RESEARCH REPORT

THE IMPACT OF SUBTLE ENVIRONMENTAL CUES
ON PRODUCT ATTITUDE PREDICTIONS

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The Impact of Subtle Environmental Cues on Product Attitude Predictions

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Abstract

For many product decisions, consumers predict the product attitudes of other persons. These predictions are typically made in retailing environments consisting of many cues that passively activate mental concepts. We investigate if and how these externally activate concepts influence attitude predictions. Depending on the activated concept, we distinguish two possible processes that might bias the predictions: retrieval and comparison. In study 1 and 2, subtle primed trait concepts are found to elicit a process that selectively retrieves trait congruent prediction cues, ultimately leading to assimilation effects. When extreme exemplars are externally activated, like in study 3, comparison processes are observed, resulting in a contrast effect on the attitude predictions.

Introduction

In many product decision situations people are required to predict the attitude of someone else. These situations vary from everyday household decisions, where a family member serves as purchasing agent for his or her relatives, to special occasions like birthdays, when people are feverishly looking for the perfect gift. Studies looking at how an agent predicts someone else's product attitudes typically focus on predictor-specific characteristics like target person knowledge and attitude similarity (e.g., Davis, Hoch and Ragsdale 1986; West 1996). These studies are mostly performed in isolated and distraction-free settings. In reality, however, people are also influenced by external factors that are present at the time of purchase. The complex and busy retailing environment consists of many cues (e.g., posters with slogans, advertisements with models, store atmosphere etc.) that passively activate mental concepts like traits (e.g., classy, smart) and exemplars (e.g., Naomi Campbell) (Bargh 2002). Many studies in the area of social judgment have demonstrated that such activated concepts unconsciously influence the perception of a target person (for reviews see Schwarz et al. 2003; Stapel and Koomen 2001). Therefore we expect that externally activated concepts affect consumer's perception of the person for whom he or she is buying a product and in turn the product attitude prediction.

It can reasonably be assumed that product attitude predictions are typically based on previously stored information about the target person. The goal of this article, then, is to find out if and how externally activated concepts influence product attitude predictions, after the target person information is encoded. More specifically, we predict that externally activated knowledge might affect product attitude predictions through one of two different processes. These processes are: retrieval processes resulting in assimilation effects and comparison processes leading to contrast effects. We will discuss both of them consecutively.

Assimilation effects

In knowledge activation research, assimilation effects are typically found when *trait concepts* are externally activated. Stapel and Schwarz (1998), for instance, first primed their participants with either negative or positive trait concepts, and, then, asked them to read an ambiguous or a mixed Donald description. The ambiguous Donald description contained behavioral instances, each individually having both a negative and positive valence (e.g., “Michael helps a friend complete a take-home examination” is both dishonest and kind). The episodes of the mixed Donald description, on the other hand, imply only either a negative or positive trait, but the description consists of both positive and negative episodes (e.g., “When Michael learned that John had failed his exam, he sought John out to console him” is kind, while “Michael copied an article from the JESP and submitted it as his final research project in his psychology class” is dishonest). When asked to rate the target person, the participants perceived both the ambiguous and mixed Donald significantly more positive when primed with positive, as compared to negative, trait concepts. More specifically, the trait primes served as an interpretation framework for the ambiguous Donald and elicited selective encoding of trait congruent episodes when the Donald description was mixed, resulting in assimilation effects of both types of descriptions. Interestingly, the knowledge activation literature provides no evidence that activated trait concepts also can have a significant impact on person perception after the person information has been encoded. Both Srull and Wyer (1980) and Stapel, Koomen and van der Pligt (1997) failed to find any post-priming effects after information encoding. We predict, however, that assimilation effects still could occur, even when consumers previously stored the information about the person for whom they are predicting product attitudes. When storing information about another person, namely, people are found to spontaneously link the applicable personality trait to the encoded instances (Srull 1983; Uleman and Moskowitz 1994). Moreover, it has also been shown that those traits subsequently serve as effective recall cues for previously stored episodes (e.g., Winter and Uleman 1984). By consequence, we expect that trait concepts, activated at prediction time, will make congruent target person features more accessible. This expectation is consistent with previous research (Lerouge,

Smeester and Warlop 2004), where we have shown that personality traits can lead to assimilation effects, even when activated after the information encoding stage. Furthermore, we have provided some evidence that the selective use of target person information congruent with the activated trait is likely the underlying mechanism of the observed assimilation effects. Applied to a consumer context, then, this means that the purchasing agent who is searching his memory for diagnostic information is expected to selectively retrieve those instances that are congruent with the most accessible trait construct at that time.

Contrast effects

Next to assimilation effects, the knowledge accessibility studies also observed contrast effects when judging other persons. These contrast effects are consistently found when people are primed with *extreme exemplars*. Herr, Sherman and Fazio (1983) first documented this effect through the external activation of animal exemplars that were either extremely high (e.g., Tiger, Shark) or extremely low (e.g., Rabbit, Puppy) with respect to ferocity. When the participants were subsequently asked to judge other animals, the judgments shifted away from the activated exemplar, serving as an anchor to which the target person animals were compared. Stapel, Koomen and van der Pligt (1997, study 3) later observed that these contrast effects also apply to perceptions of individual persons about whom the predictors already possessed some previously stored information. More specifically, the participants were first asked to read the description of a person named Donald who was vaguely negative with respect to kindness. In a later stage of their study, they were asked to judge Donald with respect to kindness. Right before this judgment, they provided the participants with either extreme hostile exemplars (“Dracula, Stalin and Hitler”) or extreme kind exemplars (“Aladdin, Ghandi and Mandela”). The kindness ratings pointed out that people perceived Donald as kinder when they were exposed to the extreme hostile exemplars compared to the extreme kind exemplars. An identical observation was made with respect to kindness ratings about a good friend. A good friend is perceived as kinder after priming with extremely hostile as opposed to

extremely kind exemplars. Similar to Herr et al., the authors explain this contrast effect as a tendency of people to use the activated knowledge as a comparison standard.

Whether or not an activated concept elicits a comparison process and results in a contrast effect, depends on its' characteristics. Dijksterhuis, Spears and Lépinasse (2001) consistently observed stronger contrast effects, when people were primed with a single individual as apposed to a group of individuals, the former functioning as a better comparison standard than the latter. Furthermore, Stapel and Koomen (2001) showed that an effect of activated concepts on the comparison process is likely when the accessible information is more distinct, has more comparison relevance and is sufficiently extreme. Combining these findings, we predict that the external activation of an individual and extreme person exemplar will evoke a comparison process at prediction time.

Study 1

Activated traits are assumed to influence the kind of target person information that is retrieved from memory. We expect that if the predictor is primed with traditional trait concepts, this will favor the retrieval of previously stored traditional target person information. When asked to predict a target person's attitudes towards traditional clothes, people are expected to perceive the target person's attitudes higher, after being primed with traditional compared to extravagant trait concepts. Likewise, we expect that, the attitudes prediction towards extravagant clothes will be lower for people primed with the traditional, compared to extravagant, trait concepts.

Since the occurrence of an assimilation effect is caused by selective retrieval of stored target person information, we expect the type of encoded information to play an important moderating role. In other words, we expect that an assimilation effect will only be observed when prime congruent prediction cues are available. When the target person information is mixed and consists of both traditional and extravagant

instances, primed traits will make congruent cues more accessible, leading to an assimilation effect. On the other hand, when the target person information is vague and the behaviors only apply weakly to the primed traits, no priming effects are expected.

Pretest

Selection of behavioral descriptions

We compiled a set of 54 individual paragraphs describing human behaviors on a wide range of different topics (e.g., music preference, favorite holiday, hobby, type of pet). Based on these 54 behavioral instances, three questionnaires were created. Each questionnaire contained an equal number of traditional, extravagant and vague behaviors.

One hundred fourteen students sampled from the same population as the participants of the main experiment received one of the three questionnaires. For each of the 18 individual behaviors they indicated how traditional or extravagant the behavior was. They rated the behaviors on a seven-point scale ranging from 1 (= extremely traditional) to 7 (= extremely extravagant). On the basis of these data we selected a number of vague, traditional and extravagant episodes. For each of the topics the rating of the vague behavior did not significantly differ from the midpoint of the scale. The instances that had the lowest (highest) score were defined as traditional (extravagant) behaviors. In total we selected six vague ($M = 3.88$), three traditional ($M = 1.81$) and three extravagant ($M = 6.20$) behaviors. We combined the six vague behaviors to form the vague target person description. The mixed target person description consisted of the three traditional and three extravagant descriptions.

Test of target person descriptions

Next, we tested how the respondents perceived the vague and mixed target person with respect to his clothing style. Therefore, 33 participants, coming from the same pool as the participants of the main experiment, were asked to read the behaviors of either the vague or mixed target person and subsequently judged the target person's clothing style. They sat down in an individual cubicle equipped with a computer and were instructed to very carefully read some episodes describing David, a student in Leuven. Next, the individual episodes were randomly presented on the screen. The participants were provided with the behaviors of either the vague or the mixed target person. For the vague target person description, these episodes were:

David likes to go out. His ideal Saturday evening compromises a visit to the local pub. Once there, he is completely at ease and forgets all his troubles.

Every now and again, when David has some spare time, he calls his friends. Together they often go out to do some sports or to go downtown. These are the moments David really enjoys.

David loves music. He followed some music courses before and learned how to play the violin and electrical guitar. Currently however David plays no instruments any more.

David likes dancing and he plans to enroll at a dancing school. Although David has not decided on the course yet, he wants to follow one. He very much likes the idea of becoming a good dancer.

David perceives his cooking capacities as rather bad. Because he would like to surprise his friends with a dinner, David has enrolled for a number of cooking classes.

Although David is aware that his chances to win are extremely small, he buys lottery tickets from time to time. If David would win the jackpot, he would buy a decent car first and then spend some money on a trip.

The mixed target person was described as follows:

David likes to go out from time to time. His ideal Saturday evening consists of a visit to the opera. Once there, he is completely at ease and forgets all his problems.

Every now and again, when David has some spare time, he calls his friends. Together they normally go out to play some golf or chess. These are the moments David really enjoys.

David is a great animal lover and he especially likes exotic animals. He is the proud owner of a snake called Sissly, which he keeps at home. David really enjoys feeding Sissly.

David likes dancing and he plans to subscribe at a dancing school. He is especially interested in the street dance course. It looks like a lot of fun to him to become a good dancer, like the ones he sees on MTV.

David occasionally enrolls for evening classes in his neighborhood. At this moment he follows the body painting class, which he likes very much. He would recommend it to all his friends.

When the weather is bad, David sometimes visits a museum. He prefers expositions about classical art. He can really enjoy an exhibition about Rubens or Rembrandt.

After they had read all the instances at their own pace, with a minimum of 5 seconds for each behavioral instance, they were asked to judge the target person's clothing style on a seven-point scale (1 = very traditional, 7 = very extravagant).

No significant difference between the ratings of the mixed ($M = 3.47$) and the vague target person ($M = 3.75$) was observed ($t(31) = -.60, p > .55$). Both descriptions also did not differ from four, the midpoint of the scale.

Selection of Primes

A sample of 24 participants from the same population as the main study were asked to indicate how strongly the concept of a traditional clothing style was related to 28 provided personality traits. They were asked to do this on a five-point scale (1 = not at all, 5 = very strongly). Similarly, they were also asked to judge the level of association between the concept 'extravagant clothing style' and 29 related traits. From each pool, we selected eight traditional personality traits ($M = 4.01$) and eight extravagant traits ($M = 4.22$) that scored highest. The selected traits related to a traditional clothing style were: 'conservative, formal, decent, British, neat, classic, traditional and common'. The traits that scored highest with respect to extravagant

clothing style were: 'exaggerated, extravagant, loud, flashy, colorful, spicy, daring and risky'¹.

Selection of Product Alternatives

We sampled 32 students from the same population as that of the main studies. We asked them to score a number of shirts and ties on a bipolar seven-point scale (1 = traditional, 7 = extravagant). For each clothing category, we compiled a pool of 10 product alternatives, which we expected to score high and 10, which we expected to score low on the traditional-extravagant scale. In total the participants rated 20 different shirts and ties of which pictures were presented on a computer screen in random order. Based on these ratings we selected 3 shirts that were perceived as traditional ($M = 2.11$) and 3 shirts that were seen as extravagant ($M = 5.70$). Similarly we also selected 3 traditional ties ($M = 1.98$) and 3 ties perceived as extravagant ($M = 5.98$).

Method

Participants and Design

In total 119 undergraduate students of the Katholieke Universiteit Leuven participated in this study. They received a fee of € 7 in return for their participation. The participants were randomly assigned to the conditions of a 2 (target person description: vague vs. mixed) x 2 (prime valence: traditional vs. extravagant) between subjects design. The dependent variables were the participants' attitude prediction towards the different shirts and ties.

¹ In our studies, the prime words were presented in Dutch. The Dutch prime words related to traditional clothing style were: "conservatief", "formeel", "deftig", "Brits", "keurig", "klassiek", "traditioneel" and "sober". The extravagance prime traits were "buitensporig", "extravagant", "opvallend", "flashy", "kleurrijk", "pikant", "gedurfd" and "gewaagd".

Procedure and materials

The study was again part of a general testing session in which participants were asked to complete several tasks. After the participants were seated in individual cubicles, they were requested to complete a number of unrelated tasks, more specifically: (a) a reading task; (b) a filler task; (c) a task involving the priming procedure; (d) an attitude prediction task and (e) a post-experimental questionnaire. Finally, the participants were thanked for their cooperation. When the entire study was finished, we debriefed them.

Reading and filler task

This reading task was conducted on a computer. The computer randomly assigned the participants to either the vague or mixed target person condition. First, the target person was introduced as David, a student in Leuven. After the participants were requested to read the description attentively, the individual behaviors were randomly presented on the screen one by one. The participants could proceed to the next behavioral instance at their own pace by clicking a 'continue' button. This button each time only appeared after five seconds to prevent that participants would quickly browse through all behavioral instances without reading them. When the participants had read the six behaviors, they were instructed to count down from 60 to zero in steps of three. After this small counting exercise, the participants performed an unrelated filler task. Both counting and filler task were included to conceal the connection with the other tasks.

Priming manipulation

The primes in the present study were traits retained from the pretest. These traits were embedded in eight of 14 word groups. Each word group consisted of 5 words. The participants were asked to unscramble the word groups and to form grammatically correct sentences with 4 of the 5 words. For half of the participants the

prime words were related to a traditional clothing style and for the other half the prime words were related to an extravagant clothing style.

Attitude prediction task

This final task was again executed on a computer. The participants were asked to imagine that they were looking for a suitable gift for the target person, David. They were told they would see a number of shirts and ties and were requested to predict the target person's attitude towards the set of six shirts and the equally large set of ties. Each set consisted of three traditional and three extravagant alternatives. The sequence of the clothing sets as well as the product alternatives within each set were randomly chosen by the computer. For each shirt or tie, the participants had to predict on a seven-point scale (1 = extremely negative, 7 = extremely positive) what target person's attitude towards the provided piece of clothing would be.

Post-experimental questionnaire

At the end of the entire session, the participants were asked to write down any suspicions they had about the experimental procedure. Based on this post-experimental questionnaire, we had to exclude 16 of the 119 participants (= 13%) because they were suspicious about the scrambled sentence task and its' relationship with the attitude prediction task.

Results and discussion

We computed the average attitude prediction of the three extravagant shirts, the three traditional ones, the extravagant ties and the traditional ties. The Cronbach's alpha with respect to the traditional shirt ($\alpha = .71$) and extravagant shirt ($\alpha = .65$) were acceptable. For the category of ties, and especially for the extravagant ones ($\alpha = .37$) the cronbach's alpha was insufficient. Therefore, we decided to perform the analyses only on the shirt ratings. More specifically, we performed a 2 (target person

description: mixed vs. vague) x 2 (prime valence: traditional vs. extravagant) x 2 (clothing style: traditional vs. extravagant) mixed ANOVA with target person description and prime valence as between-subjects variables and style as a within-subjects variable.

We found a significant main effect of style ($F(1, 99) = 63.28, p < .0001$). The attitude prediction was higher for the traditional ($M = 4.50$) compared to the extravagant shirts ($M = 2.86$). Furthermore, the ANOVA revealed a three-way interaction between target person description, prime valence and style ($F(1, 99) = 7.90, p < .01$). The means for this three-way interaction are shown in figure 3.1.

FIGURE 1
MEAN ATTITUDE PREDICTION AS A FUNCTION OF TARGET PERSON DESCRIPTION, PRIME VALENCE AND CLOTHING STYLE (STUDY 1)

To further analyze this interaction we conducted a separate 2 (prime valence: traditional vs. extravagant) x 2 (clothing style: traditional vs. extravagant) mixed ANOVA with prime valence as between and style as within-subjects variables for the mixed target person and for the vague target person. For the mixed target person, we found a main effect of style ($F(1, 52) = 41.18, p < .0001$). The mean prediction score was higher for the traditional ($M = 4.75$) than for the extravagant shirts ($M = 2.76$).

This effect was qualified by prime valence ($F(1, 52) = 4.28, p < .05$). As expected, the participants predicted that the target person would be more favorable towards the traditional shirts when they previously were exposed to the traditional primes ($M = 5.12$) compared to the extravagant primes ($M = 4.38$) ($F(1, 52) = 4.65, p < .04$). And although the participants also tended to predict that the extravagant shirts were more suitable for the target person in the extravagant valence condition ($M = 3.03$) than in the traditional valence condition ($M = 2.49$), this assimilation effect did not reach significance ($F(1, 52) = 2.17, p < .15$).

For the vague target person, we similarly found a main effect of style ($F(1, 47) = 23.48, p < .0001$). Unexpectedly, we also observed a marginally significant interaction effect between style and prime valence ($F(1, 47) = 3.77, p < .06$). Although there seems to be a tendency for contrast effects, Tukey post hoc analyses on both the traditional and the extravagant shirt ratings did not reveal significant differences between the traditional and extravagant prime valence condition.

Although the results provided partial proof of our expectations, we were confronted with some unexpected problems. We first had to remove around 13% of the participants because they correctly detected the link between the scrambled sentence and the attitude prediction task. We also had to exclude the tie attitude predictions from the analysis. The results with respect to the mixed target person provided convincing evidence for the traditional shirts only, and, finally we observed tendency for contrast effect when the target person was vague.

Study 2

One of the problems in study 1 was the awareness of the priming procedure. Since awareness is previously found to unpredictably affect expected assimilation effects (Higgins 1996; Lerouge et al. 2004), this might be the major source of the disappointing results in study 1. We tried to solve this problem in the present study by

using a subliminal priming procedure. Our expectations are identical to those of study 1.

Method

Participants and Design

Eighty students of the Katholieke Universiteit Leuven took part in this experiment and received € 7. The experimental design included two between-subjects factors: target person description (vague vs. mixed) and prime valence (traditional vs. extravagant). The participant's prediction of a target person's clothing attitude was again the dependent measure.

Procedure and materials

After the participants entered the laboratory, they were seated in individual cubicles and were told that they would participate individually in a sequence of unrelated tasks. The sequence of tasks consisted of: (a) a reading task; (b) a word recognition task involving the subliminal priming procedure, (c) the judgment task and (d) a post-experimental questionnaire. Finally, participants were thanked for their participation, paid and debriefed.

Reading task

The reading task was identical to the tasks used in study 1. Participants were either asked to read the vague target person description consisting of six vague behavioral instances or to read the mixed target person description with three traditional and three extravagant behaviors.

Priming manipulation

After participants finished reading the target person description, they were presented with a word-recognition task. Participants performed this task on a computer. They were told they would be presented with 30 letter strings appearing one by one on the computer screen. Half of these letter strings were existing words, the other half were non-existing words. Each trial started with the presentation of a fixation point on the computer screen. To start a trial the participants had to press the key '2'. They had to decide as quickly as possible whether or not a string was an existing word by pressing a key on the keyboard ('1' for existing word and '3' for a non-existing word). In order to get acquainted with this procedure, they started with six test trials.

After the test trials the participants proceeded with the 30 actual trials. During these trials, the strings were preceded by subliminal primes. These primes were words that were presented for 17 ms and masked by a row of letters ("XQFBZRMQWGBXGMK") remaining on the screen for 225 ms. The target word immediately followed this mask. All participants were exposed to 10 different prime words that all were used three times. The prime words were retained from the pretest of study 1, in which we measured the relatedness of the trait words with traditional or extravagant clothing style on a 5-point scale. In the traditional prime valence condition these traits ($M = 3.93$) were: conservative, formal, decent, British, neat, classic, traditional, common, composed and timeless. In the extravagant valence condition these traits ($M = 4.1$) were: exaggerated, extravagant, loud, flashy, colorful, spicy, daring, risky, provocative and unbridled². The participants were randomly assigned to one of the two prime valence conditions.

² In our studies, the prime words were presented in Dutch. The Dutch prime words related to traditional clothing style were: "conservatief", "formeel", "deftig", "Brits", "keurig", "klassiek", "traditioneel", "sober", "braaf" and "tijdloos". The extravagance were "buitensporig", "extravagant", "opvallend", "flashy", "kleurrijk", "pikant", "gedurfd", "gewaagd", "uitdagend" and "ongeremd".

Judgment task

Like in study 1, participants were asked to judge the target person with respect to the six shirts and six ties on a seven-point scale. The product categories were randomly presented and also the clothing pieces within each category were randomized.

Post-experimental questionnaire

At the end of the experimental session, participants were asked to complete a form that probed for awareness and suspicion about any relatedness among tasks (see funneled debriefing procedure, Chartrand & Bargh 2000). One of the participants could retrieve some of the primes and was not included in the analyses.

Results

As in previous studies we computed the average of the three traditional and the three extravagant alternatives for the shirts and ties. The Cronbach's alpha's with respect to the traditional shirts ($\alpha = .76$) and extravagant shirts ($\alpha = .73$) were again satisfying. Contrary to study 2, the Cronbach's alpha's of the ties was also acceptable for both the traditional ($\alpha = .69$) and the extravagant ones ($\alpha = .70$). We performed a 2 (target person description: mixed vs. vague) x 2 (prime valence: traditional vs. extravagant) x 2 (product category: shirts vs. ties) x 2 (style: traditional vs. extravagant) mixed ANOVA with target person description and prime valence as between-subjects and product category and style as within-subjects variables.

The analyses revealed two significant main effects and one significant interaction effect. First, attitude prediction was higher for the shirts than ties ($F(1, 75) = 6.34, p < .02$) and for traditional than extravagant clothes ($F(1, 75) = 24.64, p < .0001$). The effect of style, however, was larger for shirts than for ties ($F(1, 75) = 5.39, p < .03$). We also found a significant effect between prime valence and clothing

style ($F(1, 75) = 24.64, p < .0001$). For traditional clothes, attitude predictions were higher in the traditional, compared to extravagant, prime valence condition ($F(1, 75) = 8.52, p < .01$). For the extravagant clothes, attitude predictions were lower in the traditional, compared to extravagant, prime valence condition, but this effect was only marginally significant ($F(1, 75) = 2.74, p < .11$).

The predicted interaction between prime valence, product style and target person description did not reach significance ($F(1, 75) = 2.54, p < .12$). The means of this interaction effect are shown in figure 3.2.

FIGURE 2
MEAN ATTITUDE PREDICTION AS A FUNCTION OF TARGET PERSON DESCRIPTION, PRIME VALENCE AND CLOTHING STYLE (STUDY 2)

To further test our hypotheses, we performed a 2 (prime valence) x 2 (product category) x 2 (product style) mixed ANOVA for the mixed and vague target person separately. For the mixed target person, the data revealed the expected significant interaction between prime valence and clothing style ($F(1, 34) = 6.70, p < .02$). The mixed target person was predicted to be more favorable towards traditional clothes in the traditional prime valence condition ($M = 4.87$) compared to the extravagant prime valence condition ($M = 3.96$) ($F(1, 75) = 7.11, p < .02$). On the other hand, the participants predicted that the target person would have a more positive attitude

towards the extravagant clothes when they were exposed to extravagant ($M = 3.45$) compared to traditional primes ($M = 2.54$) ($F(1, 34) = 4.31, p < .12$). For the vague target person, however, the interaction between prime valence and clothing style was not significant ($F(1, 41) = .57, p > .45$), as expected.

The subliminal priming procedure used in this second study produced more reliable results than those of Study 1. In the mixed target person condition, the participants predicted that the attitude of the target person would be more positive towards the prime-congruent clothes compared to the prime-incongruent ones. When the target person information was vague, this difference disappeared. This provides some evidence that the activated trait concepts increase the accessibility of congruent stored information. In the mixed target person condition where congruent information was available, assimilation effects were found. On the other hand, for the vague target person description no prime-congruent information is available and, by consequence, no assimilation effects were observed.

Study 3

In this third study we try to find out what the effect of activated extreme exemplars is on subsequent product predictions. More specifically, we expect that people, when have to predict the clothing preferences of someone on whom they previously received some information, will predict a higher (lower) attitude towards extravagant (traditional) clothes if that person has been primed with an extremely traditional exemplar as opposed to an extremely extravagant prime.

Herr et al. (1983) observed contrast effects of extreme animal exemplars on both real and fictitious animal perceptions. Also the findings of Stapel et al. (1997) revealed contrast effects for both an ambiguous Donald description as an unambiguous target person, like a good friend. These findings imply that extreme exemplars are used as an anchor to which the overall person impressions are compared, independently of the evaluative ambiguity of the target person. By

consequence, we predict that the activation of extreme exemplars will lead to contrast effects for both the vague and mixed target person.

Pretest

Selection of Primes

Twenty-four participants of the same population as the main sample were asked to judge several famous people with respect to their clothing style (1 = extremely traditional, 7 = extremely extravagant) and familiarity (1 = unfamiliar, 4 = very familiar). In total the participants rated 41 celebrities for which we expected the score to be close to one of the poles on the clothing style scale. From this pool, we selected one male celebrity, Prince Charles (the Prince of Wales) who was perceived as very traditional ($M = 1.83$) and a second one, Elvis Presley, who scored very high with respect to extravagance ($M = 5.87$). Both Prince Charles ($M = 3.48$) and Elvis ($M = 3.70$) scored high on familiarity.

Method

Participants and design

Eighty-four students of the Katholieke Universiteit Leuven participated in this study in partial fulfillment of course requirements. The participants were randomly assigned to the conditions of a 2 (target person description: vague vs. mixed) x 2 (prime valence: traditional vs. extravagant) between-subjects design. The dependent measures were the predictions of the target person's attitude towards the different pieces of clothing.

Procedure and materials

The procedure was similar to the procedure in study 1 except for the priming task. So, the participants again completed a sequence of tasks, including: (a) a reading task; (b) a filler task; (c) a task involving the priming procedure; (d) an attitude prediction task and (e) a post-experimental questionnaire. At the end of the session, the participants were thanked and paid for their participation.

Reading and filler task

These tasks were identical to the ones we used in study 1. Participants were randomly assigned to either the vague or the mixed target person condition and asked to read the corresponding target person description. Next, they completed a counting exercise and unrelated filler task.

Priming manipulation

The priming manipulation was a paper-and-pencil task, framed as a pretest for another study. We asked the participants to write down all the associations that a certain celebrity brought to mind. More specifically, we asked them to take note of all the feelings and characteristics that they assigned to the famous person. We requested them to sum up as many items as possible and to spend at least five minutes on this task. In the traditional prime valence condition this famous person was Prince Charles while in the extravagant prime valence condition the celebrity was Elvis Presley. The participants were randomly assigned to one of both conditions.

Attitude prediction task

In this final task, and like in study 1, the participants had to indicated the target person's attitude towards the six shirts and ties. For each clothing piece, this was done on a seven-point scale (1 = extremely negative, 7 = extremely positive). The order of

the clothing sets and the clothing alternatives within each set were randomly presented.

Post-experimental questionnaire

After completion of the above tasks, we asked the participants to fill-out a post-experimental questionnaire probing for their suspicions about the experimental procedures. The data of seven participants were not included in the analyses because they correctly believed that there was a link between the priming task and attitude prediction task.

Results and discussion

For each participant we computed the average score of the three traditional ($\alpha = .72$) and the three extravagant ($\alpha = .71$) shirt ratings and also of the three traditional ($\alpha = .60$) and the three extravagant ($\alpha = .70$) tie ratings. Next, we performed a 2 (target person description: mixed vs. vague) x 2 (prime valence: traditional vs. extravagant) x 2 (product category: shirts vs. ties) x 2 (style: traditional vs. extravagant) mixed ANOVA with target person description and prime valence as between-subjects and category and style as within-subjects variables.

The results showed a main effect of product category ($F(1, 73) = 36.33, p < .0001$). Overall the participants predicted that the target person's attitude would be higher for the shirts ($M = 3.87$) compared to the ties ($M = 3.30$). We also found a main effect of clothing style ($F(1, 73) = 19.90, p < .0001$). The target person's attitude towards the extravagant clothes ($M = 3.07$) was predicted to be lower than the target person's attitude towards traditional clothes ($M = 4.10$). But, more interestingly, this main effect of clothing style was qualified by a significant interaction with prime valence ($F(1, 73) = 5.35, p < .03$). The interaction means are shown in figure 3.3.

FIGURE 3
OVERALL TARGET PERSON ATTITUDE PREDICTION AS A FUNCTION OF CLOTHING STYLE
AND PRIME VALENCE (STUDY 3)

As expected, people who received the traditional prime, Prince Charles, perceived the target person's attitude towards the traditional clothes significantly lower compared to the participants who received the extravagant prime, Elvis Presley ($F(1, 73) = 3.66, p < .06$). On the other hand, people primed with the traditional exemplar perceived the target person's attitude towards the extravagant clothes higher compared to those primed with the extravagant exemplar ($F(1, 73) = 4.64, p < .04$). In short and as predicted, we found contrast effects for both the traditional and extravagant clothes. These contrast effects were independent of the target person type ($F(1, 73) = 0.43, p > .85$).

General conclusion

For a wide variety of product decisions, people have to predict the attitudes of another person towards a number of alternatives. Although some studies already investigated how (good) people predict the other's product attitudes, the effects of the environment on this prediction process remained unstudied. And this despite the huge number of social perception studies demonstrating the effect of external cues. In this

article we wanted to find out to what extent subtle external cues, through the activation of mental concepts, influence product attitude predictions made by agents that at least possess some target person information.

A first observation is that activated constructs do affect product attitude prediction. Our findings furthermore indicate, that we should distinguish between two different processes that both take place at prediction time. First, people retrieve information from memory to form an impression about the target person. Activated traits are found to influence the type of information on which a target person impression is based. Stored trait congruent information becomes more accessible resulting in an assimilation effect on the product attitude prediction. Secondly, people compare the impression they have about the target person with an activated and relevant concept. When the activated concept is extreme, this comparison results in a contrast effect, shifting the product attitude prediction away from the concept.

Although it is not directly shown that consumers go through both stages, we did find important evidence pointing in that direction. First, depending on the activated concepts, opposite effects emerged. Trait concepts, lacking comparison relevance (Stapel et al. 1997) but very effective as retrieval cues (Winter and Uleman 1984), favor a retrieval explanation of the found assimilation effect. On the other hand, the activated extreme exemplars, found to result in contrast effects, act as relevant comparison standards. Second, the impact of the type of target person information was different along the activated concepts. For activated traits, the observed assimilation effects depended on the type of available target person information. This indicates that the trait primes effectively influence the use of original episodes. When exemplars were activated, their effect was independent of the type of originally provided target person information. This demonstrates that, for activated exemplars, not the original individual episodes, but the overall target person impression matters. In sum, our study provides at least indirect evidence that the two types of activated concepts influence different processes, namely retrieval and comparison.

If we compare the contrast findings with the assimilation results, we have to admit that the effects of the latter seem less strong. When people predict someone else's product attitudes, they base their prediction not only on the target person specific information but also on other cues like their own attitudes (Davis, et al. 1986; Kenny and Acitelli 2001). One possible explanation could then be that the activated traits only influence the use of particular target person information, leading to a biased target person impression. Assuming people already formed an impression of their own clothing preferences, the own attitudes could remain unaffected by the activated trait concepts (Lerouge et al. 2004). Contrast effects, on the other hand, are assumed to result from comparisons with the overall target person impression without affecting the underlying target person instances. We should also point out that the effect of retrieval only holds when no prior impression is formed. When the predictor already has a clear image of what type of clothes the target person likes and dislikes, he or she very likely will use that information, instead of basing his or her prediction on retrieved target person episodes (Carlston 1980). In other words, we expect that, compared to contrast effects, assimilation effects on the ultimate product predictions will be limited to situations where applicable original target person information is available and relied upon.

How do our experimental results relate to a "real world" retailing environment? In fact, the priming procedure we used in our studies originates from field studies (Bargh 2002). These studies, for instance, illustrated the effect of aggressive cues such as weapons (Turner, Layton and Simons 1975) or television violence on aggressiveness (Belson 1978), and even observed stronger effects than those obtained in a laboratory (Bushman and Anderson 1998). Although, the context in which these studies were conducted was far from a retail environment, they show that the experimentally manipulated priming procedure also holds outside the laboratory. Moreover, many retail stores are carefully designed in order to activate certain concepts in the consumer's mind. The presence of the classy clothing store atmosphere enhanced through classical music, antique furniture and 19th century oil portraits on the walls in a Ralph Lauren store, for instance, is very likely to activate different trait concepts compared to store layout of the hip and trendy clothing store next door. While these

activated traits enhance the retrieval of congruent stored information, care should be taken with cues that are distinct, extreme and relevant comparison anchors, like extremely traditional or extravagant ad models or salespeople, probably leading to contrast effects. And although several prior studies investigated the effect of store characteristics on consumers' shopping experience and buying behavior (e.g., Bitner 1992; Spandenbergh, Crowley and Henderson 1996; Donovan and Rossiter 1982), the priming effects of these in-store cues on product attitude predictions still need to be investigated further.

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