

# Implicit attitudes towards romantic partners predict well-being in stressful life conditions: Evidence from the antenatal maternity ward

Rainer Banse

*University of York, UK*

Claudia Kowalick

*Humboldt-Universität zu Berlin, Berlin, Germany*

An idiographic variant of the Implicit Association Test (IAT; Greenwald, McGhee, & Schwartz, 1998) was used to investigate how implicit attitudes towards romantic partners are related to explicit attitudes, relationship-related variables such as adult attachment and relationship satisfaction, and psychological well-being as a potential outcome of relationship quality. The validity of the Partner-IAT was investigated using a known group approach that contrasted abused women currently living in a refuge ( $N = 22$ ), women who had recently fallen in love ( $N = 19$ ), women who were currently hospitalized due to pregnancy complications ( $N = 48$ ), and a control group of female students ( $N = 52$ ). Across the whole sample, the Partner-IAT showed satisfactory internal consistency ( $\alpha = .83$ ). As expected, the analysis of group differences revealed that abused women living in a refuge showed more negative implicit and explicit attitudes toward (ex-)partners than women belonging to the other three groups. Women in love showed the most positive partner attitudes, but the difference to the control group reached significance only for explicit but not implicit attitudes. Implicit attitudes toward partners correlated significantly with explicit attitudes, secure attachment, and psychological well-being. To investigate whether implicit and explicit partner attitudes can predict important relationship outcomes, psychological well-being was regressed on both variables in group-wise hierarchical multiple regression analyses. Explicit partner attitudes were significantly related to psychological well-being in student controls and hospitalized pregnant women. However, only in hospitalized pregnant women did implicit attitudes account for variance in well-being over and above explicit attitudes. This pattern of results is compatible with the notion that positive implicit representations of the romantic partner can function as a genuine coping resource that effectively buffers against major stressful life circumstances.

Une variante idiographique du Test d'Association Implicite (TAI; Greenwald, McGhee, et Schwartz, 1998) a été utilisée pour tester comment les attitudes implicites envers les partenaires amoureux étaient reliées aux attitudes explicites, aux variables relationnelles associées telles que l'attachement adulte et la satisfaction dans la relation, et au bien-être psychologique comme conséquence potentielle de la qualité de la relation. La validité du TAI-partenaire a été examinée en comparant des femmes maltraitées habitant dans un foyer d'accueil ( $N = 22$ ), des femmes récemment tombées amoureuses ( $N = 19$ ), des femmes hospitalisées à cause de complications liées à la grossesse ( $N = 48$ ) et un groupe contrôle d'étudiantes ( $N = 52$ ). À travers l'échantillon complet, le TAI-partenaire a montré une cohérence interne satisfaisante ( $\alpha = .83$ ). Tel qu'attendu, l'analyse des différences de groupes a révélé que les femmes maltraitées vivant dans un foyer ont montré plus d'attitudes implicites et explicites négatives envers leur (ex-)partenaire que les femmes appartenant aux trois autres groupes. Les femmes amoureuses ont montré les attitudes les plus positives envers leur partenaire, mais la différence avec le groupe contrôle était significative seulement pour les attitudes explicites et pas pour les attitudes implicites. Les attitudes implicites envers le partenaire étaient significativement corrélées avec les attitudes explicites, l'attachement sécurisé et le bien-être psychologique. Afin d'évaluer dans quelle mesure les attitudes implicites et explicites envers le partenaire peuvent prédire des conséquences relationnelles importantes une régression multiple hiérarchiques

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Correspondence should be addressed to Rainer Banse, Department of Psychology, University of Bonn, Roemerstr. 164, D-53117, Bonn, Germany. (E-mail: banse@uni-bonn.de).

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intra-groupe a été effectuée. Les attitudes explicites envers le partenaire étaient significativement associées au bien-être psychologique dans le groupe contrôle des étudiantes et dans le groupe des femmes enceintes hospitalisées. Cependant, uniquement chez les femmes enceintes hospitalisées, les attitudes implicites ont contribué à la variance du bien-être psychologique, au-delà des attitudes explicites. Ces résultats sont compatibles avec la notion que les représentations positives implicites du partenaire peuvent agir comme une véritable ressource de coping offrant une protection efficace contre les événements stressants majeurs de la vie.

Con el objetivo de investigar en que medida las actitudes implícitas en parejas de enamorados están relacionadas con actitudes explícitas, se utilizó una variante ideográfica del Test de Asociación Implícita—TAI (Implicit Association Test—IAT; Greenwald, McGhee, & Schwarz, 1988). Una relación de pareja se asocia con variables como apego entre adultos, satisfacción con la relación y bienestar psicológico, las cuales funcionan a su vez como indicadores potenciales de la calidad de la relación. La validez del TAI-Pareja se evaluó a través de la comparación de grupos de mujeres víctimas de abuso que viven actualmente en un refugio ( $N = 22$ ), mujeres que se habían enamorado recientemente ( $N = 19$ ), mujeres que se encontraban actualmente hospitalizadas debido a complicaciones con su embarazo ( $N = 48$ ) y un grupo control femenino de estudiantes ( $N = 52$ ). En un análisis estadístico con el total de la muestra se constató una consistencia interna satisfactoria del TAI-P ( $\alpha = .83$ ). Como se había hipotetizado, el análisis de diferencias entre los grupos reveló que las mujeres víctimas de abuso que actualmente vivían en un refugio mostraban mayores actitudes negativas implícitas y explícitas hacia sus (ex-)parejas que las mujeres pertenecientes a los otros tres grupos. Por otro lado, fueron las mujeres enamoradas, las que reportaron las actitudes más positivas hacia sus parejas, aunque en comparación con el grupo control se observó únicamente una diferencia significativa en relación a las actitudes explícitas, más no respecto de las actitudes implícitas. Las actitudes implícitas hacia la pareja correlacionaron de manera significativa con las actitudes explícitas, seguridad en el apego y bienestar psicológico. Para analizar si es que las actitudes implícitas y explícitas hacia la pareja podían predecir importantes resultados en la relación, se realizó un análisis de regresión múltiple jerárquico, en el cual el bienestar psicológico fue regresionado en relación a estas variables (actitud implícita y explícita). Las actitudes explícitas hacia la pareja estuvieron significativamente asociadas con bienestar psicológico en el grupo control y en el grupo de mujeres embarazadas que se encontraban hospitalizadas. Sin embargo, las actitudes implícitas generaron únicamente en el grupo de mujeres embarazadas hospitalizadas una varianza en la variable bienestar psicológico por encima de las actitudes explícitas. Estos resultados son compatibles con el postulado, de que representaciones positivas implícitas de la pareja pueden funcionar como una genuina estrategia de afrontamiento, la cual actúa como un amortiguador efectivo ante importantes condiciones de estrés en la vida.

In the last two decades, a quite substantial number of studies have used methods of cognitive psychology such as priming or other response latency based measures to investigate how relational schemata (Baldwin, 1992) influence processes such as self-evaluation, state self-esteem, or interaction expectancies (for an overview see Banse, 2003). However, only recently have response time measures been used to assess individual differences in relational schemata to better understand the cognitive mechanisms underlying the success of romantic relationships.

The attempt to use affective priming paradigms to assess individual differences in the automatic activation of attitudes towards relationship partners met with little success (Banse, 1999, 2001). Although it was possible to activate specific relational schemata, priming effects were generally weak and their reliability insufficient to assess individual differences. Both problems could be potentially overcome by the Implicit Association

Test (IAT; Greenwald, McGhee, & Schwarz, 1998), which is used to assess implicit attitudes, stereotypes, and other constructs. The IAT essentially consists of a double discrimination task. Stimuli belonging to two target object categories (e.g., romantic partner versus stranger) and to two attribute categories (e.g., good versus bad) have to be sorted using left-hand and right-hand response keys. In a first combined task, participants have to press the left key for stimuli related to *partner* or *good*, and the right key for stimuli related to *stranger* or *bad*. In a second combined task, the key assignment for the attribute categories is reversed. Now the left key is assigned to the categories *partner* or *bad*, and the right key to *stranger* or *good*.

The rationale of the IAT assumes that the responses with the same key (i.e., faster and less error prone) to strongly associated categories are easier than to less associated categories. For example, if the representation of the romantic

partner is closely associated with the concept *good* (and stranger with bad), than it should be easier to respond in the combined task *partner* or *good* (and *stranger* or *bad*) than in the combined task *partner* or *bad* (and *stranger* or *good*).

In a recent series of studies, Zayas and Shoda (2005) investigated the relation between different explicit attachment measures and a Partner-IAT in a student sample. They found significant positive correlations with the secure scale, and marginally positive correlations with the preoccupied scale of a partner-specific version of the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991). Correlations with the dismissing and fearful scales were negative. This pattern of correlations is consistent with Bartholomew's attachment model, which postulates that secure and preoccupied attachment are characterized by a positive evaluation, and fearful and dismissing attachment by a negative evaluation of the partner. Moreover, unlike explicit attachment measures, the Partner-IAT was unrelated to social desirability and self-presentation measures. Although the study by Zayas and Shoda provided first evidence that their Partner-IAT measure was meaningfully related to explicit measures of attachment, their study did not demonstrate that implicit partner attitudes are able to predict any variable of interest over and beyond established explicit self-report measures.

## THE PRESENT RESEARCH

The present research aimed to extend this work by (1) using an improved Partner-IAT; (2) by using a sampling strategy that is likely to cover a wider range of attitudes towards romantic partners, relationship commitment, and psychological well-being; and (3) by including a wider range of measures related to romantic partners, relationship quality, and well-being.

### Partner-IAT

The Partner-IAT developed for the present study, conducted in Germany, shares some features with the IAT used by Zayas and Shoda (2005). Normatively negative and positive words were used as stimuli for the attribute concepts, and idiographic stimuli such as name and hair colour of the partner were used for the partner categories. However, we used the labels *partner-stranger* as labels for the object concepts instead of the partner name and its negation (*Peter, non-Peter*). Given that, in German, different words are used for male and female romantic partners (*Partner, Partnerin*),

it was decided to use only one IAT version suitable for heterosexual female participants and to restrict the sample accordingly. Instead of 60 trials for each combined task block, as in Zayas and Shoda (2005), we used 160 trials with the aim of increasing reliability and creating an IAT that is more robust against data loss due to too many error trials.

### Sampling

In order to increase variability of the main variables, an attempt was made to include participants with more positive and more negative partner attitudes than those usually observed in a student sample. Given that very positive or even exaggerated positive partner attitudes are generally considered a defining element of romantic infatuation (Brehm, 1988), we targeted women who had recently fallen in love. For the lower end of the attitude range we reasoned that women who had recently left an abusive partner and were currently living in a refuge should hold clearly negative attitudes towards their (ex-)partners. However, it is known that some women in this situation report ambivalent or even positive attitudes towards, and a strong ongoing attachment with, the abusive partner that make it particularly difficult for them to terminate the relationship (Bartholomew, Henderson, & Dutton, 2001). Contrary to functional relationships, positive attitudes are problematic in abusive relationships because they are likely to interfere with the effort to terminate the relationship.

In order to include women for whom the attitude towards their romantic partner is likely to be particularly important for their current well-being, we chose to approach pregnant women with obstetric complications who were currently hospitalized in an antenatal maternity ward to prevent premature birth. We expected that this stressful situation would activate the attachment system, and that positive implicit and explicit partner evaluations would constitute a coping resource. Individual differences in implicit and explicit attitudes toward the partner should therefore more strongly covary with psychological well-being in hospitalized pregnant women than in women who are not currently suffering from particular stress.

### Explicit measures

In addition to adult attachment and social desirability, as assessed by Zayas and Shoda

(2005), we also included an explicit measure of attitudes towards romantic partners as an explicit equivalent to the Partner-IAT. A relationship satisfaction scale was included to assess the success of ongoing romantic relationships, and psychological well-being as a potential outcome variable of attitudes towards the partner. Numerous studies have found a positive relation between relationship quality and well-being (Berscheid & Reis, 1998; Diener, Eunkook, Lucas, & Smith, 1999), and there is also some evidence that relationship quality is the causal factor that influences well-being, and not vice versa (Heady, Veenhoven, & Wearing, 1991; cf. Diener et al., 1999).

## HYPOTHESES

It was expected that implicit attitudes towards romantic partners would show low to moderate correlations with explicit attitudes and adult romantic attachment measures, but not with social desirability. Abused women should hold more negative, and women who had recently fallen in love more positive, implicit and explicit attitudes towards romantic partners than female student controls. Furthermore, we expected that for women in ongoing relationships both explicit and implicit partner representations should predict psychological well-being; and more so in hospitalized pregnant women than in women who are not currently suffering from particular stress. To the extent that implicit and explicit attitudes towards romantic partners are related but distinct constructs, it was expected that both account for independent proportions of psychological well-being.

## METHOD

### Participants

A total of 139 women with an age range from 17 to 51 years ( $M = 28.4$ ,  $SD = 6.9$ ) were recruited in Berlin, Germany. *Abused women* ( $N = 22$ ) were contacted by two female experimenters (who had formerly worked in refuges) via the staff of four refuges who agreed to support our study. A large proportion of women living in these projects were not eligible because their German was not fluent. *Hospitalized pregnant women* ( $N = 48$ ) were contacted via the medical staff of the prenatal maternity wards of two hospitals. To avoid any physical risk or stress, participation was restricted to women who had passed the 32nd week of pregnancy, who were in good physical health, and were regularly visited by their romantic partner.

Given that the women were confined to physical inactivity over an extended period of time, they generally welcomed the opportunity to participate in a psychological study that offered a little distraction from the daily routine.

Women who had recently fallen in love (the *honeymoon* group,  $N = 17$ ) were recruited among acquaintances of the experimenters, by flyers or by directly approaching couples who displayed behaviours commonly associated with being in love in public places such as cinemas, parks, or shopping malls. To be eligible, the women had to state explicitly that they were in love, and the duration of their romantic relationship had to be less than 6 months ( $M = 2.96$  months). *Student controls* ( $N = 52$ ) with a romantic relationship lasting more than 6 months ( $M = 5.1$  years) were recruited at the university campus. Students received course credit, women in love two cinema vouchers, and the other women participated without payment. To protect the anonymity of hospitalized and abused women, only minimal background variables (age and education) could be recorded. Prior to participating, all women were fully informed about the procedures and aims of the study. It was emphasized that participation was voluntary, and that participation could be stopped at any moment.

### The Partner-IAT

The IAT followed the standard procedures (Greenwald et al., 1998), with the exception of using 160 (instead of 60) trials in the combined blocks. For the *good-bad* decision task, 20 positive and 20 negative nouns were used. For generating idiographic items for the partner-stranger classification task, participants were prompted with 10 item categories (*first name, profession, hair colour, eye colour, sport, car, hobby, music, beverage, and habits*) from which they chose 5 items that were very characteristic of their (ex-)partner, and 5 matched items that were not associated with anybody they knew. Care was taken that chosen item pairs for partner and stranger were comparable in attractiveness, evaluation, or social status.

The IAT consisted of three training blocks and two critical blocks (3 and 5) with the combined discrimination tasks. The tasks and key assignments are presented in Table 1. The IAT was run on IBM-compatible PCs in the laboratory and on IBM-compatible laptops in the field. For all IAT tasks, partner-related labels and items were presented in yellow, and evaluation-related labels and items were in white on a black background. In the

**TABLE 1**  
Task sequence of the Partner-IAT

Block	N of trials	Task	Assignment of answer keys to response categories	
			Left key	Right key
1	40	Target concept discrimination	Partner	Stranger
2	40	Attribute discrimination	Good	Bad
3	160	First combined	Good or Stranger	Bad or Partner
4	40	Reversed target discrimination	Stranger	Partner
5	160	Second reversed combined	Good or Partner	Bad or Stranger

combined blocks, object and target trials were presented alternately. Participants were prompted to take a break after 80 trials in the combined blocks. To avoid confounding method and person effects, the sequence of blocks and the random order of items were kept constant for all participants. The inter-stimulus interval was 250 ms, and the word “error” was displayed for 1000 ms after incorrect responses. Participants were instructed to respond quickly, even if this would mean making some mistakes.

The IAT was scored using the *D*-index proposed by Greenwald, Nosek, and Banaji (2003): Trials with latencies larger than 10000ms were deleted, and the mean latency difference of Block 3 and Block 5 was divided by the pooled standard deviation of the corresponding latencies. Error trial latencies were replaced by the mean of correct trials plus a penalty of 600 ms. Four partial IAT-scores were scored for trial parcels consisting of consecutive blocks of 40 trials of block 3 and 40 trials of block 5, if the error rate was lower than 25%. Valid IAT partial scores were aggregated into a total IAT score if at least three blocks with less than 25% errors were available. This criterion was missed by two participants from the refuge, three from the hospital, and two from the student group, and no IAT score was calculated. The internal consistency of the four partial IATs was  $\alpha = .83$ . A groupwise analysis of the internal consistency showed satisfactory values  $> .83$  for all groups except the student controls ( $\alpha = .70$ ). Alternative scoring methods (e.g., omitting the first or last item parcel) were explored but discarded due to slightly lower internal consistencies (although overall results were virtually identical).

### Explicit measures

To measure explicit attitudes towards romantic partners, a questionnaire with the three subscales *cognitive attitudes* (“My partner has many qualities”), *affective attitudes* (“I feel good when I am close to my partner”), and *behavioural attitudes*

(“When I am with my partner I often have the desire to hug him”) was developed for this study. Each subscale consisted of six items with a 5-point agreement scale (1 = *not at all*, 5 = *fully agree*). For abused women, the word *partner* was replaced by *ex-partner*. After eliminating four items, the internal consistency (Cronbach’s  $\alpha$ ) of the 14-item scale was good ( $\alpha = .95$ ). The full set of items can be obtained upon request from the first author.

*Relationship satisfaction* was assessed using a German translation (Sander & Böcker, 1993) of the Relationship Assessment Scale (Hendrick, 1988),  $\alpha = .87$ . *Adult romantic attachment* was assessed using a relationship specific German version (Doll, Mentz, & Witte, 1995) of the Relationship Questionnaire (RQ; Bartholomew & Horowitz, 1991) consisting of four prototype descriptions (secure, anxious, preoccupied, dismissing) that were answered on 5-point agreement scales.

Psychological well-being was assessed using three subscales (*current mood*, *capacity to enjoy and relax*, and *capacity for social contact*) of the Quality of Life Profile for Chronically Ill Patients (Siegrist, Broer, & Junge, 1996), and the internal consistency of the total score was  $\alpha = .94$ . Social desirability was assessed with a 20-item short version (Volland, 1995) of the Crowne and Marlowe Social Desirability Scale ( $\alpha = .75$ ). In the group of abused women, a number of additional measures of coping with separation and specific adaptation problems were assessed, but the results will not be discussed here.

### Procedure

The experiments with student controls and the honeymoon group were run in a university laboratory. The data from the remaining groups were collected either in the refuge flat of abused women, or in the hospital room of pregnant women. First the women were interviewed briefly to collect some biographical data (i.e., age, education), and then they filled in the questionnaires.

The women then chose the idiographic items and worked through the IAT. If two women in the same hospital room participated simultaneously, one started with the questionnaire while the other first responded to the Partner-IAT. Due to a photocopying error, 14 women in the hospital group received questionnaires with two missing pages; these were lacking the 4 attachment items and 11 out of 20 social desirability items. Social desirability scores were calculated based on the remaining items.

## RESULTS

### Group differences of implicit and explicit attitude scores

To test the expected group differences, separate one-factorial ANOVAs were conducted for implicit and explicit attitude measures. A significant main effect for the factor group emerged for implicit,  $F(3, 128) = 9.88, p < .001$ , and explicit,  $F(3, 135) = 120.4, p < .001$ , attitudes towards the partner. As expected, Student-Newman-Keuls post hoc comparisons ( $p < .05$ ) confirmed that abused women reported more negative explicit and implicit attitudes towards the partner than the other three groups. The explicit, but not the implicit, attitudes of the honeymoon group were significantly more positive than for the pregnant women and student controls (Table 2).

### Correlation analysis of explicit and implicit measures

To evaluate the relation between the Partner-IAT and explicit measures, correlation analyses were

conducted across the whole sample and for each group separately. The significance level was set to  $p < .05$ . It has to be noted that correlations for the group of abused women and the honeymoon group lack power due to small sample size. The correlations between explicit measures showed the expected pattern (Table 3). The explicit attitude towards the partner was positively related to relationship satisfaction ( $r = .71$ ) and secure attachment style ( $r = .47$ ), and was negatively related to the three insecure attachment styles (all  $r < -.23$ ).

Overall, the correlation between implicit and explicit attitudes towards the partner was substantial and significant ( $r = .49$ ). However, an inspection of the scatter plot and groupwise correlation analysis showed that this result was partially driven by abused women, who showed not only more negative implicit and explicit partner attitudes, but also larger variability and higher within-group correlation ( $r = .62$ ). A significant within-group implicit–explicit correlation was also found for student controls ( $r = .28$ ), but not for pregnant women ( $r = .08, ns$ ), or the honeymoon group ( $r = -.21, ns$ ). Across all women in ongoing relationships, the implicit attitude toward the partner was significantly correlated with the secure attachment item ( $r = .26$ ) and well-being ( $r = .37$ ).

Social desirability correlated positively with relationship satisfaction and secure attachment, and negatively with fearful attachment. Surprisingly, the IAT score also showed a significant negative correlation with social desirability. This effect was mainly driven by the group of pregnant women who showed a particularly strong negative correlation of  $r = -.49$  between the Partner-IAT and social desirability. An inspection of the scatter plot revealed a homogeneous bivariate distribution and no indication that this effect was due to outliers.

### Attitudes towards the partner and well-being

First we checked whether the four groups reported different levels of well-being. A one-factorial ANOVA revealed significant group differences in well-being,  $F(3, 128) = 16.63, p < .001$ . Post hoc comparisons (Student-Newman-Keuls,  $p < .05$ ) showed that abused women living in a refuge reported significantly lower well-being scores ( $M = 3.02, SD = 0.82$ ) than hospitalized pregnant women ( $M = 3.57, SD = 0.60$ ), whose scores were in turn significantly lower than those of student controls ( $M = 3.94, SD = 0.48$ ) and women in

**TABLE 2**  
Means and standard deviations of implicit and explicit attitudes toward (ex-)partners

	<i>Attitudes towards romantic (ex-)partners</i>			
	<i>Explicit (Questionnaire scores)</i>		<i>Implicit (IAT D-scores)</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Abused women	1.99 <sub>A</sub>	0.81	0.24 <sub>A</sub>	0.41
Hospitalized women	4.37 <sub>B</sub>	0.48	0.58 <sub>B</sub>	0.32
Student controls	4.34 <sub>B</sub>	0.54	0.66 <sub>B</sub>	0.25
Honeymoon group	4.71 <sub>C</sub>	0.30	0.88 <sub>B</sub>	0.30

Cells in the same column not sharing the same index are significantly different ( $p < .05$ ). Higher values indicate more positive attitudes.

**TABLE 3**  
Descriptive statistics, internal consistencies, and intercorrelations of all measures

	<i>M</i>	<i>SD</i>	$\alpha$	2.	3.	4.	5.	6.	7.	8.	9.
1. Partner-IAT	0.57	0.34	.83	.49**	.07	.26**	.03	.09	.01	-.27**	.37**
2. Explicit attitude	4.03	1.05	.95		.71**	.47**	-.44**	-.27**	-.24*	.06	.48**
3. Relationship satisfaction	4.19	0.59	.87			.55**	-.62**	-.37**	-.19	.25**	.22*
4. Secure	4.03	0.98	–				-.45**	-.31**	-.07	.08	.32**
5. Fearful	1.62	0.90	–					.36**	.27**	-.35**	-.04
6. Preoccupied	1.56	0.95	–						-.08	-.10	-.18
7. Dismissing	2.65	1.25	–							-.11	.14
8. Social desirability	3.17	0.57	.75								.06
9. Well-being	3.68	0.66	.94								

Relationship variables (3. to 7.) were not assessed in the group of abused women. No  $\alpha$  can be calculated for the single item attachment scales (4. to 7.). \* $p < .05$ ; \*\* $p < .01$ .

love ( $M = 4.08$ ,  $SD = 0.24$ ). The a priori assumption that both abused women and hospitalized pregnant women would show lower well-being than controls and the honeymoon group was confirmed.

The relation between explicit and implicit partner attitudes and well-being was analysed using correlation and groupwise hierarchical multiple regression analyses. The expected positive zero order correlation between attitudes towards the partner and well-being was found for explicit attitudes in student controls ( $r = .35$ ) and pregnant women ( $r = .45$ ), but only the latter showed a significant correlation between implicit attitudes and well-being ( $r = .44$ ). The joint effect of implicit and explicit partner attitudes on well-being was further analysed using multiple regression analysis. When well-being was simultaneously regressed on implicit and explicit attitudes, implicit attitudes towards the partner explained a substantial part of the variance in well-being independent of the significant contribution of explicit attitudes in pregnant hospitalized women, but not for student controls, abused women, or the honeymoon group (Table 4). Whether implicit and explicit attitudes exert a joint effect on well-being was also explored, but group-wise moderated

regression analyses did not reveal any significant interaction effects.

The correlation between implicit attitudes and well-being could be due to an artifact: If hospitalized pregnant women felt unwell, they could have problems working through the 440 trials of the IAT due to fatigue. Relatively longer latencies in the last 160 trials would result in more negative implicit partner attitudes. If the correlation was driven by this fatigue effect, one should expect that the correlation would become stronger across consecutive IAT blocks. To test this assumption, four consecutive partial IATs based on blocks of 40 trials (from the two combined tasks) were correlated with well-being. The correlations remained stable across the four blocks (.37, .50, .41, and .42), thus disconfirming the fatigue account.

## DISCUSSION

The results of this study demonstrate that the Partner-IAT shows satisfactory reliability, and evidence for convergent and discriminant validity. Probably the most important finding is that implicit attitudes towards current romantic partners predicted psychological well-being for women currently suffering from stressful life

**TABLE 4**  
Groupwise multiple regressions of well-being on implicit and explicit attitudes towards romantic (ex-)partners

	Attitudes towards romantic (ex-)partners (standardized $\beta$ s)		<i>R</i>
	<i>Explicit</i>	<i>Implicit</i>	
Total sample ( $N = 132$ )	.35***	.20*	.48***
Abused women ( $N = 20$ )	-.40	.36	.33
Hospitalized pregnant women ( $N = 45$ )	.40**	.41**	.59***
Student controls ( $N = 50$ )	.37*	-.09	.36*
Honeymoon group ( $N = 17$ )	.19	.04	.25

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

circumstances, but not for women in stable relationships who were not currently suffering from stress.

### Reliability and validity of the Partner-IAT

The internal consistency of the Partner-IAT (.83) is satisfactory. The unusually large number of 160 trials in each of the combined IAT blocks had a mainly positive effect. However, for psychology students this may have rendered the task too tedious, and consequently lowered the internal consistency of the IAT to .70 for this group.

The correlational analysis provided evidence for the convergent validity of implicit and explicit attitudes towards the romantic partner. The relatively high correlation of .49 was in part driven by the group of abused women, who showed, as expected, the most negative implicit and explicit attitudes on average, but also higher variability and within-group correlations of implicit and explicit attitudes. The implicit and explicit partner attitude scores of some of these women were as positive as in women with functional relationships. This finding is consistent with the expectation that some women who are suffering from abuse nevertheless maintain positive explicit and implicit representations of their (ex-)partners, thus indicating very problematic, enmeshed relationships. Significant positive correlations were also obtained in student controls, but not in the equally large sample of hospitalized pregnant women.

The Partner-IAT was also related to the secure item of the Relationship Questionnaire (Bartholomew & Horowitz, 1991), but contrary to Zayas and Shoda (2005), we did not find significant correlations with the three insecure attachment items. Interestingly, the Partner-IAT did not correlate with relationship satisfaction, although this variable showed substantial correlations with explicit attitudes (.71) and secure attachment (.55), both of which were correlated with the Partner-IAT. In summary, the pattern of correlations indicates that the Partner-IAT taps specifically into the positive affective evaluation of the partner. The automatically activated implicit attitudes show considerable overlap with explicit attitudes, some overlap with explicit secure attachment, but no overlap with explicit insecure attachment or relationship satisfaction.

At the group level, the Partner-IAT discriminated as expected between abused women and the other three groups. However, the significant difference for abused women has to be interpreted with caution, because the IAT was slightly

modified for this group. Implicit attitudes of abused women may have been more negative due to the use of the concept label *Ex-Partner* instead of the label *Partner* that was used for the other groups. However, the significant within-group correlations confirm the validity of both variants of the Partner-IAT.

The failure to find more positive implicit attitudes in the honeymoon group may be due to the fact that, in this group, extremely positive attitudes towards the romantic partner are confined to explicit attitudes. An alternative explanation lies in the lack of sensitivity of the Partner-IAT to the normal range of positive attitudes towards the partner in ongoing relationships. Given that the IAT is based on the relative association strength of objects and attributes (*partner-good* as compared to *stranger-good*), it may be advisable to use a more positive object concept label such as *ideal partner* instead of *stranger* to increase the sensitivity of the IAT in the positive attitude range.

It was expected that implicit attitudes towards romantic partners would be independent of social desirability. Therefore, it was somewhat surprising to find a significant negative correlation ( $-.27$ ) between these variables. Social desirability correlated significantly with relationship satisfaction and adult attachment, as one would expect on the basis of an exaggerated self-report of positive relationship quality. It is intriguing but difficult to explain why individuals with higher social desirability scores showed lower implicit partner attitudes.

### Implicit attitudes towards the romantic partner and well-being

Replicating the results of earlier studies (e.g., Berscheid & Reis, 1998), explicit attitudes towards the romantic partner in ongoing relationships correlated positively with psychological well-being. Positive correlations of similar magnitude were found for female students and hospitalized pregnant women. It was hypothesized that stressful life conditions would activate the attachment system, and that a positive representation of the partner could be used as a coping resource to buffer stress. The group of pregnant women who were hospitalized in an antenatal maternity ward reported significantly lower well-being than the student controls. Only in the group of hospitalized women do implicit attitudes towards the partner account for a significant proportion of variance of well-being (17%) over and above the amount accounted for by explicit partner attitudes (19%).



An explanation of this result as being due to fatigue can be eliminated because the correlations between implicit attitudes and well-being are stable across consecutive IAT blocks. This result strongly suggests a genuine relation between implicit partner attitudes and well-being in stressful life circumstances.

The cross-sectional design of this study does not allow one to distinguish between the two possible casual directions of the effect. It may be that low well-being leads to low implicit attitudes towards the partner. However, it seems theoretically more interesting and also more plausible that chronically accessible positive implicit attitudes towards the partner are able to buffer stress. It therefore appears very promising for future longitudinal studies to investigate whether implicit partner attitudes assessed in "normal" life circumstances predict well-being in subsequent stressful situations.

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