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IMPLICIT ATTITUDES TOWARD ELDERLY WOMEN AND MEN

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ABSTRACT

We tested students' implicit attitudes toward elderly people with the Implicit Association Test (IAT). This tool was used to assess automatic evaluations of elderly opposed to younger people through the analysis of response latencies. We focused on whether the IAT can detect differences between the automatic evaluations of favorable and unfavorable subgroups of the elderly. IATs differing in distinct categories for positive and negative subgroups of elderly men and women were applied. The IAT revealed a general preference for younger as compared to elderly women and men. However, implicit attitudes depended highly on the subgroup valence. A positive subgroup elicited more favorable automatic evaluations than the elderly in general. In contrast, the elderly in general were judged as negatively as a negative subgroup.

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INTRODUCTION

Chronological age is one of the most salient dimensions with which people are categorized (Hamilton and Sherman 1994; Kite and Johnson 1988). However, the consequences of being categorized as "elderly" are unfavorable; elderly people form a stigmatized group in today's western societies. Analogous to "sexism" or "racism" the term "ageism" has been coined, and it comprises negative attitudes, stereotypes, and behavioral discrimination based solely on a person's chronological age. Ageism can be observed in a wide variety of settings including sectors such as work or the health system (Clapham and Fulford 1997; Finkelstein, Burke, and Raju 1995). For example, discrimination due to age bias in medical settings occurs when psychologists or physicians consider psychotherapy with elderly depressed patients to be ineffective (Gatz and Pearson 1988; James and Haley 1995; Scogin and McElreath 1994) or

when mental impairments are judged as irreversible too quickly so that medical professionals refrain from treatment (Filipp and Schmidt 1995). It cannot be denied that aging has in fact some negative consequences (e.g., decline in physical health). However, discrimination in fields like employment or health care are partly based on a clear overestimation and overgeneralization of elderly people's impairments. These stereotypic and unfavorable views of old age may be a crucial reason for the inadequate treatment of the elderly. Therefore, research on the different facets of ageist attitudes and stereotypes is an important topic.

When asked about their views on elderly people, individuals predominantly show negative attitudes and beliefs compared with those toward younger people. However, the investigation method strongly influences the ratings of old people. For example, elderly people are judged more negatively when participants have to compare young and old people, or when the elderly in general (instead of a specific elderly person) are to be rated (Kite and Johnson 1988). Additionally, studies on subtyping show that the elderly are not perceived as a homogenous group (Brewer, Dull, and Lui 1981; Brewer and Lui 1984; Hummert 1990; Hummert, Garstka, Shaner, and Strahm 1994; Schmidt and Boland 1986). Several subgroups can be distinguished. The most important and best-replicated of those subgroups include both positive and negative subtypes, e.g. Perfect Grandparent, Golden Ager, Shrew, Curmudgeon, or Severely Impaired (Hummert et al. 1994). Explicit ratings of these subcategories show that they clearly differ in valence (Hummert 1990; Schmidt and Boland 1986).

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The negativity of the ratings also depends on the year the investigation took place. Newer studies reveal smaller differences between the evaluations of young and old target groups on self-report measures (Kite and Johnson 1988). It is quite possible that during the last few decades participants have become more concerned about social desirability when exposing ageist attitudes. Similar developments have been observed using self report measures on racism (Judd, Park, Ryan, Brauer, and Kraus 1995) and sexism (Swim, Aikin, Hall, and Hunter 1995). Therefore, attitudes and stereotypes about aging should not be judged relying on direct self-report measures only, but should be examined with so-called indirect measures also. Indirect (or implicit) measures of attitudes and stereotypes reveal automatic and not necessarily conscious evaluations or stereotyping of target groups (Wilson, Lindsey, and Schooler 2000; Wittenbrink, Judd, and Park 1997). They possess the crucial advantage of not being directly influenced by deception or self-presentation strategies. Additionally, these measures are supposed to capture facets of evaluation or stereotyping which are not accessible through introspection (Nisbett and Wilson 1977). Such aspects of evaluation can be measured only indirectly (Greenwald and Banaji 1995), for instance, with response latency measures.

There are a few studies in which automatic judgments of old age have been assessed with response latency measures, for example using affective priming procedures (Perdue and Gurtman 1990) or the so-called Implicit Association Test (IAT) (Dasgupta and Greenwald 2001; Greenwald, McGhee, and Schwartz 1998; Nosek, Banaji, and Greenwald 2002; Rothermund and Wentura 2001; Rudman, Greenwald, Mellott, and Schwartz 1999). Similar to explicit measure findings, it has generally been found that implicit attitudes toward the elderly are negative as well when compared to younger targets. Importantly, compared to the effect size of the explicit

age bias, implicit preferences for *young* vs. *old* were even larger (Nosek, Banaji, and Greenwald 2002). Furthermore, implicit attitudes were only marginally related to explicit stereotype and attitude measures (Rudman, Greenwald, Mellott, and Schwartz 1999). As compared to other implicit measures, the IAT showed particularly large effect sizes in detecting age bias (Rudman et al. 1999). It seems that the IAT is especially sensitive for measuring implicit evaluations of the elderly. The current study assesses whether this sensitivity also extends to attitude differences toward differently valenced subgroups of the elderly.

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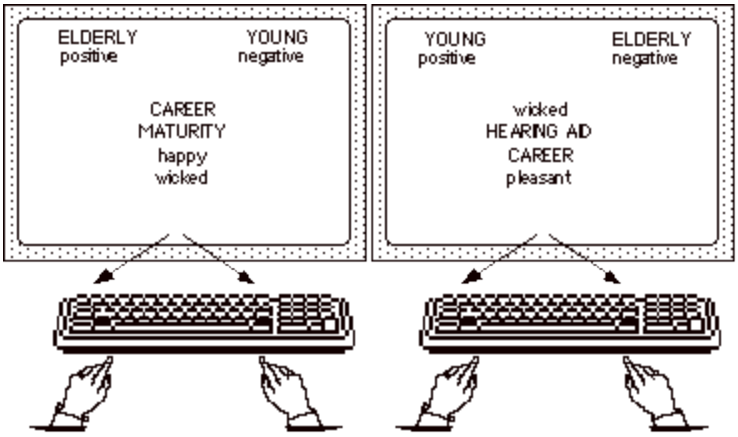
The Implicit Association Test

The IAT was developed by Greenwald et al. (1998) as a tool to measure automatic associations between target concepts and an attribute dimension. In the IAT, participants have to respond to four categories of stimuli by using only two response keys. When measuring implicit attitudes toward the elderly, participants have to classify stimuli belonging to the two target concepts (e.g., stimuli representing elderly people vs. stimuli representing young people) in between stimuli representing the two poles of an evaluative dimension (e.g., positive and negative words). Stimuli appear one at a time on the computer screen. When a target concept (e.g., elderly people) and a dimension pole of the attribute dimension (e.g. negative words) are of similar positive or negative valence, then mapping them onto the same response key should be easier than when target concepts and valenced words are evaluated differently. Therefore, participants with a strong association of *old* and *negative* should respond substantially faster when "elderly" and "negative" on the one hand and "young" and "positive" on the other share the same response key. Reactions will take more time when the concepts "elderly" and "positive" (and "young" and "negative") have to be mapped to the same keys. This is illustrated in Figure 1.

Figure 1: Illustration of the Implicit Association Test (IAT)



The easier, young+positive, assignment will henceforth be called "congruent," the other, "incongruent." The reaction time difference (the IAT effect) between the incongruent and the congruent condition shows the degree to which the two target concepts are associated differently with the evaluative dimension.

There is an ever-growing body of evidence as to the validity of various IATs. For instance, an IAT evaluating Japanese versus Koreans discriminated almost perfectly between Japanese and Korean test takers (Greenwald, McGhee, and Schwartz 1998). In another known-groups approach, IATs discriminated well between individuals very fearful of snakes and individuals very fearful of spiders (Teachman, Gregg, and Woody 2001). An IAT on gender stereotyping predicted social competence ratings of stereotypically male acting candidates in a job interview situation (Rudman and Glick 2001; Steffens, Günster, and Mehl 2001). The implicit association of *self+conscientious* predicted the number of errors made in a concentration test that was administered without time limits (Steffens 2002). Finally, the IAT was the only of seven implicit self-esteem measures that correlated significantly with several criterion variables, such as raters' impressions of participants' self-esteem as revealed in essays (Bosson, Swann, and Pennebaker 2000). Taken together, these findings show that the IAT is a promising new tool for investigating implicit attitudes, stereotypes, and self-related cognitions. Whether the IAT is sensitive to variations in the groups presented, is a question that has not been addressed yet.

The Current Research

In all the studies that have addressed implicit attitudes toward elderly people, the elderly were only investigated as a general category. However, as stated above, elderly people can be perceived as distinct subgroups that differ in controlled appraisal. Consequently, we explored whether introducing the elderly as members of differently valenced subgroups has an impact on automatic evaluations also. Labeling an old person as a “perfect grandparent” should diminish the negativity of the automatic evaluation (here compared to the younger population in general), and because this subgroup is clearly positive the negative age bias could even be overcome. Furthermore, we wanted to know whether introducing someone as a member of a negatively valenced subgroup (“old shrew” or “old curmudgeon”) could even increase the automatic age bias, or whether the elderly in general were essentially evaluated as negatively as their most negative subgroups.

In addition to differing between subcategories, the present study examined the automatic age bias for male and female targets separately because it could be that elderly women and men are evaluated differently. For example, both men and women are rated as less attractive when they grow older. However, the decline of perceived attractiveness is larger for elderly women than for elderly men (Deutsch, Zalenski, and Clark 1986). Given this double standard of aging (Kogan 1974), we examined whether elderly women (compared with younger women) are judged more negatively than elderly men (compared with younger men). Furthermore, we investigated whether replacing the neutral female elderly group with a negative elderly female subgroup (here: "old shrew") leads to an especially negative impact. The positive male subgroup (here: "good grandpa") could, in turn, have an especially positive impact.

In addition to implicit attitudes toward elderly people, explicit attitudes were assessed. Participants rated either elderly males or females on a semantic differential scale and then completed a questionnaire measuring attitudes toward elderly people in general.

METHOD

Materials

IAT stimuli and labels

The labels describing young people were neutral in all IATs (young woman; young man) whereas the labels characterizing the elderly varied in valence (elderly woman, good granny, old shrew; elderly man, good grandpa, old curmudgeon). Stimuli representing the categories *young* and *old* consisted of 10 items stereotypically related to either *young* or *old* as assessed in a pilot study ($N = 32$), e.g., career, cannabis vs. hearing aid, wisdom. Stimuli for these two categories did not differ in average evaluation (Steffens and Plewe 2001) and were matched on word length. To represent the attributes, we selected clearly positive or negative adjectives that are not associated with *old* or *young* and matched on word length. Only the category labels were varied across IATs (positive, neutral or negative; male vs. female), that is, the stimuli were identical in all experimental conditions.

Explicit Measures

Two explicit scales assessing attitudes toward elderly people were administered. First, the Age Group Evaluation and Description (AGED) Inventory (Knox, Gekoski, and Kelly 1995), a semantic differential consisting of 28 bipolar adjective pairs was administered in a German translation. This semantic differential claims to contain 14 descriptive items measuring stereotypes and 14 evaluative items measuring attitudes. The authors showed that the descriptive items were based on two orthogonal factors, maturity and vitality, and the evaluative items formed two orthogonal factors, goodness and positiveness in their sample. Furthermore, factor analyses with all 28 items showed that the items loading on maturity and goodness and on vitality and positiveness were highly correlated. The items of the maturity and the goodness factor formed the age factor, and the items of vitality and positiveness formed the youth factor. Altogether, Knox et al. (1995) found this factor structure to be well replicable. Instructions for the current experiment were modified so that participants rated elderly men or elderly women instead of elderly people in general.

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Second, the Attitudes Toward Old People Scale (Kogan 1961) was applied. The Kogan Scale measures attitudes toward old people employing 34 items; 17 of these are worded positively and 17, negatively. It assesses attitudes toward the elderly in general.

Procedure

We adapted the Mac-IAT computer program (Steffens 1999) to the needs of the current experiment. The IAT consisted of 5 discrimination tasks: (1) Practice in discriminating target concepts (10 trials), (2) practice in discriminating attributes (10 trials), (3) crucial combined task: congruent or incongruent, i.e. *young+positive* or *old+positive* (2x60 trials), (4) practice reverse discrimination of the target concepts (10 trials), and (5) crucial combined reverse task: incongruent or congruent, (2x60 trials). Response keys were "Y" (positioned where the Z is on English keyboards) for left and "N" for right responses. Participants were instructed to place their index fingers on these keys. Stimuli appeared in the center of the computer screen, and category labels were presented throughout a task in the top left and right corners of the screen. False reactions were indicated by a flashing "F." After each task, the computer displayed the number of errors committed and the average reaction time during the previously completed task as feedback for the participants.

Participants were tested individually by a female experimenter in experimental cubicles equipped with iMacs. They read the instructions on the computer screen. First, they were given a (thematically unrelated) text containing a geographical description and finished a word completion task. Then they completed an IAT in which they were told that their reaction times would be measured and that some of the words presented were related to older or younger people. After that, the participants rated elderly people (of the same sex as in the previous IAT) with the AGED Inventory. Then they completed the Kogan Scale. The last part of the experiment consisted of questions referring to the text at the beginning of the experiment, and participants were asked to indicate how much contact they had with elderly people. The experiment lasted about 20 minutes. After the experiment was completed the participants were thanked and informed about the purpose of the study.

Design and Participants

The dependent variable for the measurement of implicit attitudes was the reaction time difference between the congruent and the incongruent task (i.e., the IAT effect). We applied a 3 (Valence of labels) x 2 (Gender of target concepts) design and varied both independent variables between participants. The valence of the labels was either positive, neutral, or negative, and crossed with the gender of the target concepts. The order of task congruency (IAT Task 3 congruent, Task 5 incongruent, or vice versa) was used as a control factor. 48 volunteers participated in the experiment (mean age = 23.81; *SD* = 4.27). The percentage of female and male participants in each condition was held constant (36 women and 12 men were tested).

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In addition to these three experimental groups with differently valenced category labels, we tested two further experimental groups with 16 participants each. In these two additional experimental groups we investigated whether implicit evaluations of the elderly could be altered by reading descriptions of favorable and unfavorable single old persons before completing the IAT. Reading those descriptions did not have a systematic impact on automatic evaluations. Implicit attitude measure data from these 32 participants will not be depicted in detail in the following results because of statistical insignificance.[1] These data will only be included in the

correlational analyses resulting in a total of $N = 80$ participants (60 women and 20 men; mean age = 24.3 years; $SD = 5.38$).

Dependent variables for explicit attitude measures comprised the AGED Inventory and the Kogan Scale. The gender of the target concepts was only varied in the AGED Inventory.

RESULTS

Implicit Attitudes

The first two trials in each IAT task were excluded from analysis because of their typically prolonged response latency. Additionally, response latencies from incorrect classifications were not considered. Because a logarithmic transformation yielded a better approximation to the normal distribution all statistical analyses were carried out with transformed data. All significance tests were conducted with $p < .05$. Individual p-values will not be presented in further results. We used Eta-square as an indicator of effect size (Cohen 1977).

A preliminary analysis with a paired samples t-test revealed that participants reacted considerably slower in the incongruent (i.e., *old+positive*) than in the congruent (i.e., *old+negative*) task, $t(47) = -7.00$; Eta-square = .51. To simplify the following presentations, further analyses were conducted with the differences between the mean response latencies (i.e., the IAT effect).

A 3x2x2 analysis of the IAT effect with the factors “Valence of labels,” “Gender of target concepts,” and “Order of task congruence” yielded the expected main effect of label valence, $F(2,36) = 5.47$, Eta-square = .23. That is, the label valence highly influenced the automatic evaluation of the elderly. A Scheffé-test confirmed that positive labels led to a smaller IAT effect than negative or neutral labels. This is illustrated in Figure 2 with error bars reflecting the standard error of means. The IAT effects in the neutral and the negative conditions did not differ. Even though the IAT effect in the positive label condition was diminished, a one-sample t-test revealed that the effect was significantly larger than zero, $t(15) = 2.44$, Eta-square = .28. Hence, the *old+negative* association could not be eliminated or reversed by labeling elderly people "good granny" or "good grandpa." No other main effects or interactions reached significance (all F values < 3.93). The main effect "Gender of target concepts" remained insignificant, $F(1,36) < 1$.

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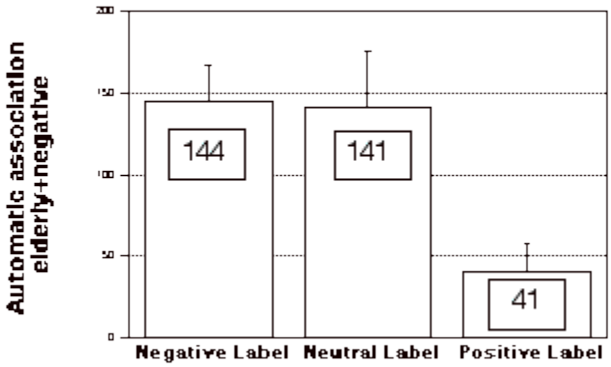
Figure 2: IAT effects in ms for each Label Condition



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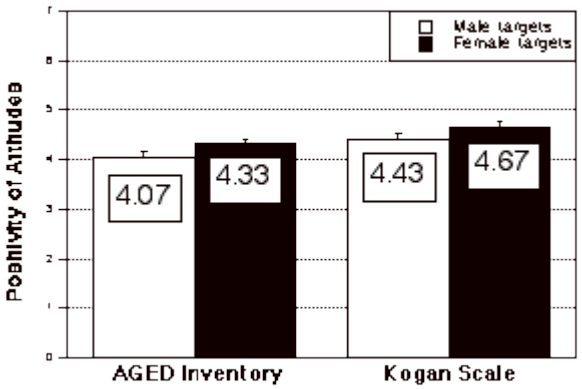
Explicit Attitudes

AGED Inventory

In a preliminary analysis, we tested whether the four-dimensional structure of the AGED Inventory could be replicated in our sample. A confirmatory factor analysis by way of structural equation modeling could not demonstrate the postulated factor structure. Models with two orthogonal factors fit neither the evaluative items (N = 80; Chi-square = 123.8; df = 77, p = .00; GFI = .83; AGFI = .76) nor the descriptive items (N = 80; Chi-square = 122.61; df = 77; p = .00; GFI = .85; AGFI = .80). Furthermore, it was not possible to obtain individual factors for youth and age while applying the confirmatory factor analysis to all 28 items simultaneously (N = 80; Chi-square = 586.85; df = 350; p = .00; GFI = .70; AGFI = .64).[2] In addition, the internal consistencies of the four single scales were rather low (Cronbach's alpha between .61 and .77). Thus, the overall mean score of the AGED Inventory was used as a dependent measure (Cronbach's alpha = .86). Furthermore, we eliminated the possibility that the different IAT conditions result in carry-over effects on the AGED Inventory. A 5 (Experimental condition) x 2 (Gender of target concepts) ANOVA with 80 participants showed only a significant main effect of target gender, with women being judged more positively than men, $F(1,70) = 4.43$; Eta-square = .06 (all other F values < 1.1). Thus, the experimental conditions of the previous task did not show an impact. The factor "Gender of target concepts" was varied in the AGED Inventory. The left half of Figure 3 shows scores reached with the AGED Inventory, divided by target gender categories. Higher scores indicate more favorable ratings. Error bars reflect standard errors of means.

Figure 3: Explicit Attitude Ratings of the Elderly



Kogan Scale

The Kogan Scale assesses attitudes toward the elderly in general. It is a one-dimensional measurement tool so that an attitude index was computed as an overall mean of all 34 items (Cronbach's alpha = .86). Values range between 1 and 7, with higher scores indicating more positive attitudes. Participants showed an overall mean of 4.55 (*SD* = .61; *N* = 80). Comparing the ratings on the positively vs. the negatively poled items, a *t*-test for paired samples revealed that participants scored higher on the negatively poled than the positively poled items, *t*(79) = 3.27, Eta-square = .12. In short, participants contradicted ageist statements more strongly than they agreed to pro-age statements.

Overall, participants who dealt with elderly women in the IAT and the AGED Inventory rated elderly people more positively on the Kogan Scale than participants who dealt with elderly men. This carry-over effect shown in Figure 3 was confirmed in a one-tailed *t*-test for independent samples, *t*(78) = 1.82; Eta-square = .04.

Relations between the Implicit and the Explicit Measures

In order to control for influential experimental factors the z-values of the IAT effect were computed for each of the five groups of the factor "Experimental condition." For the AGED Inventory, z-values were computed for each group of the factor "Gender of target concepts." This procedure eliminated differences in the means and the standard deviations between the cells caused by the experimental factors. Other factors or interactions did not reach significance.

As Table 1 shows, the AGED Inventory was uncorrelated with the IAT scores. However, there was a significant correlation between the Kogan Scale and the IAT effect in the expected direction. The AGED Inventory and the Kogan Scale were highly correlated.

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Table 1. Correlations between the Implicit and Explicit Measures, Controlling for Experimental Condition in the IAT and for Target Gender in the AGED Inventory (*N* = 80)

Measure	IAT Effect	AGED Inventory	Kogan Scale	Contact
IAT Effect	*M* = .05 *SD* = .06 *N* = 80	.04	**-.20**	.14
AGED Inventory		*M* = 4.2 *SD* = .56 *N* = 80	**.57**	**-.26**
Kogan Scale			*M* = 4.55 *SD* = .61 *N* = 80	-.10
Contact				median = 3 *N* = 80

Notes: Significant correlations are printed in bold. In our experimental design assessing the label influence (*N* = 48), we obtained a mean IAT effect of .06 (*SD* = .06).

Participants were asked to indicate their contact frequency with elderly people on a six-point rating scale from 1 = "very often" to 6 = "no contact" (median = 3). Spearman correlation coefficients were computed between the contact rating and the implicit and explicit attitude measures. As Table 1 shows, the only significant correlation was observed between the contact variable and the AGED Inventory.

DISCUSSION

Implicit evaluations of the elderly were negative compared to those of the young, independent of the to-be-evaluated subgroup of the elderly. However, the subgroup valence showed a strong influence on the degree of negativity. A positive subgroup of the elderly led to a less negative evaluation. Under this condition, classifying *old* together with *positive* was apparently not much more difficult than classifying *old* with *negative*. Whether a negative subgroup or the elderly in general were to be evaluated did not influence the negativity of evaluations.

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On the one hand, it does not seem to be so surprising that a group explicitly presented as "good" (e.g., "good grandpa") is more easily mapped with "positive" than a related group presented in a neutral way (e.g., "elderly man"). However, it is notable that even in the IATs with very favored subgroups of elderly people the *young+positive* association was significantly above zero. Thus, the basic association *old+negative* appeared to be stronger than the influence of favorable

category labels for the elderly. This finding does not contradict previous results that positive subgroups of the elderly may obtain clearly positive (explicit) ratings (Hummert 1990). The IAT measures the relative preference of *young* vs. *old*, and we found that even positive subgroups of the elderly were judged more negatively than the (neutral) young reference group.

Similar results were obtained in other studies manipulating automatic youth preference with the IAT (Dasgupta and Greenwald 2001; Rothermund and Wentura 2001). For example, the exposure to descriptions of favorable elderly and unfavorable young people in an ostensibly unrelated knowledge task led to a substantially smaller age bias effect than exposure to descriptions of unfavorable elderly and favorable young people (Dasgupta and Greenwald 2001). Nevertheless, having dealt with positive elderly and negative young examples could not override the age bias in the IAT, classifying *young* with *positive* and *old* with *negative* still remained easier than classifying *young* with *negative* and *old* with *positive*.

It is also remarkable that the elderly in general were evaluated as negatively as a negative subgroup. In this sense, it could be that the IAT effect has reached the highest extreme with the neutral category labels. This can be interpreted as another indicator for the generally negative associations of the concept "elderly" which can hardly be increased in negativity. However, results of two questionnaires assessing explicit judgements, the AGED Inventory and the Kogan Scale, stood in sharp contrast to the negative automatic evaluation of the elderly in general. Both questionnaires showed predominantly neutral attitudes. These findings stress the importance of implicit attitude measures which are not affected by social desirability concerns or personal standards. These generally negative automatic appraisals are in line with past findings revealing the implicit age bias to be much larger than the explicit one (Nosek, Banaji, and Greenwald 2002).

From a methodological point of view concerning the processes underlying the IAT, the present experiment demonstrated the influence of the subgroup valence on attitudes. Categorizing identical stimuli with differently valenced labels had a great impact on the IAT effect. Importantly, the average valence of the two stimulus groups representing young or old was matched, with negatively and positively valenced terms in each stimulus set (e.g., wisdom, hearing aid). This implies that stimuli within one category do not need to be consistent for an IAT effect to occur, and differences in the label valences are sufficient to produce and influence the size of the IAT effect. This stresses the importance of the labels for the IAT effect and is in line with our previous findings that the label representation is crucial for the IAT effect, and more important than the stimuli (Steffens, Jelenec, Anheuser, Goergens, Hülsebusch, Lichau, and Still 2002; Steffens and Plewe 2001).

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Our data do not support the notion that implicit preferences for young to elderly women and young to elderly men differ. Compared with their younger counterparts, elderly women were not judged more negatively than elderly men. In this sense no effects corresponding to a "double standard of aging" could be found. In the AGED Inventory, elderly women even obtained more favorable ratings than elderly men. There was an unexpected carry-over effect on the Kogan Scale. Activating the more liked subgroup "elderly women" in the IAT and the AGED Inventory

produced a more favorable rating of the elderly in general in the Kogan Scale than activating the less liked group “elderly men.” It seems that a priming effect has occured here. The participants were probably unaware of the influence of the IAT and the AGED Inventory. This effect deserves further investigation with more refined methods.

Relations of the explicit and implicit attitudes were not even of medium size, and the IAT was uncorrelated with our measure of contact to elderly people. This is parallel to results obtained by Rudman et al. (1999) who observed small positive relationships between explicit and implicit attitudes toward the elderly. However, the explicit measures of our study were highly correlated. It seems that our implicit and explicit attitude measures tap into distinct constructs. Another factor contributing to the small correlations with the IAT is its rather low reliability. Though internal consistencies of up to Cronbach's alpha = .93 have been reported, IAT test-retest correlations appear to be rather low ranging mainly between r = .4 to .6 (Steffens and Buchner in press). However, compared with other implicit attitude measures, the psychometric properties of the IAT turned out to be promising and worth improving (Bosson, Swann, and Pennebaker 2000). The fact that the IAT is sensitive to measuring attitudes toward different subgroups of the elderly is a further indicator of its validity

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ENDNOTES

[1]These two experimental groups were given a text describing a single old person either very favorably or unfavorably before completing the IAT. After completing 10 word stems in the text referring to thematically crucial words (e.g., wise or morose), the participants completed an IAT with neutral labels (young man vs. elderly man or young woman vs. elderly woman). These person descriptions did not influence automatic evaluations of the elderly. In a 3 x 2 x 2 analysis of variance with the factors "Valence of person description," "Gender of target concepts," and "Order of task congruence" only a main effect "Order of task congruence" emerged, $F(1,36) = 4.27$, Eta-square = .11. Most notably, there was no main effect of "Valence of person descriptions," $F(1,36) = 1.89$. No other main effects or interactions reached significance (all F values < 3.65). However, a manipulation check at the end of the experiment clearly revealed positive ratings for the likable and negative ratings for the unlikable person described.

[2]If a correlation between the two latent factors is allowed, the model fit improves neither for the evaluative items ($N = 80$; Chi-square = 110.21; $df = 76$; $p = .01$; GFI = .85; AGFI = .78) nor for the descriptive items ($N = 80$; Chi-square = 110.9; $df = 76$; $p = .01$; GFI = .86; AGFI = .80). When we conducted the CFA with all 28 items simultaneously, a correlation between the two latent factors did not improve the model fit ($N = 80$; Chi-square = 564.29; $df = 349$; $p = .00$; GFI = .70; AGFI = .65).