

Schwarzel, B, & A

(10) ~~9/11~~ ~~personally~~, pg 69

Correction before: sand
Single (1)

(11) ~~11~~ avg (2), pg 73

(12) self (3), pg 71

(13) self (3) pg 71

(14) obs (1), pg 73

(15) obs (5), pg 73

(16) null (0), pg 71

(17) word (0), pg 71

(18) one (1), pg 71

(19) ~~2~~ not rep (0), pg 70-71

(20) 0, pg 70-71

(21) 0, pg 70-71

(22) counter (3), pg 70-71

(23) counter (3), pg 70-71

(24) sum (0), pg 70-71

(25) sum (0), pg 70-71

(26) sd - (2.5), pg 71
(27) sd - (2.5), pg 71
(28) con - (5), pg 71
(29) spec - (3.5), pg 71
(30) spec - (3.5), pg 71
(31) comp - (1), pg 71
(32) nor (0), pg 69
(33) dual (2), pg 71

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Employing Automatic Approach and Avoidance Tendencies for the Assessment of Implicit Personality Self-Concept

The Implicit Association Procedure (IAP)

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Abstract. A new chronometric procedure, the Implicit Association Procedure (IAP), was adapted to assess the implicit personality self-concept of shyness. A sample of 300 participants completed a shyness-inducing role play and, before or after the role play, a shyness IAT, a shyness Implicit Association Test (IAT), and direct self-ratings. The experimental group was instructed to fake nonshyness. The control group did not receive this instruction. IAT and IAP were unaffected by position effects, and were less susceptible to faking than direct self-ratings with regard to mean levels and correlates. Under faking, correlations between direct and indirect measures decreased, and direct but not indirect measures showed higher correlations with social desirability and lower correlations with observed shyness. Despite many similarities, the true correlation between IAT and IAP was estimated only .61, indicating high method-specific variance in both procedures. The findings suggest that indirect measures are more robust against faking than traditional self-ratings but do not yet meet psychometric criteria for practical assessment purposes.

Keywords: implicit self-concept, Implicit Association Test, Implicit Association Procedure, shyness, fakability

Individual behavior is the result of reflective and impulsive processes (e.g., Strack & Deutsch, 2004). Both aspects should be taken into account for the assessment of interindividual differences. Traditional questionnaires rely on the willingness and ability of respondents to inform in a reflective way, and are, therefore, biased by social desirability concerns and introspective limits (Greenwald & Banaji, 1995). New chronometric procedures, most prominently the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998), were shown to be relatively robust against social desirability biases, and to tap cognitive representations that are not assessed by questionnaires (for a review, see Nosek, Greenwald, & Banaji, in press). Asendorpf, Banse, and Mücke (2002) employed the IAT for the assessment of the personality self-concept that was defined as associative network containing all associations of the concept of self with personality attributes. Using shyness as an example,

Asendorpf et al. (2002) showed that a) the IAT reliably assessed individual differences in the implicit personality self-concept that b) were partly independent from traditional self-ratings, c) increased significantly the prediction of spontaneous behavior, and d) were less susceptible to faking instructions. The present study extended this approach into three different directions.

Research Question 1: The IAT and IAP as Parallel Assessment Procedures

We attempted to replicate the findings for the shyness IAT with a new, parallel procedure. Priming procedures were only partially successful as adequate referents to the IAT (Nosek et al., in press). For this

purpose, we modified the Evaluative Movement Assessment (EMA) from Brendl, Markman, and Messner (2005). The modification was named *Implicit Association Procedure (IAP)*. Similar to the IAT, the IAP aims to assess automatic associations between concepts (e.g., "me," "shy," "nonshy") through a series of discrimination tasks. Differently from the IAT, the IAP triggers automatic approach (pulling the joystick toward a target) and avoidance behavior (pushing the joystick away from a target) by two joystick movements (cf. Chen & Bargh, 1999; Neumann, Hülsebeck, & Seibt 2004). The detailed procedure of the IAP is described in the method section. In line with the EMA methodology it was hypothesized that attributes that play an important role in the self-concept could be responded to more quickly with a joystick movement towards oneself than away from oneself.

Research Question 2: Dissociations of Indirect and Direct Measures Under Faking

Previous research revealed that the IAT is slightly susceptible to faking instructions (Nosek et al., in press). However, faking effects are a threat to the validity only if *differential faking* (different individuals fake to a different degree) occurs. The present study investigated both faking main effects (as in the 2002 study of Asendorpf et al., Study 2) and effects on the correlations of direct and indirect shyness measures by contrasting an experimental group that was instructed to appear nonshy, and a control group that was instructed to act naturally. Stronger effects of differential faking on direct than indirect measures were expected to be apparent in three ways. First, the correlation between direct and indirect shyness should be moderate in the control group (cf. Asendorpf et al., 2002, Study 1) and much lower in the experimental group. Second, differential faking should increase the negative correlation between social desirability and direct shyness because the more participants fake good, the higher will be their social desirability score, and the lower their shyness score. In contrast, correlations between indirect shyness and social desirability should be low in both experimental groups. Third, differential faking should decrease the correlation between direct shyness self-ratings and observer judgments of shyness, because behavior can be faked less easily than answers in a questionnaire. In contrast, correlations between indirect shyness and observer judgments should be unaffected by faking instructions.

Research Question 3: State Influences on the Indirect Measures

It has been found in several studies (Schmukle & Egloff, 2004) that the internal consistencies of IATs were satisfactory (between .70 and .80) whereas their retest or parallel test reliabilities were somewhat lower (between .50 to .60). This suggests that IATs capture both stable interindividual differences and occasion-specific variance. Sources for occasion-specific variance are a) changes in test taking strategies and b) state changes. Recently, Schmukle and Egloff (2004) showed that the mean scores of an anxiety IAT did – in contrast to direct anxiety measures – not increase when anxiety was experimentally induced. In order to replicate this immunity to state changes we studied the robustness of the shyness IAT and IAP with regard to their mean level and their correlates by comparing participants who completed them before or after a shyness-inducing role play.

Methods

Participants

Participants were 300 nonpsychology university students who were recruited on the campus of Humboldt University Berlin (150 female, 150 male; age $M = 24.5$ years, range 20–34 years; native speakers of German). Following Study 2 of Asendorpf et al. (2002), participants were asked to participate in "a job application procedure" (faking condition, $n = 240$, 120 of either sex) or "a study on social perception" (control condition, $n = 60$, 30 of either sex). In the first case, they were motivated for participation by informing them that the study included a simulated job assessment center and video feedback on their performance, and they were offered DM 20 (approximately US \$ 10) for the 1.5 hour study. In the second case, they were motivated by offering them feedback on their results after the study, and they received DM 15 (approximately US \$ 7.5) for the 1 hour study.

Assessments and Measures

Overall Procedure and Design

All participants a) completed an indirect shyness test (either IAT or IAP), b) judged themselves on bipolar personality-describing items, c) were video-taped in a shyness-inducing role play, d) completed a different indirect shyness procedure (IAP or IAT), e) judged

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themselves on other personality scales, f) completed a retest of d), and g) were interviewed about the indirect tests. Participants in the experimental group additionally received video feedback on their performance in the role play. The shyness items were identical for both indirect procedures and were included as direct self-ratings in steps b) and e). The direct shyness ratings, the IAT, the instructions for the two experimental conditions, and the role play were identical to Study 2 of Asendorpf et al. (2002).

There were two between-subject variations: *faking instruction* and *position* of the two indirect tests. Consistent with their invitation, participants received either the faking instruction (assessment center group) or the honesty instruction (social perception group). Invitations were scheduled such that approximately every fifth participant was in the social perception group. Within each group, half of the participants completed first the IAT and later IAP and IAP retest; the other half completed first the IAP and later IAT and IAT retest. Assignment to the 2 orders alternated between successive participants.

Finally, participants were thanked, asked for permission of analyzing the videotapes (all agreed), and were promised feedback on their results (control participants only). Four months later, participants received a letter explaining the procedures and general findings, and control participants were invited for a feedback session on their individual results.

Instructions

Upon arrival at the lab, participants in the faking condition were instructed to present themselves in the following simulated assessment center as favorably as possible in order to get a job that required to be able to warm-up strangers quickly and to avoid insecure behavior. Participants in the control condition were informed that they would participate in a study on social perception, and that they should answer all questions as honestly as possible (see Asendorpf et al., 2002, for details).

Role play

The role play was identical for all participants. Participants had to small talk with their "future boss" for about 10 minutes. The future boss was an older-looking, unfamiliar, opposite-sex, advanced psychology student who wore a business suit and slightly patron-

ized the participant (see Asendorpf et al., 2002, for details). The interaction was videotaped with a camera that was operated from another room. When participants interrupted the role play the confederate tried to get them back as quick as possible. The time period until the role play was continued was defined as missing. For the judgments of shy behavior secondary tapes were prepared that contained the first three minutes of noninterrupted role play of each participant.

Direct self-ratings

Direct self-ratings were assessed on the computer and were presented in a fixed random order. Bipolar *shyness* pairs in step b were identical to Asendorpf et al. (2002) and were mixed with 30 conscientiousness, intellect, and irritability pairs. In order to minimize transfer effects from the preceding indirect test, the shyness items occurred only among the last 20 items. Self-ratings in step e started with a 32-item self-monitoring scale that should again minimize transfer effects and was included for the purpose of another study. The scale was followed by the 10 *shyness* and irritability items of step b and concluded with the *social desirability scales* from Lück and Timaeus (1969) and Stöber (1999; without the Item "Have you ever consumed drugs") that were aggregated. The reliability of the direct self-ratings was separately calculated for both experimental conditions and was above $\alpha = .84$ in each case.

Implicit Association Test (IAT)

The shyness IAT was identical to the 2002 studies of Asendorpf et al. (2002) studies.¹ Task sequence and stimuli are depicted in Table 1. IAT scores were computed by subtracting mean response latencies in Sequence 3 from Sequence 5 such that high IAT scores represented quicker associations of me-shy and others-nonschy relatively to me-nonschy and others-shy.

Implicit Association Procedure (IAP)

The IAP was based on the EMA (Brendl et al., 2005) and was modified noticeably due to the results of two pilot studies. The final procedure is depicted in Table 2. Participants had to push a joystick toward or away from oneself dependent on whether a stimulus had to be associated with me or notme. Differently from the

¹ To maximize comparability between both studies we do not report results for the improved D-scores (Greenwald, Nosek, & Banaji, 2003). We calculated D-scores and found only minimal changes (differences in correlations below .02) most likely because we already included a major feature of the D-scores, namely inclusion of practice trials for combined tasks.

Table 2. Implicit Association Procedure for Shyness: Task sequence.

Sequence	N of trials	Task	Joystick direction assignment	
			To the participant	Away from the participant
1	24	Target discrimination	Me	Notme
2	128	Initial combined task	Me, shy	Notme, nonshy
3	128	Reversed combined task	Me, nonshy	Notme, shy

Note. The 5 shy and 5 nonshy words and the 3 me (self, my, own) and 3 notme (your, them, other) were identical to the IAT stimuli.

Table 3. Summary statistics and instruction effect for the main variables (Study 2).

Variable (range of scores)	Faking <i>n</i> = 240 ^a		Control <i>n</i> = 60 ^b		Instruction effect <i>df</i> = 298 ^c		
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>t</i>	<i>p</i>	<i>d</i>
IAT	-115 ms	194 ms	-76 ms	169 ms	1.99	.05	.23
IAP	-85 ms	134 ms	-62 ms	142 ms	1.27	.21	.15
Bipolar shyness self-rating (1-7)	1.85	0.59	3.58	1.01	17.3	.001	2.00
– before role play	1.90	0.64	3.62	1.01	16.3	.001	1.89
– after role play	1.79	0.59	3.54	1.03	17.3	.001	2.00
Social desirability score (0-1)	0.85	0.14	0.48	0.17	17.8	.001	2.06
Observer shyness judgment (1-7)	3.72	1.19	4.11	1.26	2.29	.02	.27

Note. *M* and *SD* refer to raw scores, statistical tests to log-transformed scores in the case of the IAT and IAP latencies. The effect sizes *d* were defined such that positive scores indicate less shyness in the faking condition.

^a *n* = 239 for IAT and IAP; ^b *n* = 59 for IAT and IAP. ^c *df* = 294 for IAT and IAP, *t* = \sqrt{F} in case of ANOVAs.

order to decrease error rate, increase speed, or make a favorable impression.

Judgments of shy behavior

Four student judges who were blind to the experimental condition independently rated their overall impression of the participants' shyness. Each minute of the 3-minute secondary tapes was separately rated on a 7-point scale ranging from 1 = not shy to 7 = shy. The judgments were anchored by two examples of extremely shy and extremely nonshy participants from Study 1 of Asendorpf et al. (2002). For each participant the 12 ratings were averaged. The reliability (interjudge agreement) was above $\alpha = .92$ for both conditions.

Results

Instruction and Position Effects on Indirect, Direct, and Behavioral Measures

IATs

Error rates were *M* = 5.1%, *SD* = 3.6% for the first and *M* = 4.9%, *SD* = 3.8% for the second IAT. IAT

data of three extreme scorers (25% error) were excluded from analyses. All other error rates were below 20%. Internal consistency α was calculated across four subtests containing the trials 3–20, 21–40, 41–60, and 61–80, and was .78 for test and .76 for retest and highly similar for all conditions; in particular, it was not lower in the faking condition. The retest reliability of the IAT was $r = .68$.

Effects of instruction, position, and their interaction on the IAT means were tested by a 2 × 2 ANOVA. A significant effect was found only for instruction, $F(1, 294) = 3.97$, $p < .05$. Table 3 indicates that participants had lower IAT scores in the faking condition than in the control condition. Although the effect size was small, it suggested that some participants manipulated the IAT in order to present themselves as nonshy. Therefore, participants' reports in the postexperimental interview about faking the IAT were related to their IAT scores. In the faking condition, 57 participants reported attempts to bias IAT results by vividly imagine themselves as a nonshy job applicant; one other participant reported to have deliberately committed errors. A *t* test contrasting them with the other 181 participants in the faking condition confirmed the hypothesis that they had lower IAT scores, $t(237) = 1.78$, $p < .05$, $d = .23$, one-tailed tests. When these 58 participants were excluded from analysis, the remaining