Running head: IMPLICIT CONSUMER ATTITUDES

Implicit Consumer Attitudes and their Influence on Brand Choice

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Abstract

Recent theories in social psychology assume that people may have two different attitudes toward an object at the same time, one that is explicit and corresponds with deliberative behavior and one that is implicit and corresponds with spontaneous behavior. The assessment of both attitudes, therefore, would attenuate the attitude-behavior correspondence. In two experiments, we tested this assumption in the consumer domain by measuring implicit and explicit attitudes towards consumer products as well as actual choice. In the first experiment, we found implicit attitudes to predict spontaneous choice between recycled and classic writing pads even when controlled for explicit attitudes. In Experiment 2, we found participants whose explicit and implicit attitudes towards generic food products and well-known food brands were incongruent with each other were more likely to chose the explicitly preferred brand over the implicitly preferred one as long as they had ample time to make their choice. However, when choices were made under time pressure, consumers tended to chose the implicitly preferred brand over the explicitly preferred one. On the basis of these results we stress the importance of the concept of implicit attitudes for the understanding of consumer behavior.

Implicit Consumer Attitudes and their Influence on Brand Choice

How much do you like Product X? Do you like it a lot, somewhat, not too much, or not at all? Questions like this one are asked a zillion times by market researchers throughout the world for all kinds of product domains. Although not its sole purpose, to a large extent product attitudes are measured to predict future consumer behavior. But researchers sometimes complain that such explicit questions tend to tap consumers´ rationalized responses or instigate an effortful attitude construction which makes these attitude measures poor predictors of behavior in more natural situations. In this respect, the concept of implicit attitudes may provide an alternative.

Recent theories in social psychology assume that people may have two different attitudes toward an object at the same time, one that is explicit and one that is implicit (Fazio, 1990; Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000). Although different definitions of implicit or automatic attitudes have been proposed, for the present purpose implicit attitudes may be described as evaluative responses towards an attitude object, which in contrast to explicit attitudes are not necessarily subject to introspection (Greenwald & Banaji, 1995). In other words, individuals may not be aware of their implicit attitudes or they may be unable to verbalize them. Nevertheless, implicit attitudes may influence information processing and behavior. We therefore suggest that measuring implicit attitudes may lead to insights beyond what assessing explicit attitudes may provide.

A measure of implicit attitudes that is easily adaptable to different contexts has been presented by Greenwald, McGhee, and Schwartz (1998): The Implicit Association Test (IAT). Initially the IAT was developed to assess prejudice against minority groups. While individuals may be concerned to be fair-minded and strive to be unprejudiced on more controlled responses IAT scores are believed to reflect uncorrected feelings. In the consumer domain, social

desirability is not the only concern why explicit measures may not reflect the attitudes researchers are interested in. Rather, individuals may really have different attitudes because implicit and explicit attitudes are based on different grounds. A health-minded person's implicit attraction towards ice-cream for example may be overridden by worries about weight gain.

Since its publication the amount of research gathered on and with the IAT has exploded (for an overview see the special issue by Plessner & Banse, 2001). Up to now the IAT has proven to be a very useful tool for research on associations in general and implicit attitudes in specific. The IAT has proven to be a flexible, robust and reliable instrument. For example, Greenwald et al. (2002) report an average test-retest reliability of .60 and most studies also show satisfactory internal consistencies of Cronbachs' alpha > .80 (e.g. Asendorpf, Banse & Mücke, 2002, Banse, Seise, & Zerbes, 2001; Egloff & Schmuckle, 2002). The IAT seems less sensitive to instructions to fake than explicit measures are (Steffens, in press). Finally, the IAT has shown its predictive and incremental validity in quite a few studies (e.g. Asendorpf et al., 2002; Eggloff & Schmuckle. 2002; McConnell & Leibold, 2001). On the other side, one of its major drawbacks is the open question what the underlying processes behind the IAT scores are (internal validity). Although it seems quite clear that associations may be the source of the variation in IAT scores, there may be other processes driving the effect to a certain amount (Mierke & Klauer, 2003; Brendl, Markman, & Messner, 2001; Rothermund & Wentura, 2001). Second, it should be mentioned that the stimuli and not only the categories chosen might have an influence on IAT scores (Steffens & Plewe, 2001; Blümke & Friese, 2004). Therefore one should be careful by choosing the stimuli for an IAT and the final IAT scores can not be interpreted as representing absolute associations or attitudes (e.g. positive and negative IAT scores should not be interpreted

as positive and negative attitudes). Third, the IAT can only measure relative associations which also forbids an absolute interpretation of the IAT scores.

So far however, little is known about its suitability in consumer research (but see Govan, Williams, Wheeler, & Edwardson, 2001; Maison, Greenwald, & Bruin, 2001; Brunel, Tietje, & Greenwald, in press).

By and large, the IAT measures whether individuals are faster responding to a target by pressing a key on a keyboard when this key is also associated with positive or with negative stimuli. In its usual version the IAT measures relative attitudinal preferences between two categories. The present research was aimed to explore whether consumer products could be used as targets in the IAT.

But to investigate whether the IAT could be used in measuring implicit attitudes towards consumer goods was only one of our goals. Trying to extend the work presented in the field of consumer research so far (e.g. Brunel, Tietje, & Greenwald, in press), we primarily set out to investigate whether IAT scores are helpful in predicting consumer behavior, especially when implicit and explicit attitudes dissociate. In general, it has been suggested that implicit attitudes guide spontaneous behavior whereas more deliberative behavior is influenced more by explicit attitudes (Fazio, 1990; Fazio & Towles-Schwen, 1999; Wilson et al., 2000). Implicit and explicit attitudes may converge but they might just as well dissociate. For example, a dieter may feel attracted to an ice cream sundae but on second thought the high calorie content may override his spontaneously rather favorable attitude. Given the time to reflect about his thoughts and feelings he would report a less favorable attitude compared to a spontaneous measure. But which measure would be a better predictor for behavior? According to models on attitude-behavior correspondence, this would depend on the circumstances under which the behavior takes place as

mentioned above. Assuming the dieter in our example will ponder over the menu what to have for desert reflecting on his weight he may be less likely to give in to his craving. However, when he is pondering about the structure of the universe while he passes an ice-cream parlor, he may absent-mindedly get a scoop and may be half-done with it before guilt has its way.

Many factors may influence whether consumer behavior is exerted under more or less control. The example illustrates that the state of hungriness may influence control in the domain of eating behavior. In general, need states are strong moderators of controlled vs. uncontrolled behavior. Other factors have been proposed in the literature, most prominently the motivation and opportunity to deliberate (Fazio, 1990; Fazio & Towles-Schwen, 1999). We would therefore assume that time pressure moderates the predictive value of implicit versus explicit attitudes as it limits the probability of extensive information processing. In particular we predict that time pressure increases the predictive value of implicit attitudes and diminishes the influence of explicit attitudes. We tested this assumption in Experiment 1.

Experiment 1

The goal of our first experiment was to figure out whether the IAT could be used in measuring implicit attitudes towards writing pads (recycled versus classic white paper) and whether IAT scores are helpful in predicting behavior towards these products. The reasoning behind using recycled and classic white writing pads was the assumption that implicit and explicit attitudes may be dissociated in accordance to the explicit norm of environmental friendly behavior on the one hand side and the implicit preference for paper that appears to be cleaner on the other.

Method

Participants and Design

A total of 40 students (5 male and 35 female, M_{age} = 23.1) of different majors at the University of Heidelberg participated in the experiment. In an initial talk it was checked if they were familiar with the distinction between classic white and recycled paper. Only those students took part in the experiment who reported to have prior experiences with both kinds of products. This was done to ensure that participants already had attitudes towards the different writing pads before the experiment. An equal number of participants were randomly assigned to the four conditions of a 2 x 2 between-subjects design with the factors time pressure (yes vs. no) and task order of the IAT (see below). As a reward for their participation, participants could chose between different selections of writing sets (with a value of about 3 EURO).

Materials

Explicit attitude. Participants had to judge both recycled and classic white writing pads on seven-point rating scales with respect to top quality, profitable price-performance relationship, high trustworthiness, stability of quality, and looks. These attributes were taken from consumer studies on attitudes and behavior towards corresponding products (Bruhn, 1997). For each of the seven attributes, participants had to judge how well it fits to recycled and classic white writing pads from 1 (*not at all*) to 7 (*perfectly*).

Implicit Association Test. In general, the IAT used in the present experiment followed the standard version (cf. Greenwald, McGhee, & Schwartz, 1998). However, differences were as follows. The category names were *recycled paper*, *white paper*, *positive*, and *negative* (translated from German). Colored photographs taken from different recycled and classic white writing pads represented the target categories. Two pictures were taken of each of 5 recycled paper and 5

classic white paper writing pads from different perspectives, thus, creating a total of 40 different target stimuli. The exemplars that had to be categorized as positive or negative were direct translations of the words used by Greenwald et al. (1998). From this sample, 20 words with a positive and 20 with a negative meaning have been used. The response assignments in the first combined and the reversed combined task of the IAT procedure (i.e., block 3 and 5) have been manipulated as follows. In block 3, one half of the participants had to press the left key if stimuli were either positive or recycled paper and the right key if they were either negative or white paper (task order A) and the other half had to press the left key if stimuli were either positive or white paper and the right key if they were either negative or recycled paper (task order B). Key assignments were changed in block 5, respectively.

Choice. Participants could choose between three writing sets as a reward for their participation. They consisted of two pencils and two writing pads that where either both recycled pads, one recycled and one classic white paper pad, or both classic white paper pads. In the time pressure condition, photographs of the three selections appeared on the computer screen and participants had to decide between them via key press within 5 seconds. In the no time pressure condition, the writing sets were presented as real products and participants had unlimited time to make a decision.

Procedure

Upon arrival at the laboratory participants were randomly assigned to one of the four conditions resulting from the manipulation of time pressure (yes versus no) and the order within the IAT. At first, they were given the questionnaire containing the explicit attitude measure. After completion, instructions on the computer screen instructed them about the IAT procedure. They were told that positive and negative words as well as pictures of recycled paper classic

white paper writing pads would be presented on the screen. Their task was to classify these words by pressing one of two keys (response keys were ‘Y’ and ‘-‘ on German keyboards). Participants were informed that each stimulus would remain on the screen until a correct classification had been performed.

The IAT consisted of five blocks. In the first block, positive and negative words were presented on the screen and had to be classified according to their valence (labels of the categories were “positive” and “negative”). Half of the participants were instructed to press the left key for positive words; the other half was to press the right key for positive words. In the second block, pictures of writing pads appeared and had to be categorized as either being of recycled paper or of white paper (labels ran “recycled paper” and “white paper”). Both blocks, as well as the upcoming fourth block, consisted of 40 trials. The third block (80 trials as well as block 5) constituted the first double discrimination task in which the target and attribute dimensions were combined. Depending on their assignment in the first block, participants shared the same response key for recycled paper and positive words (and therefore the other key for white paper and negative words) or the crossed combination of categories, respectively. In the fourth block, only the attribute stimuli were presented again, but compared to the first block, the assignment of labels toward the response keys was reversed. The last block represented the second double discrimination task. Again, stimuli of both dimensions (pictures and words) had to be discriminated at once. This time, the assignment of the evaluative attribute dimension was reversed, i.e. opposite to the first combined block. Hence, subjects who were to press one key for recycled paper and positive words in the first combined task now did so for recycled paper and negative words and vice versa. This order of response key assignment was balanced between

subjects. To control for task-shifting effects (Mierke & Klauer, 2001) stimulus selection alternated between the target and the attribute dimension in the combined blocks.

Having finished the IAT, participants were told that as a gift they could choose between three arrangements of writing sets of equal monetary value. In the time pressure condition, they were shown three photos next to each other on the computer screen, each depicting a writing set. Beforehand they were told that they had only 5 seconds to make their choice. While they were shown the photos a time bar was running at the bottom of the screen indicating how much time was left. In the no time pressure condition, participants were show the writing sets on a table and they could think about their choice as long as they wanted. Finally, all participants received their chosen arrangement, were thanked and dismissed. The complete experiment lasted about 20 minutes.

Results

IAT-Scores

Only the latencies of the combined tasks of the IAT procedure are of interest in the present study. Therefore our report is limited to the mean reaction times within these blocks. In consistence with Greenwald et al. (1998), outlier values (1% of all responses) below 300ms were recoded to 300ms and those above 3000ms were recoded to this value. Latencies were log-transformed. The first two trials of each block were dropped. They Latencies were subjected to a 2 x 2 (task order x response assignment) ANOVA with response assignment as repeated measurement (see Table 1 for the untransformed means). The ANOVA revealed a main effect for response assignment, $F(1, 38) = 6.25$, $p < .05$ and no other effects (all Fs < 1). Response times of participants were faster when reactions towards positive words and classic white paper (and accordingly towards negative words and recycled paper) shared the same response key than

when reactions towards negative words and classic white paper (and accordingly towards positive words and recycled paper) shared the same response key ($M_{\text{white/positive}}$ = 794 ms vs. $M_{\text{white/negative}}$ = 906 ms). That means, participants implicitly preferred white paper to recycled paper. Task order did not matter in the present experiment. Data are, therefore, pooled over these conditions in the following analyses. We also calculated a single difference score for each participant using the reaction times from block 3 and 5 for the following analyses. The difference score (IAT-score) shows good internal validity (Chronbach's alpha was .96)

Explicit Attitudes

Average attitude scores have been calculated for white and recycled paper products over the seven attribute ratings (Cronbach's alpha was .77) and a difference score was calculated ranging from –3 (preferring recycled paper) to +3 (preferring white paper). On average, participants only slightly preferred recycled to white paper (M = 0.29, SD = 1.27).

Prediction of Choices

Our main assumption was that implicit attitudes contribute to the prediction of behavior under time pressure but not when time for choices is unlimited. Therefore, regression analyses were conducted for both conditions. In both cases we tested a model including implicit and explicit attitude measures as independent variables. In the condition without time pressure, only the explicit attitude (standardized *beta* = .45, $p < .05$) contributed significantly to the prediction of choices (R^2 = .42). However, when time pressure was installed both the explicit attitude (standardized *beta* = .41, $p < .05$) and the implicit attitude measured by the IAT (standardized *beta* = .49, $p < .05$) contributed independently to the prediction of the choices between the three writing sets which included a different number of recycled writing pads (R^2 = .63). This was also

evident in a significant gain in explained variance when the implicit attitude was included in the regression model after the explicit one ($R^2_{change} = .18$, $p < .05$)

Discussion

Experiment 1 provides first evidence that explicit, more elaborated, attitudes and implicit ones, both are valid predictors of brand choice depending on the situation. If participants had ample time to reflect about their choice, their choices were predicted exclusively by the questionnaire. This pattern however changed once the decision was made under time pressure. Apparently, when consumers lacked the time to retrieve an explicit attitude, implicit attitudes were additional predictors of choice. Because time pressure interferes with retrieval and judgment processes time-pressured choices tend to be guided by highly accessible attitudes (Fazio & Towles-Schwen, 1999). But these are not necessarily the ones reported in other situations. While our study showed that by and large such attitude reports were rather reliable predictors of choice, their predictive validity was clearly reduced (compared to implicitly measured attitudes) when it came to situations where the choice could not be adequately reflected. In real life, time pressure is certainly not the only variable which interferes with more controlled behavior. Indeed making choices under time pressure is often restricted to the domain of game shows or the shopping channel. However a good deal of everyday consumer decisions are made without much reflection (e.g. Bargh, 2002), either because participants lack involvement, time, adequate knowledge or cognitive capacity. In fact, a good deal of consumer decisions is made rather absent-mindedly or at least not involving effortful processing. Our data suggest that for those decisions implicit attitudes may improve prediction quite successfully, in fact they may even serve as better predictors than explicit measures. This effect can be assumed to be stronger for people whose implicit and explicit attitudes are really dissociated. The aim of

our second experiment was to replicate the findings of Experiment 1 in another consumer domain and to focus specifically on the aspect of dissociation between implicit and explicit attitudes.

Experiment 2

In this experiment we investigated the impact implicit attitudes have on the prediction of brand choice between brand products and generic products. We chose these categories because we assumed that implicit and explicit preferences would to some extent dissociate. From informal studies we observed that consumers in Germany believed that generic products came from the same manufacturers as branded products and were only cheaper because they were not burdened with the costs of advertising. This was in particular true for food products. Nevertheless, we believed that brands would carry more positive affective connotations, and consumers would feel a deeply rooted trust to brands rather than generic products.

While the prediction of choice is trivial for those participants with similar explicit and implicit attitudes – i.e. to take the respective arrangement – the case is more intriguing for subjects with dissociated explicit and implicit attitudes (e.g. explicitly preferring generic products but implicitly favoring brand products). For these participants, we assumed the explicit attitude to guide behavior when they could deliberately choose the product arrangement they preferred, independently of their implicit attitude. However, under time pressure we expected the implicit attitude to become more important.

Method

Participants

95 passers-by in the inner city of Heidelberg, Germany participated in the experiment. The majority were students of different faculties of the local university. They were randomly

assigned to the four conditions of a 2 x 2 between-subjects design with the factors time pressure and task order within the IAT. Data of three participants were dropped due to high error rates, extremely short latencies and problems with the personal computer respectively. Mean age of the resulting 92 participants was M_{age} = 22.1 years. The sample included 58 women and 34 men. They received food products of approximately 3 EURO value as reward for their participation.

Materials and Procedure

By and large, materials and procedure were taken from Experiment 1 and adapted to the consumer domain of branded versus generic products.

A questionnaire assessed the general explicit attitudes towards brand products and generic products on a 7-point-rating scale ("When you shop for groceries do you in general rather prefer brand products or rather generic products?") before some more detailed questions about participants' attitudes. For both branded and generic products, participants were asked for ratings of the fit between specific attributes concerning price, quality, publicity, taste, and advertising on a scale from 1(*not at all*) to 7 (*perfectly*). The measure ended with some questions about participants' individual grocery shopping behavior and demographic data.

10 pictures of brand products and 10 of generic products served as target stimuli in the IAT. All pictures were of equal size. Brand and generic products were of the same kind (i.e. cream, cream cheese, corn, margarine, coffee). Each product was presented from two different angles, thus, creating a total of 40 different target stimuli.

As a behavioral measure participants could choose between two different arrangements of food products. One of the arrangements contained only branded food products while the other one consisted entirely of generic products. The arrangements were of equal monetary value and

included the same kind of products with the exception that the generic arrangement contained one more product since they were cheaper.

Results and Discussion

Again, the IAT data were treated in accordance with Greenwald et al. (1998), that is trimmed and log-transformed before further analyses. Again, task order had no influence on the reaction times in the third and fifth block. We therefore dropped this factor in the following analyses.

Next we calculated the difference between the third and the fifth block. According to the difference in response latencies between the third and the fifth block each participant was categorized as either implicitly preferring brand products or generic products. Participants whose difference scores fell between ± 20ms were categorized as indifferent. 85% of the remaining 86 participants showed an IAT-Effect in favor of brand products, 15% for generic products.

Despite the overwhelming preference for brands over generic products as measured by the IAT, the explicit measures reflected a very different picture: 33% of participants preferred brand over generic products, 35% were indifferent and 32% preferred generic products over brand. This strong discrepancy between the IAT measure and the explicit rating scales already suggests that both measures were based on different attitudinal components, at least for some participants. In fact, among those respondents who reported a clear preference only about 58% showed the congruent preference on the IAT. We exploited this discrepancy for our analysis. First, we formed two categories: Participants whose implicit preferences were consistent with their explicit ones vs. participants who showed incongruent preferences. Then, the behavioral measure was recoded so that it reflected whether the choice between brand and generic products was in line with the explicitly reported preference (0) or not (1). This choice consistency was analyzed

in a 2 (time pressure vs. no time pressure) x 2 (consistency between implicit and explicit preference vs. inconsistency) ANOVA. Figure 1 shows the mean results. By and large participants' choices were in line with their explicitly reported preferences. This was even the case when explicit and implicit preferences diverged as long as participants had ample opportunity to think about their choice. However, when choices had to be made under time pressure, implicit preferences assumed a larger role as had been expected. Under time pressure, participants whose implicit and explicit attitudes diverged were less likely to choose the explicitly preferred goods. This interaction of time pressure x consistency between implicit and explicit preference was statistically significant, F (1,48) = 5.11, $p < .05$. Due to this interaction, the main effect of time pressure reached significance as well, F (1,48) = 4.74, $p < .05$ while the main effect of consistency did not, F (1,48) = 2.57, $p > 10$.

Based on a different methodical approach, Experiment 2 replicates the findings of Experiment 1. Implicit attitudes seem to have no influence on people's choices as long as they have ample time to make their decisions. Put under time pressure however, their implicit attitudes take over and exert a strong influence on their choices. This effect is of great significance when implicit and explicit attitudes are dissociated, for example, as a result of different origins (Betsch, Plessner, Schwieren, & Gütig, 2001; Wilson et al., 2000).

General Discussion

In two experiments, we have shown that the IAT can be used for measuring consumer attitudes. We have assessed implicit attitudes towards recycled versus white paper and towards branded versus generic products. For both product domains the IAT score added to the prediction of behavior compared to using merely explicit attitudes. In particularly for uncontrolled behavior such as spontaneous choices implicit attitudes may even represent better predictors than explicit

attitudes. These results confirm the general assumption that spontaneous behavior is guided by implicit attitudes and deliberative behavior by explicit attitudes (Fazio, 1990; Fazio & Towles-Schwen, 1999; Wilson et al., 2000). Similar results have recently been obtained in other areas of social behavior (Asendorpf et al., 2002; Egloff & Schmuckle, 2002).

For brands where consumers are likely to implicitly hold a different attitude than explicitly this finding cannot be stressed enough (cf. Brunel, Tietje, & Greenwald, in press). Market researchers will come to wrong conclusions if they simply rely on the explicitly measured attitude for predicting less deliberative consumer behavior. And even when predicting behavior not under control constraints implicit attitudes will improve the prediction. Quite often marketers can hardly know whether their brands are typically chosen with great care or not as this in fact may vary between consumers or situations. In any case, assessing the implicit attitudes in addition to the explicit ones will gain valuable knowledge.

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The study was financially supported by a grant from the Deutsche Forschungsgemeinschaft (WA 939/9-1).

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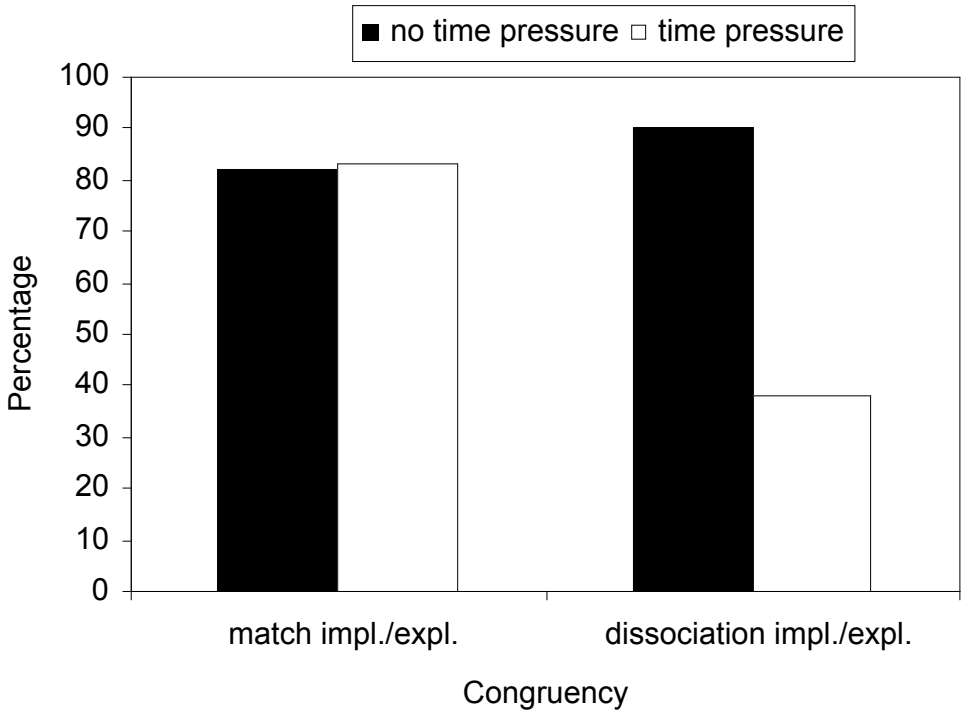
Table 1

Mean Latencies in the Combined Tasks of the IAT by Response Assignment and Task Order in Experiment 1.

	Response Assignment			
	White/Positive		Recycling/Positive	
Task Order	Recycling/Negative		White/Negative	
	M	*SD*	*M*	*SD*
Task Order A	781	179	930	236
Task Order B	806	308	881	287

Figure Caption

Figure 1. Percentage of choices that are congruent with the explicit attitude by time pressure and consistency between implicit and explicit preferences.


no time pressure
time pressure
100
90
80
70
60
50
40
30
20
10
0
Percentage
match impl./expl.
dissociation impl./expl.
Congruency