

On the propositional nature of cognitive consistency: Dissonance changes explicit, but not implicit attitudes[☆]

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Abstract

Two studies investigated the influence of cognitive dissonance on explicit and implicit attitudes. Employing the induced compliance paradigm, participants wrote a counterattitudinal essay under conditions of either high or low perceived situational pressure; control participants did not write an essay. Consistent with dissonance theory, results indicated a more favorable explicit attitude toward the initially counterattitudinal position when perceived situational pressure was low, but not when it was high. Implicit attitudes, however, were unaffected by dissonance manipulations. Moreover, explicit attitudes were significantly related to implicit attitudes under high perceived situational pressure and control conditions, but not when perceived situational pressure was low. Results are discussed in terms of associative versus propositional modes of information processing.

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Introduction

One of the perhaps most basic human motives is the desire for personal consistency. In order to achieve a state of cognitive consistency, people change their personal attitudes, their behaviors, or the personal importance of an attitude object (Festinger, 1957). For example, in their seminal work on cognitive dissonance, Festinger and Carlsmith (1959) found that participants reported a more positive attitude toward a genuinely dull experiment when they had agreed to tell another person that the study was actually interesting. Most importantly, however, this effect emerged only when participants were paid a low incentive for giving this false information, but not when they received a high incentive. According to dissonance theory (Festinger, 1957), this result indicates that people usually experience

an uncomfortable feeling of cognitive dissonance when they act in a counterattitudinal manner. Hence, in order to reduce this uncomfortable feeling they often change their original attitude to make it consistent with their behavior. However, the reduction of dissonance by attitude change is necessary only if people have no personal justification for their counterattitudinal behavior such as a high incentive or other situational forces (for an overview, see Harmon-Jones & Mills, 1999).

Drawing on the recent distinction between explicit versus implicit attitudes (Greenwald & Banaji, 1995; Wilson, Lindsey, & Schooler, 2000), the main goal of the present studies was to investigate the attitudinal consequences of cognitive dissonance on the explicit and the implicit level. In particular, we argue that both the cause of dissonance experiences and the process of dissonance reduction are inherently propositional. Hence, dissonance-related attitude changes were expected to emerge only for explicit attitudinal judgments (i.e., explicit attitudes), but not for implicit evaluative associations (i.e., implicit attitudes). Before we test these assumptions, however, we would like to provide a more detailed analysis of what we regard as propositional thinking and what we regard as associative processes.

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Associative vs. propositional processes

In order to outline the distinction between associative and propositional processes, we refer to a central distinction recently proposed by several two-systems models in social cognition (Sloman, 1996; Smith & DeCoster, 2000; Strack & Deutsch, in press). In particular, it is assumed that there are two qualitatively different modes of information processing. One of these modes is associative processing, which is best characterized as a process of spreading activation in a network formed on the basis of spatio-temporal contiguity. Associative processes are fast but inflexible and require little cognitive capacity. Most importantly, however, associative processes are independent of the assignment of truth values. For example, the activation level of negative stereotypes about African Americans may be high even though an individual may regard these stereotypes as being inadequate or false (Devine, 1989).

Propositional thinking, in contrast, can be characterized as the application of syllogistic rules to generate or transform declarative knowledge. Propositional thinking is slow but flexible, and often requires a large amount of cognitive capacity. The most important feature with regard to the present question, however, is that propositional thinking is generally in terms of truth values, i.e., a propositional thought is necessarily regarded as true or false.¹ Hence, even though propositional thinking usually refers to cognitively accessible associations, and even though its default mode is usually the acceptance of these associations (Gilbert, 1991), the former can in principle be independent from the latter when the propositional implication of an activated node is considered as inadequate or false.

Propositional consistency

Applied to cognitive dissonance, we argue that both the cause of dissonance experiences and the process of dissonance reduction require a propositional representation of their elements. With regard to the causes of dissonance experiences, we argue that a dissonance producing inconsistency between two propositions is defined only by an assignment of truth values. That is, even though two antagonistic associative nodes may be activated at the same time (McGregor, Newby-Clark, & Zanna, 1999), inconsistency emerges only when their corresponding propositions are regarded as true. In other words, inconsistency between two propositions

results when both of them are regarded as true, and one follows from the obverse of the other (Kruglanski & Klar, 1987; Shultz & Lepper, 1996).

With regard to dissonance reduction, we argue that inconsistency between two or more propositions is resolved either by explicitly rejecting one proposition as being false or by finding an additional proposition that resolves the inconsistency (Kruglanski, 1989). Applied to Festinger and Carlsmith's (1959) induced compliance paradigm, for example, participants may solve the inconsistency between their attitudes and their behavior either by rejecting the propositional implications of their chronic evaluative associations or by finding a justification for their counterattitudinal behavior. Both of these processes, however, are inherently propositional, with one reflecting a negation of formerly ascribed truth values (Gilbert, 1991), and the other reflecting a deliberate attributional process (Kruglanski & Klar, 1987; Zanna & Cooper, 1974).

Based on these considerations, we expected dissonance-related phenomena to emerge only for explicit propositional attitude judgments, but not with respect to implicit evaluative associations. Specifically, we predicted counterattitudinal behavior under conditions of low situational pressure to affect explicit, but not implicit attitudes. More precisely, explicit attitudinal judgments were predicted to be more favorable toward a previously advocated counterattitudinal position, when there is no external justification for the counterattitudinal behavior (e.g., induced compliance), than when there is a plausible external justification (e.g., situational forces). Moreover, participants were expected to base their evaluative judgments on their chronic evaluative associations when dissonance can be reduced by an additional proposition that resolves the inconsistency (i.e., when perceived situational pressure is high), but not when dissonance is reduced by a rejection of the propositional implications of their chronic evaluative associations (i.e., when perceived situational pressure is low). Accordingly, explicit attitudinal judgments should be positively related to implicit evaluative associations under conditions of high situational pressure, but not under conditions of low situational pressure.

Experiment 1

In order to test these assumptions, participants in Experiment 1 were asked to write a counterattitudinal essay under conditions of either high or low situational pressure. Afterwards, all participants completed both an explicit and an implicit attitude measure on the topic in question. Participants in a control group completed the two attitude measures without writing an essay. Based on the assumptions outlined in the Introduction, we expected participants to exhibit a more favorable ex-

¹ The notion of truth values in propositional thinking is not committed to a dichotomous conceptualization, but can also be interpreted in terms of a probabilistic approach implying gradual shifts in the subjective likelihood of truth. For the sake of simplicity, however, we adopted a dichotomous conceptualization to outline our theoretical assumptions.

explicit attitude toward the advocated counterattitudinal position under low situational pressure than under high situational pressure or control conditions. Implicit attitudes, in contrast, were expected to be unaffected by dissonance manipulations. Moreover, explicit and implicit attitudes were predicted to be positively correlated under high situational pressure and under control conditions, but not under conditions of low situational pressure.

Method

Participants and design

Sixty-four German students (43 female, 21 male) drawn from a volunteer pool were recruited for a study on a controversial political issue. Participants were paid 6 Euro (approximately US-\$6 at the time). Participants were randomly assigned to the six conditions of a 3 (essay assignment: induced compliance vs. forced position vs. no essay) \times 2 (order of attitude measurement: implicit first vs. explicit first) factorial design.

Procedure

On arrival, participants were welcomed and informed that they were taking part in a study sponsored by the European Union about alcohol prohibition in European countries. Pretests revealed that most German students have a strong negative attitude toward a general prohibition of alcoholic beverages. The experimenter explained that there is a controversial discussion in the European Union whether or not the legal consumption of alcoholic beverages should be strongly restricted in European countries. For this purpose, the European Union was said to be interested in finding arguments favoring and opposing a general prohibition of alcoholic beverages. Ostensibly, the main goal of the present study was the collection of arguments generated by citizens of the European Union. In the induced compliance condition, participants were told that we already had collected a large number of arguments against a general prohibition of alcoholic beverages and that we would be pleased if they were willing to generate arguments in favor of a general prohibition, even though they were free to choose either position. In order to increase the salience of their “free choice,” participants were asked to sign a release form, indicating that their performance was freely chosen (Elliot & Devine, 1994). In the forced position condition, participants were told that each participant would be randomly assigned to generate arguments either in favor or against a general prohibition and that they had been assigned to generate arguments in favor of a general prohibition. Participants had a maximum of 15 min to generate arguments. Participants under control conditions did not have to generate arguments. After participants had finished the argument generation task, they were administered measures of

explicit and implicit attitudes toward alcoholic beverages. Finally, participants were debriefed and thanked for their participation.

Explicit attitudes

Explicit attitudes toward a general prohibition of alcoholic beverages were assessed with two items. Specifically, participants were asked to indicate: (a) how much they favor a general prohibition of alcoholic beverages on a rating scale ranging from 1 (absolutely not) to 5 (very much), and (b) whether they would be willing to sign a petition in favor of a general prohibition of alcoholic beverages on a rating scale ranging from 1 (definitely not) to 5 (definitely yes).

Implicit attitudes

Implicit attitudes toward alcoholic beverages were assessed with an adaptation of Greenwald, McGhee, and Schwartz's (1998) Implicit Association Test (IAT). Following Greenwald et al., the IAT consisted of five blocks. In the initial target-concept discrimination task (Block 1), names of 10 alcoholic beverages (e.g., gin, beer) and names of 10 non-alcoholic beverages (e.g., juice, soda) had to be assigned to the categories “alcoholic” or “non-alcoholic,” respectively. Participants were asked to press a left-hand key (“A”) when the name of an alcoholic beverage appeared on the screen and a right-hand key (“5” of the number pad) in the case of a non-alcoholic beverage. In the attribute discrimination task (Block 2), 10 positive nouns (e.g., happiness, paradise) and 10 negative nouns (e.g., bomb, hate) were presented and had to be classified according to the categories positive (left-hand key) and negative (right-hand key). In the initial combined task (Block 3), target and attribute discrimination trials were presented in alternating order. Participants had to press the left-hand key when either an alcoholic beverage or a positive noun was presented and the right-hand key when either a non-alcoholic beverage or a negative noun was presented. In the reversed target-concept discrimination task (Block 4), the initial target-concept discrimination was repeated with a switch of the categorization keys. The reversed combined task (Block 5) again combined the two individual tasks. Participants had to press the left-hand key when either a non-alcoholic beverage or a positive noun was presented and the right-hand key when either an alcoholic beverage or a negative noun was presented. Each block started with a brief instruction for the following task and a request to respond as quickly as possible even if this would lead to errors. The three discrimination tasks (Blocks 1, 2, and 4) each consisted of a total of 20 trials. The two combined tasks (Blocks 3 and 5) each comprised 120 trials. The same randomized order of trials was used for all participants. The response-stimulus interval following correct responses was 250 ms. Wrong responses were indicated

with the word “FEHLER!” (German equivalent for “ERROR!”) appearing for 1000 ms below the center of the screen.²

Results

Preliminary analyses

Explicit attitude ratings were merged into a single index of explicit negative attitudes toward alcoholic beverages by calculating mean values (Cronbach's $\alpha = .62$, $M = 2.59$, $SD = .91$). IAT-scores for implicit attitudes toward alcoholic beverages were calculated according to the procedures described by Greenwald et al. (1998). Response latencies lower than 300 ms were recoded to 300 ms, and latencies higher than 3000 ms were recoded to 3000 ms. Error trials were excluded from analyses. Individual IAT-scores were calculated by subtracting the mean response time of the reversed combined task (Block 5) from the mean latency of the initial combined task (Block 3), with higher values indicating an implicit preference for non-alcoholic as compared to alcoholic beverages. IAT-scores ranged from -382 to $+858$ ms ($M = 244$, $SD = 234$).³ In order to estimate the reliability of the IAT (see Gawronski, Ehrenberg, Banse, Zukova, & Klauer, 2003a), the two combined blocks were each divided into three consecutive parts of equal length (i.e., 40 trials). The three thirds were then used to calculate three IAT-scores for each participant, which revealed an internal consistency of .90 (Cronbach's α).

Cognitive dissonance

In order to test the effects of dissonance manipulations on explicit and implicit attitudes, the respective indices were first standardized by a z -transformation and then submitted to a 2 (attitude type) \times 3 (essay assignment) \times 2 (order of attitude measurement) mixed-model analysis of variance (ANOVA) with the first variable as a within-subjects factor and the other two as between-subjects factors. This analysis revealed a significant main effect of order, $F(1, 58) = 4.97$, $p = .03$, $\eta^2 = .08$, indicating that attitudes toward alcoholic beverages were more negative when explicit attitudes

Table 1

Means and SD of explicit and implicit attitudes toward alcoholic beverages as a function of essay assignment conditions, Experiment 1

		Induced compliance	Forced position	Control condition
Explicit attitudes	M	3.10	2.58	2.07
	SD	.90	.76	.83
Implicit attitudes	M	211	272	242
	SD	139	246	296

Note. Higher values indicate more negative attitudes.

were assessed first than when implicit attitudes were assessed first. This main effect was qualified by a significant two-way interaction of order and attitude type, $F(1, 58) = 8.41$, $p = .005$, $\eta^2 = .13$, indicating that implicit attitudes toward alcoholic beverages were more negative when they were assessed after rather than before explicit attitudes. Most importantly, there was a significant two-way interaction of attitude type and essay assignment, $F(2, 58) = 7.23$, $p = .002$, $\eta^2 = .20$ (see Table 1). Whereas implicit attitudes were unaffected by dissonance manipulations, $F(2, 58) = .44$, $p = .64$, $\eta^2 = .01$, explicit attitudes were most negative under induced compliance conditions, moderate under forced position conditions, and least negative under control conditions, $F(2, 58) = 7.74$, $p = .001$, $\eta^2 = .21$. Planned contrasts for explicit attitudes revealed significant differences between all of the three conditions (all $ps < .05$).⁴

Implicit–explicit correlations

Overall, explicit and implicit attitudes were moderately correlated ($r = .26$, $p = .04$). Consistent with our hypotheses, however, this correlation was driven by particularly pronounced correlations under forced position ($r = .46$, $p = .02$) and control conditions ($r = .44$, $p = .05$). There was no significant correlation between explicit and implicit attitudes under induced compliance conditions ($r = -.11$, $p = .64$). The correlation obtained for induced compliance conditions differed significantly from both forced position, $z = 1.86$, $p = .03$, and control conditions, $z = 1.70$, $p = .04$. There was no significant difference between forced position and control conditions, $z = .08$, $p = .53$.

Discussion

Results from Experiment 1 offer preliminary evidence for our assumption that dissonance-related attitude changes are inherently propositional. Consistent with

² Because one of the main goals of the present studies was to test predictions about the relation between explicit and implicit attitudes, we deliberately decided not to counterbalance the order of the two combined blocks (for a discussion, see Gawronski, 2002).

³ One could argue that IAT-scores in the present study were generally positive, and hence indicate a negative rather than a positive implicit attitude toward alcoholic beverages. However, since the IAT assesses only relative rather than absolute attitudes, a positive IAT-score indicates only that participants have an implicit preference for non-alcoholic as compared to alcoholic beverages. Moreover, recent research indicates that IAT-scores cannot be interpreted in an absolute manner, because the overall size of IAT-scores is affected not only by category associations, but also by contingent stimulus factors (e.g., Mitchell, Nosek, & Banaji, 2003; Steffens & Plewe, 2001).

⁴ Separate analyses for the two explicit items revealed corresponding effects for attitudes toward a general prohibition of alcoholic beverages, $F(2, 58) = 3.37$, $p = .04$, $\eta^2 = .10$, as well as for willingness to sign a petition in favor of a general prohibition of alcoholic beverages, $F(2, 58) = 7.65$, $p = .001$, $\eta^2 = .21$.

this assumption, cognitive dissonance affected only explicit, but not implicit attitudes. Specifically, participants showed a more favorable explicit attitude toward a previously advocated counterattitudinal position under low situational pressure than under high situational pressure or control conditions. Implicit attitudes, in contrast, were unaffected by cognitive dissonance manipulations. Moreover, explicit and implicit attitudes showed a significant positive correlation under conditions of high situational pressure and under control conditions, but not when situational pressure was low. Taken together, these results indicate that participants based their explicit judgments on their chronic evaluative associations when cognitive dissonance could be reduced by finding an additional proposition that solved the inconsistency between their counterattitudinal behavior and the propositional implications of their chronic evaluative associations. However, participants seem to have rejected the propositional implications of their chronic associations when cognitive dissonance could not be reduced by an additional proposition.

Even though these findings are consistent with our assumptions about the propositional nature of cognitive dissonance, one may object that the measures used in Experiment 1 differed not only with respect to the assessed processes (i.e., associations vs. judgments), but also with respect to their content. Whereas the IAT assessed relative attitudes toward alcoholic versus non-alcoholic beverages, the employed explicit measure assessed attitudes toward a prohibition of alcoholic beverages. In other words, the two measures assessed attitudes toward related but not necessarily corresponding attitude objects. Accordingly, participants in the present study could have changed their attitudes toward the particular policy in question without changing their attitudes toward alcoholic versus non-alcoholic beverages. This pattern, however, could be independent of the proposed interpretation in terms of associative and propositional processes, such that relative attitudes toward alcoholic beverages remain unchanged regardless of whether they are assessed explicitly or implicitly. Hence, in order to rule out this alternative interpretation, Experiment 2 aimed to replicate the basic findings of Experiment 1 employing measures that differ only with respect to the assessed processes, but not with respect to the particular attitude object.

Experiment 2

In order to rule out the alternative interpretation that the results obtained in Experiment 1 are due to differences in the attitude object rather than to differences in the cognitive processes, Experiment 2 employed a variant of the induced compliance paradigm developed by

Leippe and Eisenstadt (1994). Applying the notion of dissonance-related attitude changes to the domain of prejudice, these researchers asked participants to write an essay in favor of a general increase of scholarships for African American students at the expense of funding for Caucasian students. Consistent with previous findings in the induced compliance paradigm, Leippe and Eisenstadt found that White participants exhibited a lower level of prejudice against African Americans when situational pressures to write the essay were low, than when they were high.

Drawing on the present assumptions, we argue that such dissonance-related changes in prejudice should emerge only for explicit, but not for implicit prejudice. Most importantly, this should be the case even when explicit and implicit prejudice measures directly correspond to one another with respect to their attitude object. In the following study, these assumptions were tested by using an IAT designed to assess implicit preference for Caucasians over African Americans, and rating scales assessing explicit preference for Caucasians over African Americans. These measures differ exclusively with regard to their processes, but directly correspond to one another with regard to the particular attitude object, thus ruling out alternative explanations in terms of differing contents. Specifically, we expected Leippe and Eisenstadt's (1994) dissonance manipulation to affect explicit, but not implicit prejudice. Moreover, explicit and implicit prejudice were expected to be positively correlated under conditions of high situational pressure, but not under conditions of low situational pressure.

Method

Participants and design

Thirty-nine non-Black Northwestern undergraduates (24 female, 15 male) participated in a study on political issues in return for course credit. Participants were randomly assigned to the four conditions of a 2 (essay assignment: induced compliance vs. forced position) \times 2 (order of attitude measurement: implicit first vs. explicit first) factorial design. Because of a computer error, data from one participant were only partially recorded, and thus had to be excluded from analyses.

Procedure

On arrival, participants were welcomed by a White experimenter and informed that they were taking part in a survey conducted by the university administration. The experimenter explained that the administration considers a new scholarship policy implying that of the total amount of money the university has available for scholarships, the percentage committed to African American students should at least be doubled (Leippe & Eisenstadt, 1994). The administration was said to

employ the psychology department to gather arguments on both sides of this issue, which it will then use in making an educated decision. In the induced compliance condition, participants were told that we already had collected enough arguments against a policy change and that we would be pleased if they were willing to generate arguments in favor of a policy change, even though they were of course free to choose either position. In the forced position condition, participants were told that each participant would be randomly assigned to generate arguments either in favor or against an increase of scholarships for African American students and that they had been assigned to generate arguments in favor of an increase. Afterwards, participants were administered measures of explicit and implicit prejudice against African Americans. Finally, participants were debriefed and thanked for their participation.

Explicit attitudes

Explicit attitudes were assessed with rating scales, asking participants to indicate their personal feelings toward a number of different ethnic groups (e.g., African Americans, Caucasian Americans) on scales ranging from 1 (very negative) to 7 (very positive).

Implicit attitudes

Implicit attitudes were assessed with an IAT designed to assess implicit preference for Caucasians over African Americans. The IAT was conceptually identical to Greenwald et al. (1998). The three discrimination tasks each consisted of a total of 20 trials. The two combined tasks each comprised 80 trials. Order of trials was randomized for each participant. The response-stimulus interval following correct responses was 250 ms. Wrong responses were indicated with the word "ERROR!" appearing for 1000 ms below the center of the screen.

Results

Preliminary analyses

Explicit attitude scores were calculated by subtracting ratings for African Americans from ratings for Caucasian Americans, with higher scores indicating a stronger preference for Caucasians over African Americans ($M = .42$, $SD = .95$). IAT-scores for implicit attitudes were calculated according to the procedures described in Experiment 1 (Cronbach's $\alpha = .80$). IAT-scores ranged from -365 to $+476$ ms ($M = 160$, $SD = 156$).

Cognitive dissonance

Order of assessment did not affect any of the present dependent measures, and was thus excluded from the following analyses. Indices for explicit and implicit attitudes were first standardized by a z -transformation and then submitted to a 2 (attitude type) \times 2 (essay assignment) mixed-model ANOVA with the first variable as a

Table 2

Means and SD of explicit and implicit prejudice against African Americans as a function of essay assignment conditions, Experiment 2

		Induced compliance	Forced position
Explicit prejudice	<i>M</i>	.00	.80
	<i>SD</i>	.69	1.01
Implicit prejudice	<i>M</i>	158	163
	<i>SD</i>	114	190

Note. Higher values indicate higher levels of prejudice.

within-subjects factor and the second as between-subjects factor. This analysis revealed a significant two-way interaction of attitude type and essay assignment, $F(1, 36) = 4.10$, $p = .05$, $\eta^2 = .10$ (see Table 2). Whereas implicit attitudes toward African Americans were unaffected by dissonance manipulations, $F(1, 36) = .01$, $p = .92$, $\eta^2 = .00$, explicit attitudes toward African Americans were less negative under induced compliance conditions than under forced position conditions, $F(1, 36) = 8.02$, $p = .008$, $\eta^2 = .18$.

Implicit–explicit correlations

Overall, explicit and implicit attitudes revealed a non-significant positive correlation ($r = .18$, $p = .29$). However, replicating the pattern obtained in Experiment 1, this correlation was driven by a relatively pronounced positive correlation under forced position conditions ($r = .35$, $p = .13$).⁵ Under induced compliance conditions, in contrast, explicit and implicit attitudes showed a moderate negative correlation ($r = -.25$, $p = .31$). Even though these correlations did not reach the conventional level of statistical significance, the difference between the two correlations was statistically significant, $z = 1.75$, $p = .04$.

Discussion

Results from Experiment 2 corroborate the assumption that cognitive dissonance changes explicit, but not implicit attitudes. Replicating the pattern obtained in Experiment 1, participants exhibited a lower level of explicit prejudice against African Americans after writing an essay in favor of a general increase of scholarships for African American students under conditions of low situational pressure than under conditions of high situational pressure. Implicit prejudice, in contrast, was unaffected by dissonance manipulations. Furthermore,

⁵ The somewhat lower correlation under forced position conditions obtained in Experiment 2 might be due to the fact that only individuals low in motivation to control prejudiced reactions exhibit a high correlation between explicit and implicit prejudice, but not people high in motivation to control (e.g., Banse & Gawronski, 2003; Dunton & Fazio, 1997; Fazio, Jackson, Dunton, & Williams, 1995; Gawronski, Geschke, & Banse, 2003b).

explicit and implicit prejudice were positively correlated under conditions of high situational pressure, but not under conditions of low situational pressure. Most importantly, these results were obtained even though the employed measures differed only with respect to their processes, but not with respect to their content. Hence, the present findings rule out the alternative interpretation that the results obtained in Experiment 1 are due to differences in the attitude object, rather than to differences in the particular processes assessed by the employed measures.

General discussion

The main goal of the present studies was to investigate the impact of cognitive dissonance on explicit and implicit attitudes. Drawing on the distinction between associative and propositional processes (Sloman, 1996; Smith & DeCoster, 2000; Strack & Deutsch, *in press*), we argued that both the cause of dissonance experiences and the process of dissonance reduction require a propositional representation of their elements. Hence, dissonance-related attitude changes were expected to emerge only for explicit attitudinal judgments, but not for implicit evaluative associations. The present results generally support these assumptions.

Notwithstanding these findings, however, one may object that the obtained null effect on implicit attitudes is difficult to interpret, since it could reflect either the predicted stability of implicit attitudes or the theoretically uninteresting case of low measurement validity. This criticism, however, can easily be ruled out by the predicted finding that implicit attitudes were significantly related to explicit attitudes under both forced position and control conditions, but not under conditions of induced compliance. If the IATs used to assess implicit attitudes actually had low measurement validity, there should have been no significant relation between explicit and implicit attitudes under these conditions.

Another possible objection is that writing a counterattitudinal essay could have activated counterattitudinal associations, thus resulting in a general change of implicit attitudes under both induced compliance and forced position conditions. Moreover, participants may have based their explicit judgments on these activated counterattitudinal associations when there was no situational justification for their counterattitudinal behavior, but they may have relied on their old attitude when a situational justification was available. Even though these assumptions are theoretically possible, they are not consistent with the present data. First, if merely writing a counterattitudinal essay affects implicit attitudes, participants should have exhibited a more favorable implicit attitude toward the counterattitudinal topic when they actually wrote a counterattitudinal essay than

when they did not write a counterattitudinal essay. This, however, was not the case. Rather, implicit attitudes were approximately equal regardless of whether participants did or did not write a counterattitudinal essay. Second, if participants based their explicit judgments on activated counterattitudinal associations when there was no situational justification for their counterattitudinal behavior, but relied on their old attitude when a situational justification was available, explicit and implicit attitudes should have exhibited a positive correlation under induced compliance, but not under forced position conditions. This, however, was also not the case. In contrast, explicit and implicit attitudes were positively correlated under forced position and control conditions, but not under induced compliance conditions.

In some respects, the present conceptualization may sound more like self-perception theory (Bem, 1967) rather than dissonance theory (Festinger, 1957). Basically, self-perception theory states that individuals deliberately infer their attitudes from observing their own behavior and the circumstances in which it occurs. Hence, applied to the present conceptualization one could argue that the propositional processes of assigning truth values and testing the resulting consistency is exactly what self-perception theory considers as the process of deliberately inferring one's attitude. However, even though such an interpretation in terms of self-perception may sound quite plausible, we nevertheless favor a conceptualization in terms of cognitive dissonance for two reasons. First, self-perception theory usually argues that individuals have no access to their premanipulation attitudes (e.g., Bem & McConnell, 1970). In the present studies, however, premanipulation attitudes were clearly reflected in participants' implicit evaluations. Moreover, implicit evaluations were significantly related to explicit judgments under high situational pressure as well as under control conditions, suggesting that participants actually have conscious access to their premanipulation attitudes. Second, the present conceptualization implies that the propositional process of assigning truth values causes an uncomfortable feeling of cognitive dissonance when two propositions are regarded as true, and one follows from the obverse of the other. However, such dissonance experiences may not result in explicit attitude change—even under conditions of low situational pressure—if these experiences are attributed to causes other than cognitive inconsistency (Fazio, Zanna, & Cooper, 1977; Zanna & Cooper, 1974). In this case, people may still base their explicit attitudinal judgment on their chronic evaluative associations even when self-perception should lead to attitude change. Hence, even though the process of ascribing of truth values and testing the resulting consistency may be considered as a process of self-perception, the feeling of cognitive dissonance still plays a crucial role for attitude changes caused by counterattitudinal behavior.

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