



Netherlands Institute  
for Sustainable Packaging

# Sustainable consumer behaviour and packaging

A theoretical report

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## Colophon



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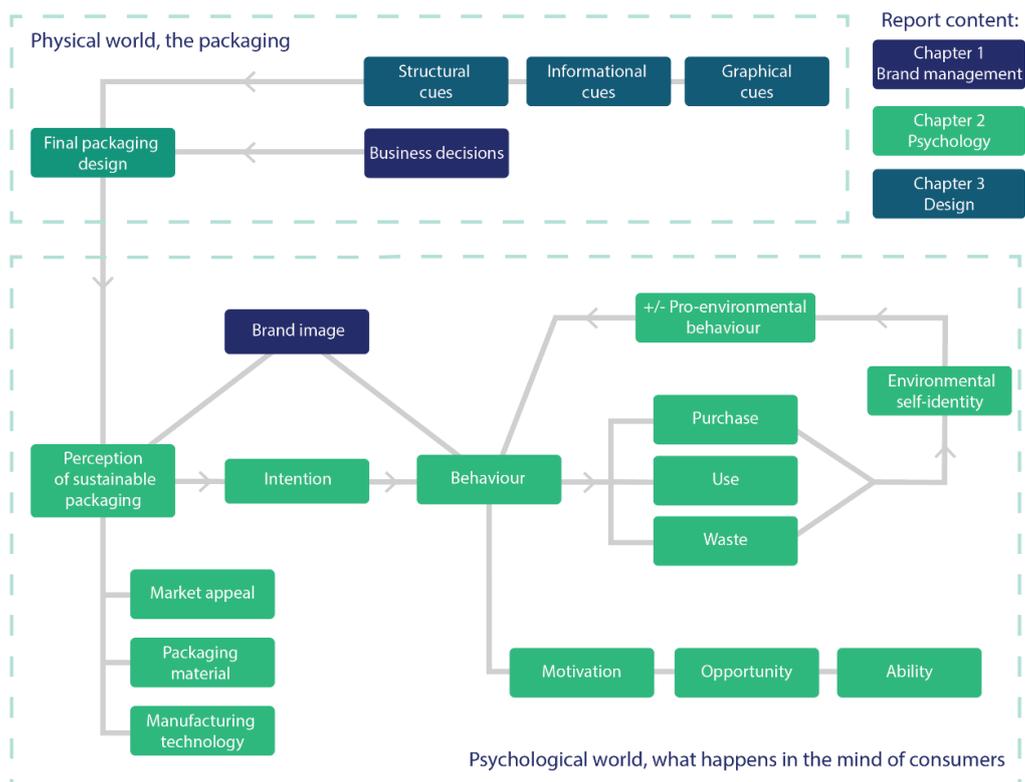
# Introduction

Society is constantly changing, and one trend is the need for more sustainable products and services. Next to companies, the government and consumers are also responsible for the transition towards more sustainable products (and packaging). To be a thriving company, consumers need to buy its products. Therefore, it is important to incorporate consumer behaviour in the packaging development process. Regarding the sustainability trend and the challenge of the sustainability transition, knowledge about sustainable consumer behaviour is a must.

The current report has been developed to help companies face the complexity of sustainable consumer behaviour. It is part of a tool pack including an interactive infographic and a physical Cues Cube as well, you can find these on the KIDV website. This theoretical report aims to provide a comprehensive overview of factors companies can consider. It will explain an overview of consumer behaviour and how companies can stimulate sustainable consumer behaviour through packaging design. The goal is to inform companies, give advice and inspiration on how to deal with sustainable consumer behaviour. The report mainly focuses on food packaging since most research has been done on food packaging. And the report focuses on the in-shop context, not on e-commerce. Finally, the report provides the theoretical background. For more practical advice and examples on the topic, look into the [infographic](#) on the website.

The report explores three main topics: brand management, psychology and design. All three provide insights about why, what and how to apply sustainable consumer behaviour knowledge. A summary of the knowledge can be found in the theoretical model below (figure 1). The physical world (the packaging itself) represents the factors companies can adjust to change the psychological world (the perception and behaviour of the consumer). A small reminder, the facts are meant as advice and reminder. Every packaging product combination is different, and there is no one way to go. Facts cannot be seen as strict rules to comply with. One of the most important goals remains the function of packaging and finding the right balance between the packaging's environmental impact versus the prevented food waste impact.

Figure 1: Theoretical model and the corresponding chapters in this report





## Brand management perspective

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Sustainability has been seen as a driver for innovation and growth [1], and companies are encouraged to act in a more responsible way [2]. There is global growth in green trends and consumer awareness on sustainability [3]. For instance, more consumers have been searching for terms like 'plastic soup' and 'litter' on Google since 2014 [4]. Furthermore, consumers have been searching for more sustainable goods globally since 2016 [5]. Companies who engage in Corporate Social Responsibility (CSR) activities may experience increased sales, reduction of costs and improved new product developments [6]. High sustainable companies outperform competitors in terms of the stock market and accounting performance [7]. Other studies also confirm a positive relation between environmental performance and financial performance [8, 9, 10]. Furthermore, the environmental performance of a company could be beneficial for the recruitment process since employees at a company may feel more pride and loyalty for the company when sustainability is implemented [11]. It may attract more qualified employees [12]. To sum up, a company's survival and prosperity perspectives goes beyond profits and requires a purpose as well [13].

### Role of packaging design for companies

Packaging design is of great importance for a company, since it is a valuable communication vehicle [14]. Packaging is a brand-related stimulus, just like any other marketing communication (e.g., advertisements) [15]. Packaging is a critical factor in creating and delivering the brand identity [16] and is part of the brand experience [15]. Therefore, with sustainable packaging, a company can differentiate itself from competitors [17] and stand out, since consumers see packaging as an environmental burden [18]. It is thus an important factor in product marketing [19]. Packaging promotes the brand and reinforces the purchase decision every time the product is being used [20]. It becomes even more interesting when millennials are the target group, since they have started to reject traditional advertising (e.g., TV ads), but the brand's message can still be communicated on the packaging [21].

### (Sustainable) packaging benefits during the purchasing phase

- Packaging helps consumers to identify the promise of a product [22] and whether the product meets the consumer's objectives (e.g., sustainability goals) [23].
- Consumers may feel attracted to sustainable packaging since they can identify themselves with the packaging and sustain a green(er) self-identity [24]. It is known that brand identity involves self-expressive benefits for consumers [25]. For instance, excessive packaging can negatively impact the green brand image [26].



- 50% to 70% of the purchase decision are made in-store at the point of sale [14] and other studies found that it is even more than 70% [27].
- On average, a consumer takes 12 seconds to make a purchase decision, thus it is important for sustainable packaging to attract attention at the point of sale. Sustainable packaging is hard to recognise for consumers [28].
- Sustainable packaging can generate green trust [29, 30]. This can be beneficial, since trust influences consumers' behaviour [31], for instance, it can stimulate the consumers' commitment to a brand [32]. When the brand attachment is high, consumers are more willing to pay for it [33].

## Price

Research shows mixed findings about pricing sustainable packaging. The facts are summed up below.

- Consumers can trade-off many product features for sustainable packaging, except for price and taste [34].
- People are willing to pay a higher price when sustainability is well communicated on the packaging, since they acknowledge more efforts being made for creating sustainable packaging [35].
- People are willing to pay a premium price for biodegradable packaging [36, 37, 38].
- In one study, most of the participants (70%) were able to pay 1-5% more for sustainable packaging [146]. In another study, 44% of consumers would be willing to pay €0,10 extra for green packaging [39].
- Factors such as performance, durability and convenience also steer the decision-making process [40].

## Greenwashing

The number of products that have been called 'green' has grown [41]. A company can show they care about the environment through green advertising by highlighting its efforts for a responsible corporate image [42]. However, green advertising must be done with care since consumers are sceptical of its credibility [42]. Consumers seem to be more aware of greenwashing than before [43]. Eco-friendly communication must be credible [18], which can be achieved by using logos (certifications) from independent organisations [44]. Check the factsheet "[Symbols on packaging](#)" for an overview of symbols one can use on the packaging. The lower the actual sustainability of packaging, the higher the perceived greenwashing effect. One must only make a claim when the packaging's and product's performances match the claim [45]. When a company makes a claim containing an emotional connotation, it should be supported by real actions of the company, otherwise consumers will believe that the claim has only been made for financial reasons [24].

Thus, it is better to communicate why a company chooses a specific packaging design than to make a wrong claim. When consumers find out that the claim does not make sense, the effects on the brand image may be dramatic, perhaps even worse than if a brand is honest about less perceived sustainable packaging. For instance, packaging with an outer paper layer and an inner aluminium layer attached to each other is not per se more sustainable than just plastic packaging. It may also confuse the consumer during the disposal behaviour. For example, they may throw it away in the paper bin since it looks like paper packaging. More information on claims can be found in the factsheet "[Environmental claims](#)" on the KIDV website.

## Strategies for implementing sustainability

A company can apply (re)design strategies in the transition towards (a more) sustainable packaging. Keep in mind that one strategy for a packaging's redesign is enough since multiple strategies for a redesign do not lead to a higher sustainability perception of the redesign, and consumers are not more willing to buy [46]. In addition, circular design strategies (e.g., biomaterials) are rated as more positive than linear redesigns (e.g., packaging light-weighting) [46].



Packaging producers and brand owners must design packaging which is acceptable for consumers [47]. Companies can use the Most advanced yet acceptable (MAYA) principle to design and evaluate new packaging designs based on two dimensions, the consumers' acceptability (familiarity) and how advanced it is (innovative) [48]. For more information on how the MAYA principle works, [click on this link](#). When the packaging design is too unfamiliar after a redesign, it may be more difficult to categorise the packaging for consumers [49]. On the other hand, consumers may not notice the improved sustainability effects when one keeps the same packaging appearance for a more sustainable packaging [50]. For a new packaging design, it is extra important that the design helps understand how to use the packaging (e.g., opening, dispensing, reclosure and disposal) [51]. You can find KIDV's report "[Duurzaam door\(ver\)pakken](#)" for inspirational examples of companies who made big steps into the transition towards sustainable packaging on the website.

A communication strategy can highlight the perceived benefits to convince consumers in purchasing their packaging [18]. There are many perceived benefits from sustainable packaging for consumers, like health-related aspects, convenience, social value, protection of environment, emotional value and decrease in price (less material) [18]. Consumers may also see perceived costs for sustainable packaging. Sustainable packaging may give a lower user experience, aesthetic costs (less visually attractive), decreased perceived quality, hygiene, protection, higher price, lack of credibility [18].

On a business level, one can use the following general strategy for implementing sustainability in the organisation, see figure 2. Starting from a strategic level to operation, to marketing implementing it in the branding [52].

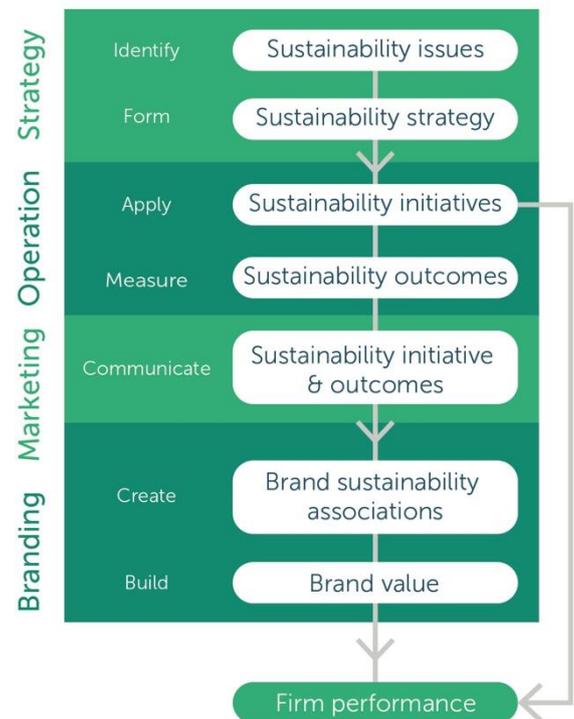


Figure 2: implementing sustainability in the organisation [52]



## Psychology perspective

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This chapter will dive into the psychological world of the consumer. What factors are important to consider in designing and developing sustainable packaging? The interaction with the packaging starts with perceiving the packaging. The perception of packaging and a consumers' intention will lead to a certain behaviour. Subsequently, consumers will evaluate their own behaviour (e.g., feeling good after recycling), which can contribute to sustainable consumer behaviour in the future.

### Perception

One reoccurring topic which influences the perception is the consumers' knowledge gap. They have little knowledge about packaging. Several researchers have found a link that knowledge could trigger sustainable behaviour [53, 54, 55], and the knowledge gap can be a big barrier for consumers to act pro-environmentally [56]. However, there are studies that question if knowledge can help [57, 58]. For example, knowing does not mean doing, and a direct experience has a higher impact on people's behaviour [59].

Consumers evaluate the packaging's sustainability based on three characteristics: market appeal, packaging materials and manufacturing technology [60]. The most important factors are summarised below.

#### *Market appeal*

- It concerns eco-friendly expectations regarding graphic design, price, and performance [60].
- Visual aspects of packaging play a role in meeting expectations and on the consumers' decision at the point of sale [61, 62]. More on visual cues in the design perspective chapter.
- Communicate the brand values (e.g., sustainability) through the aesthetic appearance [63].

#### *Packaging materials*

- Consumers use the packaging material to evaluate the perceived environmental impact of the packaging [39].
- Consumers have little knowledge about packaging materials, and there is a gap between the Life Cycle Analysis outcomes and the consumers' knowledge of sustainable packaging materials [47]. For instance, a terminology gap and inconsistent consumer attitudes towards sustainable packaging highlight this gap [64].
- The perceived sustainability is influenced by factors such as education, gender, age, personal background, and social-cultural awareness [65].
- Plastic has a low perceived sustainability rating, whereas paper packaging receives the highest sustainability rating [47, 66, 67]. However, plastic can be more eco-friendly than paper for aspects such as the water and energy consumption for the production [68], the sustainability of a material depends on the application of the material. Furthermore, metal packaging has a low perceived sustainable rating, whereas glass, bioplastics and

paper are perceived as the most sustainable [47]. Keep in mind, perceived sustainability says nothing about the real sustainability of the material.

- Changing the material has not per se the most beneficial effects for the environment, where preventing food waste and improving the transport's efficiency can be more beneficial to the environmental [39].

### *Manufacturing technology*

- This reflects the manufacturing process evaluation how packaging is produced [60]. For instance, the use of energy and the different techniques being used.
- The consumers' lack of knowledge of manufacturing techniques may inhibit the acceptance of innovative packaging technologies [69, 70].

## **The Motivation-Opportunity-Ability framework**

The behaviour of people depends on many factors. To create an overview of the factors, this report uses the motivation, opportunity, and ability model [71, 72]. Motivation refers to beliefs, attitudes, and social and personal motivations [72]. Opportunities concern the external factors outside the person itself, for instance, the context and the design of a product [73]. And ability concerns the knowledge, skills and tools needed to reach a certain goal [72]. The three categories will be explained below. For more practical advice, look at the [infographic](#) on the website.

### *Motivation*

Research shows that human behaviour is not as rational as one thought. Decisions are more random and less influenced by rational rules [74]. Emotions play a role in predicting the pro-environmental purchase behaviour of packaging [75, 24]. However, research shows mixed results since another study found that communicating in an emotional or informational manner does not influence the purchase intention [18]. For recycling behaviour, factors such as attitudes, social and personal norms, and environmental self-identity play a big role [76]. Personal norms are about how one thinks others are performing a certain behaviour (e.g., recycling). Consumers would like to comply with this 'common' norm and gain social approval [77]. To maintain or gain a green self-identity, consumers must care about the environment and see social value in their actions [78]. A recent study by Kantar Publics [79] found that one of the most important motivations is the idea of contributing to a better environment. Consumers must believe that their action makes a difference (otherwise, it can be an obstructive factor). Motivational factors relate more strongly to recycling behaviour than knowledge about recycling [76]. Communicating about sustainability can help provide arguments for a certain behaviour, however, it is not always successful. Consumers do not always use the provided information, and it depends on how relevant they think it is for themselves [80].

### *Opportunity*

Perception and behaviour always happen in a certain context. In particular, the perception of a product (or packaging) happens within a certain environment [80]. The product-extrinsic cues of the environment can influence food perception and experience [82]. For instance, health-related associations communicated by packaging were not enhanced when being presented in a green supermarket [83]. On the other hand, in a discount supermarket, the packaging enhanced health associations [83]. There are two environmental factors, the situation (environmental and social aspects) and the object (packaging) [84]. The surroundings are important for recycling since that depends on environmental factors like facilities nearby, for instance, having a bin at home or the distance to a recycling location [76]. Opportunity also concerns the availability of sustainable products for consumers [85]. Finally, a consumer must



dispose of a packaging properly, thus assisting the consumer in that process by a clever design is recommended. A clever design can help reduce cognitive load by presenting the right cues at the right moment [86]. More on this in the design perspective chapter.

### *Ability*

The purchase process of sustainable packaging may be stressful, expensive, and time-consuming [87]. Also, our decision process has cognitive limitations due to habits, routines and cues that create cognitive boundaries for consumers [88]. Companies can help reduce the purchasing efforts by wisely communicating the environmental aspect of the packaging [39]. Other communication (e.g., symbols) can guide the user on how to use and dispose of the packaging, instead of relying on their own (wrong) beliefs created in the past. When product involvement is low (low interest in purchasing the product), habits are a major driver for choosing already known products [89]. In addition, sustainable packaging with a familiar design can help minimise the cognitive efforts for consumers when choosing for repeated purchase (of low involvement products) [89]. Especially for low involvement purchases, consumers tend to rely more on visual cues [90]. To encourage consumers to break habits, repetition and reinforcement are strategies to use [91]. Another factor that influences the ability is self-efficacy (the perceived behavioural control one has). It concerns whether people are able to perform a certain behaviour [90]. Finally, (prior) knowledge may help in assisting sustainable consumer behaviour. It can strengthen their ability to choose a sustainable behaviour.

### **Intention-behaviour gap**

A big problem for pro-environmental behaviour is the intention-behaviour gap (IB gap). The IB gap reflects how consumers express their intentions to buy sustainable products, however, they might not actually buy sustainable products [93, 94]. The same concept applies when consumers say they would like to see more information on the packaging, but already presented information is not always perceived and implemented by the consumer [95]. The limited practical knowledge of the consumer about environmental factors may stimulate the IB gap [96]. For instance, when people know how to prepare healthy meals, they are more likely to have healthy diets [97]. However, people easily fall back to their old habits (e.g., not choosing sustainable packaging), so (financial) incentives should be linked to personal motives and values [98].

In addition, consumers may have to make sacrifices to choose sustainable packaging, which asks for a high commitment [99]. For example, consumers are not always satisfied with the poor appearance of paper-based packaging [60], its simplicity and lack of colour [18]. Perceived sustainable products are also associated with a decrease of convenience [100].

There is hope, since ethical purchase decisions are likely to be made intentionally (prior to the shopping), which may reduce the IB gap [99]. Other factors such as social influence [98], availability (of sustainable products), transparency (of knowledge), and creating awareness are also factors that influence the IB gap [101].

There are six obstacles to ethical consumption [99] and suggestions on how to tackle them:

- Personal values (let the packaging meet these values)
- Habits (make it easy for consumers to change their habits)
- Inability to plan (make a sustainable option available for the consumer)
- Unwillingness to make commitments/sacrifices (highlight the benefits of the sustainable packaging)



- Lack of information or ability to find information (communicate sustainability properly on the packaging)
- Distractions during spontaneous shopping (let your sustainable packaging stand out or use point of sale advertising)

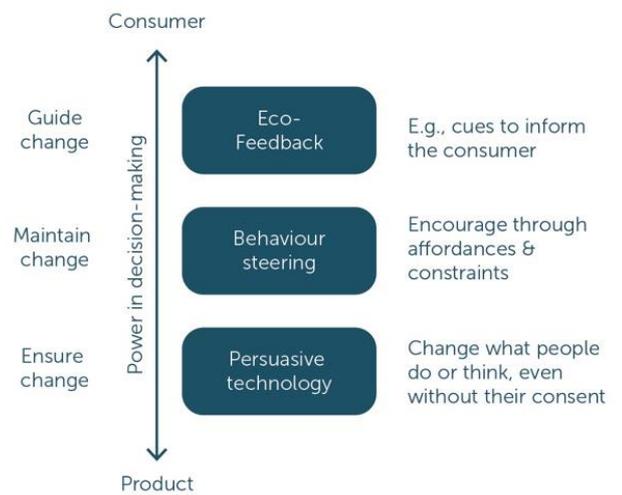
There is an important side note to make for behaviour studies in general. The way consumers are asked to take surveys may cause them to answer in a desirable and socially acceptable manner, instead of answering what their real actions and beliefs are [102]. It may contribute to an (unrealistic) intention-behaviour gap.

## Behaviour change

There are several models which present strategies how to change behaviour. These can be used in the design of an intervention (on the packaging). In general, consumers will not change their behaviour when they do not see an economical, convenient, and immediate benefit [89].

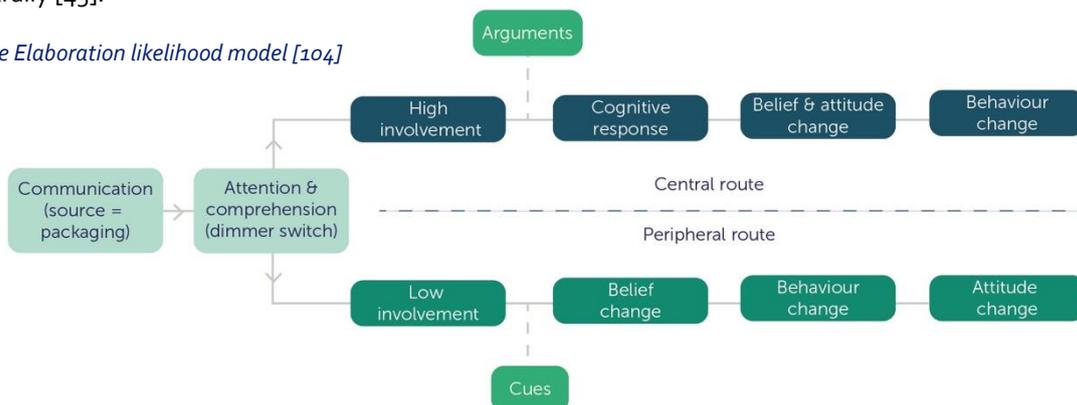
The first model [103], figure 3, presents three general strategies for designing for sustainable behaviour. Firstly, Eco-feedback is used to stimulate the consumer's awareness about the impact of their behaviour, therefore hoping that the user will limit its impact. However, too strong emotions can cause distress and activate a defence mechanism towards a problem, for instance, denying the problem or delegating the problem to others [75]. Secondly, you could try to steer the consumer towards a prescribed behaviour. Thirdly, persuasive technology (e.g., an intelligent product that can make decisions for the consumer) can control the decision-making process and can (forcefully) guide the user in a prescribed behaviour.

Mind that the company may need to justify the last strategy, however, *Figure 3: Strategies to design for sustainable behaviour [103]* people accept it when the target behaviour (one wants to change) is illegal or socially unaccepted [103]



Another model that can be used to decide what action is required for a behaviour change is the Elaboration likelihood model [104], see figure 4. The model states that there are two routes for persuading the consumer. When there is high involvement with the product, consumers will use a central processing route, where arguments are the most effective way to communicate your message. When there is low involvement (e.g., doing groceries), the peripheral route will be used, and cues are your way to go. Thus, the type of product and the consumers' involvement with the product play a crucial role in processing information. The packaging itself is mostly processed peripherally, and the product features more centrally [45].

*Figure 4: the Elaboration likelihood model [104]*



Finally, the Design behaviour intervention model [105], figure 5, examines the elements of behavioural change, and what interventions could be used. You can use this model to see the relationship between certain interventions and the behavioural factors. For instance, providing information and feedback will only guide consumers to change. Which shows that presenting information to the consumer is not enough. It is also an (ethical) discussion point how much power one would like to give the consumer or the product.

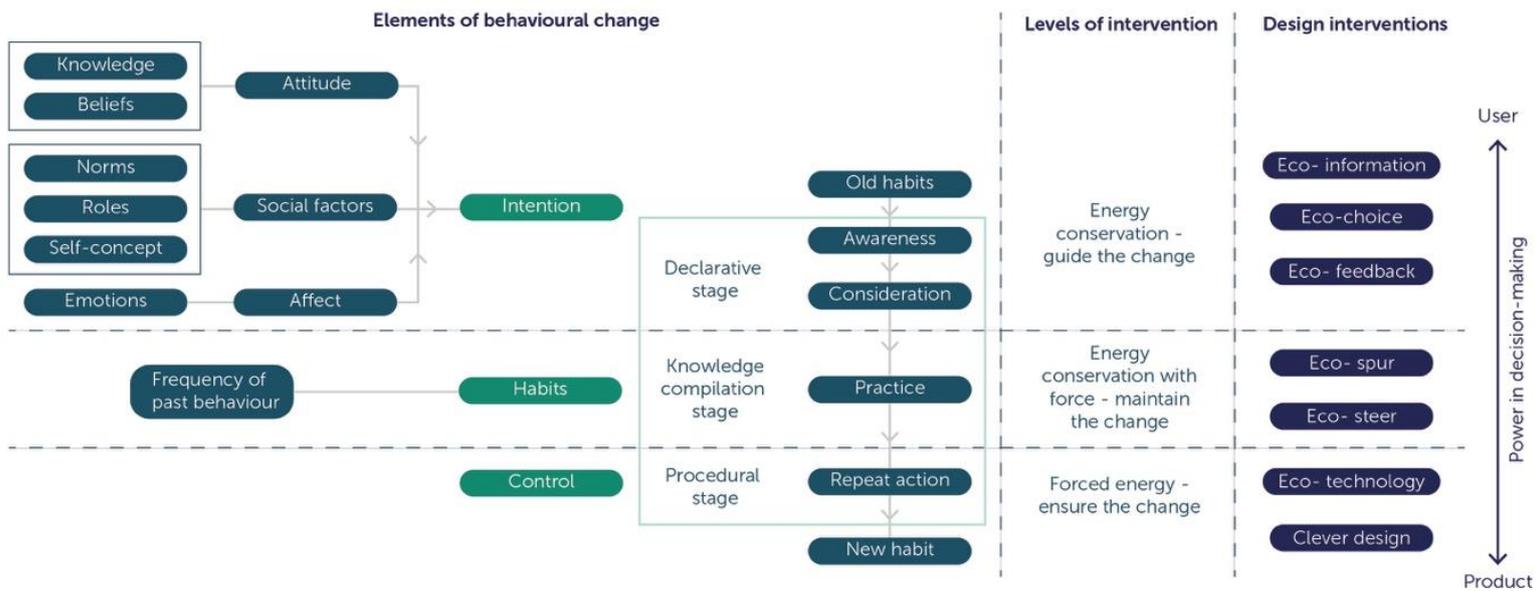


Figure 5: the Design behaviour intervention model [105]

Behaviour change is subtle and needs to be stimulated carefully since interventions can work counter effectively. For instance, adding extra functionality or distraction to the packaging may result in the packaging being taken away from the environment and perhaps increase littering [104]. An extra function may be a small puzzle on the packaging.

## Post behaviour

A perceived environmental responsibility provides comfort for consumers, where they could have the feeling of doing the right thing [106]. Consumers may buy green packaging for their own moral goals and to show their morally justified behaviour, thus in favour of their moral satisfaction [107]. After a certain behaviour, self-identity is influenced [108]. Self-identity concerns the way someone describes oneself [109]. For example, someone who has a high environmental self-identity is more likely to see themselves acting environmentally friendly and showing pro-environmental behaviour [108].



## Design perspective

The designs chapter will dive into the physical world how design decisions can change behaviour. Cues can work on a graphical and structural packaging level and happen in the physical world, where consumers are able to observe and interact with them. Consumers are using a bottom-up process in processing (innovative) products, and cues will be translated into benefits which will help consumers in determining if their goal will be met (e.g. goal of being sustainability) [110, 111]. Unfortunately, there is no one way to go regarding cues since the interplay of the different cues together and other factors are important for the total effect.

### Different consumers

In the design process, one must start with the consumer. Who are they, what do they know and want, and what are their values? Consumers seem to have different levels of biospheric values, which reflect how much they care about the environment and can predict pro-environmental behaviour [112]. One study makes a distinction between the lifestyle of health and sustainability-oriented consumers and the convenient consumer [96]. In another study, the distinction is called low and high environmental concern groups [50]. The groups and their characteristics are summarised below.

<b>Lifestyle of health and sustainability-oriented consumers</b>	<b>Convenient consumer</b>
Pay more attention to sustainable packaging (focused on material and recyclability) [38].	Provide environmental knowledge to stimulate pro-environmental behaviour [38].
Are involved in environmental issues, are already intrinsically motivated, and extra green advertising does not lead to a higher purchase intention [114].	Green advertising is a good strategy for persuading consumers who do not show a high environmental involvement [114].
Their attitude had the highest impact on their behaviour [38].	
Are more driven by emotions [38].	

<b>High environmental concern (HEC)</b>	<b>Low environmental concern (LEC)</b>
Reacts positively on a packaging with no verbal claim but an eco-looking packaging [50].	Are more doubtful regarding the companies' environmental claim than HEC [113].
When the claim on a packaging is incongruent with the packaging's visuals, HEC prefer a conventional packaging with a claim [50].	When the claim on a packaging is incongruent with the packaging's visuals, LEC are less positive [50].



When the claim and visual on the packaging were both congruent, both LEC and HEC reacted positively [50].	Low-environmental attitude consumers have a higher intention when sustainability is not communicated [28].
Communicating sustainability on the packaging can increase the purchase intention for consumers with a high pro-environmental attitude [28].	

Important for international companies, there are also cultural differences between countries, for instance, Italian and German consumers are more sustainability oriented and Dutch consumers are focused on convenience [115]. Convenient driving consumers tend to focus on the visual cues [115]. And younger consumers are more likely to buy sustainable packaging [115]. Also, the higher the education and income level, the more sensitive consumers are for environmental factors [56]. These findings altogether show how complex consumers are.

## Cues

There are three different cues for consumers that a company can use for its packaging design regarding sustainability: informational, graphical, and structural cues [18]. Firstly, informational cues inform consumers about the product's and or packaging's features. You can alter the consumers' behaviour by the way how the information is presented. For instance, you can prevent food waste when providing no best before date, which results in fewer products being thrown away [116]. Another example is a claim, which can be a heuristic cue, since most of the claims do not tell in detail what the claim is about [42]. These kinds of verbal cues can be used to explicitly communicate the packaging's sustainability [50,117]. Referring that the packaging is recyclable or compostable is an important feature to signal sustainability for the consumer [68]. In addition, a company can also use labels on packaging, however, these can be confusing for consumers due to the variety of labels [118]. Labels can help categorise and recognise sustainable packaging, especially when it is not immediately clear [14, 50]. Clear labelling is important for plastic packaging to communicate where one can recycle it and what will happen with the packaging after recycling [119]. In general, consumers find it difficult to identify environmental benefits [120]. But standing out and communicating information on the packaging is important since it was found that 19% [127] or even 51% [122] of food shopping is unplanned. More information can be found in the factsheet "[Symbols on packaging](#)" on the website.

Secondly, graphical cues are cues such as colour, logos and images. For example, the colour green is often used to communicate (perceived) sustainability since green is associated with sustainability [123, 117]. Colours can evoke associations, for instance, when adding yellow to the 7-Up cans, consumers tasted more lemons, even though the drink was not adjusted [124]. Next to colour, it has been found that attractive nature imagery resulted in a higher memory score for both recall and recognition when compared to the same advertising with other attractive pictures [125]. When one needs to choose a visual stimulus, even not related to the product, one can choose nature imagery because the positive emotional effect of nature can be beneficial for the advertising effect [125]. The place of the image is important as well, since it was found that imagery placed in the top-left (versus bottom-right) packaging area were perceived to have a lower packaging weight [126]. It was found that buying intention, recycling intention, sustainability perception and reliability of the packaging were higher when the packaging contained graphical elements (e.g., nature imagery) associated with sustainability [127]. The appearance can stimulate purchase decisions [126]. However, an environmental appeal does not per se lead to more correct disposal behaviour [128]. Regarding recycling behaviour, action-oriented logos worked better than pictorial and informational logos [127]. Examples of action-oriented logos



contain statements such as 'please recycle me' or a picture of disposing of the packaging in a bin (e.g., [KIDV disposal logos](#)).

Structural cues such as shape can also play an important role in the consumers' perception (e.g., materials). Pro-environmental behaviour can also be influenced by the packaging's structure. A study found that users choose a smaller portion of food when it came from a squeeze tube in comparison to a traditional container [129]. The shape also affects the volume perception and the product's usability [130]. An affordance can also be a structural cue, for instance, the shape of a packaging can indicate how to open the packaging. However, a shape can also limit the user in certain ways if there is only one way of opening a packaging. The last one is a constraint, where the user is limited (and forced) to a certain interaction, where affordances only suggest certain possible and appropriate interactions [131; 132]. The packaging's shape has implications on recycling behaviour as well. People tend to see altered objects as waste, for example, torn objects were more likely to be littered [118]. When the packaging is empty, consumers perceive the packaging as waste [133; 134] and they have the perception that the packaging itself has a bigger impact than food waste [135; 136]. Examples of cues can be found in the [infographic](#) on the website, but the current packaging you are using already contains cues as well, can you find them?

### *Explicit or implicit cues*

Explicit cues are asking for cognitive processing and are easy to (consciously) recognise, examples are text labels, information, logos [137]. The use of specific explicit information creates reasons to believe and can improve the sustainable perception and behaviour [137]. Implicit cues are processed through an inferential route which is more automatic and intuitive [137]. When you combine explicit cues to already meaningful implicit cues, it may be harmful for communicating sustainability [137]. When information is generic, it is not useful and may even damage the sustainability perceptions and increase scepticism [137].

### *The impact of cues*

It is important to note that not all cues have the same impact, since that depends on the confidence and predictive value a consumer assigns to a cue (cue utilisation theory) [138]. Consumers can be misled by cues which do not communicate something about the real sustainability consequences [47]. Furthermore, information on packaging must be noticeable for consumers to even start the mental process about the cue [139]. A packaging design must be approached in a holistic way since consumers process the packaging as a whole, and not as loose individual design parts [140; 141]. Another important theory not to forget is the Cue Consistency Theory [142]. When the message of cues is consistent and coherent with each other, it may result in an additive effect, however, inconsistent cues may result in a weaker effect [143]. In case of incongruency, the trust in the made judgment can be affected. This consistency in cues may also help in processing and prevent confusion [144]. In addition, it was found when a food product itself is intrinsically sustainable, a sustainable packaging does not have an additional effect, since it is mediated by the perceived naturalness of the already sustainable product [145]. When there is no information about the product's sustainability, a sustainable packaging can work positively on the perceived quality [145].



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# Reference list infographic

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