieuvriendelijke consumentenkeuzes kan stimuleren.

Wij richten ons in dit proefschrift op trots en schuld, die behoren tot de groep van zelfbewuste emoties. Zelfbewuste emoties ontstaan wanneer mensen zich bewust zijn van zichzelf en hun eigen gedrag evalueren. Kortgezegd, verkennen we in dit proefschrift de fundamentele manier waarop trots en schuld milieuvriendelijk gedrag beïnvloeden. We verwachten dat trots en schuld gedrag beïnvloeden via een zelfregulerende functie, ofwel dat deze emoties feedback geven over hoe men presteert ten aanzien van de eigen persoonlijke normen (bv. ik voel een morele verplichting om...) en de waargenomen normen van anderen (bv. ik denk dat mijn familie/vrienden vinden dat ik...). Deze emotionele feedback wordt vervolgens gebruikt om het eigen gedrag aan te passen aan deze normen (d.w.z. zelfregulering). Verder verwachten wij dat de manier waarop men zichzelf ziet (wie ben ik in relatie tot anderen), beïnvloedt hoe mensen hun eigen gedrag evalueren, waardoor trots en schuld ook op een andere wijze worden gevormd en gedrag beïnvloeden.

Dit proefschrift bevat zowel theoretische implicaties, zoals het vergroten van het inzicht in de functie van zelfbewuste emoties en praktische implicaties, zoals het begrip hoe trots en schuld gebruikt kunnen worden om interventies te ontwikkelen die milieuvriendelijke keuzes stimuleren. Zie het hoofdstuk 'General Discussion' voor een uitgebreide beschrijving van deze implicaties. Hieronder volgt een kort overzicht van de bevindingen van de afzonderlijke hoofdstukken.

**Hoofdstuk 2** onderzoekt of en hoe trots en schuld milieuvriendelijk gedrag beïnvloeden. Voorgaand onderzoek geeft geen duidelijk beeld over de gevolgen van trots en schuld op toekomstig milieuvriendelijk gedrag. Het is bekend dat milieuvriendelijk of milieuonvriendelijk gedrag ervoor kan zorgen dat men zich respectievelijk trots of schuldig voelt, maar dit betekent nog niet dat deze emoties ook toekomstig gedrag beïnvloeden. In dit hoofdstuk laten we met drie studies zien dat trots, en in mindere mate schuld, ervoor zorgen dat consumenten milieuvriendelijkere keuzes maken. Verder verwachten we dat trots en schuld milieuvriendelijk gedrag beïnvloeden doordat zij een individu informeren of het voorgenomen gedrag in overeenstemming is met de persoonlijke en sociale normen. Twee studies tonen aan dat alleen gerelateerde (endogene) en niet ongerelateerde (exogene) emoties gedrag beïnvloeden. De

bevindingen impliceren dat trots en schuld milieuvriendelijk gedrag beïnvloeden via een feedbackmechanisme en niet via een basale behoefte tot een goed gevoel.

In **Hoofdstuk 3** onderzoeken we *hoe* trots en schuld gedrag beïnvloeden. Het is nu nog niet bekend hoe deze emoties gedrag precies beïnvloeden. We gebruiken twee gevestigde theorieën, het Norm-Activatie Model (NAM) en de Theorie van Gepland Gedrag (TGG), om de functie van trots en schuld nader te onderzoeken. Verschillende onderzoekers die de NAM gebruiken stellen dat geanticiperde trots en schuld een link hebben met persoonlijke normen. Echter, hoe deze link er precies uit ziet is nog niet bekend: Verschillende onderzoekers stellen verschillende mogelijke verbanden voor (directe, mediërende en modererende effecten). Ook worden deze verbanden zelden getoetst. Dit hoofdstuk maakt duidelijk hoe trots en schuld de NAM beïnvloeden. De resultaten laten zien dat trots en schuld een zelfregulerende functie hebben, zodat zij individuen stimuleren om zich zo te gedragen dat het gedrag overeenkomt met persoonlijke normen ten aanzien van het milieu. Ook hebben we de NAM en de TGG samengevoegd tot één model (Bamberg et al., 2007). We laten zien dat de zelfregulerende functie van trots en schuld ook aanwezig is in dit samengevoegde NAM-TGG model. Trots en schuld reguleren de effecten van persoonlijke normen, attitudes en injunctieve sociale normen op intenties. Trots en schuld lijken dus individueel gedrag met betrekking tot het milieu te reguleren zodat zij een individu helpen om keuzes te maken die in overeenstemming zijn met persoonlijke en sociale normen betreft het milieu.

In **Hoofdstuk 4** is onderzocht of trots en schuld gedrag reguleren bij *verschillende consumentenkeuzes*. Bestaat de zelfregulerende functie van trots en schuld alleen voor milieuvriendelijk gedrag, of ook voor andere duurzame en voor gezonde consumentenkeuzes? Eerdere studies naar de zelfregulerende functie van zelfbewuste emoties binnen de TPB laten verschillende resultaten zien. In dit hoofdstuk onderzoeken we of de verschillen tussen eerdere studies kunnen worden verklaard door verschillen in context (duurzame versus gezonde consumptiecontext). Drie studies laten zien dat geanticiperde trots en schuld gedragsintenties reguleren om deze te laten overeenkomen met de houding, de injunctieve sociale normen en de descriptieve sociale normen. Verder laten we zien dat de zelfregulerende functie van trots en schuld verschilt tussen contexten. Dit kan de verschillende resultaten van voorgaande studies verklaren. We zien een eerste indicatie dat geanticiperde zelfbewuste emoties een groter mediërend effect hebben in pro-sociale (biologische en fair trade consumptie) contexten dan persoonlijk georiënteerde (gezonde consumptie) contexten.

In **hoofdstuk 5** onderzoeken we of de zelfregulerende functie van trots en schuld verschilt tussen collectivistische en individualistische landen. Op basis van eerdere studies (bv. Mesquita, 2001) verwachten we dat de functie van emoties kan verschillen als gevolg van culturele verschillen in self-construal, dit is de manier waarop men zichzelf ziet in relatie tot



anderen. De bevolking van individualistische landen bestaat uit relatief veel individuen met een *onafhankelijk zelf*, wat betekent dat het zelf bestaat uit een uniek individu met zijn/haar eigen persoonlijke doelen. In collectivistische landen zijn mensen met een *sociaal zelf* oververtegenwoordigd (onderling afhankelijk zelf), wat betekent dat het zelf onderdeel is van familie, vrienden en belangrijke anderen en dat men ernaar streeft om groepsdoelen te bereiken. Er is een survey uitgezet in acht collectivistische en individualistische landen. Zoals verwacht laten de resultaten zien dat er geen verschillen zijn tussen de zelfregulerende functie van geanticiperde trots en schuld *binnen* individualistisch en *binnen* collectivistische culturen, maar dat er wel verschillen zijn *tussen* collectivistische en individualistische culturen. Individuen uit collectivistische landen gebruiken meer sociale normen en minder persoonlijke normen om te anticiperen of zij zich trots of schuldig gaan voelen over hun gedrag. Deze bevindingen geven een eerste indicatie dat de functie van emoties meer sociaal is gedreven voor individuen uit collectivistische culturen in vergelijking met individualistische culturen. Deze bevindingen impliceren dat de culturele verschillen in de functie van emoties komen door culturele verschillen in self-construal ('onafhankelijke zelf' versus 'sociale zelf').

In **hoofdstuk 6** onderzoeken we of de zelfregulerende functie van trots en schuld ook kan verschillen binnen een persoon, zodat deze emoties op verschillende momenten anders functioneren. Voorgaande studies laten zien dat het 'onafhankelijke zelf' en het 'sociale zelf' geactiveerd kunnen worden in een persoon. Dus op verschillende momenten zijn er andere self-construals actief. Hoofdstuk 6 laat zien dat sociale media het sociale zelf kan activeren. Verder tonen drie experimenten aan dat het activeren van een ander self-construal ('onafhankelijke zelf' versus 'sociale zelf') de invloed van emoties op intenties versterkt. Dit mechanisme werkt verschillend voor trots en schuld. De effecten van *schuld* op milieuvriendelijke intenties worden verhoogd als de *'sociale zelf'* is geactiveerd, terwijl de effecten van *trots* op milieuvriendelijke intenties worden verhoogd als de *'onafhankelijke zelf'* is geactiveerd. Vervolgens laten we zien dat deze effecten optreden omdat de activering van de 'onafhankelijke zelf' versus de 'sociale zelf' leidt tot verschillende zelfevaluaties. Het activeren van de 'sociale zelf' maakt individuen gevoeliger voor sociale normen, zodat deze meer worden gebruikt om eigen gedrag te evalueren. Terwijl het activeren van de 'onafhankelijke zelf' individuen gevoeliger maakt voor attitudes, zodat deze meer worden gebruikt om eigen gedrag te evalueren. De bevindingen uit dit hoofdstuk impliceren dat de manier waarop trots en schuld tot stand komen, en de invloed die zij hebben op milieuvriendelijke intenties, binnen dezelfde persoon kan verschillen doordat er een andere zelf is geactiveerd. Ook zien we dat dit anders werkt voor trots en schuld. Schuld is meer sociaal van aard dan trots.

**Conclusie.** Dit proefschrift laat zien dat trots en schuld milieuvriendelijk gedrag beïnvloeden via een zelfregulerende functie. Een evaluatie van eigen gedrag ten aanzien van milieu-gerelateerde persoonlijke en sociale normen kan leiden tot emoties van trots of schuld. Deze emoties leiden vervolgens tot milieuvriendelijk gedrag, omdat mensen zich graag goed voelen. De functie van trots en schuld verschilt wanneer mensen zichzelf anders zien. De manier waarop men zichzelf ziet (self-construal) kan worden geactiveerd of gecultiveerd. Dus hoe men zichzelf ziet door de eigen ogen en door de ogen van anderen heeft invloed op de emoties die men ervaart, en deze emoties beïnvloeden vervolgens toekomstige milieuvriendelijke keuzes.

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I am a part-time PhD. Accordingly I have worked two days a week on my PhD and three days a week on projects at the Consumer and Chain department of LEI Wageningen UR. At some moments it was possible to use projects or parts of projects for my PhD. This especially refers to the use of data. Below I will provide a short overview of the data used for my PhD.

Six datasets are developed and used exclusively for my PhD (Study 3 of Chapter 2, Chapter 4, and the datasets used in Chapter 6). One dataset was developed by myself and colleagues and was used for both a LEI-project (Voedselbalans) and my PhD-thesis (Study 2 of Chapter 2 and Chapter 3). One dataset was developed by colleagues who provided me with the opportunity to include some variables so that I could use the dataset for my Phd (Study 1 of Chapter 2 and Chapter 5).



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**Completed Training and Supervision Plan**  
**Marleen Onwezen**  
**Wageningen School of Social Sciences (WASS)**



Wageningen School  
of Social Sciences

Name of the activity	Department/Institute	Year	ECTS (= 28 hrs)
<i>I. Courses</i>			
-Introduction to WASS	WASS	2011	0.75
-Sensory perception & food preference	VLAG	2011	1
-KLI workshop: Affective science recent development	KLI	2011	0.5
-Techniques for writing and presenting a scientific paper	WGS	2011	1.2
-Structural equation modelling	Utrecht Summerschool	2011	1.2
-Advanced Course on Using Mplus	Utrecht Summerschool	2012	1.5
-New features Mplus version 7: Workshop by B. Muthén	Utrecht Summerschool	2012	1
-The Transmission of Emotions: An interdisciplinary symposium	VU	2012	0.5
-Symposium: Emotions and the self	UVT	2012	0.5
-Summerschool on Theories in Environmental and Economic Psychology	STEEP	2012	5
-Clear scientific writing	Taalcentrum VU	2013	1
<i>II. Development of skills</i>			
-Developing and writing PhD- research proposal		2010	6
-Organising a workshop on emotions for primary producers		2012	2
-Phd lunch colloquia		2011-2013	1
-Papers project		2011-2012	1
-Review articles (ASPO, InMind, Journal of Environmental Psychology, Trends in Food Science and Technology)		2011-2013	1
<i>III. Conferences</i>			
-‘The gaps between environmentally friendly food purchase behaviors, and consumer attitudes and their social environments: The enforcing role of emotions’	PSSS, Toronto, Canada	2011	2
-‘Causal effects of pride and guilt on pro-environmental behaviour’	PHD-day, Wageningen, The Netherlands	2012	1
-‘Functie-gerelateerde Trots en Schuld Stimuleren Milieuvriendelijk Gedrag’	ASPO, Utrecht, the Netherlands	2012	2
-‘The self-regulatory function of anticipated pride and guilt in environmentally-friendly behavior: Differences between collectivistic and individualistic cultures’	EPC, Magdeburg, Germany	2013	2
-‘Trots maakt groener dan schuld’	Bessensap, the Hague, the Netherlands	2013	2
-‘Self-regulation of Sustainable Consumption by Anticipated Emotions’	AMA, Orlando, USA	2014	2
<b>Total</b>			<b>36.15</b>

*Note.* Wageningen School of Social Sciences (WASS), Voeding, Levensmiddelentechnologie, Agrobiotechnologie, en Gezondheid (VLAG), Kurt Lewin Institute (KLI), Wageningen Graduate Schools (WGS), Utrecht Summerschool Graduate School of Social and Behavioural Sciences organises (GS-SBS), Associatie van Sociaal Psychologisch Onderzoek (ASPO), Summer school on Theories in Environmental and Economic Psychology (STEEP), Vrije Universiteit Amsterdam (VU), Pangborn Sensory Science Symposium (PSSS, Environmental Psychology Conference (EPC), American Marketing Association (AMA) Winter Marketing Educators Conference.



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