

## **Group Norm and Category Norm in Anonymous Situations: Two Sources of Social Influence**

The Social Identity model of De-individuation Effects (SIDE-model), as it was developed in recent years (Reicher, 1987; Reicher, Spears & Postmes, 1995), is a framework of assumptions, ideas and hypotheses about the way in which people think and behave in particular group situations. The situations in focus were described as 'de-individuated' or 'de-personalised' by previous theories of crowd behaviour. Among these situations we can find not only crowds and riots, but also other situations that are restricted in terms of limited perceptions of fellow group members (anonymity) or in terms of limited visibility of oneself to other group members (lack of identifiability). An instance of this type of situation is computer-mediated communication (Spears, Lea & Lee, 1990). The SIDE model assumes that the salient membership in a group can be crucial in such situations, bringing people to define themselves, to present themselves and/or to act as group members rather than as single individuals. Both cognitive consequences of the specific situational conditions as well as strategic considerations of the actors have to be acknowledged in order to understand and to explain behaviour in these situations adequately.

From our perspective, there are at least two distinguishable approaches to empirical work on the SIDE-model. On the one hand, the framework of SIDE ideas as a whole is powerful for describing, explaining and understanding specific and also more general classes of phenomena of intra- and intergroup behaviour (Lea & Spears, 1995; Reicher, 1996; Spears & Lea, 1994). On the other hand, some researchers have tested the main assumptions of the SIDE-model several times in a rather analytical way, by isolating specific variables and processes which can be called 'SIDE-effects' (Postmes, 1997; Sassenberg, 1999; Spears et al., 1990). Using the term SIDE-effect does not mean that those effects exist in isolation, or that they are independent from the whole spectrum of contextual conditions. The SIDE model can not be reduced to one or two effects under specific situations. However, even if we understand SIDE as a broader framework of ideas and as a specific way of thinking about group behaviour, which does not make general predictions but takes into account the specific situational conditions in each case, it may be useful from time to time to scrutinise our main assumptions. For empirical and theoretical progress we need to isolate the one or the other process in the laboratory and to make predictions about effects that challenge alternative explanations.

The research presented here was directed towards this goal. The prediction tested was thus part of the SIDE model's cognitive pathway of the consequences of anonymity. Spears et al. (1990) have argued that one of the prominent effects of anonymity in computer-mediated communication is that there are fewer perceived intragroup differences in the group. Under conditions of salient group membership, this should lead to an increased structural fit of the category (Oakes, 1987), resulting in a more salient group and thus in a stronger impact of the group norms (Turner, 1991; Wetherell, 1987).

The materials and procedure of the first study to be presented here were designed with this concept in mind. We planned to replicate the results found by Spears et al. (1990) in an Internet experiment. The goal was not a one-to-one replication, but a *conceptual* replication, designed to examine the cognitive process of group salience that forms one of the cornerstones of the SIDE model.

The unexpected results of this study, presented below, led us to three further studies that tested possible explanations for these divergences from predictions. The outcome is a conception of the consequences of anonymity that specifies the conditions under which a SIDE-effect as described above could be found, and of the conditions under which the opposite can be expected. We want to emphasise that we do not think that our results oppose the SIDE-model and its predictions. Instead, they may offer some complementary insights into limiting conditions and hints at underlying processes. This is true especially for the role of groups and category norms on the one hand and the normative fit of the group with respect to the category on the other.

### **Experiment 1: Discussing Star Trek on the Internet**

The first study was conducted to replicate the results found in a study by Spears et al. (1990), who examined the consequences of anonymity in computer mediated communication for group behaviour. The design consisted of two crossed factors: *anonymity* (anonymous vs. non-anonymous) and *group priming* (salience of group vs. individual level of self-categorization). In a group polarisation paradigm, Spears et al. observed what we call the SIDE-effect: a significant interaction between both factors reflecting highest social influence (group polarisation) under anonymous conditions and group priming, and lowest social influence (actually de-polarisation) under anonymous conditions and individual priming, with the two other conditions lying in between (see Spears et. al., this volume).

Several operationalisations were modified compared to this earlier work. First of all, the design was moved into an Internet setting. This setting may be unusual for psychological experimentation, but conceptually it fits the intention of the original study, in so far as it presents anonymous conditions for communication. Second, we focused on a particular aspect of the local group norm, as will be explained below.

#### *Method*

Participants took part on the Internet, asynchronously and without ever coming together face to face (in any condition). Discussion topic and materials were tailored

to fans of the TV series *Star Trek* as potential participants. Contrary to the original experiment, the subjects only had one asynchronous communication turn. They were assigned to a 5-person group, read statements ostensibly made by the other group members and answered them in a message. Later on, in a private post-test, their attitude was once more assessed. Following this, some additional variables were measured, such as perceived intragroup differences.

Importantly, what every subject experienced was a simulated group — no real interaction or exchange occurred. The statements, which allegedly came from former participants, were presented by a computer program, that adapted the presentation to the pre-test measure. The computer program also assigned the subjects randomly to the conditions.

The *group priming* factor was operationalised in a similar fashion to the original Spears et al., (1990) study, using instructions either referring to group members or to individuals. Additionally, we introduced a competition such that the groups could compete by answering questions on *Star Trek*.

The *anonymity* factor was operationalised using so-called *avatars*, small graphical representations of the participants' heads. These figures are typically used in online communities, and in fact we used avatars from one of the largest online communities, CompuServe's WorldsAway (see Figure 1). Participants in the non-anonymous condition chose an avatar at the beginning and then saw other people's avatars. Participants in the anonymous conditions also chose an avatar, but it was not subsequently used.



Figure 1: Avatars used in Experiment 1 to operationalise anonymity  
(*avatar vs. anonymous*)

Ninety-two Internet users took part in the experiment and were randomly assigned to our 4 experimental conditions. The data of 30 participants were excluded from the analyses because they did not read the instructions thoroughly (indicated by extremely short reading times), because they were associated with social psychology professionally, or because they did not type in their email address (constant identifiability). The remaining 62 participants were not equally distributed across the conditions with  $n = 20$  in the group/anonymous condition and  $n = 14$  in each remaining cell. Thus, the sample effect was controlled statistically in the sum of square calculation in the general linear model.

At the start, the participants answered several questions concerning *Star Trek*. One of these questions was the critical pre-test item. This item, which was later discussed in the group, concerned a dilemma between the protection of copyrights of *Star Trek*

material on the one hand (“pro-Paramount”) and the freedom to use those materials for fan websites on the other hand.

After being introduced to the other group members, who ostensibly took part in the same experiment some days earlier, the participants took part in the competition. Next, the group members’ attitudes on the discussion item were presented including both a text statement similar to that used in Internet discussion groups and a rating on a 9-point rating scale. After reading other people’s opinions, the participants had to offer a possible group *consensus*, to state a *public post-test* that would allegedly be sent to the group by email, and later on to give a private answer that would be kept confidential (*private post-test*).

One central idea of our study was to control the *group norm*. Following Turner’s social influence model (Turner, 1991) based on SCT, we assumed that the group norm can be operationalised as the attitude of the most prototypical discussion group member, using the meta-contrast ratio. We decided to keep the distance between group norm and pre-test constant for each participant. After the pre-test was assessed, the experimental program generated a group in which the norm differed by 3 points on the 9 point scale from the pre-test. A typical situation is illustrated in Table 1.

Table 1 *Example of a generated distribution of group members’ statements (G) in Experiment 1.*

pro copyrights	-4	-3	-2	-1	0	+1	+2	+3	+4	contra copy-rights
			G	G		G	pre			
				G						

*Note.* The local group norm (-1), defined as the position of the prototypical group member, always differed by three points from the pre-test score (+2).

In the same vein, the primary *dependent variable* was computed with respect to the local group norm. We computed the shift of the own attitude in the direction of the local group norm. Thus, a complete shift to the local norm would result in a 3 point shift, a de-polarisation away from the local norm would result for instance in a -1 point shift (for more details see Schubert, 1998).

The *hypothesis* was exactly the same as in the original study. We expected that under anonymous conditions in the salient group participants would shift most in the direction of the group norm. In other words we expected an interaction effect between anonymity and group salience.

### Results

As a *manipulation check* on using avatars as an anonymity manipulation, the perceived intragroup differences were analysed in a 2 x 2 ANOVA with anonymity and group priming as factors. The only (marginally) significant result was a main effect of anonymity,  $F(1,58) = 3.61, p = .062$ . Consistent with the process assumption of the SIDE-model, participants in the anonymous conditions perceived less intragroup

differences (individual priming:  $M = -.71$ ,  $SD = 1.069$ ; group priming:  $M = -.45$ ,  $SD = 1.637$ ) than those in the non-anonymous conditions (individual priming:  $M = .43$ ,  $SD = 1.697$ ; group priming:  $M = .14$ ,  $SD = 2.47$ ).

The *attitude change* measures revealed surprising results. Subjects changed their attitude most strongly in the direction of the local group norm when this group was visible with avatars and when they were in the group condition. For private attitude shifts, the primary dependent variable, this resulted in a marginally significant interaction  $F(1,57) = 3.320$ ,  $p = .074$  (Figure 2) in an ANCOVA with pre-test attitude as the co-variate (Spears et al., 1990). No other effects were reliable. In the avatar condition, group priming and individual priming differed marginally,  $F(1,25) = 3.914$ ,  $p = .059$ . Results for the public attitude measures also followed this pattern.

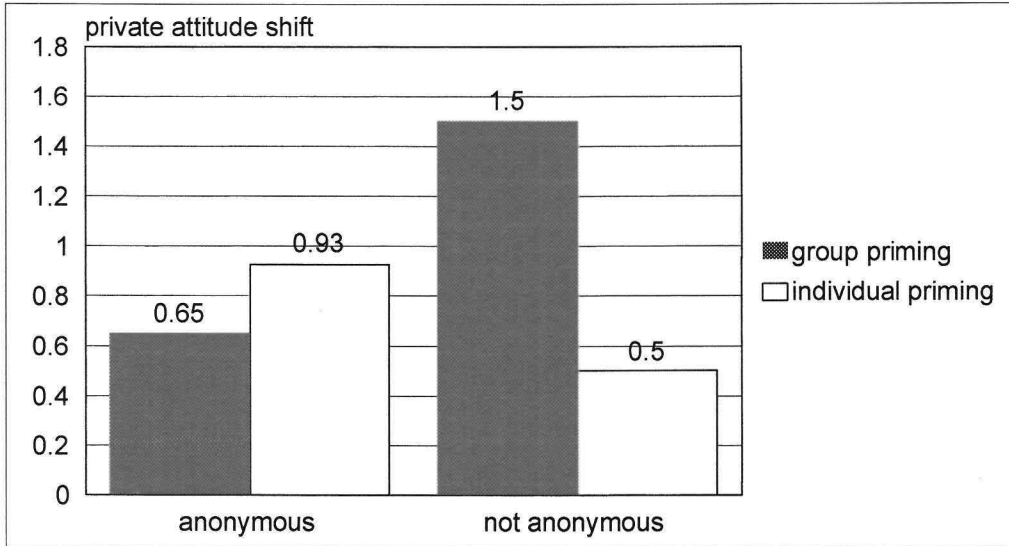


Figure 2: Private attitude shifts in the direction of the group norm (prototype) in Experiment 1.

### Discussion

When we tried to replicate the original SIDE CMC study under slightly different conditions on the Internet, we did not find what was predicted and originally found. We find the opposite of the SIDE prediction, a 'reversed SIDE-effect', so to speak. That is, if the group is salient, there is a greater shift for participants who see pictures of the other participants than for participants in the anonymity condition.

Post-hoc explanations can be generated by considering the differences between the original study and Experiment 1. The first important difference in our case is that, instead of people coming anonymously together in a laboratory, we used the Internet as setting. However, the situation in the Internet is compatible with what has been described as a de-individualized situation in computer-mediated communication.

Moreover, Postmes (1997) successfully used completely computer-mediated scenarios instead of real face-to-face communication, and obtained typical SIDE-effects.

Second, we used a topic and a social category that is rather different from the original study: Fans of the television series *Star Trek*. However, high ratings for self-rated categorization as a fan, group identification, and the ratio between perceived ingroup similarities and differences indicate that this category was salient throughout the experiment.

A further important difference between the original study and our replication is that, instead of real face-to-face contact or photos taken before the experiment, avatars were used. It was our understanding of the SIDE-model that the use of graphical representations would be compatible with the assertion that de-individuated and individuated situations differ in the degree of perceived difference between the group members. From this point of view, photos and avatars should serve the same purpose. The increased differences should decrease the salience of the group, as compared to the anonymity condition. However, it may be that avatars are not suitable for a de-individuation manipulation. Perhaps, as Tom Postmes (personal communication, June 1998) proposed, avatars have the opposite effect by acting like a mask thereby hiding rather than revealing differences.

Another important difference concerns the temporal structure of the communication. SIDE experiments typically use a somewhat dynamic group process in which the group can develop. Group members usually have a real communication exchange with scope for feedback and mutual influence. In our experiment, in contrast, the communication was very shallow: There was a mere exposure like presentation of the group members' arguments, followed by a public and later on by a private statement of the participant. There was no real exchange.

Let's consider possible consequences of this fact. The result might have been that the local group norm did not emerge in a natural process, but was instead controlled and coldly presented to the participants. Moreover, the local group norm differed in a substantial way from the participants' pre-test attitude, to give space for possible influence. Additionally, we did not explicitly present the norm of the more inclusive category of which the alleged local group was a part. Earlier SIDE experiments usually did quite the opposite. They presented the norm of the more inclusive category, while having the local norm emerge from the discourse.

It might be that inclusive category norm and local group norm play distinct roles in the influence process. Participants might deduce a category norm although none is presented. Perhaps they do it differently under different circumstances: deducing the norm either from the local prototypical group member or from their own attitude, in a false-consensus-like way. Our hypothesis is that the commitment to this category norm might be responsible for the lacking attitude shift under anonymous conditions. Unfortunately, we had no support for this post-hoc consideration in this study since we did not measure the category norm.

Along these lines, the next step was to test these post-hoc hypotheses, and try to replicate the observed reversed SIDE-effect (or RSE). The goal was to find conditions which moderate between SIDE-effect and reversed SIDE-effect. In order to do this, we conducted two further experiments (Experiment 2 and 3) with essentially the same experimental materials as in the first experiment.

## Experiment 2: Estimating the Category Norm

The goal of Experiment 2 was to replicate the RSE found in Experiment 1. For reasons of economy we reduced the design to the salient group condition which seems to be the more important one. This time, we measured the *category norm*, as the participants perceived it. The first hypothesis is that participants will adhere more strongly to the category norm than to the local group norm, following one of our post hoc explanations (hypothesis 1).

Given the latter, however, we still have to explain why under anonymous conditions there is a smaller attitude shift than under avatar conditions. There are two possible explanations. (A) The category norm will be derived at least partly from the pre-test attitude. The commitment to this category norm might be stronger under anonymous conditions. This prediction, which will be tested as hypothesis 2a, can be derived from the SIDE-model. An alternative explanation (B) may be, that in the avatar condition, the position of the category norm is closer to the local group prototype than it is under anonymous conditions. This would reflect that the local group has more influence on the category norm inference when the group members are present with avatars. This possibility would extend the SIDE-model and will be tested as hypothesis 2b.

To test the idea that avatars resemble masks rather than true faces, we introduced a third condition in which all group members were presented with the same avatars. Thus, all visible differences would be eliminated. If these uniform avatars would produce the same results as different avatars, it would cast doubt on the use of avatars as a replacement for photos.

### *Method*

Experiment 2 used the same materials and procedure as in Experiment 1. The perceived category norm was measured after the public statements, directly following the private attitude statement. An androgynous mask-like avatar was created for the uniform condition.

To control for possible sample errors, the data of 43 participants were excluded from the analysis by the same criteria as in Experiment 1. Moreover, we decided in advance to restrict the analyses only to those participants who encountered a local group that was more pro-Paramount (the Star Trek issue) than they themselves were. That is, not only the distance between pre-test and local norm, but also to the direction of the difference was kept constant. The cell distributions for the remaining 79 participants were  $n = 21$ ,  $n = 29$ , and  $n = 29$  in the *anonymous*, *uniform avatars* and *individual avatars* conditions, respectively.

### *Results and Discussion*

With regard to hypothesis 1, we used the consensus suggestion as a measure of the perceived local group norm, and observed that the private post-test was closer to the perceived category norm than to the local group norm. In 4 x 3 repeated measures analyses of variance with the absolute values of pre-test, category norm estimation,

proposed group consensus, and private post-test as the repeated measures and condition (*anonymous* vs. *avatar individual* vs. *avatar uniform*) as between subjects factor,

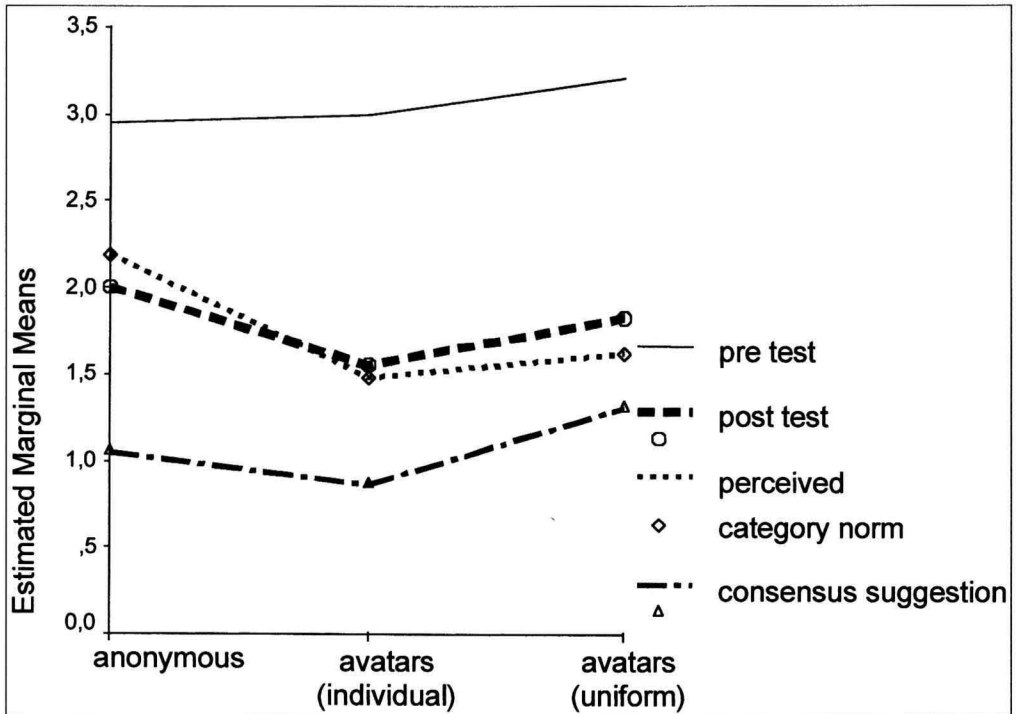


Figure 3: Pre-test, private post-test, estimated category norm and estimated group norm (consensus suggestion) in the different conditions in Experiment 2 (adjusted for a 4 x 3 repeated measure ANOVA). Group prototype in the stimulus material for each participant was always three points below the pre-test.

Table 2 Differences between the dependent variables in Experiment 2.

i	j	difference (i-j)
pre test	post test	1.25***
category norm	1.29***	
consensus	1.99***	
post test	category norm	.002
	consensus	.72***
category norm	consensus	.69**

Note. \*\*  $p < .01$ , \*\*\*  $p < .001$ , adjusted for multiple comparisons (Sidak) in a 4 x 3 repeated measure ANOVA with condition as between subjects factor.



private post-test and category norm were the only measures which did *not* differ significantly (see figure 3 and table 2). This means that hypothesis 1 was supported.

To test hypothesis 2a, we calculated the difference between the private post-test and the estimated category norm as a reversed measure of the commitment to that norm. Using this measure as dependent variable, we tested the contrast between the anonymous condition and the other two conditions (2, -1, -1). Contrary to the prediction, there was no stronger commitment to the category norm in the anonymous condition,  $t(76) = .83, p = .41$  (There was also no difference between the two avatar conditions).

Instead, we found support for our hypothesis 2b. Presupposing that the category norm is inferred from the own attitude as well as from the local group norm, we calculated a shift or displacement score indicating the distance of the estimated category norm from the pre-test in the direction of the local group prototype. As expected, in a contrast analysis that compared anonymity to the other two conditions (2, -1, -1), with the pre-test as co-variate, we found a stronger shift or displacement of the category norm in the direction of the local group norm under non-anonymous conditions than under anonymity, with a marginally significant anonymity contrast (2, -1, -1),  $t(72) = 1.91, p = .060$ . Although the *absolute* effect of anonymity on the attitude shift (difference of private post-test from pre-test in the direction of the group norm) was not significant ( $p = .16$ ), the category norm shift was a highly significant predictor of the attitude shift ( $\beta = .45, p < .001$ ) and thus the anonymity factor produced a marginal significant *indirect* effect (Baron & Kenny, 1986) on attitude shift,  $p = .09$ . This effect is again, as predicted in 2b, a reversed SIDE-effect, i.e. a lower attitude shift in the anonymous condition than in the not anonymous conditions.

The two avatar conditions (avatars vs. uniform) did not differ with respect to the central variables. Indeed, avatars seem to be a problematic non-anonymity manipulation.

### Experiment 3: Photos instead of avatars

The latter result seems to support the alternative explanation that the use of avatars could be responsible for our failure to replicate the SIDE-effect in Experiment 1. In Experiment 3, we tried to replicate the SIDE-effect with photos instead of avatars, resembling a study of Postmes (1997). Additionally, we changed the inclusive category by introducing a distinction in men and women in order to make the inclusive category more relevant than just having *Star Trek* fans.

#### Method

Except the use of gender subcategories (male and female *Star Trek* fans) and the photos instead of avatars, the procedure and material was similar to that used in Experiment 1, but as in Experiment 2 the design was reduced to the salient group condition. Since Experiment 3 was also conducted on the Internet, participants did not have their own photo, so they were unidentifiable to the local group. The cover story told them that they could send in their photo after the session in order to continue the discussion.

Regarding another research question, which will not be discussed in detail here, we included an additional anonymous condition with group symbols instead of a complete absence of any visual cue. Thus, the design is again one-factorial, with the three conditions *non-anonymous: photos*, *anonymous: no picture*, and *anonymous: group symbols*. The important distinction for our purpose here is the difference between photos and the latter two anonymous conditions.

The goal of this study was to explore whether the use of avatars or a possible lack of category relevance is responsible for the reversed SIDE-effect. Hence, our hypothesis was that we would find a SIDE-effect, i.e. a stronger attitude shift under the anonymous condition, when we use photos and a more relevant self-category.

After the exclusion of problematic cases from the analyses following the criteria used in Experiment 1 and 2, 79 participants remained in the analysis. Due to higher dropout rates in the no-picture condition, they were not equally distributed across the conditions with  $n = 15$  (anonymous: no picture),  $n = 36$  (anonymous: symbol), and  $n = 28$  (non-anonymous: photos). The participants were mostly male ( $n = 56$ ).

### *Results and Discussion*

Although the gender distribution among the conditions was equal, indicated by a non significant cross-tabulation,  $\chi^2 (N = 79) = 1.36, p = .54$  (Fisher's Exact Test). The sample disproportion was statistically controlled in the mean square calculation in a 2 (gender) x 3 (condition) ANCOVA with the pre-test as co-variate and attitude change in the direction of group prototype as dependent variables. There was no significant gender main effect and no interaction with gender. To test our hypothesis, we performed contrasts that tested the anonymous conditions against the photo condition (1, 1, -2). Contrary to our hypothesis, the results showed a higher attitude shift towards the local group norm in the photo condition than in the anonymous conditions (Figure 4). The contrast was marginal for the attitude change,  $t(72) = 1.88, p = .065$ , and significant for the consensus suggestion,  $t(72) = 2.95, p = .004$ . Thus, we find again a reversed SIDE-effect, this time with photos instead of avatars.

Unfortunately, since Experiment 2 and 3 were conducted in parallel, we had no measurement of the perceived category norm, so nothing can be said with respect to the hypothesis that was tested in Experiment 2.

### **General Discussion of Experiment 1 to 3**

In three experiments using essentially the same experimental setup and materials, we found no SIDE-effect, but reverse SIDE-effects. In two of the three experiments this result was unpredicted. Regarding the three post-hoc explanations offered in the discussion of Experiment 1, we could rule out two of them. The use of avatars instead of photos and the assumed irrelevance of the inclusive category are probably not responsible for our findings. What remains is the interesting dynamic involving group norm and category norm.

In Experiment 2, we could show that the category norm, which was not fixed beforehand like in other SIDE experiments, was equally important in all conditions

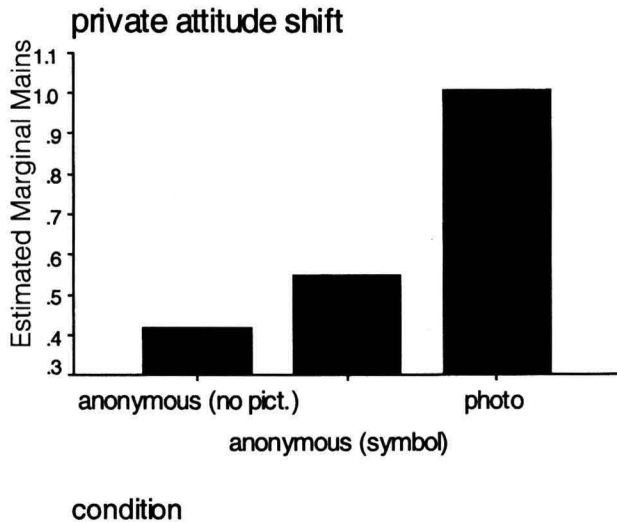


Figure 4: Private attitude shift (distance from pre-test in the direction of group prototype) for the different experimental conditions in Experiment 3. Means adjusted for a 2 (gender) x 3 (condition) MANCOVA with pre-test as co-variate.

and was itself variable, depending on the experimental manipulations. Moreover, it mediated our reversed *SIDE*-effect, resulting in higher shift scores in non-anonymous conditions. What might that mean for the *SIDE*-model?

Distinguishing between the inclusive category norm and the local group norm, we think that the relation between category norm and the local group norm can influence the salience of the relevant self category because of the higher or lower *normative fit* (Turner, 1987; Oakes, 1987). It may be that a fit between local group norm and the overall category norm is crucial for the salience of a self-category under anonymous conditions, that means that it is a necessary condition for the *SIDE*-effect. One basic distinction between our experiments and the traditional *SIDE* experiments was that we fixed the local group norm by reducing the communication to a one-way messaging or — in other words — to a mere exposure setting. One could argue that this fixing impeded the emergence of a fitting local group norm, decreasing the salience of the self category under anonymous conditions. If the free emergence of a fitting local group norm during an active interchange between group members is the mechanism that creates the *SIDE*-effect, then it could not work in our experiments. The reason is that we introduced the participants' statements in a controlled way. The prototype of the local group was only determined by the pre-test, and not by possible reactions of other group members to the category norm.

From our perspective, distinguishing local and category norm leads to two possible processes that can produce a *SIDE* effect and which are *not* mutually exclusive. First, the local group norm — if it is not fixed beforehand — can emerge in reaction to a pre-established category norm in a way that produces a *SIDE*-effect. This *group-dynamic* process would be restricted to situations with real mutual influence between

group members in a group discussion. The fit between local and category norm would be a mediator in this case, comparable to the mediating function of the shifting category norm in our reversed SIDE-effect.

Second, we assume that there is also an alternative, more *cognitive* process. This process could produce a SIDE-effect even when both local and category norm are pre-established, which is not unusual in social reality. When both norms are fitting, then a high influence would be expected in anonymous situations because anonymity results in a higher salience. In this case the fit between local and category norm *moderates* the effect of anonymity because it restricts it to a situation with fitting norms. To examine this second process, we conducted a fourth experiment, using a different setting this time.

#### **Experiment 4: Category norms and local norms**

In this experiment we controlled the two norms: the local norm and the category norm. Participants had to answer several attitude measures, and for every measure, both the local group norm and the category norm were presented. For some items, these norms fitted, for some not. Thus, we had a within-subjects factor of *fitting vs. non-fitting norms*. Anonymity, this time operationalised as presence (*non-anonymous*) or absence (*anonymous*) either of avatars or of photos, was the between-subjects factor. If the assumptions above are correct, then the fit or non-fit between local norm and category norm can serve as a moderator for the SIDE-effect. Only under conditions of corresponding norms (*high fit*) should there be a stronger attitude shift in the direction of local and category norm under anonymity. A reversed SIDE-effect cannot be expected since we explicitly presented the category norm, which thus was not free to shift itself.

#### *Method*

We switched to a different paradigm in this experiment, which was again conducted on the Internet. The social category was *users of Netscape Navigator*, which was contrasted to the category of *users of Microsoft Internet Explorer*, a distinction, which is important for many users of Netscape. The topic of the attitude items were risks of technological development in the future. We also omitted the pre-test (Haslam, 1997) and added instead a no-influence condition as a *baseline*. The difference to the baseline was used as an indicator for the underlying attitude shift. Thus, the between subjects factor had 4 conditions: *baseline*, *avatars*, *photos*, and *anonymous*. Again, as in Experiment 2 and 3, the local group was made salient in all conditions.

After answering which browser they personally used (e.g., ‘I am a user of Netscape Navigator.’), participants were presented items on an Internet survey. For every item, information about the category norm was given — that is, how Netscape users in general allegedly stood on that issue. Additionally, an alleged local group of 4 persons of previous participants was presented with their attitudes.

Only Netscape users were included in the study.<sup>1</sup> Problematic cases were excluded, especially participants who used browsers other than what they reported. The remaining 93 participants (70% male) were more or less equally distributed across the conditions with  $n = 22$  (anonymous),  $n = 25$  (non-anonymous: avatar),  $n = 21$  (non-anonymous: photo) and  $n = 25$  (baseline).

### Results and Discussion

Items with fitting or not fitting norms were combined into two scores (*high-fit* vs. *low-fit*) and transformed such that high values indicated adherence to the local group norm (thus, for high-fit items, high values indicate attitude shift in the direction of the combined norms). The results show that a significant difference from the baseline (Figure 5) emerges only for high-fit items in the anonymous conditions.

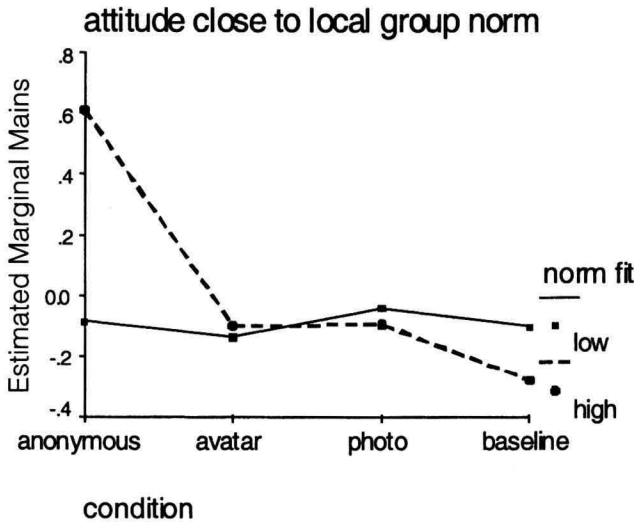


Figure 5: Attitudes in the conditions of Experiment 4. High scores indicate closeness to the local group norm (prototype). Differences to the baseline condition (no influence) are interpreted as results of social influence. Means adjusted for a 2 (norm fit) x 4 (condition) repeated measure ANOVA with norm fit as within subject factor.

The respective contrast analyses in a 2 x 4 repeated measure ANOVA confirmed, that only the anonymous condition differed from the baseline (3, -1, -1, -1),  $t(89) = 2.19$ ,  $p = .031$ , and that this pattern is significantly moderated by the within subject factor of high vs. low fitting norms (1, -1),  $t(89) = 2.26$ ,  $p = .026$ . The respective residual contrasts were not significant with respect to main effects and interactions.

Thus, we observe higher social influence for the fitting and combined norms in the anonymous condition: in other words, a SIDE-effect as described in the introduction.

<sup>1</sup> A full design including users of Microsoft Internet explorer is not reasonable because of the low salience of that category membership in general.

As predicted, this SIDE-effect is moderated by the fit between local and category norm. Even with a restricted communication process, without group formation by interpersonal exchange and feedback loops, a SIDE-effect can be observed. The cognitive processes that led from the perception or anonymity of group members to a changing salience of the social category and finally to social influence exerted at the category level are effective even under conditions when there is no true exchange between category members.

## Summary and Conclusions

In this research we have reported one new effect, a mediation, a moderation and a generalisation. In the first three experiments, we found — in two cases unexpected — what we called the reversed SIDE-effect (RSE) under conditions with an open or unknown category norm. Whereas we could rule out alternative explanations with respect to possible artefacts (Experiment 3), we observed in Experiment 2 a mediation of the RSE by the shift of the category norm to the local prototype in the non-anonymous condition. As a conclusion, we assumed that the fit between local and category norm seems to be crucial for anonymity to lead to a higher impact of group norms. In Experiment 4, we predicted and found a moderation of the SIDE-effect by the fit between local group norm and category norm. Additionally, this SIDE-effect was obtained without real interpersonal exchange and discourse, and thus no freely emerging group norm.

Especially the last result seems to support our initial interpretation of the SIDE-effect as being mediated by cognitive processes of norm induction. The SIDE-model is *not* restricted to situations with or without real intergroup exchange. It can — even without real intragroup exchange — predict cognitive processes that follow influence exerted by other ingroup members under anonymous conditions. Moreover, the SIDE-model can make predictions for the consequences of intragroup communication under anonymity, *because* of its modelling of cognitive consequences of anonymity and group membership.

The results also show that the dynamics between local group norm and category norm are important both at a methodological and a theoretical level. Polarisation studies need to clarify which categorization level is salient, if both local group and larger inclusive category are referred to in the experiment. The restriction of the SIDE-effect, i.e. higher group influence under anonymity, to conditions with a fit between local norm and category norm is completely in line with the assumptions of the SIDE-model. However, it has rarely if ever been stated in the SIDE literature explicitly, until this contribution. Moreover, the emergence of a reversed SIDE-effect under conditions of not fitting norms seems to offer a new class of situations where the predictions of the SIDE will have to be elaborated in more detail in further research.

One remark by Wetherell became more and more important during our investigations and summarises what *we* learned from them:

Specific predictions of convergence or polarization assume that people identify with the particular discussion group in which they find themselves. They may do so, but at a

higher level of abstraction than realized.... The direction of shift will depend upon the content and the level of the ingroup identification that is actually salient in the specific setting. (Wetherell, 1987)

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