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Chapter 6

How advertising influences buying behaviour

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http://www.consumerpsychologyarena.com/the-psychology-of-advertising-9780415442732
The last two chapters focused on attitude research. Chapter 4 discussed how consumers form attitudes towards products and chapter 5 reviewed principles of persuasion and attitude change to explain how advertising influences consumer attitudes. The reason for our interest in consumer attitudes and the impact of advertising on these attitudes is that attitudes are believed to be one of the major determinants of consumer choice and buying decisions. It is nearly a truism that if we can persuade consumers to develop a positive attitude towards a given product, they will also be likely to buy it. However, as we will argue in this chapter, matters are more complicated. Although attitudes are an important determinant of consumer behaviour, other factors such as social norms or the perceived or actual control over the behaviour are also influential factors.

The first part of the chapter will review theorizing and research on the influence of attitudes, social norms and perceived behavioural control on behaviour performed consciously and deliberately. However, by focusing nearly exclusively on processes of deliberate, conscious information-processing and decision-making, consumer research has neglected automatic and unconscious processes, which are also likely to exert a powerful impact on consumer behaviour. Fortunately, as of the mid 1990s, consumer research appears to have become aware of this omission in its theorizing, and by now is devoting substantial attention to unconscious influences on consumer thoughts, feelings and actions (see Simonson et al., 2001, for an overview). This research will be reviewed in the second part of this chapter.

**The attitude–behaviour relationship: a brief history**

There was general agreement among early social psychologists that human behaviour is guided by social attitudes. Some early writers even defined the field of social psychology as the scientific study of attitudes (Bogardus, 1931; Thomas & Znaniecki, 1918). Gordon Allport (1935) expressed this enthusiasm in his famous opening statement to his classic handbook chapter on attitudes when he stated that the ‘concept of attitude is probably the most distinctive and indispensable concept in contemporary social psychology’ (p. 798).

At the time of writing his chapter, Allport was probably unaware of a study by the sociologist LaPiere (1934), which might have dampened his enthusiasm. Between 1930 and 1933 LaPiere had travelled with a Chinese couple across the USA and had stayed in 66 hotels and camping places and eaten in 184 restaurants and cafés. Even though there was extreme prejudice against Chinese in the USA at that time, only one auto camp refused accommodation. When LaPiere later wrote to all of these establishments whether they would accept members of the Chinese race as guests, he received 128 answers of which 92 per cent were refusals and only one was a clear acceptance.

LaPiere’s study would not meet the more stringent methodological criteria of today: first, LaPiere did not measure attitudes but behavioural intentions. Second, it is unclear whether the persons answering his letters were really the same individuals who had admitted the Chinese couple as guests. But most importantly, the individuals answering questions about whether they would admit or serve a ‘member of the Chinese race’ as guests are likely to have had an image of a Chinese that had little resemblance to the well-dressed Chinese couple (accompanied by a Caucasian) facing
those who had agreed to provide service or accommodation. However, the LaPiere (1934) study triggered a number of further studies, which had similarly dismal results. By the late 1960s, at least 45 studies had been reported, many of them laboratory experiments, in which researchers had found virtually no relationship between measures of verbal attitudes and observations of actual behaviour deemed to be relevant to these attitudes (Ajzen & Fishbein, 1977, 2005). Many of these studies tried to relate attitudes of white Americans towards African-Americans to some specific behaviour towards an African-American individual, who was usually a confederate of the experimenter. For example, Himelstein and Moore (1963) used attitudes towards African-Americans to predict whether white participants would be influenced in their decision to sign a petition by whether a black participant (confederate) agreed or refused to sign. They found that the decisions of their white participants were unrelated to petition signing of the black. Others unsuccessfully used attitudes towards racial or ethnic groups to predict conformity with members of these groups making use of classic experimental conformity situations (e.g. Berg, 1966; Bray, 1950; Malof & Lott, 1962). But such failures were not restricted to measures of prejudice. Researchers also failed to predict job performance, absenteeism, and turnover from job satisfaction attitudes (e.g. Bernberg, 1952; Vroom, 1964) or to predict cheating in the classroom from attitudes towards cheating (Corey, 1937). Summarizing this research in an influential review, the sociologist Wicker (1969) reached the following conclusion: ‘Taken as a whole, these studies suggest that it is considerably more likely that attitudes will be unrelated or only slightly related to overt behaviours than that attitudes will be closely related to actions. Product-moment correlation coefficients relating the two kinds of responses are rarely above .30, and often are near zero’ (p. 65).

Wicker’s pessimism regarding the attitude–behavior relationship had dramatic impact on the social psychology of that period. After all, Allport’s (1935) assessment that attitudes were the most indispensable construct in social psychology was even more true in the 1960s than it had been in the 1930s. And all this research had been conducted in the conviction that attitudes would be related to behaviour. To discover suddenly that they might have studied marks on evaluative rating scales, which were totally unrelated to behaviour, came as a shock to attitude researchers and aggravated the crisis of confidence which had taken hold of social psychology at that time (see Stroebe, Hewstone & Jonas, 2008).

The issue was resolved when less than a decade later, Ajzen and Fishbein (1977) published their classic analysis of research on the attitude–behaviour relation. They argued that Wicker had asked the wrong question. The important question was not whether attitudes were related to behaviour, but when were they related. With their principle of compatibility Ajzen and Fishbein (1977) specified the conditions that had to be met to find such a relationship. They argued that the problem in much of the earlier research had been to relate a global attitude (e.g. attitude towards African-Americans) to a very specific behaviour (e.g. conformity). According to the principle of compatibility, measures of attitudes will only be related to measures of behaviour, if both constructs are assessed at the same level of generality. As Ajzen and Fishbein (1977) pointed out, a specific action is always performed with respect to a given target, in a given context, and at a given point in time. Since attitudes towards a racial group only specify the target, one cannot expect any single behaviour to be related to this attitude. After all, prejudice towards some racial group can be expressed in a multitude
of different ways: Prejudiced individuals might decide not to sit next to members of that group, might not want to work with them, might not want them as neighbours, might not want them as friends or might not greet them. Each of those behaviours will be influenced by situational factors as well as prejudice. For example, sometimes one might have no choice where to sit or with whom to work. And people might overcome their prejudice against Asians, if the Asian grocery shop is open longer hours and offers fresher fruit and vegetables at lower prices. Therefore, to assess whether there is a relationship between prejudice and behaviour, one needs to construct a behavioural index that aggregates across a representative variety of prejudicial actions, performed in a representative range of contexts, across a representative range of times.

There is evidence that such aggregate behaviour indices correlate highly with global measures of attitudes. For example, Fishbein and Ajzen (1974) related participants’ attitude towards religiosity to a set of 100 behaviours that were relevant to religiosity. Whereas the attitude was practically unrelated to most individual behaviours it was highly related to an aggregate measure across all 100 behaviours. Similarly, Ajzen and Timko (1986) reported that a measure of global attitude towards health maintenance, which did not correlate significantly with the specific self-reported frequency with which respondents performed specific health protective actions, showed a substantial correlation with a behavioural index that aggregated the performance of a wide variety of health protective behaviours. These behaviours related to different aspects of health and had been performed in a variety of contexts and times.

Since marketers are usually interested in influencing or predicting specific consumer behaviour, these findings appear to be bad news. However, the principle of compatibility cuts both ways: if we are interested in predicting specific behaviour, attitude measures would be compatible if they assessed the attitude towards performing the specific behaviour. Thus, Ajzen and Timko (1986) were able to predict specific health behaviour from equally specific attitudes towards these behaviours. For example, the reported frequency with which respondents had ‘regular dental check-ups’ correlated .46 with respondents’ attitudes towards ‘having regular dental check-ups’. Further support for the importance of compatibility was provided by a meta-analysis of eight studies that manipulated levels of compatibility between attitude and behaviour measures while holding other factors constant (Kraus, 1995). The behaviours studied ranged from participation in a particular psychology experiment to blood donations and self-reported use of birth control pills. Kraus (1995) reported a mean correlation of $r = .13$ at the lowest level of compatibility as compared to $r = .54$ when compatibility was high.

**Predicting specific behaviour: the reasoned action approach**

As we discussed earlier (chapter 4, this volume) attitudes towards a specific behaviour result from the likelihood with which one expects that behaviour to lead to a number of specific outcomes, with each outcome weighted by the value the individual attaches to that outcome. For example, a prospective car buyer’s attitude towards buying a big sports utility vehicle (SUV) will be determined by the likelihood that buying this car will lead to a number of consequences (e.g. the pleasure, greater safety, high running costs, environmental pollution), each of these consequences multiplied by the valence
the individual attaches to these consequences. However, even though attitudes towards a specific behaviour (and thus also the behavioural beliefs on which the attitude is based) are good predictors of that specific behaviour, they are not the only determinant. Behaviour is also influenced by social norms and by environmental factors that constrain the individual’s ability to engage in this behaviour. For example, if the prospective car buyer’s wife is a member of an environmentally progressive (i.e., green) party, he might not want to sacrifice his marital happiness for the sake of increasing his driving enjoyment. Furthermore, the dramatic increase in petrol price might have increased the costs of running the car beyond his means.

Several theories have been developed to improve the prediction of specific behaviours by taking account of such additional factors (for a review, see Conner & Norman, 2005; Stroebe, 2000). The most influential ones have undoubtedly been the theory of reasoned action (Fishbein & Ajzen, 1975) and the extension of that theory, the theory of planned behaviour (Ajzen, 2005). Both theories predict behavioural intentions (i.e. the motivation to perform a specific behaviour) and assume that the impact of attitudes and other components on behaviour is mediated by the intention to perform that behaviour.

According to the theory of reasoned action, the intention to perform a specific behaviour is determined by a person’s attitude towards that behaviour and by subjective norms. A person’s attitude towards a specific behaviour will be determined by the individual’s belief (i.e. perceived likelihood) that performing that behaviour will result in certain positive or negative consequences and the evaluation of these consequences. Usually a given attitude is determined by a very limited number of salient (i.e. highly accessible) beliefs (Ajzen, 2005; Fishbein & Ajzen, 1975). Subjective norms combine two components, namely normative beliefs and motivation to comply. Normative beliefs are our beliefs about how people who are important to us (i.e. reference groups) expect us to behave. For example, a businessman, who would very much like to by a big luxury SUV, might also know (i.e. normative belief) that many of his customers are extremely environmentally conscious and would frown on such a purchase. However, whether he will actually decide against the purchase will depend on his motivation to yield to this normative pressure. That Governor Schwarzenegger (California) is no longer driving a huge, petrol-slurping and environment-polluting Hummer SUV may be due to becoming environmentally more conscious, but it is also likely to have been influenced by the environmental attitudes of his electorate. The more positive a person’s attitude towards a specific behaviour and the more this behaviour is also expected by others important to that person, the more likely it will be that a person will form the intention to perform the behaviour.

Sheppard, Hartwick and Warshaw (1988) argued that the theory of reasoned action primarily applies to behaviours (e.g. stopping eating cakes; applying for a consumer loan) and not to goals (losing weight; obtaining a consumer loan) that result from that behaviour, because the achievement of goals usually depends on other factors in addition to the individual’s behaviour. Thus, people might not lose weight, even though they stopped eating cakes and they might not get the consumer loan, even if they applied for it. Although this is a valid point, the intention to stop eating cake is also a goal, simply a more specific goal than the goal of losing weight. Furthermore, even individual behaviours are rarely under complete individual control but depend on the availability of resources or on the willingness of other people to
cooperate. Thus a wealthy consumer might have planned to buy a Mercedes SL Sports Convertible, but due to a fall in the value of her stock portfolio might decide to go for a less expensive option. On a more everyday level, people often plan to buy a product of a particular brand at their supermarket, but end up buying a different brand, because stocks of their preferred brand have run out.

To acknowledge the fact that people often fail to act on their intentions because they lack the ability, resources, or willpower to do so, the theory of planned behaviour added perceived behavioural control as a third component to the theory of reasoned action. Perceived behavioural control can be assessed directly by asking respondents to indicate the extent to which performing a given behaviour was under their control. Alternatively, one can measure perceived behavioural control indirectly, by asking people to list the factors, which might prevent them from engaging in a specific behaviour as well as how likely this was going to happen. Although ultimately no behaviour is totally under an individual’s volitional control (e.g. I cannot blow my nose, if I lost my handkerchief), some behaviours are more controllable than others are. For example, going for a walk is more controllable than playing tennis, because I can walk on my own, but depend on a tennis partner for playing tennis.

The theory of planned behaviour assumes that perceived behavioural control affects behaviour indirectly through intentions, but can also have a direct link to behaviour that is not mediated by intentions (Figure 6.1). The assumption that perceived behavioural control influences intentions is consistent with expectancy-value theories of motivation. In forming intentions to perform an action or to reach some goal, people take their own resources and capabilities into account. People who lack the ability or opportunity to achieve some goal will adjust their intentions accordingly, because intentions are partly determined by the perception of the probability that a goal can be reached. For example, unless they have authored best-selling textbooks or inherited from rich relatives, professors of psychology will not form the intention to buy a Bentley or Ferrari. Similarly, beginners on the ski slopes will not form the intention to go down black runs (colour marking for the most difficult slopes).

The direct relationship between perceived behavioural control and behaviour, which is not mediated by intention, is intuitively less plausible. It also has a somewhat different theoretical status from the link that is mediated by intention. Whereas perceived behavioural control has a causal influence on intention (i.e. people usually do not intend to purchase goods, if they have no conceivable way of affording them), the direct link from perceived behavioural control to behaviour is predictive rather than causal: it depends on the accuracy of the individual’s perception of behavioural control. For example, a businesswoman, who decided before the recent economic crisis to buy a bigger apartment, intended to make regular down payments on her mortgage. However, when her firm made her redundant soon afterwards, she was unable to do so. Since her failure to keep up with her down payments was due to factors beyond her control, her intention would have been a poor predictor of her behaviour. If her loss of employment had also been totally unexpected, taking perceived control over meeting her financial obligations into account would not have improved predictions. However, if the woman worked for a firm that had already been loss-making before the economic downturn (e.g. Ford or GM) and was therefore expecting to be laid off in the near future (preventing her from meeting her financial obligations), taking account of her perceived behavioural control over making down payments in addition to her
intention to do so would have improved predictions of her behaviour (i.e. a direct link, not mediated by intention). However, since it would have been the fact that she was laid off (i.e. actual control) and not the fact that she correctly anticipated it (perceived behavioural control), which prevented her from continuing to make down payments,

**Figure 6.1** The theory of planned behaviour applied to the intention to engage in physical exercise

the relationship between perceived behavioural control and behaviour would have been predictive rather than causal.

A great number of studies have tested the theories of reasoned action and planned behaviour and their findings have been summarized in several meta-analyses (e.g. Albarracin, Johnson, Fishbein & Muellerleile, 2001; Armitage & Conner, 2001; Sheppard et al., 1988). These meta-analyses support the basic assumption of these models that intentions can be predicted by the components of these model and that measures of intention, in turn, allow a good prediction of behaviour. Based on a meta-analysis of 142 independent studies of a wide range of behaviours, Armitage and Conner (2001) reported an average multiple correlation of attitude, subjective norm and perceived behavioural control with intention of $R^2 = .63$, suggesting that these three components accounted for 40 per cent in the variance of behavioural intentions. Similar correlations were reported by Albarracin et al. (2001) in their meta-analysis of 96 data sets on condom use. However, it is important to note that these tests assessed the accuracy of the predictions of the theories of reasoned action and planned behaviour rather than the processes assumed to lead to the formation of intentions. Thus, the empirical support for these models does not necessarily imply that their process assumptions are valid.

The weighted mean correlation between intention and behaviour range from .45 (Albarracin et al., 2001; Randall & Wolff, 1994) to .53 (Sheppard et al., 1988). Thus, the intention to perform a specific behaviour accounts for 20 per cent to 28 per cent of the variance in measures of that behaviour. Adding perceived behavioural control to intention in the prediction of behaviour increases the explained variance in behaviour on average by another 2% (Armitage & Conner, 2001). The contribution of perceived behavioural control to the prediction of behaviour depends on the extent to which a specific behaviour is under individual control. Thus, it will be lower with behaviour such as attending classes or reading one’s book than with stopping smoking or keeping to one’s diet.

With the amount of error variance due to less than perfect reliability and validity of measures used, even a perfect theory would never account for 100 per cent of the variance in behaviour. Thus, these estimates of variance accounted for in behaviour are likely to seriously underestimate the strength of the association between intention and behaviour. However, even if we accept that numerous measurement artefacts attenuate the association observed between intention and behaviour, the gap between intention and behaviour remains large enough to have motivated researchers to develop techniques that would reduce it. The most successful technique, which we will discuss in the next section, has been to persuade people to form more specific intentions.

### Narrowing the intention–behaviour gap: forming implementation intentions

How can we increase the likelihood that individuals act according to their intentions? One of the most successful strategies is the formation of an **implementation intention**. Whereas behavioural intentions have the form ‘I intend to do X’ (e.g. I intend to stop smoking), implementation intentions involve the form ‘I intend to do X in situation Y’ (i.e. if situation Y, then behaviour X; e.g. I intend to stop smoking at 12 o’clock)
on New Year’s Eve). Thus, implementation intentions are more specific goals than behavioural intentions. The efficacy of implementation intentions is typically assessed in studies in which implementation intentions are induced after intentions have been measured, by asking half of the participants to name time and place in which they intended to perform a given behaviour.

For example, Sheeran and Orbell (2000) asked all the women in a medical practice in England, who were due for a cervical smear test, to indicate the strength of their intention to go for a cervical smear test within the next three months. Half of these participants were then instructed to form implementation intentions by asking them to indicate when, where, and how they would make an appointment to have the smear test. Asking individuals to form implementation intentions significantly increased attendance rate from 69 per cent of individuals without to 92 per cent with an implementation intention. The two groups did not differ in the strength of their behavioural intention. Similar results have been reported in numerous studies and over a wide range of behaviours. In a recent meta-analysis of 94 independent studies, Gollwitzer and Sheeran (2006) reported an effect size of medium-to-large magnitude ($d = .65$) for the effect the induction of implementation intentions had in reducing the intention-behavior gap.

How do implementation intentions work? One reason why people fail to act on their intentions is because they simply ‘forget’ to act when the opportunity arises. By specifying the time and situational context in which behaviour should be performed, the mental representation of the specified situational context cues becomes activated and highly accessible, making sure that people remember their intention when they encounter the situation, in which they planned to act. Furthermore the formation of an implementation intention will also create (or strengthen) the association between the situational cues and the response that is instrumental for obtaining the goal. As a result, the formation of an implementation intention increases the probability that people will remember the action intention when the specified situation arises (Webb & Sheeran, 2007).

In support of these assumptions Sheeran (2002) found in a reanalysis of the data of the Sheeran and Orbell (2000) study that 74 per cent of participants made their appointment for the smear test on the date that they had specified in their implementation intention. More direct evidence for the memory effect of implementation intentions comes from a study by Aarts, Dijksterhuis and Midden (1998). In this study, student participants were asked to go to the cafeteria (apparently to list the price of various food items), but to collect beforehand, on their way to the cafeteria, a consumption coupon at a departmental office. The location of the office was described as being ‘down the corridor’, ‘directly after the first swing door’ and ‘near the red fire hose’. To induce implementation intentions, half of the participants were requested to plan the steps that are required to collect the coupon. Participants in the control condition were required to plan the steps necessary to spend the coupon (unrelated planning condition).

After some intervening task and before leaving for the cafeteria, participants were asked to perform a lexical decision task in an apparently unrelated experiment. Among the words presented in lexical decision task, the critical words were ‘corridor’, ‘swing door’, ‘red’ and ‘fire hose’. As expected, participants, who had formed an implementation intention had shorter recognition times for the critical words and were more likely to collect the consumption coupon on their way to the cafeteria.
Furthermore, a mediation analysis showed that the impact of the type of planning task (i.e. implementation intention versus unrelated planning) on the likelihood of collecting the coupon became insignificant, when reaction time in the lexical decision task was statistically controlled for. This pattern is consistent with the assumption that the greater cognitive accessibility of the situational cues (i.e. swing door and red fire hose) mediated the impact of the implementation intention on behaviour. In other words, individuals who had performed an implementation intention were more successful in collecting the coupon, because they were more likely to be reminded by the situational cues to perform this action.

Most research on implementation intentions has been conducted with approach goals, with individuals forming the intention to perform a specific action once a specific situation arose. In contrast to approach goals, where individuals at risk of failing to perform an intended action have to be reminded to get going, with avoidance goals people have to be reminded to suppress an unwanted response. Such unwanted responses can be the expression of prejudicial attitudes (e.g. Devine, 1989), or more relevant for consumer behaviour, indulging in some forbidden pleasure, such as eating high-calorie food while dieting, drinking too much or relapsing on the intention to quit smoking. There are several strategies individuals can use to form implementation intentions that help them to resist a specific temptation. In each case, they first have to identify situations in which the risk of yielding to the targeted temptation is particularly high, second think of a coping response that is likely to be effective in helping them to resist, and third cognitively rehearse linking the coping response to the situation. The effectiveness of this type of implementation intention will not only depend on whether they remember the coping strategy at the right moment, but also on whether this coping strategy is effective in helping them to resist the temptation. One possibility is to link the coping response to the tempting experience itself. For example, if we have a weakness for chocolate, we could recall the experience of temptation the last time just before we yielded and ate the chocolate. We could then form the implementation intention that whenever we thought about this particular snack food, we should ignore that thought. Alternatively, we could intervene earlier in the sequence by avoiding buying chocolate. We could form the implementation intention to think of our diet (or of how good we would look with a few pounds less) whenever we saw chocolate on a supermarket shelf and were tempted to put it into our shopping cart.

There are few empirical studies of the effectiveness of implementation intentions with avoidance goals. In one study, participants had to indicate their intention to halve their consumption of a favourite snack food (Achtziger, Gollwitzer & Sheeran, 2008). Half of these participants were then given the implementation intention that whenever we experienced this type of craving, we should think of our diet and of the many reasons why we wanted to lose weight. Alternatively, we could intervene earlier in the sequence by avoiding buying chocolate. We could form the implementation intention to think of our diet (or of how good we would look with a few pounds less) whenever we saw chocolate on a supermarket shelf and were tempted to put it into our shopping cart.

In another study, participants formed the intention to snack on fewer unhealthy foods during the next 2 weeks (Sullivan & Rothman, 2008). Half of these participants were further instructed to form the implementation intention when and where to avoid eating a specific unhealthy snack (e.g. a bag of chips). Findings showed that individuals who had formed an implementation intention reported consuming significantly fewer calories and less fat over the two-week period of the study.
than individuals who had not formed such an implementation intention. Similarly, Adriaanse, de Ridder and de Wit (2009) demonstrated that implementation intentions, which specified motivational experiences (e.g. feeling bored, acting social), in which these participants tended to eat unhealthy snacks, and instructed them to replace the unhealthy with a healthy snack in these situations, resulted in a lower consumption of unhealthy and an increased consumption of healthy snacks.

With low effort actions such as phoning for an appointment or collecting a coupon, being reminded at a suitable moment to perform the action is probably sufficient to ensure that the action will be performed. If the action is well-learned and easy to perform, it might even be enacted automatically in response to the situational cue (Gollwitzer & Sheeran, 2006). With more difficult behaviours such as stopping smoking or reducing one’s chocolate consumption, it would seem less plausible that merely being reminded of an intention would also ensure action. However, communication of an implementation intention to the experimenter might increase an individual’s commitment to perform that behaviour in studies, where people had to record their implementation intentions during the experiment. Furthermore, forming such a specific intention should also increase the salience of a goal violation and thus of anticipated guilt feelings in the event that individuals fail to act on their intention (Stroebe, 2000). For example, if one forms the implementation intention to stop smoking at midnight on 31 December, any cigarette smoked on 1 January is in clear violation of this implementation intention. In contrast, if one violates the goal intention to stop smoking in the near future, one is unlikely to experience a clear goal violation effect, because it remains unclear at which point continuing to smoke violates this intention.

**Implications for advertising**

The research discussed so far has a number of important consequences for the planning of marketing campaigns, at least if one intends to use argument-based appeals. We learned from our review of dual process theories that one needs strong arguments to persuade people to change attitudes on issues that are important to them. However, these theories did not provide the criteria that would help us to design strong arguments, beyond the advice to have argument strength evaluated by members of the target population.

The research of Fishbein and Ajzen (1975; Ajzen, 2005) suggests several techniques, which allow us to design strong and effective argumentations. As a first step in developing an advertising campaign, marketers need to decide what precisely they want to influence with their advertisement or commercial, whether they want to improve brand awareness or would like to persuade people to buy a particular product. If their persuasive attempt is aimed at buying a particular product, they should use the techniques developed by Fishbein and Ajzen to assess whether the targeted behaviour is mainly determined by attitudes, subjective norms or perceived behavioural control (Ajzen, 2005; Fishbein & Ajzen, 1975). It is pointless to try to persuade people of the positive qualities of a product, if they are unlikely to buy it because their partners or other family members do not want them to buy it (subjective norms) or because they cannot afford it (perceived behavioural control). For example,
in the area of food choice family preferences can have a strong influence (subjective norms) as can have the lack of skills in preparing specific dishes. Thus, despite the generally accepted health advantage, seafood is often not bought because of family dislike and because the persons responsible for cooking often do not know how to prepare seafood dishes (Scholderer & Trondsen, 2007). Perceived behavioural control can become important in decisions about buying expensive goods such as cars, furniture or even houses. In such cases control beliefs will often concern financing (concerns that can often be relieved through offering low interest loans for the specific purchase). Sometimes people also fear that they are unable to make the right choice due to lack of knowledge. For example, lack of knowledge about wine or computers might prevent people from buying these goods, even if they would like to do so.

Once one has decided whether to target behavioural outcome, normative or control beliefs (or a combination thereof), one needs to identify the specific beliefs which determine the targeted behaviour. These are relevant beliefs in which people, who own the targeted product or subscribe to the targeted service differ from those who do not intend to buy or subscribe. Such beliefs are likely to strongly influence the purchasing decision. For example, if people stay with a more expensive phone company rather than switching to a cheaper one, because they are worried that switching will involve a great deal of effort and also result in a disruption of their phone service, then persuading them that one can offer a better deal will not be effective. One will also have to convince them that the changeover would be easy and without risk of disruption. Focusing merely on the fact that one can offer a less expensive service would not persuade those people to change. And yet, at the time of writing this manuscript, most low-cost internet providers in the Netherlands base their advertising appeals nearly exclusively on their low prices.

The finding that individuals are more likely to act on their intentions if they have formed implementation intentions also has implications for advertising. If marketers would succeed not only to persuade potential customers to buy their product, but also to form an implementation intention, when and where to buy it, the likelihood that they would actually do so would be largely increased. Unfortunately it would be difficult to induce implementation intentions with an advertisement. One could imagine, though, that an advertisement, showing the Lindt chocolate chef making creamy pralines, would ask viewers to imagine for a second how wonderful this chocolate would taste and then follow this up with the instruction that ‘if you want to enjoy the wonderful taste of Lindt pralines yourself, why not plan now that if you see Lindt pralines in your delicatessen when you are shopping next week, you will put them into your shopping cart.’ (If one wanted to strengthen this manipulation, one should use a picture of the distinctive looking Lindt chocolate chef as a reminder cue next to the shelf on which the Lindt pralines are displayed.)

We could find only one study using implementation intentions in a consumer context. Kardes, Cronley and Posavac (2005) gave all participants in their study a sample of household cleaning liquid to take home. Whereas participants in the control condition were only asked their intention to use the product, participants in the implementation intention condition were asked to indicate the dates and times that they intended to use the product and the specific uses they were thinking of. A follow-up two weeks later showed that participants who had been induced to form the
implementation intention were more likely to use the product and to use it in a greater variety of different situations. However, it is difficult to imagine that individuals who have been handed free samples of a product on the street or in a supermarket would be happy to answer questions about how they intended to use those samples. On the other hand, being provided with the opportunity to use a product first hand (e.g. through a free sample) might facilitate the formation of implementation intentions, because the consumer learns what the product does in which situation, something that potentially triggers the intention to acquire the product again, once the appropriate situational cues are encountered.

Beyond reasons and plans: the automatic instigation of behaviour

The theories discussed so far all assume that the impact of attitude on behaviour is mediated by intention. According to the theories of reasoned action and planned behaviour, attitudes, subjective norms and perceived behavioural control result in the formation of a behavioural intention. It is this intention which is assumed to be the most direct cause of behaviour. Although implementation intentions may result in a behavioural response being triggered automatically in the presence of the situational context specified by the implementation intention, individuals still have to form such an intention in order for the behaviour being performed.

In the last few decades, social and consumer psychologists have become increasingly interested in the automaticity of many higher mental processes (for a review, see Bargh 2007). Automatic processes are processes that occur without intention, effort or awareness and do not interfere with other concurrent cognitive processes. Thus, there is more and more research, which demonstrates that attitudes, norms and even goals can be primed by people’s social or physical environment and influence behaviour without them being aware of being influenced. The second half of this chapter will review research on the automatic influence of attitudes, norms and goals (as well as the related concept of habit) on behaviour. The last part of this section will then discuss the implication of these findings for advertising.

Before reviewing this research, we would like to discuss the extent to which these findings are inconsistent with models of reasoned action and planned behaviour (for a discussion, see Ajzen & Fishbein, 2000, 2005). Although these theories assume that individuals are guided by relevant attitudes, subjective norms and control beliefs in forming behavioural intentions, the activation of behavioural, normative and control beliefs can be automatic and without conscious intent (Ajzen & Fishbein, 2000). Thus, priming or other processes that operate outside individual awareness can increase the cognitive accessibility of normative and control beliefs and thus influence the formation of behavioural intentions. However, since intentions involve some kind of planning, even if the planning is rudimentary, people are likely to be conscious of the process of intention formation. They are further likely to be aware of their intention, when instigating an action. Thus, findings that actions are automatically instigated are difficult to explain with theories of reasoned action and planned behaviour.
**Automatic and deliberate influence of attitudes**

As discussed earlier (chapter 4) implicit attitudes typically reflect people’s automatic evaluative response to a stimulus object, whereas explicit attitudes reflect processes that can be cognitively controlled. Although implicit and explicit measures of attitudes often converge, there are certain conditions under which they diverge. One such domain is the area of prejudice, where some people react with prejudice on an implicit level, but try to consciously control such responses (chapter 4). Other domains are areas of self-regulation such as eating or drinking too much where individuals might be tempted to indulge but at the same time trying to control their temptation.

In line with dual process models such as the MODE model of Fazio and colleagues (Fazio, 1990; Fazio & Olson, 2003) or the reflective–impulsive model of Strack and Deutsch (2004) one would expect implicit measures of attitudes to predict behaviour better than explicit measures when individuals are either unmotivated or unable to exert control. In contrast, explicit measures of attitudes should do better, when individuals are able and motivated to exert control over their behaviour.

Support for these assumptions comes from research on prejudice reported earlier, which demonstrated that implicit (but not explicit) measures predicted prejudicial behaviour that was outside the control of the individual. For example, Dovidio et al. (1997) found nonverbal behaviours displayed while interacting with a black or white interviewer to correlate with implicit but not explicit measures of prejudice. Thus, the implicit measure of prejudice predicted lower levels of visual contact with the black interviewer and higher rates of blinking, both not predicted by the measure of modern racism.

But prejudice is not the only domain where people’s explicit and implicit attitudes diverge. For example, a dieter may feel attracted to chocolate or ice cream, but on further deliberation will reject these foods because of their high-calorie content. And yet when his motivational or cognitive resources are depleted, he might find himself buying and eating a large portion of ice cream. To test these predictions, Friese et al. (2006) assessed implicit and explicit attitudes towards chocolate and fruit and then allowed participants to choose five items from a large selection of different pieces of fruits and chocolate bars as compensation for their effort. Ability to control behaviour was impaired in half of the participants, by asking them to perform a cognitively demanding task (keeping in mind an eight-digit number). In support of prediction, the implicit attitude measure predicted choice better than the explicit measure under high cognitive load, whereas the reverse was true under low cognitive load. Along similar lines, alcohol consumption improved the capacity of an implicit attitude measure to predict candy consumption in an alleged market research study (Hofmann & Friese, 2009).

Another domain where implicit attitude measures have been shown to diverge from explicit measures is the choice between generic and branded products. In a study conducted in Germany, Friese, Waenke and Plessner (2006) made use of the fact that German consumers believe that generic products are manufactured by the same producers, who make the branded products, but are cheaper, because they are not advertised. And yet, probably as result of advertising, consumers often have a more positive attitudes to branded rather than generic products. Friese and colleagues (2006) therefore predicted that for consumers with divergent attitudes towards generic

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and branded products, explicit attitudes would predict product choice better when they had ample time to choose, whereas implicit attitudes would predict better when choices had to be made under time pressure. In support of these assumptions, 90 per cent of participants, whose explicit and implicit attitude diverged, made choices that were consistent with their explicit attitude under low time pressure. This pattern reversed under high time pressure. Now only 38 per cent of participants made choices that were consistent with their explicit attitude.

As one implication of these findings, it makes sense from the perspective of stimulating sales to display chocolates and other tempting goods at locations, where people have little time or cognitive resources to control their choice. The fact that supermarkets often display chocolate snacks next to the till might be motivated by similar reasoning. Not only will customers be exposed to these tempting items, but if the line is short and they have to transfer the choices from their shopping trolley to the conveyer belt that takes it to the cash-point, they may have no time for careful deliberation and thus yield to the temptation. Obviously from the perspective of protecting consumers against impulse buying, this is a devious and despicable strategy.

In contrast, if supermarkets want to sell their own brands rather than products from well-known brands, they should display them as far as possible from the exit, in areas where people are still leisurely shopping rather than being on the way to the exit. Furthermore, they should display their brands easily visible on the shelf directly below (or above) the competing product line with the prices of both sets of products shown clearly. Finally, they should make sure that the packaging of their own brands looks as similar as the law allows to that of the well-known brand. When consumers, who are not in a rush, see both similar-looking product lines displayed, with the supermarket’s own brand considerably cheaper than the well-known brand, they might decide to risk buying own brand. However, whether they will choose the own brand again next time, will depend on whether the supermarket’s own brand matches the quality of the well-known brand.

Another implication is that in cases where one could expect implicit product attitudes to diverge from explicit attitudes, both implicit and explicit attitude measures should be employed in predicting behaviour. Whereas explicit measures will predict behaviour better when people have the resources to control their behaviour, implicit measures will be better predictors when these resources are lacking. However, there is evidence to suggest that even in cases where a convergence between both types of measures can be expected, use of implicit measures can improve predictions based on explicit measures. For example, Maison, Greenwald and Bruin (2004) found implicit and explicit attitudes towards two yoghurt brands, two fast food restaurants and two soft drinks correlated. And yet, adding the implicit measure to the explicit measure significantly improved the prediction of behaviour, which suggests that behaviour is rarely totally controlled (or totally uncontrolled).

**Automatic and deliberate influence of social norms**

According to the theories of reasoned action and planned behaviour (Fishbein & Ajzen, 1975; Ajzen, 2005), the influence of subjective norms on behaviour should be mediated by intention. In contrast, Aarts and Dijksterhuis (2003) recently suggested that social
norms might often guide behaviour automatically without individuals being aware of their influence. Norms are knowledge-based beliefs shaped by social influence and triggered by situational cues. They are if-then rules that state that in certain situations individuals should behave in certain ways, the behaviour being specified by the social norm. Thus, people should lower their voices when in a library or a church, and they should watch their table manners when eating in an elegant restaurant.

Many norms are tied to physical environments. For example, in contrast to football stadiums or railway stations, churches and libraries require one to be silent, and in contrast to fast food restaurants, elegant restaurants require one to be reasonably well-dressed. Aarts and Dijksterhuis (2003) argued that physical environments do not have such behavioural implications per se. People do not lower their voices when they drive past a library or a church. Thus, a pictures of a library should trigger the norm to speak quietly only if the picture was of behavioural relevance to the individual, for example because he or she was intending to visit the library. To test these assumptions student participants were asked to participate in an experiment that consisted of two parts. In the first part, they had to look at a set of pictures. Participants were either presented with pictures of a library or with pictures of a railway station. Half of the participants exposed to the library pictures were led to believe that they had to visit the library immediately afterwards, the other half did not expect to have to visit the library. In the second part of the study, participants responded to a lexical decision task with some of the words relevant to the norm of lowering one's voice (e.g. silent, whisper, quiet). In line with expectations, participants who had been exposed to library pictures and expected to visit the library immediately afterwards responded faster to these norm-relevant words than participants in the other two conditions. Thus, in people who had the immediate goal of visiting the library, the picture of the library triggered the relevant norm of speaking quietly.

These experimental manipulations were repeated in a second experiment, but their effect was assessed with a different dependent measure, namely a word pronunciation task. Participants had to pronounce a series of 10 words. No explanation was given for this task; voice intensity was measured while participants were pronouncing each of the words. Again, in line with predictions, participants who had been exposed to pictures of a library and instructed to visit the library immediately afterwards spoke less loudly when pronouncing these words than did participants, who did not expect to visit the library or were presented with pictures of a railway station. This study showed that triggering the norm had an impact on relevant behaviour.

In a last experiment, Aarts and Dijksterhuis (2003) studied the impact of a different norm, namely the norm to be well-behaved in restaurants. The study consisted of two parts, executed a month apart. In Part 1, participants had to perform an association task aimed at measuring how strongly behaving well was associated with the concept of exclusive restaurants in these participants. They were briefly shown a picture and immediately afterwards a verbal description of a behaviour. They had to indicate as fast as possible whether the verbal description referred to a behaviour that was appropriate for the environment shown in the picture. Association strength was inferred from the speed with which participants found well-mannered an appropriate behaviour in an elegant restaurant.

In the second part of the experiment conducted one month later, participants were first shown either a picture of a restaurant or of a railway station. They all
expected that they had to visit the depicted environment immediately after the experiment. They were then seated at a table and had to eat a round biscuit that produced crumbs when one bit into it. The dependent variable consisted of the extent to which participants kept their table clean while they ate (assessed by external raters). These raters had to count the number of times participants removed crumbs from the table while eating. Consistent with expectations, participants in the restaurant-goal condition cleaned their table more often than participants in the railway-goal condition. Furthermore, the strength with which they had associated restaurants with good manners correlated significantly with their table cleaning behaviour in the restaurant-goal condition ($r = -0.65$), but not in the railway-goal condition ($r = -1.0$). These findings demonstrated that for participants, who had the goal to visit the restaurant, priming them with pictures of a restaurant appeared to have triggered a behavioural norm, which subsequently influenced behaviour.

Although advertisements also frequently appeal to norms, these appeals are typically quite explicit. More subtle norm primes are used in shopping environments. For example, the aim of the endless Christmas music played in shops in the month before Christmas is not only to put people into a Christmas mood, but to remind them of their duty to buy presents for all their loved ones. Similarly, the aim of offering a glass of champagne (or more likely cremant or prosecco) to customers of shops that sell fine clothes is not only to impair their self-control through alcohol consumption but also to trigger the norm of reciprocity (chapter 7) according to which one should not accept the shop owner’s booze without reciprocating by buying some of his wares.

**Automatic and deliberate influence of goals**

Recent research has challenged the assumption that goal pursuit necessarily reflects a conscious process with people being aware of a goal and of their intention to pursue this goal. There is increasing evidence that goal-directed behaviour can be triggered by environmental cues without an intention having been formed (Custers & Aarts, 2005; Moskowitz & Ignarri, in press). Theories of unconscious goal pursuit share with theories of conscious goal pursuit the basic assumption that goals are mentally represented as desired states relating to behaviour or outcomes (Custers & Aarts, 2005). Thus, goals are actions or outcomes towards which individuals hold positive attitudes. Furthermore, for a goal to motivate goal striving, there must also be a discrepancy between the actual state of the individual and the desired state (Custers & Aarts, 2005) and the goal must seem attainable to the individual (Kruglanski, Shah, Fishbach, Friedman, Chun & Sleeth-Keppler, 2002). Unconscious goals are therefore as much determined by attitudes, social norms and perceived behavioural control as are conscious intentions. The main difference is that theories of unconscious goal pursuit make the assumption that goals can be unconsciously activated and pursued, without the individual having formed a conscious intention. These theories assume that goals pre-exist in the actor’s mind and form part of a knowledge structure that includes the goal itself, the context, in which the goal can be enacted (opportunity) and the actions that need to be performed to reach the goal (i.e. means).

Numerous studies have demonstrated that priming can activate goals without individuals being consciously aware of either the prime or the goal (for a review, see...
Custers & Aarts, 2005). For example, Holland, Hendriks and Aarts (2005) exposed half of the participants in an experiment to the smell of an all-purpose cleaner without them being consciously aware of the presence of the scent. When participants were asked to list five home activities which they wanted to perform during the rest of the day, significantly more individuals who had been exposed to the smell of the cleaner included cleaning as their goal than individuals who had not been primed. This suggests that the smell of the cleaner increased the accessibility of the concept of cleaning, which was then used when participants were asked to retrieve plans and goals for home activities.

In this study goal priming was only shown to influence goal setting. However, there is also ample evidence that priming can influence goal enactment. For example, Bargh, Gollwitzer, Lee Chai, Barndollar and Trötschel (2001) unobtrusively exposed participants to words such as ‘cooperative’ and ‘share’ to prime the goal of cooperation. After that, participants took part in a resource dilemma task, in which they could either keep any profit for their own benefit or replenish the common pool. Participants who had been primed with the goal of cooperation were more likely to replenish the common source than were the (unprimed) control group participants. The same effects were observed with participants, who were given the explicit goal to cooperate. However, intentions to cooperate during the game (assessed afterwards) correlated with the extent of cooperative behaviour only for participants, who had been explicitly instructed, but not for those, who had formed the goal as a result of priming. Thus, people who were primed with words related to cooperation engaged in more cooperative behaviour without having formed a conscious intention to do so.

Goal priming has also been increasingly studied in the context of consumer research, where researchers have used brand images to prime goals. Brand images are the beliefs people hold about the attributes of a particular branded product. It is therefore possible to use brand images to prime specific goals. Support for this assumption comes from a study by Friedman and Elliot (2008), who used the brand image of the sports drink Gatorade as the prime. They established in a pre-test that their participants associated Gatorade with the trait of endurance. In their main experiment (Experiment 3), participants were first exposed to either a bottle of Gatorade or a bottle of Poland Spring water. In an apparently unrelated part of the experiment, they then had to undergo an effortful endurance task, which consisted of raising their dominant foot 12 inches (30.48 cm) above the ground and keeping it in this position as long as possible, while sitting on a chair with their back straight. While participants, who had been exposed to the bottle of water only managed to keep their leg in that position for 87 seconds, participants primed with Gatorade managed 187 seconds. Thus, having been primed with a brand of sports drink associated in people’s mind with endurance, participants endured much longer on a physically demanding task than did participants, who had been primed with a different drink.

Brands are not only associated with characteristics that relate to the expected qualities of a product, they are often also associated with personality characteristics. This aspect of a brand image has been called ‘brand personality’ (e.g. Aaker, 1997). For example, the Apple computer firm has devoted a major proportion of their advertising budget to establish a brand personality that reflected nonconformity, innovation and creativity (e.g. with the ‘Think different’ campaign). In contrast, IBM is not particularly associated with creativity. Fitzsimons et al. (2008) made use of these...
differential associations by priming participants subliminally either with the Apple or the IBM logo. Creativity was then assessed with the unusual uses test of Guilford (Guilford, 1950). With this test, participants are asked to generate as many unusual uses for a common object as possible. In support of their hypothesis, participants primed with the Apple logo producing more creative uses than participants primed with the IBM logo.

A study by Fransen et al. (2008, Experiment 3) tested an even more indirect effect of exposure to a brand logo. These researchers hypothesized that certain types of brands could remind consumers of their mortality, and hence could activate the goal of terror management (see Greenberg, Pyszczynski, Solomon, Simon & Breus, 1994). Insurance brands were thought to induce this type of goal because of the close association between insurance and sickness, misfortune, misery and death. Terror management goals often manifest themselves as world view defense strategies to reaffirm one’s important values and norms (Greenberg et al., 1986). In the realm of consumer behaviour typical of western societies, such salient norms involve materialism and consumerism (Arndt, Solomon, Kasser & Sheldon, 2004) and hence, terror management frequently translates into increased spending patterns, conspicuous consumption, a preference for luxury brands, and a preference for domestic products over foreign products (see Arndt et al., 2004; Rindfleisch and Burroughs, 2004; Maheswaran and Agrawal, 2004). After an earlier study had demonstrated that insurance primes significantly increased mortality thought, Fransen et al. (2008) primed participants subliminally with either the brand logo of a well-known insurance company or a control brand logo. In line with the notion of terror management, they found that participants subliminally primed with the insurance logo preferred brands of home-made products over brands of foreign products in the choice task.

That primes are not only useful in triggering goals, but also in channelling goal-directed behaviour in a specific direction has been demonstrated in studies by Chartrand, Huber, Shiv and Tanner (2008) and North, Hargreaves and McKendrick (1999). Chartrand et al. (2008) argued that the types of stores one passes on the way to the shop one is going to may well affect the type of choice people make at the point-of-purchase. Thus, if people walked past a number of shops selling cheap goods, they might be primed with the concept of thrift and therefore take the cheap alternative when making a buying decision later. To test these ideas, these researchers used the scrambled sentence test to induce either the concept of prestige or thrift and subsequently exposed participants to a product choice situation where they could choose between a prestige brand (Nike) or a US budget brand (Hanes). Not surprisingly, they found that those participants who were primed with prestige preferred Nike over Hanes.

That music in supermarkets can also be used to channel buying decisions has been demonstrated by North, Hargreaves and McKendrick (1999), who had customers in a supermarket exposed to either French or German music to influence the country of origin of the wines they bought. A selection of four French and four German wines was displayed on a shelf in the wine section of a supermarket. When French or German music was played on alternative days, the type of music influenced choice of wines, with more French wines being bought on days with French music and more German wines being bought on days with German music (Figure 6.2).

The problem with most of the consumer research on goal priming reported so far is that it is unclear whether the priming effects were driven by goal-based or
cognition-based processes. For example, the prime in the Chartrand et al. study could have increased the cognitive accessibility of the concept ‘thrifty’ and this concept might have been associated with the budget brand Hanes rather than Nike. To ensure that goals rather than concepts are being primed, goal priming studies should incorporate a delay condition to assess whether the priming effect becomes weaker or stronger over time. Whereas memory effects fade over time, the motivational impact of unfulfilled goals increases over time.

Chartrand et al. (2008) therefore conducted a second study, in which they made use of the difference assumed to exist in the persistence of concept and goal primes over time. In this study the same goals (prestige versus thrift) were primed using the scrambled sentence task and a time delay was varied (three versus eight minutes) before participants could make product choices (in this study product choices again included a choice between the prestige brand Nike and the budget brand Hanes, but also between two brands of sound systems: Bose (prestige) and Toshiba (thrift), and between either a luxurious but expensive apartment or a simpler and cheaper one. Chartrand et al. (2008) found that the prime effects on product choice (higher preference for prestige related brands after prestige prime) increased rather than decreased over time and that reaching the goal diminished the effects of goal primes, but only when actual rather than hypothetical product choices were involved.

Even though they do not use subliminal techniques, marketers often make use of goal priming techniques in designing advertisements or commercials. In most of these advertisements pictures are used to prime a goal, whereas the text message is used to argue that the advertised product is the ideal means to reach the primed goal.
For example, travel tour operators will show pictures of beautiful beaches and of people enjoying these beaches to prime the goal of going on vacation. The text message will then point out that this travel operator offers travel packages that allow customers to go to beautiful vacation locations at reasonable prices.

That priming a goal before delivering a message increases the impact of relevant messages has been demonstrated by Strahan, Spencer and Zanna (2002, Experiment 2). Strahan and colleagues asked their participants not to eat or drink for 3 hours before coming to the laboratory. They then primed half the participants subliminally with thirst-related words (e.g. thirsty, dry), whereas the other half were primed with neutral words. Subsequently, participants were given a print advertisement describing a new drink, which was either called Super Quencher or Power Pro. Whereas Super Quencher was described as the best thirst quenching drink ever developed, Power Pro was described as an electrolyte-restoring sports drink. The argument that Super Quencher was extremely effective in quenching thirst was most persuasive for individuals who were not only thirsty, but for whom their thirst had been made cognitively accessible through priming. A measure of the persuasiveness of the two ads clearly indicated that thirst priming increased the persuasiveness of the Super Quencher but not of the Power Pro advertisement (Figure 6.3).

**Goals, habits and behaviour**

Many roads lead to Rome and the same is true for most goals. People usually have a choice from a multitude of means to reach a particular goal. To get a cup of coffee at our department, we can either make it ourselves, go down to the coffee automat in the canteen or go to the cafeteria in the library building, which offers a range of different coffees that would make Starbucks proud. While it is great to have such a choice, it also poses a challenge to our cognitive resources. Automatic behaviour would be

![Figure 6.3](http://www.consumerpsychologyarena.com/the-psychology-of-advertising-9780415442732)
unlikely, if every time we would like to have a cup of coffee, we would ponder about the various means to reach this goal.

For goals to be implemented automatically, the selection of the relevant means to reach the goal needs to be routinized. In the research on goal implementation reported so far, the problem of means selection has been circumvented by presenting participants with one appropriate opportunity for goal directed behaviour. In everyday life, we often routinize the selection process by developing habits. Habits are ‘learned sequences of acts that have become automatic responses to specific cues and are functional in obtaining certain goals or end states’ (Verplanken & Aarts, 1999). Behaviour becomes habitual if it is performed frequently, regularly and under environmental conditions which are stable. Behaviour is unlikely to become habitual, if it is only performed once a year or under unstable environmental conditions. Thus, brushing one’s teeth and having a shower in the morning are so habitual that we go through the whole routine without really thinking about it. Similarly, much of grocery shopping (e.g. choice of supermarket, choice of brands of washing powder, oil, margarine, toothpaste, etc.) is habitual and automatic. Buying Christmas presents, on the other hand, will need a great deal of deliberation.

In the case of well-learnt habitual behaviours such as driving, cycling, eating or dancing one speaks of goal-dependent automaticity, because starting out the behaviour involves an intention, but once the process has been triggered it runs off automatically (Bargh, 1994). We decide to drive to work, but once we sit in the car, we do not really have to think about starting the engine or engaging gears. By being enacted automatically and without need of deliberation, habitual behaviour has the great advantage of allowing us to use our (limited) cognitive resources for other purposes. Thus, while driving to work, we can plan our day in a leisurely way, rather than concentrating on performing the multitude of acts required when driving a car or on planning the route we have to take in order to reach our office.

The great disadvantage of the automaticity of habitual behaviour is that it is difficult to change, even if we have formed the intention to do so. This is also the reason why ‘brand switching’ for habitually acquired products is such a formidable challenge to marketers that no successful marketing strategies have yet been documented. In fact, even deviation from one’s usual way home to pick up some shopping can prove a challenge. We might have promised to stop at the supermarket on our way home to pick up some supplies needed for dinner and yet we might find ourselves arriving at home, having totally forgotten about the planned deviation from our customary route. For this reason, behaviour that we perform regularly and under stable environmental conditions is probably better predicted by our past behaviour in these situations rather than by our intentions. In contrast, intentions will be a better predictor of behaviour that is performed infrequently and under conditions that vary a great deal.

These hypotheses were tested in a study of choice of travel mode by Verplanken, Aarts, van Knippenberg and Moonen (1998). The study was conducted in a small village and the target behaviour was the choice of car for travelling outside the village rather than alternative travel options. The authors measured habits as well as the determinants of behaviour of the model of planned behaviour. Habit strength was assessed through self-reported past behaviour (SPB) and with a newly developed response–frequency measure (RF)\textsuperscript{16}. Behaviour was assessed through a diary in which individuals had to list their travel destinations and modes of travel for a three-week
period. In line with predictions, habit and intention interacted to influence behaviour. As we can see from Figure 6.4, which presents the simple regression slopes of intention on behaviour for participants with weak, moderate and strong habits, this effect emerged for both measures of habit strength. Intention was a significant predictor of behaviour when habit was weak. However, when habit was very strong, the predictive power of intention decreased. In other words, for individuals who habitually went almost everywhere by car, behavioural intention became a poor predictor of their choice of travel mode.

Further support for these assumptions comes from a meta-analysis of studies that included measures of past behaviour in tests of theories of reasoned action and planned behaviour (Oulette & Wood, 1998). In line with predictions, intentions were a much better predictor than measures of past behaviour for actions that were only performed once or twice a year and in unstable contexts. In contrast, measures of past behaviour were better predictors than intentions of actions that were performed regularly and in stable contexts. These findings are indeed consistent with the assumption that habitual behaviour is automatic in the sense that it is triggered by situational cues rather than guided by conscious intentions.

If habits are a form of goal-directed automatic behaviour, they should be mentally represented as associations between goals and actions, which are instrumental for attaining these goals. Whenever a goal is activated, this should also activate the behaviour representations that present the appropriate means to attain the goal. Thus, if a student always uses her bicycle to travel to the university, activation of the goal to act (having to attend a lecture) should automatically trigger the habitual response (bicycle). This hypothesis was supported in a study with student participants, who varied in the extent to which they were habitual bicycle users (Aarts & Dijksterhuis,

**Figure 6.4** The relationship between intention and behaviour by habit strength

In a pre-test, the researchers established five locations in the university town, which could be reached by bicycle (e.g. shopping mall; university) and also the major reason, why students wanted to go to these locations (e.g. shopping; attending classes). Half the participants were then given sentences to read, which primed the five travel goals without mentioning locations (e.g. attending a lecture). The assumption was that reading these sentences would cognitively activate the five travel goals. Then, in an apparently unrelated task, all participants were presented with the five locations and a word presenting a travel mode and had to decide as quickly as possible whether the presented mode of transport was a reasonable way to get to that location. The dependent measure was the time taken to answer this question. In support of predictions, habitual bicycle users responded faster than non habitual bicycle users when bicycle was offered as a travel mode, but only if they had been primed with the relevant travel goals (Figure 6.5). Without goal priming, they did not respond faster to bicycle offered as a travel mode than did the non habitual bicycle users. This rules out the explanation that habitual bicycle users responded faster because they were more familiar with the concept of bicycle. The activation of a relevant travel goal was necessary to activate bicycling as a travel mode in habitual bicycle users.

If habits are cognitively represented as links between goals and actions that are instrumental for attaining these goals, then forming implementation intentions should operate through the same processes as the formation of habits. After all, in forming an implementation intention, individuals create a mental link between a situational cue

![Figure 6.5](http://www.consumerpsychologyarena.com/the-psychology-of-advertising-9780415442732)

**Figure 6.5** Mean response times (in milliseconds) as a function of habit strength and goal prime


http://www.consumerpsychologyarena.com/the-psychology-of-advertising-9780415442732
and a specific action. Whereas with habits the association between the relevant situation and the behaviour is learnt through repeated performance of the behaviour, with implementation intentions the association is learnt through repeated mental simulation of performing that action in that specific situation. Support for this assumption comes from a study by Aarts and Dijksterhuis (2000), who used the travel goal paradigm described above. This time, they exposed all participants to the goal prime, but added an implementation intention condition as a factor, cross-cutting the extent to which individuals were (or were not) habitual bicycle users. Implementation intentions were formed by asking individuals to write down each of the travel goals and plan precisely, how to reach these goals. Again, the dependent measure was the time it would take individuals to recognize bicycle as a word in a lexical decision task. In support of predictions that the formation of implementation intentions would operate the same way as the formation of a habit, non habitual bicycle users recognized bicycle faster after they had formed an implementation intention than without such an intention (Figure 6.6). In fact non habitual bicycle users who had formed an implementation intention recognized the word bicycle as quickly as habitual bicycle users without implementation intention. Forming an implementation intention had no effect on habitual bicycle users.

So far we have mainly focused on cognitive processes that result in the automatic elicitation and/or execution of habitual behaviour sequences. However, if

![Figure 6.6](image)

**Figure 6.6** Mean response times (ms) as a function of habit strength and type of planning

consumers continually frequent the same stores or buy the same brands, one can assume that they presumably do so because they are satisfied with those choices, or at least that they are more satisfied than they are with the alternatives available to them. Although this might have been true initially (i.e. at the time they first frequented the store or tried the product), it is quite possible that in the meantime better alternatives have become available. The problem is that once a particular choice has become habitual, people are no longer interested in searching for alternatives. In support of this assumption, Verplanken, Aarts and van Knippenberg (1997) demonstrated in a study of information search in deciding on a mode of travel that people who habitually used a particular travel mode (e.g. bicycle) acquired less information and gave evidence of less elaborate choice strategies in deciding how to travel to a new location than did people who did not habitually use a particular mode of travel.

Obviously, the fact that choices that are made on a habitual basis relieve one of the need to search for information about alternatives each time one has to choose, is one of the advantages of habit formation. For marketers, establishing habits is exceedingly desirable because they translate into brand-loyal consumers, who structurally buy the same brands. For this reason, marketers try to instill habits through what is known as ‘frequency marketing’, where repeat buying is rewarded with discounts and special benefits (e.g. frequent flyer programmes). However, there are other advantages as well. By habitually using a particular service, store, or product, people develop a particular skill in using this service, store or product. Once this skill has been acquired, switching would engender costs (i.e. extra effort and time) which lock consumers into making the same choice over and over again (Murray & Häubl, 2007). This phenomenon has been referred to as cognitive lock-in (Johnson, Bellman & Lohse, 2003). By shopping always at the same supermarket, customers save time and effort through knowing what is on offer and where to find it. Shopping in a different supermarket, where products have to be searched for, would cost considerably more time. Thus, the development of habits saves time and effort by reducing time for search and for using a particular facility or object. However, these gains are made at the risk of overlooking more advantageous alternatives, which might have become available in the meantime.

**Implications for advertising: the return of the hidden persuaders**

The finding that subliminal presentation of words or pictures can not only prime mental representations of words or objects in people’s minds but also influence their behaviour raises the possibility that such procedures could be used for subliminal advertising. **Subliminal advertising** refers to advertising that uses messages (embedded in a film or television report) that are presented so briefly that viewers remain unaware that they have been exposed to advertising. This is probably a surprising suggestion, because subliminal advertising, after a brief period in the limelight in 1957, was declared as not feasible by more recent authors (e.g. Moore, 2000; Pratkanis & Aronson, 2002). Subliminal advertising was made notorious in 1957 through publicity surrounding James Vicary, a private market researcher, who claimed to have increased sales of Coca-Cola by 18.1 per cent and popcorn sales by 57.7 per cent in a movie theatre, by secretly and subliminally flashing the message ‘Drink Coca-Cola’ or
'Eat popcorn'. People became so upset by the idea that they could be manipulated without their awareness that subliminal advertising has subsequently been banned in Australia and Britain.

Nobody has ever been able to replicate the findings reported by James Vicary. The study has never been published and is now believed to have been a publicity hoax (Pratkanis & Aronson, 2001). The belief in the efficacy of subliminal messages was further decreased by the outcome of an assessment of the efficacy of self-help tapes that claim to use subliminal messages. Such tapes appear to be wildly popular among American consumers, who spend more than $50 million annually on audiotapes that contain subliminal messages to help them to improve their self-esteem, their memory and their study habits or to help them to lose weight and to stop smoking. (Pratkanis & Aronson, 2001).

To test the veracity of these claims, Greenwald, Spangenberg, Pratkanis and Eskenazi (1991) conducted a study in which they gave their participants tapes to listen to at home. Half received tapes that, according to the manufacturers, contained subliminal messages that should improve self-esteem ('I have high self-worth and high self-esteem') the other half received memory tapes ('My ability to remember and to recall is increasing daily'). Cross-cutting the (alleged) subliminal content of the tapes, half the respondents were led to believe that they listened to the memory tape, the other half that they listened to the self-esteem tape. Reassessment of their self-esteem and their memory on their return to the laboratory could detect no improvements. However, whereas the actual content of the tapes had no effect whatsoever, the assumed content resulted in a placebo effect. Participants believed that their memory (or their self-esteem) had improved, even though, objectively, there had been no improvements at all. Obviously, such beliefs guarantee satisfied customers and the continued sales of self-help tapes.

That these subliminal messages were ineffective is hardly surprising and does not necessarily rule out the possibility that subliminal advertising might work. First, these tapes used whole sentences and it is unlikely that sentences can be primed subliminally. Subliminal verbal primes have to consist of one or perhaps two (very short) words to be effective and not of whole sentences (Greenwald, 1992). Second, successful priming does nothing more than increase the accessibility of the primed concept and of thoughts related to that concept. Thus, even if it were possible to prime subliminally sentences such as 'My ability to remember is increasing daily' or 'I have high self-worth', they would be unlikely to improve our memory or our self-esteem.

Coca-Cola is a relatively short brand name and thus meets the first condition for a subliminal prime. Thus, if clever advertising technicians developed a technique that would enable them to successfully prime movie or TV audiences, this might increase the accessibility of Coca-Cola in the viewer's mind. But would this really result in higher sales? So far, only limited evidence on priming of brand choices is available (e.g. Cooper & Cooper, 2002; Hawkins, 1970; Dijksterhuis, Wegner & Aarts, 2005; Karremans, Stroebe & Claus, 2006; Strahan, Spencer & Zanna, 2002). Hawkins (1970) primed his participants either with 'Coke' or 'Drink Coke' for 2.7-millisecond intervals during the presentation of irrelevant supraliminal material. In a control condition, participants were subliminally exposed to nonsense syllables. Both Coke conditions resulted in higher thirst ratings, even though the differences between the 'Drink Coke' and the control group just failed to reach significance. In a rather similar study, Cooper
and Cooper (2002) primed participants, who viewed a full episode of *The Simpsons* with 12 pictures of Coca-Cola cans and 12 presentations of the word ‘thirsty’, each frame being displayed for 33 milliseconds. (In the control condition blank frames were presented). Participants, who had to rate their state of thirst on a multi-item ‘motivation states questionnaire’ before and after the experiment showed a significant and positive effect of the experimental manipulation on thirst ratings. These studies indicate that subliminal exposure to the brand name of a (well-known) soft drink can increase self-ratings of thirst. However, since neither of these studies included a behavioural measure, it is unclear whether the increased thirst ratings really reflected greater thirst or simply an increased accessibility of the concept of thirst due to its association in memory with the word Coke.

A study of a subliminally primed drink or brand of beverage has been conducted by Dijksterhuis, Wegner and Aarts, 2001 (reported in Dijksterhuis, Aarts & Smith, 2005). Participants in this study were subliminally (15 ms) primed either with the word ‘drink’, the word ‘cola’ or four-letter random word strings. At the (apparent) end of the experiment, the experimenter mentioned that he was going to have a drink. He asked participants whether they wanted one and offered a choice between cola and mineral water. The dependent measure was the choice of drink and the amount drunk by participants, who wanted a drink. However, although participants in the two experimental conditions drank more than those in the control conditions, the cola prime did not result in a more frequent choice of cola.

Since the Coca-Cola company is unlikely to devote part of their advertising millions to a strategy, which is as likely to increase the consumption of mineral water as that of Coke, these findings are not supportive of subliminal advertising as a viable marketing strategy. However, Karremans et al. (2006) argued that these experiments disregarded a number of aspects that are important to get subliminal advertising to work. First, Coca-Cola is a highly accessible brand name. Priming might work better with a brand that is not as widely advertised as Coca-Cola and is therefore less cognitively accessible. Second, since priming does nothing more than increase the cognitive accessibility of the concept of Coca-Cola, effects will depend on the thoughts people associate with that brand and these thoughts might differ from the brand image that the Coca-Cola company conveys in advertisements. If participants find Coca-Cola too sweet a drink to quench thirst, priming will not change their opinion. On the other hand, if they associate it with great taste and great thirst quenching qualities, then priming might make them want to have a Coke, but only if they are thirsty at that particular moment. As Strahan, Spencer and Zanna (2002) pointed out, priming will influence behaviour only if the priming is goal relevant and people are motivated to pursue this goal. In the case of priming a brand of soft drink, this means that recipients have to be thirsty for the prime to be effective. The fact that priming slightly increased self-rated thirst in earlier studies (Hawkins, 1970; Cooper & Cooper, 2002) does not mean that they were sufficiently thirsty to go for a drink.

When Karremans, Stroebe and Claus (2006) tried to put this hypothesis to a test, they found in a pre-test that their Dutch students attributed the greatest thirst quenching qualities to Lipton Ice (an ice tea) and not to Coke. They therefore decided to use Lipton Ice in their studies. They conducted two experiments, in which half the participants were subliminally primed with Lipton Ice, the other half with a neutral control word containing the same letters. The primes were presented 25 times, but each time...
for only 23 milliseconds, so that participants were unaware of the priming procedure. Whereas in their first experiment, they used self-ratings of thirstiness to divide participants into thirsty and non-thirsty groups, they decided to manipulate thirstiness in the second study. Participants had to suck a salty sweet (‘dropje’), supposedly to see whether they could identify with their tongue the letters that were impressed on one side of the sweet. (This sweet, which is popular in the Netherlands, is known to produce thirst.) Both experiments resulted in significant prime by thirstiness interactions on choice. When offered a choice between a brand of mineral water or Lipton Ice, participants who had been primed with Lipton Ice were significantly more likely to choose it over the mineral water, but only if they were thirsty (Figure 6.7). They also expressed greater intentions to choose Lipton Ice in a hypothetical situation (if they were now sitting on a terrace and ordering a drink). There was also a tendency for priming to work better for participants who did not drink Lipton Ice regularly than for those, who were habitual Lipton Ice drinkers.

Recently, Bermeitinger, Goelz, Johr, Neumann, Ecker and Doerr (2009) published a replication and extension of the Karremans et al. study (2006). This study made use of the fact that in Germany, dextrose pills are a popular means of concentration enhancement. Participants, who could be classified as tired or not tired according to self-ratings, were subliminally primed with one of two logos for (non-existent) dextrose pills, as well as the word ‘concentration’ while playing a computer game. Afterwards, they had to conduct a concentration task and were offered two bowls with dextrose pills, each bowl labelled with one of the two logos. In support of predictions, tired participants ate more of the primed than the non primed brand, whereas there was no difference in consumption between non tired participants.

Why did subliminally priming influence choice of soft drink in the study of

![Figure 6.7](http://www.consumerpsychologyarena.com/the-psychology-of-advertising-9780415442732)

**Figure 6.7** Percentage of participants choosing Lipton Ice as a function of thirst and prime

Karremans and colleague when Dijksterhuis and colleagues (2005) failed to find such an effect? We already mentioned several important reasons. Coca-Cola is a highly accessible brand and there might have been a ceiling effect. Furthermore, participants need to be thirsty and consider Coca-Cola thirst quenching. However, there is also a fourth reason and to explain this, we have to get a bit more technical. We already mentioned that priming is modality specific and that priming effects are considerably reduced or even absent when the target material is presented in auditory form or when participants study pictorial equivalents of words (Schacter, Chiu & Ochsner, 1993). Both Dijksterhuis et al. (2005) and Karremans et al. (2006) primed their participants with the name of the drink. But whereas Karremans and colleagues (2006) later measured consumer choice again with the name of the drink, Dijksterhuis and colleagues offered their participants a choice between two drinks referred to orally. In their study the experimenter said, ‘I am going to have a drink. Do you want a drink as well? We have cola and mineral water’ (Dijksterhuis et al., 2005, p. 95). Thus, whereas the prime was presented visually, the target was presented in auditory form. And as previous studies have shown, priming does not easily transfer across modalities (for a review see Schacter et al., 1993).17

Since readers might be interested in the reasons for this limitation of the generality of priming effects, we need to go into a bit of technical detail here and explain what memory theorists call transfer appropriate processing (Bransford, Franks, Morris & Stein, 1979). According to this view, a task like reading a word or a sentence requires a set of sensory-perceptual or conceptual operations and engaging in these operations has the same effect as practising a skill. It increases the efficiency with which this skill can be reenacted at a later time. Thus, remembering is less considered a process by which the individual accesses some residue of the studied information in memory than as a re-performance of an earlier act. The greater the similarity or overlap between the analytical processes engaged in during the learning and the retrieval phase, the better will be the performance on a memory task.

Most tests of implicit memory are data-driven. Because respondents are required to operate on perceptual information provided by the experimenter (e.g. fragment completion or perceptual identification), performance on these tests is more dependent on the match between the perceptual conditions during the study and the test phase (Richardson-Klavehn & Bjork, 1988; Roediger, 1990). In contrast, most explicit tests assess the encoded meaning of concepts, and are therefore sensitive to conceptual elaboration but insensitive to changes in the surface features of the information (e.g. type face, changes in modality) or in study-test manipulations (e.g. visual versus auditory). Thus, whereas explicit memory is mediated by processes that generalize across modalities and languages, implicit memory performance is mediated in part by processes that are modality and language specific (Richardson-Klavehn & Bjork, 1988; Roediger, 1990; Schacter et al., 1993).

What is the implication of all of this for subliminal advertising? Most importantly, we have to choose the subliminal prime to match the most likely consumer choice situation. If we want individuals to pick the primed brand from among other drinks, we should probably prime with the logo of the brand rather than the brand name. Second, the drink has to be considered thirst quenching and people have to be thirsty. But third, they also have to be in a situation, in which they are able to make that choice. A known limitation of subliminal priming is that effects wear off very
quickly. Thus, even thirsty movie audiences would want the primed drink immediately after they had been primed and not three days afterwards. Thus, subliminally priming movie audiences just before the break might induce those who are thirsty to buy the primed drink during the break. However, it would not motivate them to stock up with it the next time they are at the supermarket.

Although we are continuously primed by our physical and social environment without being consciously aware of these effects, the possibility of becoming the target of subliminal advertising still raises ethical concerns. These concerns are somewhat alleviated by the fact that we now have a much better understanding of the processes underlying subliminal advertising than we did in 1957, when Vicary made his false claim. We now know that priming works by increasing the accessibility of cognitive concepts or of goals. Priming should not change attitudes. Since both the cognitive concepts and the goals must already be available in our minds to be made more accessible, this type of subliminal advertising would not guide us in directions we had no intention of moving.

More threatening is the possibility that instead of priming, one could use methods of subliminal evaluative conditioning. As we discussed in chapter 4, there is evidence that evaluative conditioning can affect attitudes towards brand-names. For example, one study on the long-term effects of conditioned attitudes towards a brand name associated positively evaluated images with a fictitious brand of mouthwash (Grossman & Till, 1998). Even three weeks after exposure, conditioning effects could still be observed. There is limited evidence for classical conditioning of attitudes to work when the evaluative stimuli are presented subliminally (e.g. Krosnick, Betz, Jussim & Lynn, 1992; but also see Pleyers et al, 2007). Thus, one could pair a brand name with evaluative stimuli (e.g. pictures of positive events), which are presented subliminally. It is this procedure, which must have been intended in a recent American election, when allegedly the concept of ‘Democrats’ was subliminally associated with ‘rats’. Because this type of subliminal evaluative conditioning might result in attitude change without individuals being aware of the influence attempts, it would certainly be more ethically problematic than subliminal priming.

Summary and conclusions

- Once upon a time, social psychologists expected attitudes towards any attitude object to influence the whole range of individual behaviour that could be enacted towards that object and were upset by evidence, which disproved this assumption. We now know that the correct question to ask is not whether but when attitudes influence behaviour.
- The most important condition for measures of attitude to predict behaviour is that the two types of measures are compatible. Compatibility can be achieved by aggregating measures of behaviour to the level of generality of the attitude measure or by making the attitude measure so specific as to apply to the specific behaviour we want to predict.
- According to the theory of planned behaviour (which is an extension of the theory of reasoned action), a person’s intention to perform a specific behaviour is the best predictor of that behaviour. People’s intentions to engage in a specific
behaviour are a function of their attitude towards that behaviour, their subjective norms (normative beliefs × motivation to comply) and their perceived behavioural control over performing that behaviour.

- The theories of reasoned action and planned behaviour assume that the influence of attitudes on behaviour is mediated by intentions. However, even though intentions are the best single predictor of behaviour, they predict less than 30 per cent of the variance in behaviour. This intention–behaviour gap can be reduced, if we motivate people to form implementation intentions. Implementation intentions differ from general intentions, because they specify the situation and time when the intended action should be performed.

- One reason why implementation intentions work is that by mentally simulating that if situation X arises one will enact behaviour Y, one partially or fully transfers the control over the instigation of the behaviour Y to environmental cues. Thus, once we have formed an implementation intention to do Y in situation X, situation X will trigger the behavioural response Y. With easy and well-learnt responses, this can lead to the automatic performance of that behaviour.

- The second part of the chapter discussed the influence of automatic processes on behaviour. There is increasing evidence that attitudes, social norms, habits and goals can be primed by one’s social or physical environment and influence behaviour without individuals being aware of being influenced.

- Behaviour can be automatically and unconsciously influenced by our implicit attitudes, an effect that becomes apparent when implicit and explicit attitudes are discrepant. Under these conditions, explicit attitudes predict behaviour that is under the individual’s control, whereas implicit attitudes are better predictors of behaviour when the individual lacks the resource (and motivation) to exert control.

- Norms can be triggered by environmental factors and influence behaviour without the individual being aware of this effect. For example, a picture of a library can induce individuals to lower their voices, but only if the norm is goal relevant (i.e. if they are planning to go to the library).

- There is increasing evidence that goals can be primed and that individuals often adopt goals without being aware of the environmental stimuli that acted as prime (e.g. the smell of cleaning liquid can make people aware that their house needs cleaning).

- Because there are usually different means available to reach a goal, the selection of means has to be routinized for goal directed behaviour to become automatic. One way to routinize the choice of means to reach a goal is the development of habits. Well-learnt habitual behaviours can be elicited by appropriate environmental cues and executed automatically. Habits work for the same reasons as implementation intentions, the difference being that the association between the situational cue and the behaviour sequence has been established through repeated performance of that behaviour rather than through mental simulation.

- The impact of subliminal priming on behaviour suggests the possibility of using such procedures in advertising. Subliminal advertising has been thought to be impossible for many decades, but recent research suggests that it might be feasible. For example, participants, who were subliminally primed with the
name of a soft drink, were more likely to choose that soft drink over other drinks, but only if they were thirsty. Thus, when people have a particular goal, subliminally priming them with the means of reaching this goal, can influence their behaviour.