[redacted] Neumann, H, + Z

~~(A) No Pers~~

(7) ~~Impulsive~~ avoidance tendency - AIDS

~~(8) intent~~ + withdraw

~~(9)~~ IMP avoid healthy

(8) with/without AIDS attitude

(9) atts pert w/ AIDS

Gender + sexuality 543

(10) ~~AT Stud~~ → ~~UNclear #10~~ pg

(11) avg (2) for intent, avg (2) for impulsive, pg 546

(12) att (1), pg 545

(13) att (1) pg 546

(14) (0) obs (approach/avoid), (0) Non-obs (intent), pg 546

(15) (5) obs (app/avoid), (2) predicted future (intent), pg 546

(16) (3) ~~X~~ tell m/log pg 547

(17) pic (1) pg 545

(18) 1 (AT (1), pg 545

(19) 2st - (AT), pg 546

(20) 3rd,

(21) 2,

(22) (1) before

(23) (2) att

(24) (0) same

(25) (0) same

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(26) ~~546~~ sd - ~~[illegible]~~ (5.5), pg 545

(27) ~~[illegible]~~ - sd - (5.5), pg 546

(28) 4 (approach), 10 (intent), pg 546

(29) ~~[illegible]~~ spec IAT - 4.5, pg ~~54~~ 545-546

(30) spec EM - ~~[illegible]~~ - ~~[illegible]~~ 4.5, pg 546

(31) ~~Fl 2 opp~~ oppose - 1, pg 545

(32) not (0), pg 543

(33) dual (2), pg 545

~~(0) error sad 1 bet~~

~~(1) cont 41 error impulsive was "0" before~~

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

Roland Neumann,* Katharina Hülsenbeck, and Beate Seibt

University of Würzburg, Lehrstuhl Psychologie II, Röntgenring 10, 97070 Würzburg, Germany

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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

* Corresponding author.
E-mail address: neumann@psychologie.uni-wuerzburg.de (R. Neumann).

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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, $M_{cong} = 749$ ms) than for incongruent trials (persons with AIDS + positive adjectives and healthy persons + negative adjectives shared a key, $M_{incong} = 1089$ ms, $t(36) = 5.1$, $p < .001$). Furthermore, reactions to persons with AIDS were faster when the avoidance movement had to be executed ($M_{away} = 475$ ms) than when the approach movement had to be executed ($M_{towards} = 577$ 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).

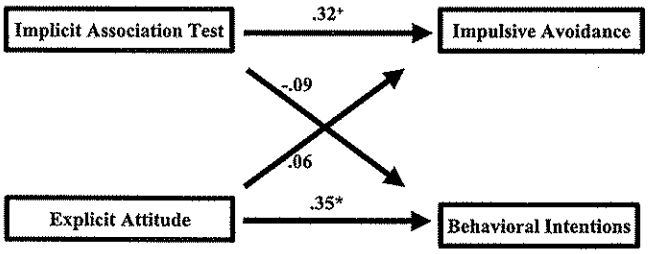

Fig. 1. Regression of attitude on behavior. *Note.* $^{*}p < .05$; $^{+}p = .06$.

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