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Journal of Experimental Social Psychology 40 (2004) 543–550
Journal of Experimental Social Psychology
www.elsevier.com/locate/jesp

Attitudes towards people with AIDS and avoidance behavior: Automatic and reflective bases of behavior

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Received 30 April 2003; revised 21 October 2003
Available online 11 December 2003

Abstract

We tested the assumption that implicit attitude measures are related to automatic behavior, while explicit attitude measures are related to reflective behavioral intentions. In our study, attitudes towards persons with AIDS were assessed with both the Implicit Association Test (IAT) and an explicit attitude measure. Behavioral intentions were measured through a questionnaire. Automatic approach and avoidance predispositions were operationalized as the speed with which a computer mouse was either pulled towards (approach) or pushed away from the body (avoidance). Consistent with our expectations, the IAT was related to the automatic approach and avoidance behaviors, while the explicit attitude measure was related to behavioral intentions. These findings support the idea that automatic and reflective processes exert independent effects on behavior.
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Social psychologists have long been fascinated by the question whether group attitudes predict behavior. The discovery that group attitudes can be automatically activated by the presence of a member of a particular group (Devine, 1989; Fazio, Jackson, Dunton, & Williams, 1995; Kawakami, Dion, & Dovidio, 1998; Lepore & Brown, 1997; Wittenbrink, Judd, & Park, 1997) has inspired the development of dual process models in attitude research (Fazio & Towles-Schwen, 1999; Strack & Deutsch, in press; Wilson, Lindsey, & Schooler, 2000). One element these models have in common is that the consistency of attitudes and behaviors depends crucially on processing capacities and motivation. Whenever processing resources and motivation are high, behavior is the result of deliberate reasoning about the pros and cons of an action and its consequences (Ajzen & Fishbein, 1980). Such behavior should therefore be consistent with well-considered attitude statements. In contrast, whenever processing capacities are limited, behavior hinges on automatic evaluative processes.

According to the Reflective–Impulsive Model (RIM), behavior is a joint function of impulsive and reflective mechanisms (Strack & Deutsch, in press). In the impulsive system, motivational orientations of approach or avoidance mediate the automatic influence of evaluations on behavioral responses. Thus, evaluative processes directly trigger motivational approach or avoidance orientations, which in turn facilitate the execution of the relevant behaviors (Chen & Bargh, 1999; Neumann, Hess, Schulz, & Alpers, 2003). Because of the proposed link between evaluations and compatible behaviors, the RIM allows researchers to predict the direction of automatic behavioral predispositions that are activated in a given situation. In addition, the RIM predicts a second, reflective route to behavior. Parallel to and independent of automatic operations in the impulsive system, behavior can also be influenced by reflective processes such as an individual's behavioral intentions.

Applying this model to group attitudes, we assume that exposure to a member of a stigmatized group triggers automatic processes. These processes give rise to automatic avoidance tendencies and, if the responding person endorses the cultural prejudice, to deliberative evaluative processes that lead to the intention to

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doi:10.1016/j.jesp.2003.10.006

withdraw from the stigmatized individual. More specifically, automatic avoidance tendencies result from the association between the group node and a negative evaluation. When motivation and resources are plentiful, however, these action tendencies can be overridden by behavioral intentions resulting from simultaneously occurring reflective processes. These intentions, then, should be influenced by explicit group attitudes (along with other kinds of judgments, such as utility judgments). We therefore propose that explicit attitudes are more predictive of behavioral intentions than of automatic behavioral tendencies, while automatic evaluations are more predictive of behavioral tendencies than of behavioral intentions.

Until now, the only evidence supporting the assumption that implicit evaluations predict spontaneous behavioral tendencies has not directly assessed approach and avoidance tendencies. However, we assume that many of them can be traced back to the activation of approach or avoidance orientations. For example, Fazio et al. (1995) observed that implicit but not explicit measures of attitudes towards African Americans predicted participants' nonverbal interaction with a black experimenter. In contrast, explicit but not implicit measures predicted more deliberate behavior such as judgments about the African Americans. In a similar vein, Dovidio, Kawakami, Johnson, Johnson, and Howard (1997) observed that implicit but not explicit measures of attitudes towards African Americans predicted eye contact and blinking in interactions with members of that group. In a recent study, attitude strength as indicated by the Implicit Association Test (IAT), (Greenwald, McGhee, & Schwartz, 1998) was successfully used to predict nonverbal parameters such as smiling, speaking time, speech hesitation, and speech errors in the interaction with a black experimenter (McConnell & Leibold, 2001).

However, is it valid to assume that all of these behaviors (smiling, blinking, eye contact, speech errors, etc.) are manifestations of activated approach or avoidance orientations? Physiological evidence indicates that this might be the case. Several findings suggest that nonverbal behavior is associated with two different neural structures that are believed to be involved in the generation of approach and avoidance responses (Davidson, Ekman, Saron, Senulis, & Friesen, 1990). Left frontal lobe EEG activity, which is associated with an approach orientation, was observed during smiling. Conversely, a consistent pattern of activity in the right frontal lobe emerged during frowning. In addition, support for the link between these nonverbal behaviors and evaluative processes comes from a recent study by Neumann, Hess et al. (2003), which found that the processing of positive information facilitated smiling, and the processing of negative information facilitated frowning.

The assumption of two basic motivational orientations of approach and avoidance is further supported by research showing that movements towards or away from the body are facilitated during the processing of evaluative information. In a study by Solarz (1960), participants were required to move word cards either toward themselves or away from themselves. Participants were faster at moving cards toward themselves (approach) when the words were positive, and faster at pushing cards away (avoidance) when the words were negative. Similar findings were obtained in a recent study by Chen and Bargh (1999), in which participants had to evaluate words on a computer screen as "good" or "bad" by either pushing or pulling a lever. Consistent with Solarz's findings, participants were faster at evaluating positive words when pulling the lever towards themselves, and faster at evaluating negative words when pushing the lever away. In a further study, Chen and Bargh (1999) demonstrated that such effects do not depend on the conscious evaluation of the presented words. Even when the word evaluation task was replaced by the task of eliminating any stimulus as soon as it appeared on the screen by either pushing or pulling a lever, the same pattern of results was observed. These findings support the assumption that evaluative processes automatically activate approach or avoidance orientations and facilitate the relevant behaviors.

Extending this prior line of research, the present study aimed at exploring whether automatic behavioral tendencies of approach or avoidance are predicted by automatically activated attitudes, while more deliberate behavioral intentions of approach and avoidance are predicted by deliberate reflections about the attitude object. According to the RIM, deliberate behavioral intentions result from an interplay of automatic and deliberate processes. Whether the two processes generate parallel or antagonistic effects (e.g., avoidance tendencies are automatically activated but the individual nevertheless shows approach behavior) depends on the attitude object and the beliefs of the judging person.

Antagonistic effects of automatic and deliberate processes are especially likely if we consider the attitude towards persons with AIDS. Despite extensive information campaigns about AIDS, the isolation of persons with AIDS in the private and professional domains is a constant issue (Devine, Plant, & Harrison, 1999; Herek & Capitano, 1999; Rozin, Markwith, & McCauley, 1994). This might be due to the fact that automatically activated attitudes towards persons with AIDS trigger behavioral avoidance tendencies independent of more consciously accessible, 'rational' attitudes toward the group (Wilson et al., 2000). Although most people probably know that the mere encounter with an infected person poses no danger at all, automatically

activated negative attitudes might nevertheless determine spontaneous avoidance tendencies.

Explicit attitudes, on the other hand, are only partially determined by the association of a group representation with an evaluation. In addition, they reflect the results of inferences ("It is not dangerous to shake hands with persons with AIDS"), value decisions ("I do not want to discriminate against any group"), self-presentational concerns ("These people would not like me if I admitted that I'm prejudiced"), and the like. Most importantly, it is believed that these decisions and inferences are formed on the spot when the judgment is generated (Strack & Deutsch, in press). Since they are not supposed to be part of the representation of the group of persons with AIDS, they should not influence measures that tap associative links. At the same time, they should be associated with behavioral decisions because the latter hinge partially on the same inferences and concerns that influence the conscious evaluation of the group.

To test this assumption, we conducted a study that assessed the automatic evaluations of persons with AIDS and healthy persons with the IAT, and explicit attitudes with a questionnaire. In addition, we assessed behavioral intentions to withdraw with an explicit measure, and measured automatic behavioral approach and avoidance tendencies with a variant of the procedure developed by Chen and Bargh (1999). We expected that the IAT would predict spontaneous avoidance tendencies, whereas the explicit attitude measure would predict behavioral intentions to withdraw. More specifically, the more closely persons with AIDS are associated with negative evaluation, the faster behavioral avoidance movements should be activated at seeing them. Note that we assume the IAT effect to be largely reflective of differences in automatic evaluations of persons with AIDS, but not of automatic evaluations of healthy persons. The reason for this assumption is that the category of healthy persons is much more broadly defined and probably not habitually used to categorize people. We therefore expected that the IAT would not be related to automatic approach and avoidance tendencies towards healthy persons. Furthermore, we expected that the explicit attitude measure would predict the behavioral intention to withdraw from persons with AIDS, but not the impulsive avoidance tendency.

Method

Participants

Thirty-seven students at the University of Würzburg who were enrolled in introductory courses in psychology participated in the experiment as a partial fulfillment of their course research requirement.

Materials

To be able to assess the attitudes and behavioral tendencies towards persons with AIDS, we first conducted a learning phase where participants saw six photos of individuals along with their alleged diagnosis (person with AIDS versus healthy person). We informed participants that they were going to be presented with a number of photos of persons with or without AIDS. Participants were required to memorize the diagnosis for each person. To facilitate this task, a name was assigned to each person.[1] The assignment of the pictures to each group (persons with AIDS vs. healthy persons) was counterbalanced such that the same set of three portraits was assigned to the persons with AIDS condition for half of the participants, and to the healthy persons condition for the other half. The pictures were drawn from a larger sample of 200 photos that had been used in previous experiments. We selected only those portraits that possessed a low average attractiveness (between 2.0 and 3.5) on a scale ranging from 1 (unattractive) to 7 (attractive). Each photo depicted only the face of a person in a 640×480 resolution image file. In order to establish a strong association of the exemplars to each group, we had participants assign each picture three consecutive times to the correct group. Whenever participants made a mistake in this task, the German word for wrong appeared on the computer screen and each picture had to be assigned once again to the correct group three consecutive times. Subsequently, these pictures served as target stimuli to assess attitudes and behavioral tendencies towards persons with AIDS.

Measures

Implicit attitude measure

In the IAT, participants classified the previously seen pictures according to the diagnosis (with AIDS or without AIDS) together with adjectives (pleasant–unpleasant) by using two designated keys. The stimulus material consisted of six portraits that had to be classified according to whether or not the depicted person had AIDS (target dimension) and six adjectives that had to be categorized according to their valence (attribute dimension).[2]

The IAT was administered following the standard procedures (Greenwald et al., 1998). As depicted in Table 1, the IAT consisted of five blocks. For half of the participants, block 3 presented prejudice-consistent trials, whereas block 5 presented prejudice inconsistent

[1] The names employed were Martin, Andreas, Markus, Tobias, Paul, and Michael.

[2] The adjectives employed were lustig (funny), freudig (glad), amüsant (amusing), dreckig (dirty), böse (bad), and faul (lazy).

Table 1
Design of the IAT

Sequence	Block 1 Practice	Block 2 Practice	Block 3 Practice and Test	Block 4 Practice	Block 5 Practice and Test
Stimuli and task description	Adjectives	Portraits	Mixed adjectives and portraits	Reversed target–concept-discrimination	Mixed adjectives and portraits
Task instructions	*Positive* vs. negative	*Persons with AIDS* vs. healthy persons	*Positive and persons with AIDS* vs. Negative and healthy persons	*Healthy persons* vs. persons with *AIDS*	*Positive and healthy persons* vs. negative and persons with AIDS

Note. Words in *italics* had to be responded to with the right key.

trials (the reversed order was used for the other half of the participants). Blocks 3 and 5 consisted of 5 practice trials and 12 experimental trials.

Employing the IAT to assess individual differences in attitude towards a social group has an important implication. Because it directly compares the implicit evaluations of two groups, the IAT yields only relative results. Part of the mechanism by which the IAT-effect is driven is a response/criterion shift (Brendl, Markman, & Messner, 2000) which always affects the latencies for both categories.[3] The focus of this study, however, lies on the relationship between behavior and attitudes for only one group (persons with AIDS). Therefore, we computed a combined index of both healthy persons and persons with AIDS for the IAT, but separate indices for each group for the impulsive avoidance tendency. An explicit attitude and the intention to withdraw were only assessed towards persons with AIDS.

Explicit measure of attitudes

A questionnaire assessing the explicit attitudes towards persons with AIDS was administered. The questionnaire consisted of four scale items with scales from 1 through 7. Sum scores were computed so that higher values indicate more negative attitudes towards persons with AIDS. The questionnaire is reproduced in the appendix.

Behavioral measures

To assess the intention to withdraw from persons with AIDS, we administered a questionnaire consisting of three items (see the appendix). To assess the impulsive avoidance tendency, we developed a procedure similar to the one used by Chen and Bargh (1999). Participants saw the photos to which they had been exposed in the learning task, together with an equal number of new portraits. The task consisted of two blocks, with each photo appearing once in each block, resulting in 12 trials per block. Half of the participants were asked to move the computer mouse along a rail towards themselves (approach) whenever they saw an "old" photo, or away from themselves (avoidance) when they saw a "new" photo (a picture of a person they had not previously seen in this experiment); the assignment was reversed for the second block. The other participants were given the sequence of tasks in the reverse order. We employed the task of distinguishing between old and new pictures to test whether behavioral dispositions are activated even when no evaluative task is used (see Chen & Bargh, 1999, Experiment 2). For every picture, the computer recorded the time that elapsed between its presentation and the initiation of a movement lasting longer than 50 ms. This threshold was introduced to avoid artifacts due to irrelevant factors such as trembling of the hand. The order in which the stimuli were presented was randomly determined for each participant and each block. After every response, the computer mouse had to be moved back to a starting position that was marked on the table; the next trial was initiated 1500 ms after the mouse had reached the starting position. All pictures were presented in the center of the computer screen and remained there until the participant responded.

Procedure

All participants were seated in front of the CRT screen with a computer keyboard and a computer mouse placed on the table. Upon arriving at our laboratory, they were informed that the experiment concerned the categorization of persons. First, we administered the learning task. This was followed by the IAT. Next, we assessed the impulsive avoidance tendency. After that, we administered the intention to withdraw questionnaire and the explicit attitude measure towards persons with AIDS. Finally, all participants were thanked, carefully debriefed, and sworn to secrecy.

[3] Actually, these assumptions are supported by our findings. Whereas the contrasts for persons with AIDS and healthy persons are highly correlated for the IAT, $r(36) = -.71$, $p < .001$, these contrasts are considerably weaker correlated for the impulsive avoidance tendency, $r(36) = -.29$, $p = .09$.

Results

In the analysis of the response latencies in the IAT and in the impulsive avoidance tendency task, we removed error trials (5% of the responses for the IAT and 4% of the responses for the impulsive avoidance tendency task) and latencies larger than three standard deviations (0.6% responses for the IAT and 0.6% responses for the impulsive avoidance tendency task). Following the recommendations of Greenwald et al. (1998), we computed a difference score between the congruent and the incongruent trials. Similarly, in the impulsive avoidance tendency task, we subtracted the mean response latency of the avoidance trials from the mean response latency of the approach trials separately for each group, so that higher values indicate faster avoidance movements.

Both the IAT and the impulsive avoidance tendency produced reliable effects in the expected direction. Categorization in the IAT was faster for congruent (persons with AIDS + negative adjectives and healthy persons + positive adjectives shared a key, $M_{\text{cong}} = 749$ ms) than for incongruent trials (persons with AIDS + positive adjectives and healthy persons + negative adjectives shared a key, $M_{\text{incong}} = 1089$ ms, $t(36) = 5.1$, $p < .001$). Furthermore, reactions to persons with AIDS were faster when the avoidance movement had to be executed ($M_{\text{away}} = 475$ ms) than when the approach movement had to be executed ($M_{\text{towards}} = 577$ ms, $t(36) = 3.4$, $p < .001$).

To test our assumption that the IAT predicts the impulsive avoidance tendency whereas the explicit attitude measure predicts the behavioral intention to withdraw, we first computed zero-order correlations between the two predictors (IAT, explicit attitude measure) and each criterion (impulsive avoidance tendency, behavioral intention to withdraw). All scores were computed such that higher values indicate (a) either a more negative attitude towards persons with AIDS or (b) a tendency to withdraw. The Cronbach α was .60 for the intention to withdraw and .61 for the explicit attitude measure.

As expected, the impulsive avoidance tendency was reliably correlated with the IAT score but not with the explicit attitude measure (Table 2). Thus, participants with a closer association of persons with AIDS + negative and healthy persons + positive were faster at moving the mouse away from their body. No correlation was obtained between the IAT score and the impulsive avoidance tendency for healthy persons. In line with our expectations, the explicit attitude measure was reliably correlated with the intention to withdraw, but not with the impulsive avoidance tendency. Thus, the more negative the explicit attitude towards persons with AIDS, the stronger the intention to withdraw from them.

Next we computed two multiple regression analyses to test how much each of the predictors (IAT and explicit attitude measure) contributed to the variance of the two criteria (intention to withdraw and the impulsive avoidance tendency). As depicted in Fig. 1, the IAT ($\beta = .32$, $p = .06$) but not the explicit attitude ($\beta = .06$, $p = .73$) predicted the impulsive avoidance tendency. In contrast, the explicit attitude ($\beta = .35$, $p = .04$) but not the IAT ($\beta = -.09$, $p = .60$) predicted behavioral intentions to withdraw. When comparing the multiple regression analysis and the correlation analysis it is noteworthy how little the coefficients change (from .33 to .32 for the prediction of impulsive avoidance behavior by the IAT and from .34 to .35 for the prediction of behavioral intentions to withdraw by the explicit attitude).

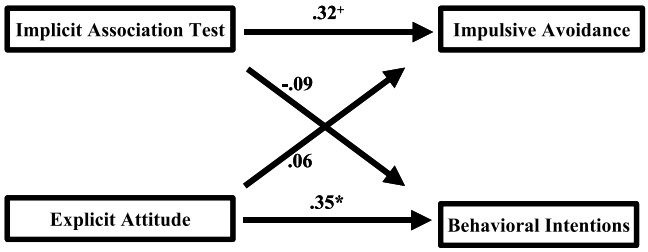

Fig. 1. Regression of attitude on behavior. *Note.* $^{*}p < .05$; $^{+}p = .06$.

Table 2
Correlations among the 'IAT,' avoidance tendencies and the explicit attitude measure

	IAT	Explicit attitude measure	Impulsive avoidance tendency (persons with AIDS)	Intention to withdraw	Impulsive avoidance tendency (heathy persons)
IAT	—	.19	.33*	−.02	−.19
Explicit attitude measure		—	.13	.34*	−.07
Impulsive avoidance tendency (persons with AIDS)			—	.08	−.28
Intention to withdraw				—	−.23
Impulsive avoidance tendency (healthy persons)					—

Note. $N = 37$.
$^{*}p < .05$.

Discussion

In the present study, we provide evidence for the assumption that automatic approach or avoidance behavioral tendencies are related to implicit attitude measures, whereas deliberate approach and avoidance behavioral intentions are related to explicit attitudes. More specifically, we observed that explicit evaluations of persons with AIDS are related to behavioral intentions, but not to automatic behavioral tendencies. In contrast, implicit attitudes towards persons with AIDS are related to automatic behavioral tendencies, but not to behavioral intentions.

In our study, participants with a strong association between persons with AIDS and a negative evaluation as measured by the IAT were faster at responding to pictures of persons with AIDS by moving the mouse away from their own body than were participants with a weaker association. Thus, consistent with the assumption that evaluative processes are directly linked to basic motivational orientations (Neumann & Strack, 2000), we obtained evidence that automatic behavioral approach and avoidance tendencies are directly linked to the evaluation of a stigmatized group.

The results of our study further showed that the IAT measure was not related to automatic behavioral tendencies towards healthy persons. To explain this, we propose that different categories are salient in the IAT and in the impulsive avoidance tendency when it comes to healthy persons. Because the task in the impulsive avoidance tendency measure was to decide whether a person had been presented before (old) or not (new), spontaneous behavioral tendencies should depend on the evaluative connotations of whichever category is salient for a particular picture. We think that, having AIDS should have been a salient category in the context of our experiment because it was well learned and repeatedly used in the different tasks throughout the experiment. The stimuli that had been memorized as not having AIDS, on the other hand, should have been categorized along various dimensions such as age, attractiveness, gender etc. The reason is that not having AIDS, by itself, is not a salient category habitually used to categorize people, but rather the absence of a category. However, the IAT forces participants to use the category of healthy persons. Thus, the correlation of the IAT and the impulsive avoidance tendency depends on whether the respective group (healthy persons or persons with AIDS) is or is not spontaneously activated in the measure of automatic behavioral tendencies

Unlike other existing dual processing models in social cognition (Fazio & Towles-Schwen, 1999; Wilson et al., 2000), the RIM allows researchers to predict the direction of the automatically activated behavior. Thus, behavior related to the avoidance orientation, such as arm movements away from the own body or contractions of the corrugator muscle (Neumann, Hess et al., 2003), is facilitated by the processing of negative valence. And conversely, behavior related to the approach orientation, such as arm movements towards the own body or contractions of the zygomaticus muscle (Neumann, Hess et al., 2003), is facilitated by the processing of positive valence. Thus, the activation of global behavioral orientations makes it harder to show an incompatible response, but in turn allows much faster compatible responses. This does not mean that the behavior associated with a motivational orientation necessarily has to be executed. However, relatively more cognitive capacity is required to show an incompatible behavioral response (Förster & Strack, 1996).

Previous research (Dovidio et al., 1997; Fazio et al., 1995) has already shown that implicit attitude measures are able to predict nonverbal behavior. The current research extends this knowledge by demonstrating that spontaneous approach and avoidance movements are predicted by automatic evaluations of the target group. This is a further support for our notion that the nonverbal behaviors predicted by implicit attitude measures can be conceived of as different manifestations of the same underlying motivational orientations of approach and avoidance (Neumann, Förster, & Strack, 2003).

However, why are approach and avoidance predispositions not also related to explicit attitude measures? The dissociation between explicit and implicit measures of attitudes suggests that automatically activated attitudes towards persons with AIDS trigger automatic behavioral avoidance tendencies independent of consciously accessible, more 'rational' attitudes (Wilson et al., 2000). Presumably, the implicit attitude reflects emotional reactions towards the group (fear, disgust, and pity) as well as prelearned associations such as a negative attitude towards homosexuals and disease in general, whereas the explicit measure taps knowledge about persons with AIDS as well as egalitarian norms and values.

There may be two reasons why the implicit and the explicit measures are uncorrelated in our study: first, as was mentioned in the introduction, antagonistic effects between automatic and deliberate processes are especially likely in the case of the attitude towards persons with AIDS. Second, our participants were students, and because high school education in Germany emphasizes egalitarian views, they have been socialized not to discriminate against persons with AIDS. As a result, they probably made sure their answers were not influenced by whatever prejudicial or emotional reaction was elicited when they thought of persons with AIDS. In addition, the norm of treating persons with AIDS fairly might be especially important for psychology students in our department who

served as participants in the study. They may be aware that at least some of them might work with persons with AIDS, and this awareness could have the same effect as an accountability manipulation or the expectation of future interaction. On the other hand, the results of the IAT show that they did have a strong automatic negative evaluation of persons with AIDS.

There is a growing body of evidence showing that the IAT reflects spontaneous emotional reactions to social groups. In a study by Phelps et al. (2000), the strength of amygdala activation in response to black vs. white faces was correlated with two indirect (unconscious) measures of race evaluation (IAT and potentiated startle), but not with the direct (conscious) expression of race attitudes. Furthermore, a study by Rudman, Ashmore, and Gary (2001) showed that the reduction of the effect in a race-evaluation IAT was best predicted by affective measures such as a measure of fear reduction towards blacks, but not by measures of cognitive restructuring. In sum, implicit measures, whether they assess attitudes or behavior, seem to tap a common underlying basis. Lang, Greenwald, Bradley, and Hamm (1993) argued that emotional stimuli elicit motivational orientations of approach or avoidance as a function of their valence. They showed, for instance, that zygomaticus and corrugator muscle activity covaried with affective valence judgements for affective pictures. Furthermore, Bradley, Cuthbert, and Lang (1990) obtained evidence of increased startle probe magnitude in participants viewing negative pictures, and diminished magnitude in participants viewing positive pictures.

The present study extends these findings in two important ways. First, we were able to show that these basic motivational orientations are elicited not only by emotional stimuli (i.e., Lang et al., 1993) or by words with a valence (i.e., Neumann & Strack, 2000; Neumann, Hess et al., 2003), but also by pictures of members of a stigmatized group. Second, we showed that interindividual differences in the automatic evaluation of this group covary with interindividual differences in spontaneous avoidance tendencies towards this same group.

Nevertheless, two important limitations of the present study should be addressed. First, the evidence in the present paper is only correlational, and it is therefore also conceivable that activated approach-avoidance tendencies exert an influence on evaluative processes (Neumann, Förster, & Strack, 2003). Further research is needed to determine in detail what produces the interindividual differences in the attitude towards persons with AIDS. Another limitation of the present research refers to the fact that one cannot know whether the avoidance response refers to persons with AIDS or more generally to AIDS. Thus, it is possible that what is decisive is the link between a negative evaluation and the concept of AIDS, or the link between a negative evaluation and a person with AIDS.

Acknowledgments

This research was supported by a grant from the Deutsche Forschungsgemeinschaft to Roland Neumann and to Beate Seibt. Fritz Strack offered invaluable suggestions and discussions.

Appendix. All items were presented in German and have been translated into English

Questionnaire to assess the explicit attitude towards persons with AIDS

1. What is your general attitude towards people with AIDS?
   Extremely positive 1 2 3 4 5 6 7 extremely negative
2. People with AIDS are too demanding in their striving for equality.
   Don't agree 1 2 3 4 5 6 7 agree
3. I would like to campaign for the rights of people with AIDS.
   Don't agree 1 2 3 4 5 6 7 agree
4. It is difficult to have a person with AIDS as close friend.
   Don't agree 1 2 3 4 5 6 7 agree

Questionnaire to assess the intention to withdraw

1. Would you be frightened to touch a person with Aids?
   Not at all 1 2 3 4 5 6 7 very much so
2. There is no problem sharing an apartment with a person with AIDS.
   Don't agree 1 2 3 4 5 6 7 agree
3. I would not like to have physical contact with a person with AIDS.
   Don't agree 1 2 3 4 5 6 7 agrees

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