

CONSPICUOUS CONSERVATION

EFFECT OF CONSPICUOUSNESS AND STATUS ON EVALUATIONS OF
PRO-ENVIRONMENTAL PRODUCTS



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"I FELT LIKE THE CAMRY HYBRID WAS TOO SUBTLE FOR THE MESSAGE I WANTED TO PUT OUT THERE. I WANTED TO HAVE THE BIGGEST IMPACT THAT I COULD, AND THE PRIUS PUTS OUT A CLEARER MESSAGE."

MRS. GATCH, A SATISFIED TOYOTA PRIUS CUSTOMER, 2007

"HELPING THE PLANET IS NICE, BUT BEING SEEN HELPING THE PLANET IS REALLY NICE."

STEPHEN J. DUBNER, 2012

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Preface

This MSc thesis has been written to conclude my Master and graduate as a student in Management, Economics and Consumer Studies at the Wageningen University.

Greatly inspired by research examples in the field of behavioural economics, I decided to perform my own research and explore the unexplored; the mysteries of irrational behaviour. This journey began when I came across an article in which two economists stated that people sometimes installed their solar panels on the wrong side of their roof. How irrational is that!? According to these two economists, this behaviour had something to do with the success of the Toyota Prius. Hooked by this rather vague rationale, I decided to set-up my own behavioural experiment. Looking back on it, it has not been the easiest path I have chosen. Nevertheless, I am grateful for the experience since it has been much rewarding and thought-provoking.

I thank Michel Handgraaf for his supervision. He taught me that setting up your own experiment is an exciting experience. His enthusiasm, insights and critical reviews were most helpful and were all a significant motivator for me during this process. Furthermore, I want to thank (in random order) the ECH chair group, my fellow students, friends and family who each in their own way were of much support.

Nick Rothengatter
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Summary

Because consumption activities take place in a broader social context, people's consumption behaviour is susceptible to the evaluations of others. This idea is captured by the popular phrase *'keeping up with the Joneses'*, which specifically refers to strive to match one's neighbours in spending and social class. One of the earliest thoughts about this subject came from sociologist and economist Thorstein Veblen. In his *Theory of the Leisure Class* (1899) he first drew attention to the notion that conspicuous displays of time and money may function as a means of gaining competitive advantages over others. He called this conspicuous consumption, which is basically a form of signalling characteristics or qualities by means of consumption. Veblen proposed that signalling in this manner enhanced social status when knowledge of others' qualities was not widely known or could be unreliable, as in situations of high socio-economic mobility.

Today, similar phenomena of signalling still exist. One concerns the recent consumer interest in ecologically-conscious or pro-environmental products. This specific form of signalling pro-environmental behaviour (PEB) is in the literature referred to as conspicuous conservation (Sexton 2011) or conspicuous environmentalism (Hargreaves 2011), both referring to the original term of conspicuous consumption. Only here, competition in consumption is not meant to lead to a waste, but rather to a conservation of resources¹. The basic idea behind this is put down adequately by Stephen Dubner: *"helping the planet is nice; but being seen helping the planet is really nice"*. But why is this? Literature provides two explanations indicating that being seen green can be a strategy to boost social status. Since human competition for relative status is evolutionary hard-wired (Frank 2011; Griskevicius, Cantú et al. 2012), people are known to have these underlying motives for engaging in PEB. A first reason for this is that people interpret PEB as behaviour that is pro-social. As people are known to compete for status via self-sacrifice, a concept known as competitive altruism, signalling personal sacrifice through the purchase of pro-environmental products can be a viable strategy. Second, people can boost their status through the display of pro-environmental products since these products are relative expensive. So the ownership of pro-environmental products can function as a costly signal.

This thesis tries to find out whether the signalling potential of pro-environmental products, or degree of conspicuousness as called from now on, has an influence on consumers' evaluations on these products; and to which consumers in specific? To find the answers a 2 (motive: control vs. status) x 2 (conspicuousness: conspicuous vs. inconspicuous) between-subjects experiment has been set-up. A total of 154 students' participated in an online survey that began with questions related to their personality traits, need for popularity, narcissism, values, norms and goal-frames. Thereafter, half of the group received a status prime while the others did not. The experiment concluded with the evaluations of eight pro-environmental products which, dependent in which condition the participant was in, varied in their degree of conspicuousness. It was assumed that conspicuous vs. inconspicuous products gave a stronger signal for pro-environmental, pro-social and pro-costly qualities. If this assumption proved to be true, this would imply that obtaining status through pro-environmental consumption would be more effective strategy for conspicuous than inconspicuous products. Based on this line of thought, several hypotheses were formulated. How do status motives and product conspicuousness interact, and to what extent do personality traits, values, norms and goal frames moderate the effect of status and/or conspicuousness?

¹ Although one could ratify this as an oxymoron.

1. Introduction

1.1 PROBLEM STATEMENT

Concern has been raised about the effect increasing population and consumption levels may have on our climate and natural resources. Latest IPCC scenarios predict an increase in temperature that ranges between 1.1°C and 6.4°C during the 21st century (Solomon 2007). An important driver for this temperature increase is resource extraction. Today humans extract and use around 50% more natural resources than 30 years ago, at about 60 billion tonnes of raw materials a year (SERI 2009). Given these pressing environmental issues, the effect of overuse of resources is a more topical issue than ever in consumer behaviour research.

One way of addressing these issues is to lower the environmental impact of our consumption. However, how can consumers be motivated to act and consume in a more sustainable way? To find clues a number of authors researched the determinants of pro-environmental behaviour (PEB) (Pedersen 2000; Gatersleben, Steg et al. 2002; Kollmuss and Agyeman 2002; Jackson 2005; Brécard, Hlaimi et al. 2009; Steg and Vlek 2009; Welsch and Kühling 2009; Griskevicius, Tybur et al. 2010; Griskevicius, Cantú et al. 2012) and provided an overview of factors that play a role in pro-environmental consumption.

Within this framework, several social scientists have recently published work which suggest that purchasing pro-environmental products can be construed as altruistic, since they often cost more and are of lower quality than their conventional counterparts, but they provide positive externalities for the environment (Griskevicius, Tybur et al. 2010; Frank 2011). Because biologists have observed before that being altruistic might function as a costly signal associated with prestige and status (Zahavi 1975), recent work by social and evolutionary psychologists examined how human's ancestral tendency for relative status can be used to promote pro-environmental behaviour (Bird and Smith 2005; Griskevicius, Tybur et al. 2010; Sundie, Kenrick et al. 2011; Griskevicius, Cantú et al. 2012; Tybur and Griskevicius 2013). Using lab experiments, Griskevicius, Tybur et al. (2010) showed that status motives increased the desire for pro-environmental products when shopping in public, but not private. These findings suggest that being seen green is part of a broader social motivation to engage in PEB.

1.2 AIM

This research draws upon these recent insights and further explores the idea that consumption takes place in a social context. This implies that the social visibility of consumption activities may play a role in consumer decision making. This notion stems from costly signalling theory which predicts that status motives should lead people to be especially sensitive to what their behaviours might signal to others when such behaviour is observable (Goldberg 1995; Harbaugh 1998). By means of an experiment we test this assumption and examine whether, and for which people, pro-environmental product evaluations might differ when these products vary in display and thus signalling potential. This signalling potential or product conspicuousness, could moderate the effect of how people perceive the purchase of pro-environmental products as altruistic, costly or pro-environmental and consequently accredit the owner a higher social status. In literature, the idea of engaging in behaviour that is pro-environmental in order to obtain or signal a higher social status is being referred to as conspicuous conservation (Sexton 2011) or conspicuous environmentalism (Hargreaves 2011). Continuing on this line of thought, it is expected that conspicuous pro-environmental products are stronger signals for pro-environmental qualities, pro-

socialness and expensiveness, than inconspicuous pro-environmental products. It is expected that this has implications to how consumers evaluate pro-environmental products.

Some pro-environmental consumption products clearly proclaim a message of 'being green'. Their environmental qualities are magnified by strategy, mostly by design. We will call such products conspicuous, meaning: standing out so as to be clearly visible. An example of a conspicuous product is the Toyota Prius. The Prius was built from the ground up as a hybrid, has a prominent and unique design, and is sold only as a hybrid (unlike many other hybrid versions). Following this strategy, it is not a coincidence that the top reason American customers gave for buying a Toyota Prius was *"because it makes a statement about me"* (Maynard 2007). Another example that fits within this category is the Dopper, a tap water bottle. The Dopper is made of high-quality plastic and is known for its unique design that radiates pro-environmental benefits. The Dopper also comes in green and it is customizable such that companies can include their logo on the bottle. An ideal way to inform others the company supports tap water, such as the example of 'Staatsbosbeheer' in the figure below.



Figure 1: Conspicuous (left, Dopper) versus inconspicuous (right, Levi's Jeans) pro-environmental products

Other products are less obvious and are more subtle in their message. This could be for reasons of strategy, or because it is simply impossible to signal its environmental qualities. Such products will we call inconspicuous, meaning: not clearly visible or not attracting attention. An example of an inconspicuous product is a contract for green electricity as is not possible to distinguish a household that uses green electricity from one that uses regular grey electricity. Until now the signalling potential is zero. Another example of an inconspicuous product is the Levi's WasteLess jean. These jeans are partly made from recycled material, but this fact cannot be deduced from the product design. The actual WasteLess logo can only be seen on the inside of the pants, which means only the owner knows the pro-environmental benefits of the purchase.

1.3 RELEVANCE

This research is relevant as its experimental set-up goes beyond earlier experiments in which consumer decision making processes were researched in public and private settings (Ariely, Bracha et al. 2009; Griskevicius, Tybur et al. 2010). By looking at product conspicuousness an extra dimension is created to how signaling aspects influence consumer decision making.

By adopting a perspective from evolutionary and social psychology this study could provide new food for thought for how pro-environmental products could be marketed. These perspectives are valuable because in the area of marketing and consumer behaviour evolutionary approaches are underutilized thus far. Saad and Dunham (2011) noted that Journal of Consumer Research abstracts for a 28-year period yielded only one result for “biology”, one for “evolutionary psychology”, and none for “Darwin”. Miller (2009) surveyed the three main journals in marketing – Journal of Marketing, Journal of Marketing Research, and Journal of Consumer Research – noting that although a small amount of papers addressed how signalling theory can be used to communicate company traits to consumers, no specific records could be found to how consumption could communicate information about purchaser’ traits to other people.

This points out that a research that tries to investigate the influence of product conspicuousness on pro-environmental product evaluations would be incomplete if no attention is put at internal states; such as personality traits and values. The reason for this is that signaling motives communicate in two directions: internally to help form ideas about who we are and externally to tell others something about ourselves. Signalling motivation captures the rule of opinion in utility, i.e., the desire to be liked and respected by others and by one’s self. If individuals are looking to gain social approval of their behaviour, they should try to signal traits defined as “good” based on the community’s norms and values (Ariely, Bracha et al. 2009). In the same way pro-environmental products can also intrinsically strengthen and confirm one’s image but also create an image for others to see. People use another’s consumption behaviours to help them make judgments about that person’s identity (Solomon 2010). Following this logic one might assume that the influence of product conspicuousness on preferences for pro-environmental products might differ according to people internal motives.

1.4 RESEARCH QUESTIONS

- 1. What is the effect of product conspicuousness and/or status motives on pro-environmental product evaluations?*
- 2. How do personality and internal motives (e.g. degree of narcissism, need for popularity, value-orientations, goal-frames, and norms) moderate the effect of product conspicuousness on pro-environmental product evaluations?*

1.5 OUTLINE

This chapter described the problem statement, which led to the aim, relevance and research questions of this thesis. In chapter two the theoretical framework is further extended and a more elaborate introduction in conspicuous conservation is given. This is followed by a description of the hypotheses. Chapter three covers the research methodology and the materials used. Chapter four reports the results of the experiment. To conclude, chapter five contains the conclusions of this research. Here, recommendations for future research will also be described.

2. Theoretical framework

2.1 CONSUMPTION AS A SOCIAL PROCESS

People express themselves through consumption in a myriad of ways. According to Miller (2009) one of the functions of consumption is to display. Because consumption activities take place in a broader social context, consumption behaviour is susceptible to the evaluations of others. This susceptibility can be noticed in how people deal with norms. Based on a community's norms people try their best to act normal and consequently unconsciously copy how others are behaving. Some studies have used this tendency of social imitation to change behaviour. For example, Goldstein, Cialdini et al. (2008) performed a field experiment using hotels cards in rooms to urge guests to reuse their towels by appealing to social norms. Results showed that normative appeals were most effective when describing group behaviour that occurred in the setting that most closely matched individuals' immediate situational circumstances (e.g., "the majority of guests in this room reuse their towels"). Opower, a Software-as-a-Service company that mainly collaborates with U.S. utility providers to promote energy efficiency, also uses social comparison. Opower sends its customers personalized energy reports in which households can compare their energy usage to similar clients. Results showed that households conserve more energy when they know how others perform (Allcott 2011). Similarly, fashion trends reflect prevailing opinions on what to wear or not to wear. As norms shift, opinions tend to follow. People most often succumb to the dominant opinion as nobody wants to be a misfit. Because people continuously observe, judge and determine their own position in the consumption society, social comparison can lead to a consumption treadmill, an invention of modern Western culture (Frank 2011; Griskevicius, Cantú et al. 2012). This idea is captured by the popular phrase '*keeping up with the Joneses*', which specifically refers to strive to match one's neighbours in spending and social class.

2.2 CONSUMER AS SIGNALLER

One of the earliest thoughts about this subject came from sociologist and economist Thorstein Veblen. In his theory of the leisure class (1899) he first drew attention to the notion that conspicuous displays of time and money may function as a means of gaining competitive advantages over others. He called this conspicuous consumption. Veblen proposed that signalling in this manner enhanced social status when knowledge of others' qualities was not widely known or could be unreliable, as in situations of high socio-economic mobility. His main contribution to economic theory was to point out that the pursuit of self-interest, rather than leading to collectively beneficial outcomes, merely led to the waste of resources in elaborate social competition (Bird and Smith 2005)².

With the emergence of (costly) signalling theory, Veblen's ideas were reintroduced by the field of behavioural ecology in the 1980s (Penn 2003). Signalling theory, which is essentially about communication, investigates the transmission of information from one individual, called a sender, to another individual, called a receiver. A signal is defined as any physical or behavioural trait of an individual that has evolved to influence the behaviour of others and which is effective because the receivers' response has also been shaped by selection (Saad and Dunham 2011). In the field of behaviour ecology, the theory is used to suggest that conspicuous consumption mirrors other behavioural and morphological traits found across the animal kingdom. Traits that, at one level, seem unnecessary and inefficient but that, at another level, serve as important communicative signals advertising the sender's quality (e.g.

² More recently, Robert Frank (2011) summarizes this as competition which leads to mutually-offsetting positional moves; which is basically a similar depiction the ideas described by Veblen (1899).

reproductive advantages) as a mate (Zahavi 1975). Such signals should be nearly impossible to copy in order to serve as honest signs of deeper unobservable qualities. A typical example of an animal that shows such behaviour is the peacock. The peacocks' extravagant tail is seen as a costly signal. Its weight forms a burden for the creature making it vulnerable to predators. However, its brilliant conspicuous feathers form an obvious signal of attractiveness and mate quality.

Although the theory of costly signalling has been mainly used to explain animal behaviour (Zahavi 1975; Grafen 1990), more recently, social scientists use the evolutionary framework to understand human behaviour as well. For example, in the past fifteen years Gad Saad tried to infuse evolutionary psychology in the study of consumption (Saad 2011). In one study Saad and Vongas (2009) examined experimentally whether conspicuous consumption served as a means by which men communicate their social status to improve their position in the mating market. Men drove either a fancy and expensive sports car (Porsche) or a beaten-up family car (Honda Sedan) in one of two environments (either in downtown Montreal where everybody could see you or on a semi-deserted highway). At the end of each driving condition, saliva was taken to measure fluctuations in their level of testosterone. The researchers expected that testosterone levels would go up in the Porsche and down in the Sedan and that this effect would be moderated by the environment in which they drove. The results showed that testosterone levels rose significantly in the sports car and partially dropped in the family Sedan, suggesting that conspicuous consumption may trigger an endocrinological response in men that mimics the one elicited during competition. However, it was not proven that the environment in which they drove their car acted as a moderator.

Continuing on the car as a signal theme, Dunn and Searle (2010) conducted a study where they manipulated status by seating a model (either a male or female but evenly pretested to match for attractiveness) expressing identical facial expressions and posture in either a 'high status' (Bentley) or a 'neutral status' (Ford Fiesta) car. A between-subjects design was used whereby photographic images were presented to male and female participants for attractiveness rating. Results showed that the male target model was rated as significantly more attractive on a rating scale of 1-10 when presented to female participants in the high compared to the neutral status context. Males were not influenced by status manipulation. These findings confirmed the hypothesis that females, compared to men, are more influenced by wealth and status. A woman tends to judge a man by his wealth and status whereas men are primarily concerned with what a woman looks like.

Even more recently, academics like Vladas Griskevicius and Jill Sundie have started to integrate evolutionary consumer psychology with social psychology. Griskevicius, Tybur et al. (2007) showed that men increase their desire to purchase products that are expensive and luxurious when mating goals are salient. Sundie, Kenrick et al. (2011) performed a series of experiments which showed conspicuous consumption appears to be part of a rather precise signalling system focused on short-term mating.

Although the automobile is a good example of conspicuous consumption these days, it is not that easy anymore to signal costly behaviour by consuming conspicuously. Take for example the fabrication of jewellery or designer clothes. These products have lost some of their strength as a costly signal in today's consumer society. Due to a general increase of wealth, increasing abilities to purchase on credit and the emergence of second-hand (luxury) markets consumers perceive that the consumption of luxurious items has become more common. Next to this, the counterfeit industry made false luxury items such as diamonds or Prada bags barely distinguishable due to improving imitation techniques. Signals of luxury therefore have lost some of their trustworthiness and thereby their power as honest signals.

2.3 **SIGNALLING GREEN CONSUMPTION**

Nevertheless, conspicuous consumption still exist these days; only perhaps more powerful in other appearances. One of those manifestations of consumers as signallers concerns the recent consumer interest in ecologically-friendly products (Saad and Dunham 2011). This specific signalling behaviour is in the literature referred to as conspicuous conservation (Sexton 2011) or conspicuous environmentalism (Hargreaves 2011). Both referring to the original term of conspicuous consumption (Veblen 1899). Only here, competition in consumption is not meant to lead to a waste but rather to a conservation of resources. Although one could ratify this as an oxymoron. The basic idea behind this new concept is that it is favourable to display and signal one's pro-environmental behaviour through buying and displaying green consumer goods. Or as one of the authors of book *Freakonomics*, Stephen J. Dubner (2012), puts it: *"helping the planet is nice; but being seen helping the planet is really nice"*. So why is it that being seen helping the planet is nice? Literature provides two possible explanations.

First, people interpret PEB as behaviour that is pro-social rather than pro-self. Pro-social behaviour is defined as any behaviour that benefits others. To take the example of the car again, a conventional or more luxurious car has solely private benefits. However, the ownership of a pro-environmental car such as the Toyota Prius can have additional social benefits. This is because people may interpret and construct an owner of a Prius as caring and pro-social as he or she does not solely care about his or her own outcome. By buying a hybrid car, which has a relative better mileage and emits less carbon dioxide, the owner signals that he or she cares for the environment. In this way, PEB such like buying a Prius exemplifies an individual's effort to provide positive externalities. When people understand the pro-environmental benefits of PEB they approve the behaviour and label it as pro-social. In this way PEB (in this case the purchase of a Prius) is used as a peacocks tail, a way to signal one's pro-socialness (Iredale and Van Vugt 2009). Being pro-social without being fawned is associated with status and prestige in a group (Griskevicius, Tybur et al. 2010). People therefore general positively value pro-social, altruistic behaviour and are known to compete for it. This phenomenon is described by the concept of competitive altruism (Roberts 1998). In the literature, examples used to back-up this mechanism are behaviours such like the practice of pot latching, the hosting of extravagant dinners and the phenomenon of public donations and sponsorships (Hardy and Van Vugt 2006; Griskevicius, Tybur et al. 2007; Van Vugt and Hardy 2010). The desire for social approval implies that, conditional on pro-social activity yielding a positive image, people will act more pro-socially in public than in private settings (Ariely, Bracha et al. 2009).

A second argument why people value being seen green is that PEB is relative costly to perform. Most pro-environmental products are more expensive than their conventional counterpart. Think of organic foods, energy-efficient light bulbs or FSC certified paper. For this reason, pro-environmental consumption can also display one's ability to incur costs, as people are aware that pro-environmental products come with a price premium. This theory is known as costly signalling theory. For conspicuous conservation – or any behavioural strategy whatsoever – to qualify as a costly signal, it must meet four criteria (Smith and Bliege Bird 2000; Nelissen and Meijers 2011). First, the behaviour must be easily observable by others. Second, the behaviour must be costly for the sender such that significant resources have to be given up (e.g. wealth, energy, risk or time to perform). The costlier the behaviour, the harder to fake and the more likely it is perceived as an honest indicator. Third, the behaviour must be associated with an unobservable but desirable individual quality (e.g. health, courage, intelligence, and pro-socialness). Fourth, the signal must ultimately yield a fitness benefit, such as increased ability to attract desirable mates due to a more

preferential treatment. The purchase of a Prius can be construed as costly as two criteria are met. The Prius comes with a price premium although its performances, apart from its mileage, are of a relative lower quality than their conventional counterparts are. Next to this, the ownership of the car is easily observable others.

These two arguments that try to explain for the motives behind showing off pro-environmental acts, to signal one's pro-socialness and one's ability to incur costs, can be interpreted as cynical. They seem to indicate that pure altruism does not exist, and we are not completely honest when we say we purchase pro-environmental products solely because we care about the environment and want to help limit the environmental impact of our consumption patterns. Apparently, there is also a motive of self-interest involved that comes with an additional value of which we might not always be consciously aware. According to Griskevicius, Tybur et al. (2010) this value is created because being an owner of, or buying pro-environmental is associated with status and prestige. Acting pro-environmentally by means of green consumer behaviour can thus be a powerful strategy to attain or gain social status and/or prestige.

2.4 STATUS, SALIENCE AND GREEN CONSUMPTION

Following this hypothesis that green behaviour is associated with status and prestige (Griskevicius, Tybur et al. 2010) set up three experiments to reveal how status motives influence the attractiveness of green products versus more luxurious non-green products. Their first experiment showed that an activation of status motives led to an increase in the likelihood of choosing pro-environmental green products versus more luxurious non-green products. Status motives increased people's tendencies to forgo luxury when given the chance to choose an equally priced green product that signalled one's pro-socialness. To test the hypothesis in line with costly signalling theory (more costly behaviour leads to more status and vice versa), the authors extended the first experiment with a condition in which the price of the green product varied (less expensive versus more expensive). Results showed that by activating status motives green products were preferred more when these products were more expensive than their non-green counterpart, thereby confirming the hypothesis. To test the hypothesis that status motives should lead people to be especially sensitive to what their behaviours might signal to others when their behaviour is visible, the authors extended the original experiment again by adding a public versus private condition. Results showed that when shopping in public, status motives increased the attractiveness of pro-environmental products. When shopping in private, status motives increased desire for more luxurious non-green products. In other words, status-seeking activities must be socially visible (either directly or through their socially visible outcomes) in order for them to work effectively.

More academic findings that show the importance of social visibility in other status seeking activities has recently become available. Kimura, Mukawa et al. (2012) explored whether reputational concerns had an effect on the purchase intention for fair-trade products among Japanese young adults by placing participants in either an 'observable' or 'anonymous' condition. Results showed that participants in the observable condition valued fair-trade products higher than those under the anonymous condition, suggesting that fair-trade purchase intention is influenced by extrinsic social factors such as reputation. Lacetera and Macis (2010) showed that donors significantly increase the frequency of their donations immediately before reaching the threshold for which the (symbolic) rewards are given, but only if the prizes are publicly announced in the local newspaper and awarded in a public ceremony. Their findings indicate that social image concerns are a primary motivator of pro-social behaviour and that symbolic prizes are most effective as motivators when they are awarded publicly. Rege and Telle (2004) showed that people contribute significantly more to a public good when both their identity as their contribution is

made visible to others. Similarly, Soetevent (2005) conducted a field experiment in which people acted more pro-social in public rather than private settings. Church contributions rose when open collection baskets were used instead of closed collection bags. Heffetz (2011) conducted a survey among U.S. households in which he ranked the visibility of thirty-one consumption categories. Using expenditure data he showed that, on average, higher-income categories households spend larger shares of their budget on more visible consumption categories. Van Vugt and Hardy (2010) set up experiments to find out if public good contributions vary if the participants would already know whether their contribution would make a difference or not. Results showed that under public conditions people's contributions increased even when the respondents knew the public good was already provided (experiment one) or could not be provided at all (experiment two). These findings might indicate that people are sometimes more concerned about their reputation than about the efficacy of their helping act.

Based on these findings the following hypotheses with respect to status and conspicuousness are formulated:

- H₁: Participants will evaluate conspicuous products higher evaluations than inconspicuous products (main effect conspicuousness)*
- H₂: Participants in the status group will evaluate products higher than participants in the control group (main effect motive)*
- H₃: Participants in the status group will evaluate conspicuous products higher than inconspicuous products whereas for participants in the control group conspicuousness has no effect*

2.5 MODERATOR VARIABLES

Based on a literature review on the determinants of pro-environmental behaviour (Harland, Staats et al. 1999; Gatersleben, Steg et al. 2002; Abrahamse, Steg et al. 2005; de Groot and Steg 2008; Brécard, Hlaimi et al. 2009; Welsch and Kühling 2009; Peattie 2010; Turaga, Howarth et al. 2010; Beattie and Sale 2011; Melnyk 2011; Osbaldiston and Schott 2012) several constructs were composed which served as independent (moderator) variables in this research.

Narcissism

This study will include a more specific personality trait: narcissism. Narcissism is often expressed as egotism, vanity and selfishness. Applied to the broader social context it can be linked to signalling theory. Narcissists are most swayed by self-image motives and hence most likely to make consumer choices in line with these motives (Gregg et al, 2007). Connecting narcissism with conspicuous conservation one can expect that narcissists attribute significant value to self-presentational signals which are beneficial to pro-environmental product evaluations. As is shown by (Griskevicius, Tybur et al. 2010), pro-environmental products are seen as high status and prestige items. A narcissist strives for a positive self-view more than others, and should therefore be more influenced such that he or she gives relative higher preferences to conspicuous pro-environmental products than inconspicuous pro-environmental products. We therefore expect that:

- H₄: Degree of narcissism and conspicuousness interact such that conspicuous products will receive a higher WTP when narcissism is high versus low whereas for inconspicuous products narcissism will have no effect on WTP*

What perhaps is more interesting is which role norms play in this relation. What will happen when pro-environmental behaviour is not commonly approved of, but personal norms are in favour of PEB? Will a Narcissist then still care about pro-environmental conspicuousness? A narcissist is generally concerned about its self-image and thus personal norms should have more weight in this decision than descriptive and injunctive norms. The following hypothesis is formulated.

H₅: *The effect of a high degree of narcissism on the WTP of conspicuous products will be stronger in combination with personal (pro-environmental) norms, such that higher scores on personal norms in combination with a high degree of narcissism will lead to higher WTP for the conspicuous product*

Need for Popularity (NfP)

NfP refers to the motivation to do certain things in order to appear popular. NfP differs from Narcissism because narcissists portray themselves favourably, but do not strive for interpersonal intimacy (Sonja Utz 2012). Popularity plays a central role in social network sites like Facebook. Sonja Utz (2012) showed that NfP is a strong predictor for, amongst others, number of friends, intensity of Facebook-use and editing of profiles. We hypothesize that when people think pro-environmental products are popular (i.e. injunctive norm), people who score high on NfP are more likely to attribute higher evaluations on pro-environmental products. Since conspicuous pro-environmental have a higher signalling power, we expect that:

H₆: *NfP and conspicuousness interact such that conspicuous products will receive a higher WTP when NfP is high versus low whereas inconspicuous products will receive a higher WTP when NfP is low versus high*

H₇: *The effect of a high NfP on the WTP of conspicuous products will be stronger in combination with injunctive norms, such that higher scores on injunctive norms will lead to higher WTP*

Value-orientations

This study will include a measure of value-orientation. (Schwartz and Mark 1992) define a value as “a desirable transsituational goal varying in importance, which serves as a guiding principle in the life of a person or other social entity”. Values are responsible for shaping much of our intrinsic motivation (Kollmuss and Agyeman 2002). An example of a value is equality. A person order of values reveals something about his or hers beliefs and priorities and is therefore linked to self-image. In environmental literature (Gatersleben, Steg et al. 2002; de Groot 2008) it is argued that three different value orientations may be relevant for understanding environmental beliefs and intentions. An altruistic value orientation, in which a concern for others’ wellbeing is dominant; an egoistic value orientation, in which the maximization of individual wellbeing is dominant; and a biospheric value orientation, in which concern for non-human species and the biosphere is dominant. Studies have shown that people who show more interest in values that lay outside the self (i.e. altruistic, pro-social, biospheric values) are more likely to engage in PEB (Stern and Dietz 1994; Van Vugt, Meertens et al. 1995; de Groot and Steg 2008). The following hypotheses are formulated:

H₈: *Participants who score high on biospheric-values are willing to pay more on pro-environmental products than participants who score low on biospheric values*

H₉: *Participants who score high on altruistic values are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on altruistic values conspicuousness has no effect on WTP*

Goal-frames

This study will include a measure based on goal-framing theory (Lindenberg 2001). The central idea of this theory is that people have multiple goals (or motives) which each have a say in explaining behaviour. To cite (Lindenberg and Steg 2007): “Goals ‘frame’ what people attend to, what knowledge becomes cognitively most accessible, how people evaluate various aspects of the situation, and what alternatives are considered”. These multiple goals are continuously ‘active’ to a certain degree and may or may not be in conflict with one another. (Lindenberg and Steg 2007) distinguish three relevant goal-frames. A hedonic goal-frame, oriented towards a short-term improvement of feeling good. A gain-frame, oriented towards middle to long-term improvement or protection of resources (e.g. money, energy, risk or time to perform). A normative goal-frame, oriented towards acting appropriate. In this state, people are especially sensitive to what is commonly done by other people (i.e. descriptive norm) and what is commonly approved or disapproved (i.e. injunctive norm) according to themselves. When people are in a normative state-of-mind, sub-goals oriented towards pleasure and resources are pushed in the cognitive background (Lindenberg and Steg 2007).

In the context of environmental behaviour, the goal-framing theory posits that both a gain and hedonic frame often put a person in an individual, selfish-like state-of-a-mind, which is in many cases not beneficial for the environment. In contrary, norms often favour PEB, so being in a dominant normative frame often implies people to act pro-socially and thus pro-environmentally. This implies that multiple conflicting motives may especially play a role in pro-environmental behaviour and that goal-framing theory is highly relevant in the environmental domain (Lindenberg and Steg 2007)

Conspicuous pro-environmental products can offer beneficial signals to both selfish as pro-social-minded people. To selfish-minded people, because conspicuous pro-environmental products more strongly display pro-environmental qualities which are associated with products those come with a price premium. The ownership of such a product would therefore signal that one has significant resources and thus has a certain ability to afford. Pro-social, because conspicuous (vs. inconspicuous) pro-environmental products are stronger signals for pro-socialness because their pro-environmental qualities are displayed more obviously. Inconspicuous pro-environmental products offer less beneficial benefits. These products are not seen as costly or pro-social because its pro-environmental qualities are far less eminent. It is for these reasons that make it interesting which goal-frame could be dominant for people who evaluate conspicuous or inconspicuous products higher. We formulate the following hypotheses:

H₁₀: *Participants who score high on normative goal-frames are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on normative goal-frames conspicuousness has no effect*

H₁₁: *Participants who score high on gain goal-frames are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on gain goal-frames conspicuousness has no effect*

Norms

The study will include measures of personal and social norms. Norms have proven to have an important influence on green consumption and are fundamental to many of the theories and models concerning consumption (Peattie 2010). Personal norms, which reflect feeling of moral commitment with internalized values and are experienced as feelings of personal obligation to engage in a certain behaviour (Harland, Staats et al. 1999). Social norms can be divided in descriptive norms (what is commonly done) and injunctive norms (what is commonly approved or disapproved).

In the context of pro-environmental behaviour, when people strongly believe that pro-environmental behaviour is the morally right thing to do (personal norm), is commonly done by their peers (i.e. descriptive norm) and is commonly approved of by their peers (i.e. injunctive norm), we expect that people are favourable towards green products. However, would product conspicuousness matter? We expect it does, especially for people who attach value to injunctive norms. As these norms refer to what is commonly approved or disapproved of, people who would behave pro-environmental get social attention and recognition from others. This recognition would increase if the product pro-environmental qualities were salient. Following this line of thought the following hypothesis is formulated:

H₁₂: *Participants who score high on injunctive norms are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on injunctive norms conspicuousness has no effect*

Socio-demographics

According to (Griskevicius, Tybur et al. 2010) status motives should lead people to want to be seen as more pro-social. We expect that conspicuous pro-environmental products be being associated with more pro-sociality than inconspicuous products. The reason for this is because conspicuous (vs. inconspicuous) pro-environmental products more strongly signal pro-environmental qualities, which are associated with pro-socialness.

When we compare singles to non-singles, we expect that singles are more status-driven. Since conspicuous displays of consumption might serve as a costly signal of desirable mate qualities (Griskevicius, Tybur et al. 2007) we expect that singles will evaluate conspicuous (vs. inconspicuous) pro-environmental products higher than people who are not single.

H₁₃: *Marital status and conspicuousness interact such that singles will have a higher willingness to pay for conspicuous versus inconspicuous products whereas for people in a relationship conspicuousness will have no effect*

3. Method

3.1 MATERIAL AND PARTICIPANTS

The experiment was set-up in an online survey format created with the programme Qualtrics and conducted in several computer rooms in Wageningen University buildings. The survey was created in English such that both Dutch and non-Dutch participants could fill in the survey. Another reason for creating the survey in English was that some of the used constructs were only available in English. The target group for this study were students at the Wageningen University. It was aimed to have at least 30 participants for each condition. Since the survey consisted of four conditions, see design, 120 participants were needed. Students were invited to participate “in a survey on environmental decision making” via a mailing list for ongoing research within the University and by the distribution of flyers and posters in University buildings and student flats. In return, participants would receive two snacks and entered into a lottery in which they could win one of the gift coupons for an online shop.

3.2 DESIGN

A 2 (motive: status, control) × 2 (conspicuousness: conspicuous, inconspicuous) between-subjects factorial design was used. Via Qualtrics all participants were randomly but evenly assigned to one of the two motive conditions. Hereafter, participants were again randomly and evenly assigned to one of the conspicuousness conditions such that each participant evaluated four conspicuous and four inconspicuous pro-environmental products. Dependent on which condition they were in participants would first evaluate the conspicuous or inconspicuous products³. A schematic overview of the experiment and the conditions is found in the figure below.

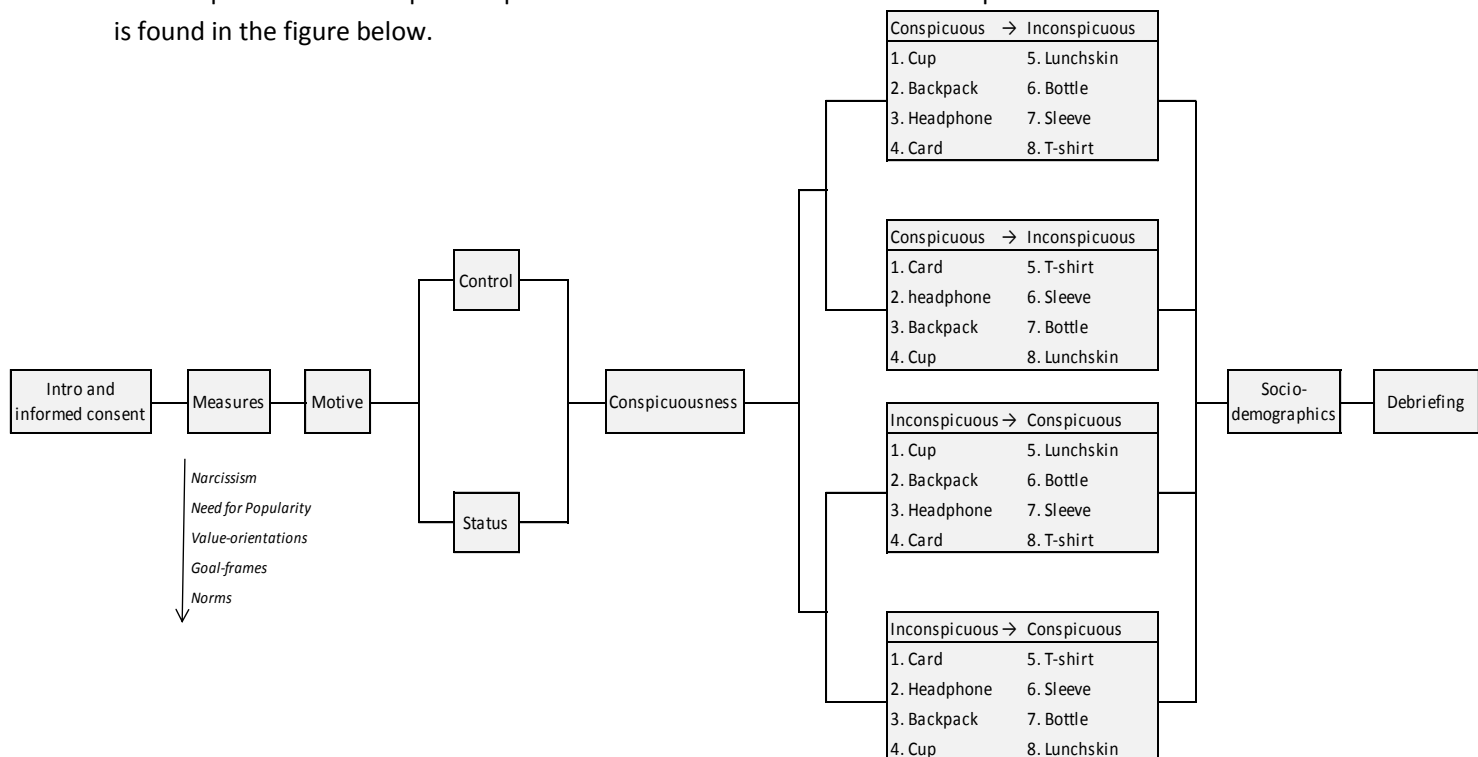


Figure 2: Schematic overview of the experiment and the conditions

³ An mistake was made here. The idea was that the eight products would be evaluated at varying orders to control for product order. However, the cup, backpack, headphone and card were always evaluated in the first group of four. The lunch skin, bottle, sleeve and t-shirt were always evaluated in the second group of four. The second group can thus be seen as ‘contaminated’ by the first. In every case, the participant has seen four inconspicuous or four conspicuous products before evaluating the second group of products.

3.3 PROCEDURE

The experiment began with an introduction and informed consent. Hereafter participants had to fill in questions related to their self-concept and personality. In order, these questions were about narcissism, need for popularity, value-orientations, goal frames and norms. More information about these measures can be found in the materials section in this chapter. Once completed these questions, the participants were randomly but evenly assigned to one of the two motive conditions. In the status condition participants read a story of about 700 words that has been used before successfully by Griskevicius, Tybur et al. (2009) and elicits a “desire for social status” and a “desire for prestige”. In the story, participants imagined graduating from college, looking for a job, and deciding to go work for a large company because it offers the greatest chance of moving up. The story describes the person’s first day on the job, focusing on the high-status features of the workplace such as the upscale lobby and nice furniture. Readers eventually learn that they will have an opportunity to receive a desirable promotion. The story ends as the reader ponders moving up in status relative to his or her same-sex peers. In the control condition, participants read a story of similar length designed to elicit similar levels of affect as the status story. To ensure that the participant read the story seriously, the reader was being told (falsely) that later in the survey questions about this story would be asked. As an extra safety check, participants could only proceed to the next question after 60 seconds. The status and control story can be found in appendix.

Hereafter participants were randomly but evenly assigned to one of the conspicuousness conditions. Both conditions began with a general introduction in which they read that Wageningen UR is planning to expand the student University shop to launch a number of new environmental-friendly products fitted to their students. The participants were told that these products would quite possibly appear in the shop in the near future. Before doing so, the shop would like to know how the Wageningen University students evaluated the products. After read the introduction story, the participant evaluated four conspicuous products followed by four different inconspicuous products (or the other way around) such that eight product evaluations were made. Extra information about the product via descriptive texts and a big image was supplemented. Participants made their evaluation by indicating what they thought these products signalled (manipulation check). Thereafter was asked what they thought about the attractiveness and their maximum willingness to pay of the product. The experiment ended with a number of socio-demographic variables (e.g. gender, age, study, nationality and marital status) and a debriefing.

3.4 PRODUCT SELECTION

To come up with a suitable choice set of pro-environmental products a number of criteria were used. First, each product should have some pro-environmental qualities. Second, the products should be appealing and popular for the participants, being the students. For products to be appealing they should be more or less be used by students in their daily life. To ensure this the products should be easy to purchase and not too expensive. This meant that typical status products such like cars or jewellery could not be used. Instead, existing product retail prices varied between 2- 25 euro. However, one expensive products (e.g. >250 euro) was added to see whether price could act as a moderator. Theoretically, the more resources (in this case money) had to be given up, the more the signal would be perceived as costly. Third, more practical, is that products must be relatively easy to manipulate. It must be possible to divide products in both a conspicuous and inconspicuous category. Many of the available pro-environmental products are conspicuous by design and therefore not suitable for manipulation. Think of the Doppler described earlier on. Its conspicuous sustainable design already radiates pro-environmental qualities. Fourth, product ownership must be observable. This means that the products offered could for example

be used publicly around the University campus. Taken these four points into account led to the conclusion that it preferable that the products should hypothetically be available at a shop which is accessible for all Wageningen University students. A good fit is the WUR-shop, which is located the campus of the Wageningen University. The WUR-shop sells products that are typical for students (e.g. stationary, promotional and gift-like merchandise). The pro-environmental products used for this experiment are products that fit well within assortment of the shop and therefore make the evaluation plausible. An overview of the pro-environmental products used and conspicuousness manipulations applied are included in the appendix.

3.5 MATERIALS

Based on a literature review on the determinants of pro-environmental behaviour (Harland, Staats et al. 1999; Gatersleben, Steg et al. 2002; Abrahamse, Steg et al. 2005; de Groot and Steg 2008; Brécard, Hlaimi et al. 2009; Welsch and Kühling 2009; Peattie 2010; Turaga, Howarth et al. 2010; Beattie and Sale 2011; Melnyk 2011; Osbaldiston and Schott 2012) several constructs were composed which served as independent variables in this research. Constructs of product evaluations served as dependent variables. Variables used are described in this section. A copy of the complete experiment in Qualtrics is found in the appendix.

Narcissism. Narcissism was measured with the Narcissism Personality Index -16 (NPI-16) as developed by Ames, Rose et al. (2006). This is a short 16-item pair measure of narcissism in which a choice has to be made between a narcissism-consistent and narcissism-inconsistent response (e.g. *I am an extraordinary person* vs. *I am much like everybody else*). The NPI-16 is derived from the NPI-40 (Raskin and Terry 1988) which originally consists of 40 statements. The NPI-40 has Cronbach's alpha of .84 while the NPI-16 reported alpha of .72.

Need for Popularity. Need for popularity (NfP) was measured with the NfP construct developed by Santor, Messervey et al. (2000). This construct is used to measure individuals' motivations to conform to peer pressure. The construct consist of twelve statements, (e.g. *"At times, I have changed the way I dress in order to be more popular"*) to which participants answer on a 7-point Likert-scale ranging from 1 = disagree strongly to 7 = agree strongly. NfP differs from narcissism because narcissists portray themselves favourably, but do not strive for interpersonal intimacy (Sonja Utz 2012).

Value orientations. To measure people's value orientations this research used of the value instrument as put down in de Groot (2008). This instrument is suitable for this study as it is a brief value instrument that is easy to administer and measures biospheric, altruistic and egoistic value-orientations. The resulting value scale consists of 13 value items: 5 items for the egoistic, 4 items for the altruistic and 4 items for the biospheric value-orientation. Related to the instrument's internal consistency the Cronbach's α for the different values are $\alpha_{\text{ego}} = .74$ $\alpha_{\text{altr}} = .73$ $\alpha_{\text{bio}} = .86$.

Norms

Personal norms were measured using four items from Gärling, Fujii et al. (2003). Injunctive social norms were measured using three items adopted from Fielding, McDonald et al. (2008). Descriptive social norms were measured using two items adopted from Kim, Lee et al. (2012). Some of the items in the injunctive and descriptive constructs were slightly altered such that the formulated behaviour was specifically about the purchase of environmental friendly products. All construct related to norms were measured on a 7-point Likert scale ranging from 1 = disagree strongly to 7 = agree strongly.

Willingness to pay and product attractiveness

Willingness to pay was measured with one open question: *“How much would you be willing to pay (in euros) for this product?”*. Product attractiveness was measured using two items. Participants were asked to indicate how much they liked the product using a smiley slider. Beginning in a neutral position, participants could move the slider up- or down by two points to respectively like or dislike the product more. Second, they were asked how attractive the product was on a 7-point Likert scale ranging from 1 = very unattractive to 7 = very attractive.

4. Results

4.1 PARTICIPANTS

A total of 154 people participated in the experiment. Non-students (N=3) were excluded as they formed potential threat to the homogeneity of the group. The remaining participants were all students of Wageningen University. Another reason to exclude them was that they were unfamiliar with the presented case study (WUR-shop). One participant was removed for she completed the online survey in 12 minutes (M = 24) and 'read' the status story in approximately 70 seconds (M = 190). The remaining sample consisted of 150 participants from Wageningen University of which 40 were male and 110 were female. Average age was 21.94 (SD = 3.15).

4.2 MANIPULATION CHECKS

4.2.1 Motive

Extensive pilot testing of the motive manipulation was performed by Griskevicius, Tybur et al. (2009); Griskevicius, Tybur et al. (2010). Results showed that relative to the control story, the status story elicits a "desire for social status" (6.63 vs. 1.97 on a 1–9 scale, $p < .001$) and a "desire for prestige" (6.21 vs. 1.88, $p < .001$). Compared to the control story, the status story also elicited relatively similar levels of negative affect and positive affect.

To ensure that the participant read the story seriously, an extra safety check was built in such that participants could only proceed to the next question after 60 seconds. As the status story contained more words (720 vs. 592), it was expected that participants needed a longer time to read. Results showed that this was indeed the case, participants took an average time of 190 seconds (SD = 54) to proceed after read the status story. For the control story the average time was 163 seconds (SD = 61).

4.2.2 Conspicuousness

To check if manipulation in conspicuousness was successful the question "*What do you think this product signals?*" was asked directly after participants had read the product description and seen the product image. Participants had to rate this question on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree) five different aspects (environmental-friendly qualities, style, expensiveness, uniqueness, pro-socialness). For the manipulation to be successful, mean scores on environmental-friendly qualities should be significantly lower for the inconspicuous than the conspicuous product. An independent-samples t-test is used to determine whether the mean differences between inconspicuous and conspicuous product versions scored significantly different on environmental-friendly qualities.

Results showed there was a statistically significant difference in environmental-friendly quality scores between inconspicuous and conspicuous products, with inconspicuous products scoring lower than conspicuous products for six out of eight products (not for the backpack and the headphone⁴). Perceived difference s in environmental quality scores between inconspicuous and conspicuous product versions are summarized in the table below. A more elaborate figure on the product signalling means is found in the appendix. Looking at the perceived difference scores on other product characteristics, it is notable to say that only the conspicuous cup scores significantly higher on pro-socialness when compared to the

⁴ For this reason it was chosen not to include the results of the backpack and the headphone since their conspicuousness manipulation appeared to be unsuccessful.

inconspicuous cup. For all others products this is not the case. Concerning scores on expensiveness, there is not a single conspicuous (vs. inconspicuous) product scoring significantly higher on this attribute. The conspicuous bottle and laptop sleeve scored even significantly lower ($p < .05$).

Table 1: Perceived differences in environmental quality scores between inconspicuous and conspicuous product versions

Independent-Samples T-Test					
Product	Mean difference	SE Difference	t	df	Sig.
Cup	-0.22	0.13	-1.666	142	.049
Backpack	-0.14	0.14	-1.054	148	.147
Headphone	-0.07	0.18	-0.382	148	.351
Card	-0.72	0.15	-4.786	148	.000
Lunch skin	-0.19	0.12	-1.541	148	.063
Bottle	-0.41	0.13	-3.1	148	.001
Sleeve	-0.37	0.15	-2.421	148	.008
T-shirt	-0.44	0.12	-3.711	148	.000

4.3 RELIABILITY AND DATA REDUCTION

To test for the reliability of each construct, reliability and data reduction techniques were performed. If items were negatively worded, reverse coding was applied in order to maintain consistency. Prior to the reliability and data reduction techniques, the suitability of Principal Component Analysis (PCA) was assessed by inspection of the correlation matrix. For every construct items should have at least one correlation coefficient greater than 0.3 and correlations could not be higher than 0.9. The determinant of the correlation matrix should be higher than 0.00001 to make sure multicollinearity does not form a problem. Next to this, the Kaiser-Meyer-Olkin (KMO) is checked to see whether linear relationships between items existed. When this was the case, it was appropriate to run a PCA. A KMO of 0.6 suggested as a minimum requirement for sampling adequacy (Kaiser, 1974). To conclude, it was checked of Bartlett's Test of Sphericity was significant. If this is not the case, the correlation matrix is not an identity matrix which means there are correlations between the items. The overall results of the reliability and data reduction techniques can be found in the table below.

Table 2: Reliability of each (sub-)construct

Construct	# Items	# removed	Alpha	Mean	SE
Narcissism	16	1	.615	0.264	0.171
Need for Popularity	12	1	.859	2.715	0.940
Value-orientations					
Altruistic	4		.726	4.817	1.212
Egoistic	5		.755	2.784	1.208
Biospheric	4		.881	4.263	1.366
Goal-frames					
Hedonic	4		.702	5.137	0.891
Gain	5	1	.601	4.925	0.861
Normative	5	3	.398*	2.317	0.960
Social	4	2	.604*	3.050	1.204
Status	5	**	.780	3.057	0.927
Norms					
Personal	4		.814	5.725	0.821
Injunctive	3	1	.624*	3.693	1.180
Descriptive	2		.523*	3.240	1.053

* Correlation

**one item was added to the scale

4.3.1 Narcissism

Narcissism was measured by the Narcissism Personality Index -16 (NPI-16) as developed by Ames, Rose et al. (2006). This is a short 16-item pair measure of narcissism in which a choice had to be made between a narcissism-consistent and narcissism-inconsistent response (e.g. *I am an extraordinary person* vs. *I am much like everybody else*). The NPI-16 is derived from the NPI-40 (Raskin and Terry 1988) which originally consists of 40 statements. The NPI-40 has Cronbach's alpha of .84 while the NPI-16 reported a alpha of .72. In our study we however find a Cronbach's alpha of .601. We decided to remove item 8 (*I always know what I am doing* vs. *Sometimes I am not sure of what I am doing*) from the scale as it increased alpha to .615. Given that the Cronbach's alpha is rather low, a closer look was taken at the corrected-item total correlation, which indicates the correlations between each item and the total score of the questionnaire. We see that 12 of the 16 items correlate poorly (values less than .3). Mean-inter correlation was .08 (compared to .13 reported in the study of Ames).

4.3.2 Need for Popularity

The construct 'Need for Popularity' is developed by Santor, Messervey et al. (2000) and measures individuals' motivations to conform to peer pressure. The construct consist of twelve items (e.g. *"At times, I have changed the way I dress in order to be more popular"*) which were measured on a 7-point Likert-scale ranging from 1 = disagree strongly to 7 = agree strongly. The scale had a high level of internal consistency, as determined by a Cronbach's alpha of .854. Removing item seven (*I've bought things, because they were 'in' things to have*) would result in an increase in Cronbach's alpha to 0.854 from 0.859. During the experiment, the surveyor had several questions regarding this specific question. Some respondents were confused and asked what was meant by 'in'. Taking this into consideration, we chose to remove this item from the construct and maintain the other eleven items.

4.3.3 Value-orientations

Value-orientations were measured using the value-orientations construct developed by de Groot and Steg (2008). Biospheric, altruistic and egoistic value-orientations were measured using five, four and four items respectively. A principal components analysis (PCA) was run in addition with a Varimax orthogonal rotation to aid interpretability. The interpretation of the data was consistent with the values the questionnaire was designed to measure with strong loadings of altruistic items on component 1, egoistic items on component 2 and biospheric items on component 3. Component loadings and communalities of the rotated solution are found in the appendix. Related to the instrument's internal consistency the Cronbach's α for the different values are $\alpha_{\text{ego}} = .755$ $\alpha_{\text{altr}} = .726$ $\alpha_{\text{bio}} = .881$. These values for internal consistencies are comparable with values found by de Groot and Steg (2008) who reported $\alpha_{\text{ego}} = .74$ $\alpha_{\text{altr}} = .73$ $\alpha_{\text{bio}} = .86$.

4.3.4 Goal-frames

Goal frames were used by adopting five sub-scales (e.g. hedonic, gain, normative, social and status) used in Rob Mak (2011). Mak based his questions on the scales developed by Lindenberg and Steg (2007). For the construct "hedonic goal-frames", four items were used. Reliability analysis showed that Cronbach's alpha is 0.702, which indicates the internal consistency for our scale is acceptable.

For the construct "gain goal-frames", five items were used. Reliability analysis showed that Cronbach's alpha is 0.370, which indicates the internal consistency for our scale is unacceptable. Removing one item

(*I spend a lot of money in order to be green*) increased the alpha to 0.601. Although the value of alpha indicates that our scale has a questionable internal consistency we decided to use this construct.

For the construct “normative goal-frames” five items were used. Reliability analysis showed that Cronbach's alpha is 0.441, which indicates the internal consistency for our scale is unacceptable. Removing one item “*To the extent that I purchase environmentally friendly products, I do so mainly because it's what everyone else does*” increases the Cronbach's alpha to 0.508 which still indicates our scale has a poor internal consistency. For this reason a factor analysis was done by combining the items of the normative and social goal-frame. Factor analysis was performed to see if some meaningful constructs could be deduced. It appeared that two items “*Behaving in an environmentally friendly way will make people like me better*” and “*More people will like me if I purchase environmentally friendly products*” had a correlation of .604. The item “*To the extent that I purchase environmentally friendly products, I do so mainly because it's what everyone else does*” and the item “*To the extent that I buy environmentally friendly products, I do so mainly because it will help me fit in*” had a correlation of .398.

For the construct “status goal-frames” six items were used. Reliability analysis showed that Cronbach's alpha is 0.75, which indicates the internal consistency for our scale is acceptable. When an item from norms was added, “*I would buy an environment friendly product for the recognition I get from others*” is added Cronbach's alpha would increase to 0.78. We decided to use this item for the status goal-frame.

4.3.5 Norms

For the construct “Injunctive social norms” two items were used. Correlation between the two items was .624. For the construct “Descriptive social norms” two items were used. Correlation between the two remaining items was .523. For the construct “personal norms” four items were used. Reliability analysis showed a Cronbach's alpha of 0.814, which indicates the internal consistency is good. Mean inter-item correlation is .657.

4.3.6 Product attractiveness

Product attractiveness was measured using two items. Participants were asked to indicate how much they liked the product using a smiley slider. Beginning in a neutral position, participants could move the slider up- or down by two points to respectively like or dislike the product more. Second, they were asked how attractive the product was on a 7-point Likert scale ranging from 1 = very unattractive to 7 = very attractive. Since scores on the two items were alike for each product (correlations > .75) the items were combined and recoded into a single standardized Zscore.

4.4 MANIPULATIONS: EFFECT OF STATUS AND MOTIVE

Two-way ANOVA analyses were used to determine group differences on a continuous dependent variable (attractiveness and WTP of pro-environmental products) between two independent, unrelated variables (motive and conspicuousness). The variable product order was used as an independent variable to see whether product order had an effect. In addition, signalling style and signalling uniqueness were used as covariates to control for the effect of these variables. In this way we made sure differences in attractiveness and WTP scores were based on product characteristics in line with the competitive altruism and costly signalling theory (perceived signal in pro-environmental qualities, perceived signal in pro-socialness and perceived signal in expensiveness). When main or interaction effects were found simple main effects were run by editing the syntax and applying a Bonferroni correction for multiple post-hoc comparisons.

New generated results in the form of Univariate tests and Pairwise Comparison tables were assessed to determine simple main effects results. The reason for running simple main effects rather than separate ANOVAs is that simple main effects use the error term of the whole analysis rather than just the groups being compared. This is advantageous for statistical significance testing (Laerd 2013). Univariate Tests report F tests which test simple effects of for example conspicuousness within each level combination of the other effects. These tests are based on the linearly independent pairwise comparisons among the estimated marginal means.

A two-way ANOVA requires certain assumptions to be true, such as the assumption of normality. Since our sample sizes are greater than 50, it was chosen to use graphical methods such as a Normal Q-Q Plot to check for this assumption. This is because sample sizes larger than 50 will flag even minor deviations from normality as statistically significant (i.e., not normally distributed) when the Shapiro-Wilk test is used for this. Outliers were detected for the dependent variable WTP. To reduce the influence of outliers, participants that had WTP values greater than 3 box-lengths from the edge of the box were excluded. Smaller outliers were not removed since they formed genuine data points that neither comes from data entry or measurement errors. Based on these criteria, two outliers were found and excluded for the cup, five for the card, two for the lunch skin and two for the bottle. No outliers were found for the laptop sleeve and the t-shirt. To test whether homogeneity of variances existed was assessed by the Levene's Test of Homogeneity of Variance. There was homogeneity of variances, unless otherwise reported.

In the following section the results of the main and interaction effects on six out of eight products will be presented. It was chosen not to include the results of the backpack and the headphone since for these products the conspicuousness manipulation appeared to be unsuccessful. There was no statistically significant difference in environmental-friendly quality scores between the inconspicuous and conspicuous product version for these two products. This undermined the underlying assumption were the hypotheses were built upon.

- H₁:** *Participants will evaluate conspicuous products higher evaluations than inconspicuous products (main effect conspicuousness)*
- H₂:** *Participants in the status group will evaluate products higher than participants in the control group (main effect motive)*
- H₃:** *Participants in the status group will evaluate conspicuous products higher than inconspicuous products whereas for participants in the control group conspicuousness has no effect*

4.4.1 Cup

Six evaluations of the inconspicuous cup were excluded from the analysis. These evaluations were taken on the first day of the experiment where the participants viewed an inconspicuous cup that was, after consultation, modified after the first day.

Attractiveness . Two-way ANOVA reported a significant main effect of motive on attractiveness of the cup, $F(1,141) = 2.738$, $p = .100$. Participants in the control group found the cup more attractive than participants in the status group ($M = .244$, $SE = .147$). After adjusting for perceived style and uniqueness, the main effect for motive became statistically insignificant ($p = .936$). It thus seemed like style and uniqueness explain much of the variance.

There was a significant interaction effect for conspicuousness cup and product order, $F(1, 141) = 14.895$, $p = .000$. For participants in order condition 2 (card, headphone, backpack, cup, t-shirt, sleeve, bottle, lunch skin), the conspicuous product had a statistically significant higher attractiveness score ($M = .717$, $SE = .195$) than the inconspicuous product, $F(1, 141) = 13.449$, $p = .000$. For participants in the order condition 1 (cup, backpack, headphone, card, lunch skin, bottle, sleeve, t-shirt), the reverse was true. For these participants, the conspicuous product had a statistically significant lower attractiveness score ($M = -.421$, $SE = .221$) than the inconspicuous product, $F(1, 141) = 3.636$, $p = .059$. After adjusting for style and uniqueness, the interaction effect between conspicuousness and motive significance level remained significant ($p = .008$). An possible explanation for the mixed attractiveness score for the participants in in order condition 2, is that they evaluated the cup in position 4 . This implies that they have already evaluated three conspicuous or three inconspicuous products. The conspicuous prime could therefore be stronger in this group than in order group 1.

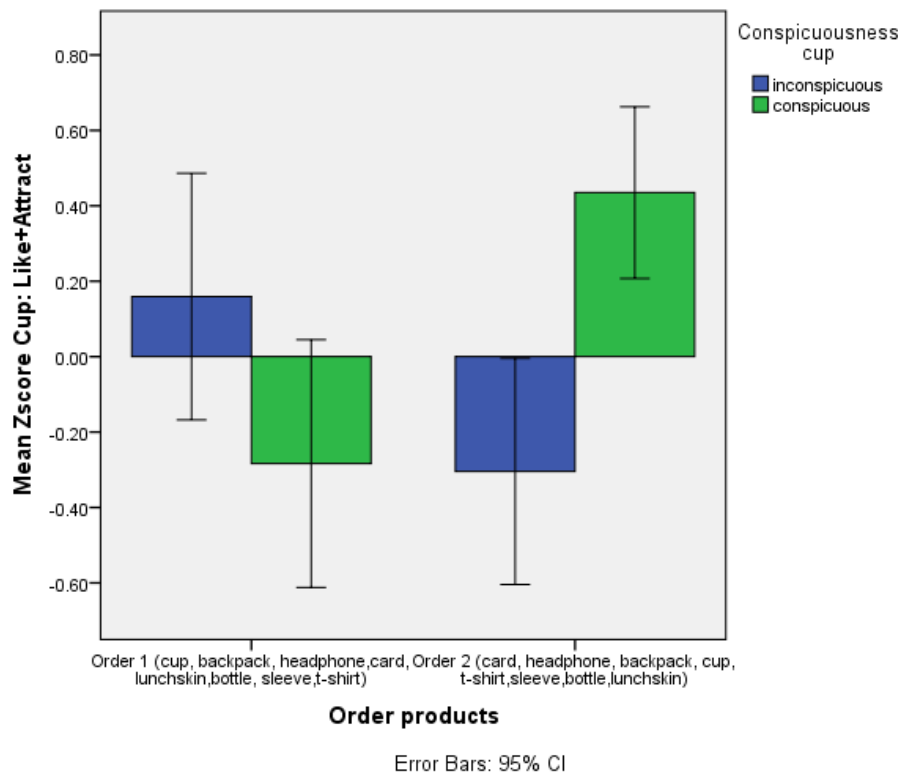


Figure 3: Simple main effect of product order and conspicuousness on attractiveness cup

WTP. There was no homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance ($p = .019$). Two-way ANOVA reported a significant main effect of conspicuousness on WTP, $F(1,134) = 3.254$, $p = .074$. Participants were willing to pay a significant higher amount for the conspicuous ($M = 1.011$, $SE = .561$) than the inconspicuous cup. This is in line with hypothesis 2. After adjusting for style and uniqueness, the main effect for conspicuousness however became statistically insignificant ($p = .115$). It seemed again that style and uniqueness explain much of the variance.

There was a statistically significant interaction between motive and the conspicuousness of the cup on WTP, $F(1,134) = 3.868$, $p = .051$. For the status group, the conspicuous cup scored significantly higher on WTP ($M = 2.114$, $SE = .795$) than the inconspicuous cup, $F(1,134) = 7.077$, $p = .009$. For the control group, conspicuousness had no effect, $F(1,134) = .013$, $p = .908$. For the conspicuous cup, participants in the status group had a higher WTP ($M = 1.712$, $SE = .784$) than the participants in the control group, $F(1,134) = 4.767$, $p = .031$. For the inconspicuous cup, motive had no effect, $F(1,134) = .379$, $p = .539$. After adjusting for style and uniqueness, the interaction effect between conspicuousness and motive significance level increased ($p = .033$).

A statistically significant interaction effect for conspicuousness cup and product order was found, $F(1,134) = 11.190$, $p = .001$. Post hoc test revealed that for participants who rated the conspicuous product, participants in order condition 2 were willing to pay a significantly higher amount ($M = 2.193$, $SE = .784$) compared to participants in order condition 1, $F(1,134) = 7.822$, $p = .006$. For the participants who evaluated the inconspicuous cup, this effect was reversed. For participants who rated the inconspicuous product, those in order condition 1 were willing to pay a significantly higher amount ($M = 1.559$, $SE = .802$) than those in order condition 2, $F(1,134) = 3.778$, $p = .054$. After adjusting for style and uniqueness, the interaction effect between conspicuousness and product order remained statistically significant ($p = .011$).

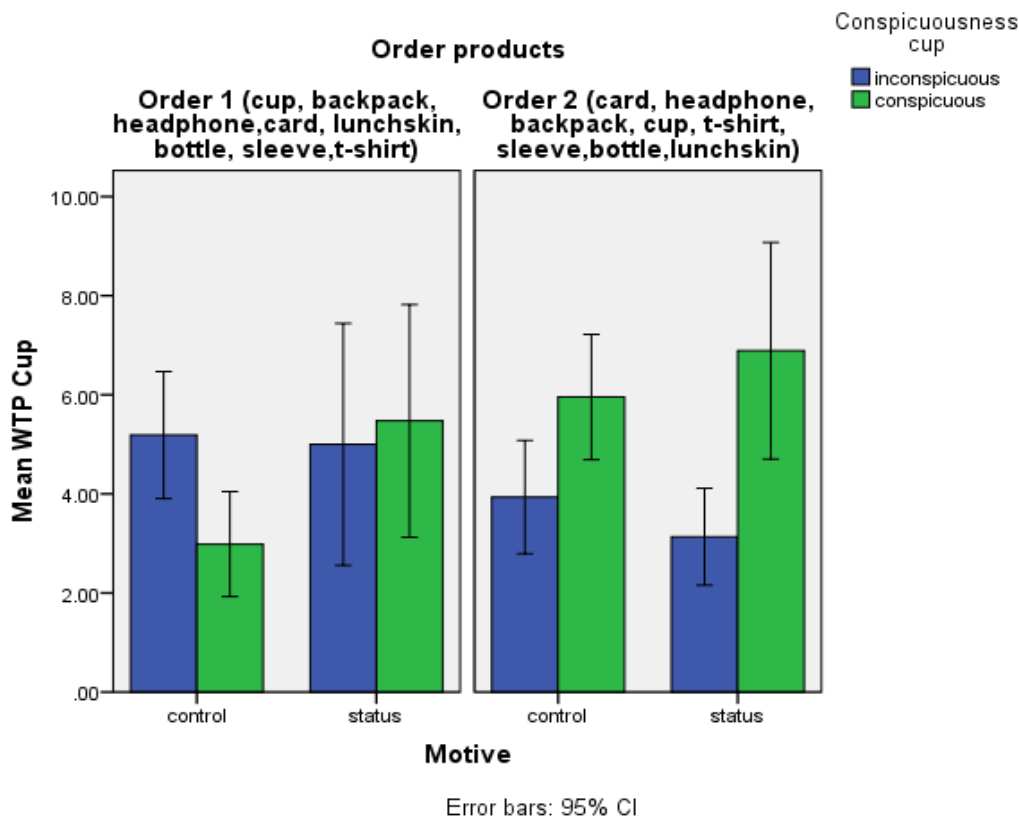


Figure 4: Simple main effect of motive and conspicuousness on WTP cup for product order 1 and 2

4.4.2 Card

Attractiveness. Two-way ANOVA reported a significant main effect of motive on the attractiveness of the card, $F(1,142) = 4.704$, $p = .032$. Participants in the control group found the card more attractive than participants in the status group ($M = .344$ SE = .157). No statistically significant effect of product order was found ($p < .10$). After adjusting for style and uniqueness, the main effect of motive on attractiveness of the card became statistically insignificant ($p = .236$). However, the new two-way ANOVA reported a significant main effect of conspicuousness on the attractiveness of the card, $F(1,140) = 2.986$, $p = .086$. Participants found the conspicuous card more attractive than the inconspicuous card ($M = .191$ SE = .111).

WTP. There was no homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance ($p = .018$). Two-way ANOVA reported no significant main or interaction effect of conspicuousness, motive or product order. After adjusting for style and uniqueness, no significant effects were found ($p < .10$).

4.4.3 Lunch skin

Attractiveness. There was no homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance ($p = .034$). After adjusting for style and uniqueness, a significant main effect of motive was on the attractiveness of the lunch skin, $F(1,140) = 5.101$, $p = .025$. Post hoc tests showed that the status group found the lunch skin significantly more attractive ($M = .266$, SE = .118) than the control group. This is in line with hypothesis 2.

WTP. There was no homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance ($p = .035$). Two-way ANOVA reported no significant main or interaction effect of conspicuousness or motive. However, a statistically significant interaction effect for conspicuousness lunch skin and product order was found, $F(1, 140) = 8.442$, $p = .004$. Post hoc test revealed that for participants who rated the conspicuous product, participants in order condition 1 were willing to pay a significantly higher amount ($M = 2.097$, SE = .691) compared to participants in order condition 2, $F(1, 140) = 9.211$, $p = .003$. For participants in the order condition 1, the conspicuous product had a statistically significant higher WTP ($M = 1.885$, SE = .757) than the inconspicuous product, $F(1, 140) = 6.198$, $p = .014$. After adjusting for style and uniqueness, the interaction effect between conspicuousness bottle and product order remained statically significant ($p = .008$).

4.4.4 Bottle

Attractiveness. Two-way ANOVA reported a main effect of degree of conspicuousness on the attractiveness of the bottle, $F(1,142) = 4.378$ $p = .038$. Participants found the conspicuous bottle significantly more attractive than the inconspicuous bottle ($M = .330$, SE = .158). No statistically significant effect of product order was found.

WTP. Two-way ANOVA reported no significant main effects of conspicuousness or motive. Nor could a significant interaction effect be found. However, a statistically significant interaction effect for conspicuousness bottle and product order was found, $F(1, 140) = 10.529$, $p = .002$. Post hoc test revealed that for participants who rated the conspicuous product, participants in order condition 1 were willing to pay a significantly higher amount ($M = 3.814$, SE = 1.146) compared to participants in order condition 2, $F(1, 140) = 11.000$, $p = .001$. For the inconspicuous bottle, product order had no effect ($p = .244$). For participants in the order condition 2, the inconspicuous product had a statistically significant higher WTP ($M = 3.512$, SE = 1.089) than the conspicuous product, $F(1, 142) = 10.405$, $p = .002$. For participants in the

order condition 2, conspicuousness had no effect ($p = .157$). After adjusting for style and uniqueness, the effect of conspicuousness became statically insignificant ($p > .10$). The interaction effect between conspicuousness bottle and product order remained intact ($p = .001$).

4.4.5 Laptop sleeve

Attractiveness. Two-way ANOVA reported no significant main effects of conspicuousness or motive. However, a statistically significant interaction effect for conspicuousness sleeve and product order was found, $F(1, 142) = 4.480$, $p = .036$. Post hoc test revealed that for participants in the order condition 2, the inconspicuous product had a statistically significant higher attractiveness score ($M = 0.409$, $SE = 0.203$) than the conspicuous product, $F(1, 142) = 4.057$, $p = .046$. For participants in order condition 1, conspicuousness' had no significant effect ($p = .231$). For participants who rated the conspicuous product, participants in order condition 1 scored significantly higher on attractiveness ($M = 0.470$, $SE = 0.213$) compared to participants in order condition 2, $F(1, 142) = 4.875$, $p = .029$. For participants who rated the inconspicuous product, product order had no significant effect ($p = .441$). After adjusting for style and uniqueness, order effects become statically insignificant ($p > .10$).

WTP. Two-way ANOVA reported a main effect of degree of conspicuousness on the WTP of the sleeve, $F(1, 142) = 11.703$, $p = .001$. Participants were willing to pay a significant higher amount for the inconspicuous sleeve than the conspicuous sleeve ($M = 4.227$, $SE = 1.236$). A statistically significant interaction effect for conspicuousness sleeve and product order was found, $F(1, 142) = 4.475$, $p = .036$. Post hoc test revealed that for participants in the order condition 2, the inconspicuous product had a statistically significant higher attractiveness score ($M = 6.841$, $SE = 1.634$) than the conspicuous product, $F(1, 142) = 17.540$, $p = .000$. For participants in order condition 1, conspicuousness' had no significant effect ($p = .389$). For participants who rated the inconspicuous product, participants in order condition 2 scored significantly higher on WTP ($M = 4.462$, $SE = 1.782$) compared to participants in order condition 1, $F(1, 142) = 6.271$, $p = .013$. For participants who rated the inconspicuous sleeve, product order had no significant effect ($p = .656$). After adjusting for style and uniqueness, order effects become statically insignificant ($p > .10$) and the main effect of conspicuousness increases marginally.

4.4.6 T-shirt

Attractiveness. Two-way ANOVA reported a main effect of motive on the willingness to pay of the t-shirt, $F(1, 142) = 3.226$, $p = .075$. Participants in the status group found the t-shirt more attractive than participants in the control group ($M = .281$, $SE = .159$). No statistically significant effect of product order was found.

WTP. Two-way ANOVA reported a main effect of conspicuousness on the WTP of the t-shirt, $F(1, 142) = 4.659$, $p = .033$. Participants were willing to pay a significant higher amount for the inconspicuous t-shirt than the conspicuous t-shirt ($M = 1.963$, $SE = .910$). Also a main effect of motive on the willingness to pay of the t-shirt was reported, $F(1, 150) = 5.239$, $p = .024$. Participants in the status group were willing to pay significantly more ($M = 2.082$, $SE = .910$) than participants in the control group. Two-way ANOVA reported a significant main effect of product order, $F(1, 142) = 3.215$, $p = .075$. Participants in order condition 2 were WTP a significantly higher amount ($M = 1.631$, $SE = .910$) than participants in order condition 1. An ANCOVA was run to determine the effect of motive and conspicuousness on t-shirt WTP after controlling for participants style and uniqueness perception of the product. The adjustments led to slightly higher significant differences between conspicuousness, differences between motive groups decreased slightly.

4.5 OTHER HYPOTHESES

To test the remaining hypotheses two-way ANOVA analyses were used to determine group differences on a continuous dependent variable (WTP) between different combinations of two independent, unrelated variables. Product order was run as an extra independent variable. Continuous independent variables were transformed to categorical variables by means of a median split⁵. Based on frequency tables an equal division was made in a low and high category. An overview of this division is found in the appendix. Signalling style and signalling uniqueness were used as covariates. In this way we made sure differences in WTP scores were based on product characteristics in line with the competitive altruism and costly signalling theory (perceived signal in pro-environmental qualities, perceived signal in pro-socialness and perceived signal in expensiveness). When main or interaction effects were found simple main effects were run by editing the syntax and applying a Bonferroni correction for multiple post-hoc comparisons.

Hypothesis 8 was tested with an independent-samples t-test. It was again chosen to use graphical methods such as a Normal Q-Q Plot to check whether the assumption of normality holds. To test whether homogeneity of variances existed was assessed by the Levene's Test of Homogeneity of Variance. Normal distribution of the data and homogeneity of variance was found, unless otherwise notated.

4.5.1 Narcissism

H₄: *Degree of narcissism and conspicuousness interact such that conspicuous products will receive a higher WTP when narcissism is high versus low whereas for inconspicuous products narcissism will have no effect on WTP*

After testing for all products, two-way ANOVA reported only a marginally interaction effect of narcissism and conspicuousness on the WTP of the t-shirt, $F(1,142) = 3.345$, $p = .069$. Post-hoc Bonferroni tests showed that participants who scored low on narcissism were willing to pay more ($M = 3.825$, $SE = 1.123$) to the inconspicuous t-shirt than the conspicuous t-shirt, $F(1,142) = 8.352$, $p = .004$. For the participants who scored high on narcissism, conspicuousness had no significant effect ($p = .683$). It was not found that conspicuous products will receive a higher WTP when narcissism is high versus low whereas for inconspicuous products narcissism will have no effect WTP. Therefore hypothesis 4 is rejected.

H₅: *The effect of a high degree of narcissism on the WTP of conspicuous products will be stronger in combination with personal (pro-environmental) norms, such that higher scores on personal norms in combination with a high degree of narcissism will lead to higher WTP for the conspicuous product*

For participants with a high degree of narcissism, those who scored high on personal norms scored significantly lower ($p < 0.1$) on WTP of the conspicuous lunch skin and bottle, compared to participants with high personal norms. In more detail, two-way ANOVA reported a significant interaction effect of narcissism and personal norms on the WTP of the conspicuous lunch skin, $F(1,72) = 3.764$, $p = .056$. For the high narcissism group, those scoring high on personal norms scored significantly lower on the WTP of the conspicuous lunch skin ($M = -2.156$, $SE = 1.097$) than those scoring low on personal norms, $F(1,70) = 3.764$, $p = .053$. For the low narcissism group, personal norms had no effect on WTP, $p = .474$.

⁵ When a two-way ANOVA reported a significant main or interaction effect, an additional multiple regression was run to check if the effect remained significant. In this regression, one continuous and one categorical IV was used. Interaction effects were obtained by manual calculations in SPSS.

For the conspicuous bottle, a similar relationship was found. For the high narcissism group, those scoring high on personal norms scored significantly lower on the WTP of the conspicuous bottle ($M = -3.292$ SE $=1.310$) than those scoring low on personal norms, $F(1,73) = 6.318$, $p = .014$. For the low narcissism group, personal norms had no effect, $p = .769$.

These two significant findings are opposite to what we expected. What these results tell us is that a person who scores relative high on narcissism, does not favour pro-environmental products because his or her personal norms are in line with it. On the contrary.

4.5.2 Need for Popularity

H₆: *NfP and conspicuousness interact such that conspicuous products will receive a higher WTP when NfP is high versus low whereas inconspicuous products will receive a higher WTP when NfP is low versus high*

The inconspicuous card and laptop sleeve indeed received higher evaluations when participants NfP was low versus high. For the conspicuous versions, NfP however had no effect. Hypothesis 6 is therefore rejected. The inconspicuous card received a higher WTP ($M=.654$, $SE=.325$) when NfP is low versus high, $F(1,140) = .053$. For the conspicuous card, need for popularity had no significant effect, $p = .531$. For the sleeve a similar effect was found. The inconspicuous sleeve received a higher WTP ($M=.3.054$, $SE=.1.697$) when NfP is low versus high, $F(1,139) = .074$. For the conspicuous sleeve, need for popularity had no significant effect, $p = .858$.

H₇: *The effect of a high NfP on the WTP of conspicuous products will be stronger in combination with injunctive norms, such that higher scores on injunctive norms will lead to higher WTP*

For the high NfP group, injunctive norms had no significant effect ($p < .1$). Hypothesis 7 is therefore rejected. Injunctive norms did not moderate the relationship significantly between NfP and the evaluation of conspicuous products.

4.5.3 Value-orientations

H₈: *Participants who score high on biospheric-values are willing to pay more on pro-environmental products than participants who score low on biospheric values*

An independent-samples t-test was used to determine mean differences on a continuous dependent variable (WTP) variable (WTP) between two groups of an independent variable (low vs. high biospheric values).

Table 3 shows that no significant differences were found that were in line with the hypothesis. Therefore hypothesis 8 is rejected. Participants were not willing to pay a higher amount for pro-environmental products when their biospheric values were high (vs. low). A closer look was given to the significant difference in the WTP of the sleeve. Participants who scored high on biospheric values were willing to pay less the laptop sleeve, independent of product conspicuousness, $F(1,139) = 8.824$, $p = .004$. Participants who scored low on biospheric-values were willing to pay more on the laptop sleeve ($M= 3.524$, $SE=1.213$) than participants who score high on biospheric values, $F(1,139) = 10.995$, $p = .001$. This finding is opposite to our expected findings. A possible explanation is that the participants thought that the laptop sleeve, independent of conspicuousness, had no significant benefit for the environment.

Table 3: : Difference in product WTP scores between high biospheric and low biospheric values

Independent-Samples T-Test					
Product	Mean difference	SE Difference	t	df	Sig.
Cup	-.781	.576	-1.356	140	.177
Card	.216	.234	.902	143	.369
Lunch skin	.006	.500	.127	146	.899
Bottle	-.238	.837	-.284	146	.777
Sleeve	-3.853	1.238	-3.113	148	.002
T-shirt	-.573	0.919	-.624	148	.534

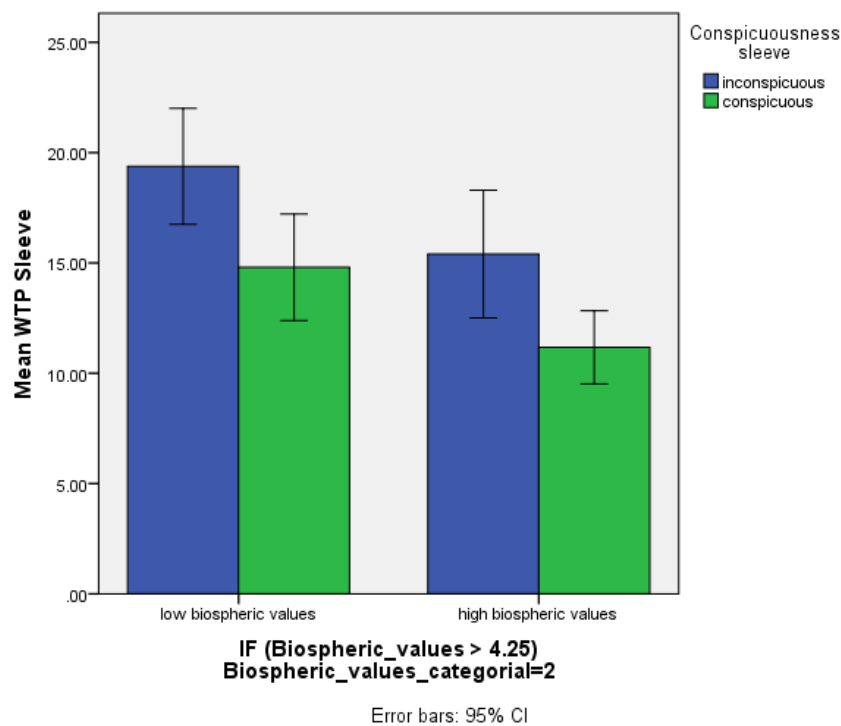


Figure 5: Simple main effect of conspicuousness and biospheric values on the WTP of the laptop sleeve

H₉: *Participants who score high on altruistic values are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on altruistic values conspicuousness has no effect on WTP*

As can be seen from Table 4, a significant difference on the laptop sleeve WTP was found between inconspicuous and conspicuous products for the participants who score high on altruistic values. This finding is however due to a main effect of conspicuousness, $F(1,139) = 11.837$, $p = .001$. Participants who scored low on altruistic values also scored lower ($M = -4.342$, $SE = 1.756$) on the conspicuous (vs. inconspicuous) laptop sleeve, $F(1,139) = 6.122$, $p = .015$. For the t-shirt, also a significant difference on the WTP was found between inconspicuous and conspicuous products for the participants who score high on altruistic values. Participants who scored high on altruistic values were willing to pay less for conspicuous

versus the inconspicuous t-shirt ($M = -3.118$, $SE = 1.263$) whereas for participants who score low on altruistic values conspicuousness had no effect on WTP, $p = .175$. A possible explanation for this finding is that the inconspicuous Wageningen UR shirt is already a strong signal for pro-environmental qualities. To put an additional logo of '100% organic' could be therefore less appealing to Wageningen UR students. We therefore reject hypothesis 9.

Table 4: Pairwise comparisons on high altruistic, mean difference on conspicuous vs. inconspicuous (DV: WTP)

Pairwise comparisons					
Product	Mean difference	SE Difference	F	df	Sig.
Cup	.549	.830	.438	132	.509
Card	.087	.333	.068	135	.794
Lunch skin	.105	.722	.021	138	.885
Bottle	-1.433	1.113	1.659	138	.200
Sleeve	-4.141	1.683	6.056	139	.015
T-shirt	-3.118	1.263	6.097	140	.015

Adjustment for multiple comparisons: Bonferroni

IV: conspicuousness, altruistic values, product order ; covariates: style and uniqueness

4.5.4 Goal-frames

H₁₀: *Participants who score high on normative goal-frames are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on normative goal-frames conspicuousness has no effect*

As can be seen from

Table 5, a significant difference on the t-shirt WTP was found between inconspicuous and conspicuous products for the participants who score high on normative goal-frames. This finding is however again due to a main effect of conspicuousness, $F(1,140) = 5.953$, $p = .016$. Participants who scored low on normative goal-frames also scored lower ($M = -1.931$, $SE = 1.163$) on the conspicuous (vs. inconspicuous) t-shirt, $F(1,140) = 2.758$, $p = .099$. We therefore reject hypothesis 10.

Table 5: Pairwise comparisons on high normative goal-frame, mean difference on conspicuous vs. inconspicuous (DV: WTP)

Pairwise comparisons					
Product	Mean difference	SE Difference	F	df	Sig.
Cup	.660	.890	.551	132	.459
Card	-.063	.368	.029	135	.866
Lunch skin	.303	.752	.162	138	.688
Bottle	-1.342	1.213	1.222	138	.271
Sleeve	-2.361	1.899	1.545	139	.216
T-shirt	-2.544	1.380	3.422	140	.066

Adjustment for multiple comparisons: Bonferroni.

IV: conspicuousness, normative goal-frame, product order ; covariates: style and uniqueness

H₁₁: *Participants who score high on gain goal-frames are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on gain goal-frames conspicuousness has no effect*

Two-way ANOVA showed one significant difference in WTP scores. Participants who scored high on gain goal-frames were willing to pay more ($M=1.665$, $SE=.801$) for the conspicuous cup versus the inconspicuous cup, $F(1,132)=4.323$, $p=.040$. For participants who scored low on gain goal-frames conspicuousness has no effect for the WTP of the cup, $p=.723$. Hypothesis 11 is therefore accepted for this product.

4.5.5 Norms

H₁₂: *Participants who score high on injunctive norms are willing to pay more for conspicuous versus inconspicuous products whereas for participants who score low on injunctive norms conspicuousness has no effect*

Two-way ANOVA's reported an significant interaction effect of injunctive norms and conspicuousness on the WTP of the bottle, $F(1, 138) = 3.102$, $p = .08$. Post-hoc tests revealed that for participants who scored high on injunctive norms were willing to pay an higher amount to the inconspicuous bottle ($M=2.251$, $SE=1.064$) than the conspicuous bottle, $F(1,138) = 4.463$, $p = .036$. For participants who scored low on injunctive norms, conspicuousness had no significant effect on the WTP of the bottle ($p = .667$). For all other products, no significant interact effect between injunctive norms and conspicuousness was found ($p < .10$). This finding is not in line with our hypothesis. When pro-environmental behaviour is commonly approved by a participant peers' (e.g. a participants scores high on injunctive norms) it was expected that these participants were willing to pay more to the conspicuous than inconspicuous bottle. In this case, the opposite is true. Hypothesis 12 is therefore rejected.

4.5.6 Social-demographics

H₁₃: *Marital status and conspicuousness interact such that singles will have a higher willingness to pay for conspicuous versus inconspicuous products whereas for people in a relationship conspicuousness will have no effect*

Post-hoc Bonferroni tests showed that singles scored significantly different between the conspicuous and inconspicuous cup, bottle and t-shirt. Singles were willing to pay more ($M=1.762$, $SE=.741$) for the conspicuous cup than the inconspicuous cup, $F(1,132)= 5.652$, $p = .019$. For participants in a relationship, conspicuousness had no significant effect on WTP of the cup, $p = .825$. In this case, the hypothesis is accepted. Singles were willing to pay less for the conspicuous bottle and t-shirt than the inconspicuous versions (see table 6). For participants in a relationship, conspicuousness had no significant effect on WTP of the bottle ($p=.524$) and the t-shirt ($p=.738$). In these cases, the hypothesis is rejected. For the three remaining products, no significant interaction effect ($p < .10$) of marital status and conspicuousness has been found. These mixed findings may imply that single students are not more status-driven than students in a relationship. This can be tested in an independent t-test with status goal-frames as continuous dependent variable and marital status (single vs. in a relationship) as categorical independent variable. Results showed that singles students have a higher status goal-frame than students in a relationship ($M=.115$, $SE=.153$) but that this difference is not statistically significant, $p = .546$.

Table 6: Pairwise comparisons on singles, mean difference on conspicuous vs. inconspicuous product (DV: WTP)

Pairwise comparisons					
Product	Mean difference	SE Difference	F	df	Sig.
Cup	1.762	.741	5.652	132	.019
Bottle	-2.603	1.036	6.311	138	.013

T-shirt	-3.877	1.167	11.042	140	.001
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Adjustment for multiple comparisons: Bonferroni

IV: conspicuousness, marital status, product order ; covariates: style and uniqueness

5. Conclusion and discussion

5.1 FINDINGS

In this thesis the effect of conspicuousness and status on the evaluations of pro-environmental products was investigated. **Error! Reference source not found.** Findings show that in only a few cases significant differences in evaluations were found. However, apart from two cases, the main and interaction effects found were in line with the first three hypotheses after controlling for perceived product style and uniqueness.

Participants evaluated conspicuous cards and bottles higher than their inconspicuous counterpart. However, for the laptop sleeve and t-shirt, the inconspicuous versions were higher evaluated (hypothesis 1). Participants in the status group evaluated the lunch skin and t-shirt higher than participants in the control group (hypothesis 2). Participants in the status group evaluated the conspicuous cup higher than inconspicuous cup whereas for participants in the control group conspicuousness has no effect on the evaluation of the cup (hypothesis 3).

A possible explanation for the fact that in only a few cases significant differences in product evaluations were found is that the pro-environmental qualities being signalled differed across products. It could therefore be that the signalling of some pro-environmental qualities (e.g. less use of chemicals, good stewardship) were preferred over others (e.g. reusability, recyclability). Another explanation is that almost all conspicuous pro-environmental products were not fully associated with being more expensive or pro-socialness when compared to their inconspicuous counterpart (only the conspicuous cup was associated with being more pro-social than the inconspicuous cup). Perhaps the signal being given was therefore not strong enough because the pro-environmental impact of the product was perceived as too small.

With respect to the question how different internal motives (e.g. degree of narcissism, value-orientations, goal-frames and norms) moderated the effect of product conspicuousness on pro-environmental product evaluations, a few statistically significant results have been found. Concerning degree of narcissism, results showed that higher scores on personal norms in combination with a high degree of narcissism did not led to higher but lower WTP scores for the conspicuous lunch skin and bottle. What this result tell us is that a person who scores relative high on narcissism, does not favour pro-environmental products because his or her personal norms are in favour of pro-environmental behaviour. Concerning value orientations, two significant results were found. Findings showed that participants who scored low on biospheric-values were willing to pay more on the laptop sleeve than participants who score high on biospheric values. This finding was opposite to our expected findings. A possible explanation is that the participants thought that the laptop sleeve, independent of conspicuousness, had no significant benefit for the environment. Participants who scored high on altruistic values were willing to pay less for the conspicuous versus inconspicuous t-shirt whereas for participants who score low on altruistic values conspicuousness had no effect on WTP. A possible explanation for this finding is that the inconspicuous

Wageningen UR shirt is already a strong signal for pro-environmental qualities. To put an additional logo of '100% organic' could be therefore less appealing to Wageningen UR students. With respect goal-frames, one significant results was found. Participants who score high on gain goal-frames are willing to pay more for conspicuous versus the inconspicuous cup whereas for participants who score low on gain goal-frames conspicuousness has no effect.

In the context of environmental behaviour, the goal-framing theory posits a gain goal-frame often put a person in an individual, selfish-like state-of-a-mind, which is in many cases not beneficial for the environment. The example of the conspicuous cup however shows that this does not always need to be true.

5.2 LIMITATIONS

There were a number of limitations in this research. The first one is the lack of pre-tests. Since no pre-tests were performed we could not measure on beforehand whether the conspicuousness manipulations were successful or not. Were conspicuous (vs. inconspicuous) products seen as having more pro-environmental qualities? For two products this was not the case. These products were therefore excluded in further analyses. In addition, none of the conspicuous pro-environmental products were perceived as more costly when compared to their inconspicuous version. Theoretically, these conspicuous products could therefore did not classify as a costly signal. Extensive pre-testing could have prevented this. A second limitation was the mistake that was made concerning product order. The idea was that the eight products would be evaluated in different orders to control for product order. However, the cup, backpack, headphone and card were always evaluated in the first group of four. The lunch skin, bottle, sleeve and t-shirt were always evaluated in the second group of four. The second group can thus be seen as 'contaminated' by the first. In every case, the participant has seen four inconspicuous or four conspicuous products before evaluating the second group of products. When product order was used as an extra independent variable, findings showed that product order in many cases had a significant interaction effect with conspicuousness manipulation. This shows that product order indeed interfered with conspicuousness. A third limitation is the use of purchase intentions rather than real purchases. This implied that participants were not given a real signal as they didn't actually bought the product. They didn't actually have to think about wandering around with one of the products on the campus. This may contributed to the fact that the conspicuousness manipulation had no sufficient strength as there was no real purchase that could have social implications to the participants peers.

5.3 RECOMMENDATIONS AND FUTURE DIRECTIONS

There are many research examples that have shown that people act more pro-social or more pro-environmental when status and image benefits are involved (Rege and Telle 2004; Griskevicius, Tybur et al. 2010; Van Vugt and Hardy 2010; Kimura, Mukawa et al. 2012). For example, Griskevicius, Tybur et al. (2010) showed that when shopping in public, status motives increased the attractiveness of pro-environmental products over non-green products. However, in this research the lack of significant differences in product evaluations may indicate that this increase in consumer evaluations couldn't be solely explained by a perceived difference in pro-environmental signalling power or the activation of status motives. When the pro-environmental benefits of a product are more visible, this does not automatically imply that the owner is accredited a higher social status as the purchase of pro-environmental products is not automatically construed as being more altruistic or costly.

Another explanation and avenue for future research is that the importance of the perceived salience of pro-environmental qualities might differ among products. For pro-environmental products that are higher priced, have a more obvious benefit for the environment, and are more associated as being a symbol of status (e.g. hybrid or electric bicycles, cars or even solar panels) pro-environmental conspicuousness might matter more. These assumptions would fit in the theory of competitive altruism and costly signalling the recent research examples that have focused on these type of products (Saad and Vongas 2009; Dunn and Searle 2010; Beattie and Sale 2011; Sexton 2011; Gatersleben 2012)

What could also be valuable is to make the consumption behaviour of the respondent more susceptible to the evaluation of others. This can either be done by adding a factor of social influence in the experiment. A means to achieve this is to make use of real purchases rather than purchase intentions. Another way could be that the participants are in some way involved to evaluate the product choice of their predecessor. In this way, the salience of pro-environmental product should matter more and this could have implications to whether the signalling strength of pro-environmental products matter or not.

Finally, it might be interesting to research at which ages people are more likely to engage in conspicuous pro-environmental behaviour. Until now, much of the research has been focused at students (Griskevicius, Tybur et al. 2010; Sundie, Kenrick et al. 2011) but it is likely that other groups, such as starters, are more concerned with reputational concerns and therefore are more effective candidates for leveraging their ancestral tendencies for relative status to help eliminate or alleviate environmental problems.

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7.1 MOTIVE MANIPULATION

General introduction: Memory test

You completed the part on values and environmental decision-making and have entered a new part of this study. In this part, you will read a story. Please read this story carefully as you will be asked to recall information about the story later on in this research. As a tip, when you read, try to imagine yourself in the scenario and try to feel the emotions and feelings that the person is experiencing.

When you have read the story fully proceed to the next page.

Status story

Imagine you recently graduated from college. You were offered several jobs and decided to go work for a well-known and powerful company. Besides paying well, this job offers you the greatest chance of moving up—assuming you can prove that you have what it takes.

As you pull into the parking lot on your first day of work, you immediately notice that the lot is full of expensive new cars. Walking to your building, you eye these impressive vehicles and think about the kind of car you should get now that you've graduated, perhaps an upscale luxury sedan or a new sports car. You imagine yourself driving through town in a sparkling new car and you feel yourself becoming more motivated. Entering the lobby, you're impressed by how upscale everything looks—the antique furniture, the artistic decorations, the designer clothing. You're thrilled to be working at such a prestigious company and you feel that this is exactly the kind of job you deserve.

As you wait, another person sits down next to you. A minute later a third person also takes a seat. The two are dressed in brand new business suits, and they're about the same age as you. Each one briefly looks at you, smiles slightly, and says hello. Both of them look a little nervous and you sense that these are probably your new colleagues. Looking at them out of the corner of your eye, you feel both excited and a little anxious. You imagine how much fun it would be to have colleagues with whom you can talk about the new job. But looking at their facial expressions and their body posture, you feel a sense of competition in the air. You realize this job isn't a game. You're not in school anymore.

Your new boss finally comes out and greets everyone. As all three of you walk into the large corner office, everyone sits down. "You're all very fortunate to be here. The company hires only a few people out of thousands of applicants each year." Hearing that you beat out thousands of people to get here sends a rush of pride through your body.

"In the next few months, all three of you will both work independently and together. You're going to get to know each other pretty well." As the atmosphere seems to relax a little, you look around the room and everyone smiles.

But the boss continues: "Starting today each one of you will get a small cubicle. But we don't expect you to stay there. After 6 months, one of you will be fired." Hearing this news sends a shiver down your spine. You quickly scan the room. The other two people are trying to suppress any look of concern and show a confident side to the new boss. You remind yourself that you were hired for a good reason and that you deserve a spot at the top. You sit up straighter and put on a confident expression.

"Although one of you will be fired," the boss goes on, "the person who does the best will not only get a promotion, but they will get a large bonus and will be put on the fast track to the top." Pointing to the grand window offices down the hall, the boss finishes: "I see a lot of potential in all of you, but only one of you will make it into one of those big offices. You have 6 months to show everyone what you're made of."

You know there will come a day in 6 months when your boss will again call all three of you into the office. Feeling your heart beating faster, you're anxious and excited. As your boss finishes up the speech, you're so eager to get started that you can't

even pay attention anymore. Finally, your boss stops and points at each of you in turn, "Go out there and show us what you've got!" Your eyes open wide and a rush of adrenaline pumps through your body. You feel like letting out a yell and running out the door to get started. Seeing your two colleagues in the background, you walk out of the office with a rush of anticipation in hopes of achieving something that few people ever have the chance to do...

Control story

Imagine that it's Tuesday afternoon during the semester. Your classes are pretty difficult this semester, and you've been getting pretty stressed out about everything that you need to do. You are hanging out at home doing homework, but it's getting boring and you're feeling tired. You know that you still have to go run some errands before it's too late, so you decide to get started.

As you go to get your keys and wallet from the counter, you only find your wallet. The keys are nowhere in sight. Thinking that it's a little awkward, you feel your pockets. No keys in there either. You try to think back to where you last saw the keys, but you can't exactly remember. You know you had it yesterday, and you're usually pretty good about leaving your keys right next to your wallet.

You sometimes put your keys in your backpack, so that seems the logical place to look. You search through your bag. Books, folders, pens, but no keys. You turn the bag upside down and shake it. Nothing but junk. Now you start getting a little annoyed, and a little worried. Where the heck are your keys?

You decide to search around the house. You look all around your desk. You open the drawers. You search deep in the drawers. But it's not anywhere. You look through your bedroom floor, but all you find is junk.

Getting more desperate, you look through the laundry. Maybe they're in another pocket somewhere? You find some pieces of paper, but no keys. Feeling more upset, you go into your closet and start throwing things to the floor—no keys. You run to the kitchen and start looking on the counters. You open all the cupboards and drawers. You have no idea why the keys would be there, but you need to look somewhere. In fifteen minutes, your kitchen looks like a disaster area. But still no keys!

You're feeling really frustrated at this point. You think back to when you last remember having the keys and try to retrace your steps. You clearly remember having them yesterday, but you just don't know where you put them. You hope you didn't leave them somewhere. You really don't need another thing to worry about right now.

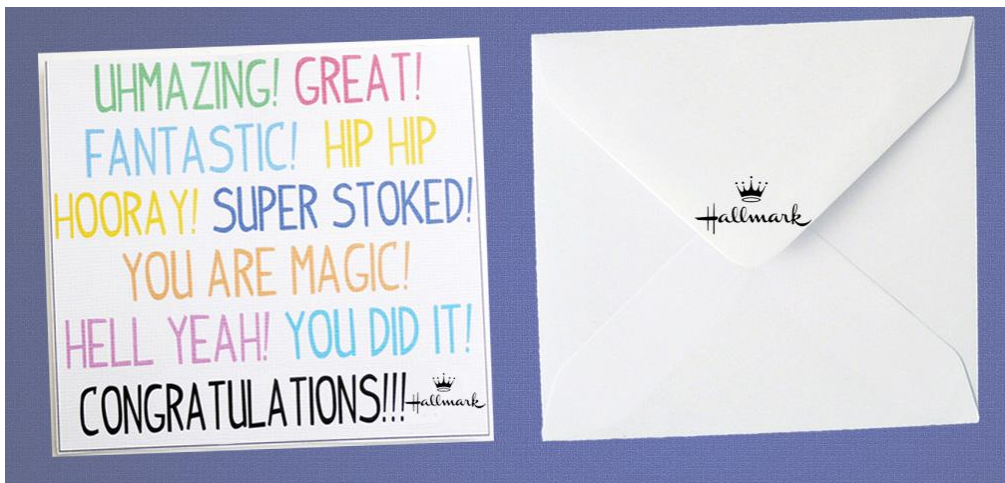
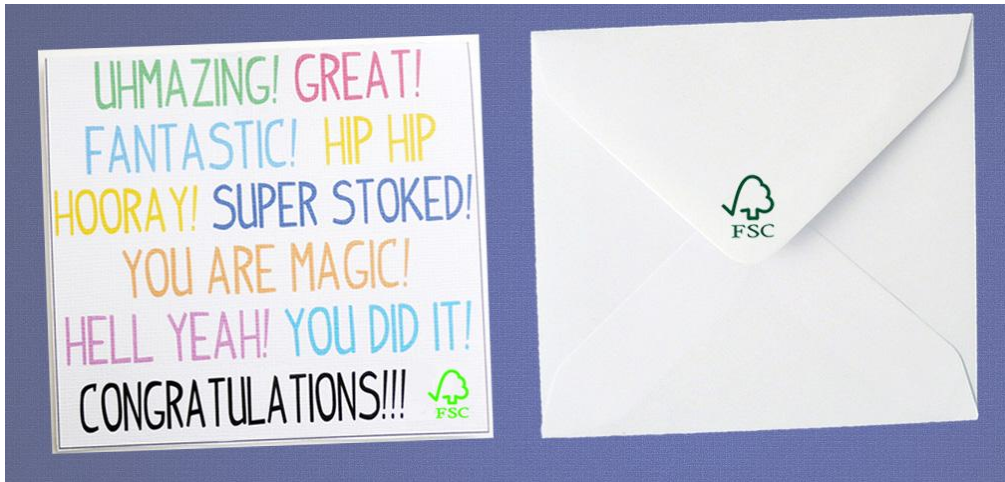
Remembering that you had gone outside to take out the garbage earlier, you run out into the driveway. Maybe the keys fell out there? You look in the grass, the bushes, underneath cars. You see nothing. You think to yourself: did I really lose my keys? As you walk back inside the house in frustration, you feel as though you're ready to pull out your hair. Your keys have disappeared. You knew this was coming sometime, but why now. It's so annoying.

You plop onto your living room couch. Sighing, you look back to the counter where you normally put your keys. To your astonishment, there they are. Your keys are on the counter! How could you have missed them? You can't believe it. Something like this always happens to you.

You sit back down to take a breather, shake your head, and put your hand on your chest. Wiping the sweat that was beginning to form on your forehead, you begin to laugh. You don't think you've ever felt so relieved in your life. They were just keys, but you had gotten so upset. Your relief quickly turns into elation. You want to shout to everyone just how great you feel. In a fantastic mood, you leave the house to run your errands.

7.2 CONSPICUOUSNESS MANIPULATION

Card



Cup



Headphone



T-shirt



Backpack



Bottle



Laptop Sleeve



7.3 SIGNALLING SCORES (MEANS)

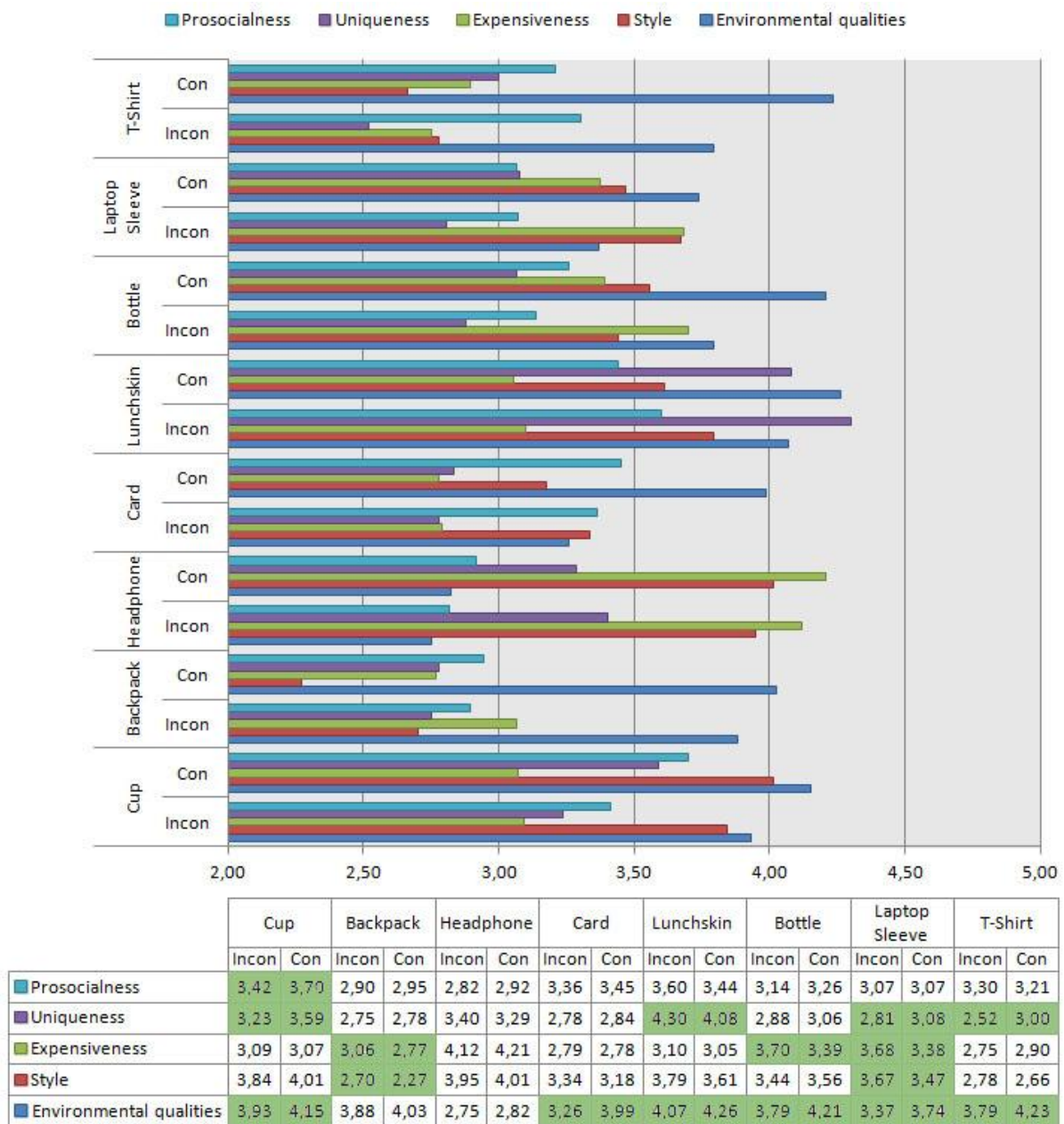


Figure 6: Signalling scores (means)

Measured on a 5-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Green blocks indicate significant difference in signalling score on $p < 0.1$ level.


7.4 COMPONENT LOADINGS

Table 7: Component loadings of the construct value orientations

Rotated Component Matrix ^a			
	Component		
	1	2	3
EQUALITY (equal opportunity for all)	-.085	-.082	.737
RESPECTING THE EARTH (harmony with other species)	.828	-.076	.143
SOCIAL POWER (control over others, dominance)	.236	.751	-.105
UNITY WITH NATURE (fitting into nature)	.822	-.014	.073
A WORLD AT PEACE (free of war and conflict)	.271	.073	.719
WEALTH (material possessions, money)	-.200	.699	-.064
AUTHORITY (the right to lead or command)	.083	.837	-.010
SOCIAL JUSTICE (correcting injustice, care for the weak)	.236	.079	.748
PROTECTING THE ENVIRONMENT (preserving nature)	.849	.074	.224
INFLUENTIAL (having an impact on people and events)	.100	.635	.177
HELPFUL (working for the welfare of others)	.256	.153	.632
PREVENTING POLLUTION (protecting natural resources)	.850	.125	.182
AMBITIOUS (hard-working, aspiring)	-.109	.608	.292

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

7.5 A COPY OF THE EXPERIMENT IN QUALTRICS

 **WAGENINGEN UR**
For quality of life

Let the surveyor fill in your respondent number.

Welcome to this study!

This study is about environmental decision making and consist of several parts. Each part begins with an instruction. Please fill in each part with care. Remember that there are no right or wrong answers.

This study will take approximately 20 minutes.
To proceed with the next question click ">>".

Thank you in advance for your cooperation!

>>

Survey Powered By [Qualtrics](#)

Informed consent form

Before you start with this research it is important to carefully read the following points.

- Your participation in this study is voluntary
- You may withdraw and discontinue participation at any time without penalty
- Your responses will remain anonymous and confidential

I have read and understand the explanation and I

☐ Agree and continue with this study

☐ Disagree (end of this research)

>>

Personality

In this part a number of personality related questions will be asked. In total you will be asked to fill in three different sets of questions.

>>

Below you will find sixteen pairs of statements. Read each pair and select the one that comes closest to describing your feelings and beliefs about yourself. You may feel that neither statement describes you well, but pick the one that comes closest. Please complete all pairs.

I know that I am good because everybody keeps telling me so	<input type="radio"/> <input type="radio"/>	When people compliment me I sometimes get embarrassed
I like to be the center of attention	<input type="radio"/> <input type="radio"/>	I prefer to blend in with the crowd
I think I am a special person	<input type="radio"/> <input type="radio"/>	I am no better or nor worse than most people
I like having authority over people	<input type="radio"/> <input type="radio"/>	I don't mind following orders
I find it easy to manipulate people	<input type="radio"/> <input type="radio"/>	I don't like it when I find myself manipulating people
I insist upon getting the respect that is due me	<input type="radio"/> <input type="radio"/>	I usually get the respect that I deserve
I am apt to show off if I get the chance	<input type="radio"/> <input type="radio"/>	I try not to be a show off
I always know what I am doing	<input type="radio"/> <input type="radio"/>	Sometimes I am not sure of what I am doing
Everybody likes to hear my stories	<input type="radio"/> <input type="radio"/>	Sometimes I tell good stories
I expect a great deal from other people	<input type="radio"/> <input type="radio"/>	I like to do things for other people
I really like to be the center of attention	<input type="radio"/> <input type="radio"/>	It makes me uncomfortable to be center of attention
People always seem to recognize my authority	<input type="radio"/> <input type="radio"/>	Being an authority doesn't mean that much to me
I am going to be a great person	<input type="radio"/> <input type="radio"/>	I hope I am going to be successful
I can make anybody believe anything I want them to	<input type="radio"/> <input type="radio"/>	People sometimes believe what I tell them
I am more capable than other people	<input type="radio"/> <input type="radio"/>	There is a lot that I can learn from other people
I am an extraordinary person	<input type="radio"/> <input type="radio"/>	I am much like everybody else

>>

Here are a number of personality traits that may or may not apply to you. Please indicate next to each statement the extent to which you agree or disagree with that statement. You should rate the extent to which the pair of traits applies to you, even if one characteristic applies more strongly than the other.

I see myself as:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Extroverted, enthusiastic.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Critical, quarrelsome.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dependable, self-disciplined.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Anxious, easily upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Open to new experiences, complex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserved, quiet.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sympathetic, warm.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Disorganized, careless.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Calm, emotionally stable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conventional, uncreative.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>

This is the last set of personality related questions. Please indicate next to each statement the extent to which you agree or disagree with that statement.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I have done things to make me more popular, even when it meant doing something I would not usually do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've neglected some friends because of what other people might think.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times, I've ignored some people in order to be more popular with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'd do almost anything to avoid being seen as a "loser."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's important that people think I'm popular.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times, I've gone out with people, just because they were popular.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've bought things, because they were "in" things to have.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times, I've changed the way I dress in order to be more popular.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've been friends with some people, just because others liked them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I've gone to parties, just to be part of the crowd.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I often do things just to be popular with people at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times, I've hung out with some people, so others wouldn't think I was unpopular.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>

Values and environmental decision making

You completed the *personality related questions* and have entered a new part of this study. In this part you will be asked to fill in questions related to your values. When completed the rest of the questions relate to environmental decision making.

>>

Below, thirteen values are described. The explanation of each value is given in the parentheses following each value. Please indicate how important each value is for you **AS A GUIDING PRINCIPLE IN YOUR LIFE**.

Use the scale rating below:

0 means the value is not at all important, it is not relevant as a guiding principle for you.

3 means the value is important.

6 means the value is very important.

-1 is for rating any values **opposed** to the principles that guide you.

7 is for rating a value of supreme importance as a guiding principle in your life; **ordinarily there are no more than two such values.**

The higher the number (0, 1, 2, 3, 4, 5, 6), the more important the value is as a guiding principle in YOUR life. Try to distinguish as much as possible between the values by using **different numbers**.

Please indicate how important each value is for you **AS A GUIDING PRINCIPLE IN YOUR LIFE**.

	<i>opposed to my values</i> -1	<i>not important</i> 0	1	2	<i>important</i> 3	4	5	<i>very important</i> 6	<i>of supreme importance</i> 7
EQUALITY (equal opportunity for all)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
RESPECTING THE EARTH (harmony with other species)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL POWER (control over others, dominance)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
UNITY WITH NATURE (fitting into nature)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A WORLD AT PEACE (free of war and conflict)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
WEALTH (material possessions, money)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AUTHORITY (the right to lead or command)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SOCIAL JUSTICE (correcting injustice, care for the weak)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PROTECTING THE ENVIRONMENT (preserving nature)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
INFLUENTIAL (having an impact on people and events)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
HELPFUL (working for the welfare of others)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PREVENTING POLLUTION (protecting natural resources)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AMBITIOUS (hard-working, aspiring)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below, 23 statements are presented that relate to environmental decision making. For each statement, please indicate to what extent you agree or disagree.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Buying environmentally friendly products makes me feel uncomfortable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy being green	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behaving in an environmentally friendly way feels good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I buy environmentally friendly products, I do so mainly because it makes me feel good	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behaving in an environmentally friendly way is cheaper in the long run	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Buying environmentally friendly products saves me money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I spend a lot of money in order to be green	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behaving in an environmentally friendly way is expensive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I buy environmentally friendly products, I do so mainly because it saves me money	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behaving in an environmentally friendly way is normal	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It's good to purchase environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends behave in an environmentally conscious way	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I purchase environmentally friendly products, I do so mainly because it's morally right	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I purchase environmentally friendly products, I do so mainly because it's what everyone else does	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each statement, please indicate to what extent you agree or disagree.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Behaving in an environmentally friendly way will make people like me better	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
More people will like me if I purchase environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People will compliment me if I am environmentally conscious	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I buy environmentally friendly products, I do so mainly because it will help me fit in	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Behaving in an environmentally friendly way will improve my reputation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People will look up to me if I purchase environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
What my friends think about my green consumption behaviour is important to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I want to be seen as someone who cares about environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To the extent that I buy environmentally friendly products, I do so mainly because it is good for my image	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Below you will find the last sets of questions related to environmental decision making. Again, please indicate to what extent you agree or disagree for each statement.

For each statement, please indicate to what extent you agree of disagree.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
I feel a moral obligation to protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I should protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel it is important that people in general protect the environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Our environmental problems cannot be ignored	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For each statement, please indicate to what extent you agree of disagree.

	Strongly Disagree	Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Agree	Strongly Agree
Most people who are important to me think that purchasing environmentally friendly products is desirable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people who are important to me think that I should buy environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would buy an environment friendly product for the recognition I get from others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people have an interest in environmentally friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I think that many other shoppers are purchasing environment friendly products	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Memory test

You have completed the part on *values and environmental decision making* and have entered a new part of this study. In this part you will read a story on the next page. Please read this story carefully as you will be asked to recall information about the story later on in this research. As a tip, when you read, to try imagine yourself in the scenario and try to feel the emotions and feelings that the person is experiencing.

When you have read the story fully proceed to the next page.

>>

[Motive story, see appendix 7.1]

You have read the story and completed this part of the research. Because it is important to let some time pass before the memory recall question will be asked (to allow for memory decay), we ask you to work out a number of product evaluations.

>>

Product evaluations

You have entered a new part of this research. In this part you will evaluate eight products.

The reason for this is that Wageningen UR is currently planning to expand the student University shop (the WUR-shop located in the Forum) in order to launch a number of new products. Some of these products will be environmental-friendly. At the moment the WUR-shop takes into consideration which environmental-friendly products to offer and wants to take the opinion and preferences of students like you into account.

In the following part questions will be shown to you that relate to eight environmental friendly products the WUR-shop will possibly take into the assortment. Please evaluate each product carefully.

>>

[Example product evaluation]

1. Reusable ceramic cup's

Turn your everyday disposable cup into a stylish reusable mug. Ideal for coffee or tea.

Product features:

- Double walled; thermal ceramic cup with silicone top.
- Microwave and dishwasher safe
- Environmental friendly due to 100% reusable use-ability
- Capacity: 300 ml
- Available colors: pink, blue or green



What do you think that this product signals?

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Environmental-friendly qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Style	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expensiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Uniqueness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prosocialness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much would you be willing to pay (in euros) for this product?



How much do you like this product?
(use the slider to change the smiley)

How attractive is this product to you?

Very unattractive



Moderately unattractive



Mildly unattractive



Neutral



Mildly attractive



Moderately attractive



Very attractive



>>

You completed all product evaluations. Have you seen the product image every time you evaluated a product?

☐ Yes

☐ No

Please continue to the final parts of this research.

>>

Personal details

This part of the research includes questions related to your personal details.

What is your gender?

☐ Male

☐ Female

What is your age?

What is your nationality?

☐ Dutch

☐ Other:

What is your marital status?

☐ Single

☐ In a relationship

☐ Cohabiting

☐ Other

Do you live in Wageningen?

☐ Yes

☐ No, I live in:

What do you study?

>>

Debriefing

This is the end of this research. Thank you for your time. Please walk to the surveyor to collect your snack. Here you can write down your name and e-mail if you want to make a chance to win a gift coupon of bol.com. These coupons vary in worth from 5, 10, 25 to 50 euro's. The lucky winners will be randomly drawn and will receive an e-mail at the end of February.

Purpose

The main purpose of this study is to examine your product evaluations and see how this relates to the tests you filled in before these evaluations.

Deception

As you might have noticed deception was used in this study. The long story you read was not intended to test your memory. It was used for priming. Secondly, the WUR-shop is not involved in this study. This means that the story you read was fictive.

Final report

To receive answers to why and for what purpose deception was used (and what priming is about) we would like to send you a copy of the final report. If you are interested in this you can indicate this on the same form you fill in your name and e-mail to possibly win a gift coupon.

Confidentiality

As stated earlier, all your responses will be treated as absolutely confidential. In return, we ask you to honor our confidentiality --please do not tell anyone about the details of this study before March. If the other students know about the purpose of this study before they participate, their data will be biased and thus cannot be included. If this happens it could for example mean that your participation in this study is useless as well. Please be aware of this and honor our confidentiality.

If you have any questions or comments related to this research (such as how this research can be improved) please write them down here.

Click ">>" to end the research.

>>

7.6 MEDIAN SPLIT GROUP DIVISION

Construct	Median split value	% Participants in low group
Injunctive norms	3.5	48
Degree of narcissism	.2	47.3
Personal norms	5.75	52.7
Need for popularity	2.55	50
Biospheric values	4.25	50
Altruistic values	4.75	48.7
Egoistic values	2.6	48.7
Normative goal-frame	2	58
Gain goal-frame	4.75	44.7
Status goal-frame	3	54