The InSIDE story: Social psychological processes affecting on-line groups

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Introduction

The development of the Social Identity Model of Deindividuation Effects has been intimately linked with the emergence of computer-mediated communications. While our general aim has been to specify the effects of situational factors on social influence processes proposed by social identity and self-categorization theories (Postmes, Spears & Lea, 1999; Reicher, 1984; 1987; Reicher, Spears & Postmes, 1995; Spears, Lea & Lee, 1990; Spears, Postmes & Lea, in press), much of the development work has been driven from the outset by particular interest in how communication and behaviour can differ in the relatively anonymous conditions of the new computer medium (e.g., Lea, O'Shea, Fung & Spears, 1992; Lea & Giordano, 1997; Lea, Postmes & Rogers, 1999; Lea, & Spears, 1991, 1992, 1995; Postmes & Lea, in press; Postmes, Spears & Lea, 1998, in press; Spears & Lea, 1992, 1994; Spears, Lea & Postmes, in press).

There are several reasons for this association. The CMC domain provides opportunities to test specific predictions derived from our social identity model against alternative theories of group interaction in the medium that implicitly or explicitly base themselves on more traditional perspectives on groups. The relation of these theories to substantive social psychological theory has been discussed elsewhere (e.g., Lea & Giordano, 1997; Lea & Spears, 1995; Postmes & Lea, in press; Postmes, Spears & Lea, 1998; Spears & Lea, 1992, 1994; Spears, Lea & Postmes, in press). In this respect, the study of group CMC contributes as well to the wider literature on social identity and self-categorization theories that underpin the SIDE model.

CMC knows a variety of forms that are dependent in part on the design of the underlying technologies, and new collaboration technologies are being developed at a rapid pace. The development of SIDE model can help expose some of the assumptions about social

organization and social psychological processes implicit in the design of groupware and computer-supported collaborative work systems. It can influence the development of new forms of interaction systems, as well as contribute knowledge about their implementation and use (e.g., Lea & Giordano, 1997; Lea, Postmes & Rogers, 1998; Postmes & Lea, in press).

CMC also provides a new paradigm for research into general deindividuation phenomena that can usefully clarify some of the complexities in earlier deindividuation research as well as test the intervening processes that deindividuating contexts supposedly activate. For example, it enables one to manipulate anonymity and identifiability independently from physical isolation and co-presence. Conceptual distinctions between different forms of anonymity, such as visual anonymity and nominal anonymity (not being identified by name) are also readily manipulated in the medium, as are different components of anonymity, such as anonymity of self to others, and anonymity of others to self. These are some of the issues that will be covered in this brief overview of recent studies that have been carried out as part of a programme of research at Manchester into the social psychological effects on groups of communicating via the computer medium. However, the major theme that links these various studies has been to investigate evidence for the social identity processes that we consider responsible for anonymity effects on groups.

The main purpose of this short overview is to explore some of the implications of these studies when considered as a whole, rather than to describe individual studies and their results in any detail. The studies and their general findings will be described in turn very briefly, and in the concluding section some general remarks will be made about the based on the general pattern of findings.

SIDE in the computer medium

SIDE is one of several social psychological approaches that aim to account for the

varieties of group behavior observable in computer-mediated communication (for reviews see Lea & Spears, 1991, 1995; Spears & Lea, 1992, 1994; Postmes, Spears & Lea, 1998; Spears, Lea & Postmes, in press). According to SIDE, the relative anonymity associated with mediated communication is crucial for predicting and understanding behavior in the new computer medium. Visual anonymity, which is greatest in remote text-based CMC (relative to normal face-to-face interaction) tends to depersonalize perceptions of self and others and encourages behavior that is normative for salient groups (Spears & Lea, 1992, 1994). Results of a number of empirical studies to date support the predicted effects on normative behavior in computer-mediated groups. For example, Spears, Lea and Lee (1990) found that when group members were isolated and anonymous during interaction their attitudes towards discussion topics that were salient for the interacting group polarized more in the direction of pre-existing group norms than when members were identifiable and co-present. Furthermore this normative behavior coincided with less messaging and issue-discussion, undermining alternative information-based explanations of the anonymity effect on group polarization (Lea & Spears, 1991). Similarly, in a study of CMC conducted between groups composed of different nationalities, visual anonymity was found to increase group members' conformity to ingroup norms and rejection of outgroup norms (Postmes, Lea, Spears, Croft, van Dijk, & van der Pligt, 1995). In a further series of studies that directly manipulated the salience of particular group norms, anonymity was found to increase adherence to whatever norm was primed in groups with whom participants identified (Postmes, Spears, Sakhel, & de Groot, 1998; Postmes, Spears & Lea, 1998).

Despite the accumulating body of evidence to support the SIDE model within CMC groups, previous studies have been mostly concerned with investigating social influence or conformity effects within groups. Although much of this research has provided support for the predictions of the SIDE model, to date there has been little attempt to assess the

intervening processes proposed to produce behavioral effects. This was the common objective of the studies described below.

<u>Social identity processes mediating anonymity effects on group attraction</u>

In the first study we describe, we investigated core social identity processes such as self-categorization and group prototypical perceptions of others, and their role in mediating anonymity effects. A second aim of this study was to extend previous SIDE research on anonymity effects to explain group attraction in the computer medium. We also contrasted the SIDE model with alternative models derived from the CMC literature that are based upon traditional interdependence approaches to group attraction.

According to the social identity approach, group attraction results from depersonalized perceptions of self and others in terms of a common group categorization (Turner et al., 1987; for a comparative review, see Hogg, 1993). Attraction to the group is explained by self-liking in the context of a self-included group and by the tendency to see others as interchangeable members of that group, rather than as unique individuals. SIDE predicts that visual anonymity increases this tendency because it further reduces the basis for interpersonal comparison and self-awareness so that the self and others are perceived more in group-terms, resulting in greater group attraction.

This approach contrasts with the interdependence approach to group cohesiveness in which group attraction is merely the aggregate of interpersonal attraction responses (e.g., Cartwright, 1968; Mudrack, 1989). Theories of group behaviour in CMC based upon this approach argue that the reduction in interpersonal cues under anonymity creates an impersonal task focus for the interaction and reduces concern over evaluations by others. These conditions create conflict and reduce attraction to others (Jessup, Connolly & Tanisk, 1990; Kiesler et al., 1984; Kiesler & Sproull, 1992; Walther, 1992).

These two sets of opposing predictions concerning the effects of visual anonymity on group attraction and the intervening processes responsible for the effects were tested in a study of discussion groups using a computer-based conferencing system. Groups were composed of one volunteer participant and two confederates (all female). The groups used a computer-based video conferencing system to enable multi-way text and silent-video communication between the three participants who were physically located in different rooms. In the visually anonymous condition, communication was text-based, and in the visually identifiable condition was supplemented by real-time silent video. The latter was achieved by means of a camera directed at the user connected to each computer. A conference reflector transmitted the video mages so that they appeared in a small window on each participant's screen. In both conditions, text entered by one participant appeared on every participant's screen pre-pended by a group member identifier. Care was taken to ensure that group members did not meet each other. Instructions given to participants were designed to reinforce the salience of the interacting group. Category-level salience was found to have no effects on the group-level effects discussed here.

Questionnaire based scales were used to measure participants' self-categorization with the group, the degree to which they stereotyped other participants in terms of the group, their attraction to the group, evaluation concern and the degree of task focus they perceived during the discussions. We used LISREL to perform a series of path analyses of the data. From these we found that visual anonymity increased group attraction, and that the effect was mediated by self-categorization with the group. Self-categorization achieved this effect in two ways: by directly raising group attraction, and indirectly by increasing the degree of stereotyping of other group members which in turn increased group attraction. These results support the SIDE model's account of anonymity effects on group attraction as involving processes of depersonalizing the self in terms of the group, first, and dependent on that process,

depersonalizing others on terms of the group.

The alternative approaches were tested in a separate path analysis. Here we found that visual anonymity increased task focus, as predicted, but that there was no effect of task focus on group attraction, whereas these approaches predicted reduced attraction. Visual anonymity was found to increase, rather than reduce evaluation concern, and there was no effect of evaluation concern on group attraction, directly contrary to predictions.

Finally, we briefly mention further measures and a manipulation that were designed to test whether anonymity achieved its effects on self-categorization primarily at the level of the interacting group, or at a wider level of categorization, such as nationality. We predicted that anonymity primarily affects relatively transient identifications rather than identification with pre-existing longstanding categories. The definition of these latter categories and one's relation to them are likely to be relatively enduring and therefore less affected by the contextual conditions of the communication environment. However our previous studies (e.g., Spears, Lea & Lee, 1990) had confounded local group and wider social category categorizations. We therefore tested this prediction under two conditions: one in which the wider social category (nationality) aligned with the group; the other in which the nationality cut across the group. This was done using various procedures designed to present the study as one involving international communication over the Internet with participants located in another country (Germany) who were either the same or a different nationality to the other participant. We found that nationality had no effects on participants' self-categorization in terms of nationality or the interacting group under anonymity or identifiability conditions. Various mediation analyses were conducted, and the results clearly indicated that social identity processes activated by anonymity at the level of the interacting group were unaffected by perceptions of nationality. We return however to reconsider this issue in Study 3.

In summary, we found that the visual anonymity manipulation caused an increase in self-categorization as expected, and from this point onwards in the analysis we found that the data could be satisfactorily modeled as if self-categorization caused group attraction directly and also indirectly by stereotyping others in terms of the group. I say "as if" because strictly speaking path analysis does not enable one to determine causal effects in the same way that our experimental manipulation of anonymity allowed such inference (i.e., causality is probablistic).

We also tested alternative models that are based upon the traditional interdependence formulation of group cohesiveness and involved task focus and evaluation concern as mediating variables. We found that these models did not explain the effects of visual anonymity on group attraction.

There are several additional points of interest about this study. Self-categorization and group attraction are usually considered to be related components of social identification (and measured as such). By separately measuring the cognitive component of social identity (self-categorization) from one of its affective components (attraction to the group), and testing different models, we were able to show that visual anonymity probably achieves its effects on social identification primarily by influencing the cognitive component of self-categorization with the group.

In this study we manipulated visual anonymity independently from other forms of anonymity, such as nominal anonymity which removed a confound from our previous studies wherein different forms of anonymity were simultaneously manipulated. This strategy was followed-up in subsequent studies where we investigated whether different forms of anonymity may activate the same processes, or whether different anonymity forms activate cognitive and strategic processes to different extents. This in turn begins to address the wider issue of whether the reduction of any forms of social information is likely to produce similar

effects.

Decomposing visual anonymity

In the second study of our review we attempted to decompose the two sides of anonymity: anonymity of the self to others, and anonymity of others to the self. The basic predictions were that anonymity of self in the group should directly increase depersonalized self-perception, while anonymity of others should primarily increase perceptions of group homogeneity, of the group as an entity, and the tendency to stereotype others in terms of the group.

Forty-seven groups of female students carried out a group discussion using the computer-based video conferencing system, described earlier. On volunteer participant and two confederates formed each group. The experiment was designed to manipulate visual identifiability of self to others separately from visual identifiability of others to self, so that these conditions could be compared with communication under complete visual anonymity of self and others. Groups therefore communicated in one of three conditions: participant sends video to others (but does not receive video); participant receives video from others (but does not send video); participant sends and receives no video. In all three conditions the group communicated by multi-way text conferencing, in addition to any video. As before, there was no audio communication. Following the group discussions, the participants completed a number of questionnaires.

Our analysis of the data so far has compared the receives-video condition with the text-only condition and is not yet complete. However some of our preliminary findings suggest rather complex effects occur when anonymity is asymmetrical within the group, especially when compared with the previous study in which full anonymity or full identifiability within the group were manipulated.

We found that visibility of others increased the participants' sense that they could recognize and identify the others (this was a manipulation check). However, identifiability of others had no direct effect on stereotyping of others. Instead the effect of visibility of others, when the self is anonymous appeared to activate several different processes. Firstly, identifiability of others directly increased group attraction. This effect, which occurred independently of depersonalization processes, we assume to reflect group attraction based upon interpersonal attraction to others in the group. Secondly, identifiability of others increased self-categorization, which in turn increased group attraction; and self-categorization increased stereotyping of others, which also increased group attraction. These paths represent the depersonalized attraction process also observed in Study 1. However, in this case it is the visibility of others, rather than anonymity within the group, that increases the tendency for depersonalized attraction to occur. We think this process reveals that, rather than visibility having a primary effect of individuating group members, visible cues provided cues for identifying with the group. A likely candidate in these all-female groups is that gender cues, that are readily visible, increased the participant's sense of belonging to the group. We specifically investigated this hypothesis in Study 3.

A third process was evident from an additional tendency of identifiability of others to increase the participant's sense of anonymity of self, which in turn reduced their self-categorization with the group (this latter effect was weak). This we believe may reflect a comparative process produced by the asymmetrical visibility conditions. Knowing that the others were visible to one's self could increase the sense that one's self was anonymous beyond the level felt when all group members were anonymous. This in turn distinguishes, i.e., individuates, the self from the others (I am 'outside' the group, different in this respect). Indeed we found that although identifiability of others tended to increase anonymity of self, this in turn reduced the self-categorization with the group. These results suggest that the

participant compared herself with the others and knowing herself to be more anonymous than the others, this decreased her sense of being a member of the group.

In summary, we think that three processes are revealed by our first analysis of these data. First, an interpersonal attraction process increased by the visibility of others; a second social identity-based depersonalized attraction process increased by visible common-gender cues; and a weaker third comparative process in which identifiability of others coupled with anonymity of self causes a separation of the self from the group. The second of these processes was investigated further in our next study.

Visibility, anonymity and category salience

Thus far our argument was that visual anonymity under salient group conditions depersonalizes perceptions of self and others in terms of the salient group. In general, by reducing the availability of interpersonal cues, the group becomes is made more salient. We also argued that this effect occurred primarily at the level of the interacting social group, and that the perceived relation of self and others to pre-existing, longstanding categorizations such as nationality, are less affected by anonymity manipulations. Study 1 supported this argument. However Study 2 produced some unexpected results in that it appeared that visibility of others could enhance depersonalization of the self in terms of the group. Several explanations for the effects are possible; one being that in contrast to nationality, gender cues are readily communicated by visibility, which can make gender more salient under identifiability than under anonymous conditions. Furthermore, when gender categorization is aligned with the interacting group (i.e., all members of the interacting group are the same gender) visibility could increase self-categorization with the interacting group. In our third study we investigated the idea that some categories such as gender could be enhanced by visibility and that this would lead to increased self-categorization with the local group, and

contrasted this categorization with another (nationality) that we believed would be enhanced by anonymity under salient nationality conditions.

Thirty-eight groups consisting of 2 British participants (1 male and 1 female) and 2 Dutch participants (1 male and 1 female) discussed topics using a computer-based video conferencing system over the Internet. Topics were selected so as to evoke either a readily visible category (gender) or a less visible category (nationality). Groups interacted under visually anonymous or video-mediated conditions. The aim was to test the boundaries surrounding the visual anonymity effect of depersonalizing perceptions of self and others at the level of salient categories. Whereas Study 1 focused on the effects of anonymity in reducing interpersonal cues, Study 3 investigated this effects in combination with predictions regarding the effects of anonymity on social category cues. The basic predictions were that visibility would increase perceptions of gender (because gender is a cue easily discerned from visual information) when gender is salient to the discussion, but not increase perceptions of nationality, when nationality is salient to the discussion (because nationality cues are not easily communicated by visibility). In both conditions anonymity should reduce the perception of interpersonal cues.

Analyses to date support the main hypotheses. Visibility increased self-categorization in terms of gender (i.e., category with visual cues available) when gender was salient—and also when nationality was salient. In contrast, anonymity increased self-categorization with nationality when gender was salient, and not when nationality was salient.

These results seem to tie in reasonably well with the contrasting findings of Study 1 and Study 2. It appears that rather than anonymity uniformly increasing perceptions in terms of the interacting group, it can also undermine perceptions of certain wider social categories such as gender, for which visibility can provide cues to the category. In other words we should be wary of assuming that anonymity always leads to more group level effects: this

may depend on the nature of the group or category and whether its group essence is designated by visible features or not.

Nominal anonymity, accountability, duty and conformity

For our final study, we return to the analysis of social identity processes at the level of the interacting group. This study had three main aims. The first was to consolidate the predictions and findings of previous studies on the effects of anonymity on group conformity and to test the mediating role of self-categorization therein. Whereas study 1 demonstrated the central role of self-categorization in mediating anonymity effects on group attraction, the present study sought to establish whether the same process was responsible for the effect of anonymity on increased conformity to the group, as observed in previous studies.

The second aim was to explore the effects of manipulating nominal identifiability against a background of visual anonymity. Our previous studies have focused primarily on manipulating visual anonymity (e.g., Study 2) or else have included manipulation of nominal identity (by the use of real names, or group member identifiers) as part of the main (visual) anonymity manipulation (e.g., Lea & Spears, 1991). Visual anonymity has been demonstrated to be a powerful situational factor that depersonalizes perceptions of self and others by eliminating communication of physical and nonverbal cues. However, nominal anonymity may also reduce self-perceptions of unique individuality and activate social identity processes in a salient group.

The third aim was to investigate the effects of nominal anonymity on accountability within the group. One prediction is that nominal anonymity provides a strategic effect on perceptions of accountability within the group relative to conditions where group members are identified by name. Thus far, SIDE has considered the strategic consequences of anonymity and identifiability in respect to the expression of attitudes and behaviour that may

be sanctioned by an outgroup. However, anonymity is likely to have strategic effects within groups as well as in inter-group relations. Knowing the names of one's co-communicators, and knowing that one's own name is also known within a closed environment where future interaction is possible and indeed inevitable (the Psychology Department) is sufficient to realize the consequences of accountability. Accountability therefore captures a process responsible for compliance to the group norms. The participant goes along with the group for the instrumental reason that not to do so risks being singled out for social disapproval and rejection by the group. Anonymity should <u>reduce</u> perceptions of strategic accountability within the group, and this reduced sense of individual accountability should in turn reduce group conformity.

At the same time anonymity may have another <u>cognitive</u> effect on accountability within the group, dependent upon increased feelings of belonging to a group. The more participants feel themselves to be part of a group the more they should consider each other accountable to the group. If self-categorization is increased by nominal anonymity, then this provides a second process by which anonymity should <u>increase</u> accountability. Thus, the cognitive and strategic components of SIDE predict two antagonistic anonymity effects on accountability within the group. The cognitive effect of anonymity should be to increase feelings of accountability within the group, by increasing the sense of belonging to the group, while the strategic effect of anonymity should be to reduce feelings of accountability, by reducing the means of being held accountable by others.

Another process of interest that relates to accountability but is conceptually distinct is a sense of duty. Feelings of accountability may increase one's sense of having a duty or obligation to conform to the group, for instrumental reasons outlined above, However, duty also captures a sense of moral obligation to the group that is independent from instrumental concerns. That is, one feels a duty to conform to the group merely because the self is

perceived to be part of the group, irrespective of any negative response or punishment that failure to conform might invoke. Duty differs from compliance in that the former recognizes that the group has been internalized, and that conformity to the group may occur not because of any feared rejection. At the same time conformity produced by a sense of duty to the group can be distinguished from conformity as private acceptance of a specific group norm.

Sense of duty and feelings of accountability are related in that they are both components of responsibility within the group, with duty representing moral and instrumental concerns, and accountability merely instrumental concerns. As such they are related but distinct processes that should increase conformity. Furthermore, if we are correct in our prediction that feelings of belonging to the group increases a sense of duty to the group, then we predict that there should be a positive effect of anonymity on sense of duty, mediated by self-categorization.

To summarize our considerations of the effects of nominal anonymity: We propose that nominal anonymity should have the effect of decreasing accountability (strategic explanation) and at the same time of increasing accountability because anonymity increases self-categorization with the group (cognitive explanation). Self-categorization should also increase a sense of duty to the group that is independent of practical accountability (i.e., moral responsibility). Both accountability and duty should increase conformity to the group norm. Finally, self-categorization should also increase conformity to the group norm independent of considerations of accountability and duty within the group.

In this study groups of participants interacted for 30 minutes on a group decision-making task. Participants whose identities were unknown to each other prior to the study were located in individual cubicles and care was taken to ensure that participants did not meet each other upon arrival at the laboratory. Instructions were designed to establish high group salience. As in previous experiments participants used a simple text-only video conferencing

system to carry out a group discussion. The combination of physical isolation and communication via the text-only system provided visual anonymity among group members. In the identifiable condition participants entered their full name into the conferencing software at the beginning of the experiment. The full name then pre-pended every message they sent to the group. In the anonymous condition no names were entered and messages appeared without any identifiers, and in addition participants were requested not to exchange their names during the group discussion.

Participants first completed the decision-making task individually and their responses were recorded. The group then discussed the decision-making task during which they had to arrive at a group consensus. The consensus decision was also recorded and participants completed a questionnaire. Computed scales measured participants' self-categorization with the group, their sense of duty to the group, and their feelings of accountability within the group. In addition group conformity was measured by calculating the sum of the differences between the post-discussion group consensus rankings and each participant's individual pre-discussion rankings. We also used a measure of the length of the group discussions as a simple controlling variable in our path analysis to control for any effects of anonymity on the group discussion due to coordination difficulties (cf. Kiesler et al., 1984).

The significant results were as follows. Nominal anonymity reduced feelings of accountability in the group—the predicted strategic effect. In addition, anonymity increased self-categorization to the group which in turn increased accountability in the group. Thus as predicted, there were two distinct paths by which anonymity affected accountability; the strategic route which lowered accountability, and the cognitive route by which accountability was raised in accordance with the increased feelings of belonging to the group produced by anonymity. Anonymity also increased a sense of duty to the group, by increasing self-categorization with the group. Feelings of accountability and a sense of duty were correlated

in accordance with their conceptualization as two distinct but related components of responsibility within the group. Finally, both self-categorization and sense of duty increased group consensus. Feelings of accountability within the group had no significant direct effect on consensus. However, accountability had the effect of increasing participants' focus on the task, and task focus predicted consensus.

The results of this study generally support the SIDE predictions and demonstrate the complexity of anonymity effects, by delineating two sets of antagonistic processes activated by anonymity that affected accountability within the group. Feelings of accountability affected attention to task rather than conformity to the discussion topic. (The lack of a direct effect of accountability on group consensus probably reflected the absence of practical implications for not agreeing with the group in this case).

The results also indicate that anonymity effects on self-categorization are not limited to visual anonymity. The studies described earlier had already shown that visual anonymity increases self-categorization under high group salience conditions. Here, group salience was high and participants were visually anonymous, yet nominal anonymity manipulated under these conditions produced a further increase in self-categorization. Taken together, the results suggest that a significant process activated by anonymity within groups is to depersonalize perceptions of the self in terms of the group.

The results also establish the central role of depersonalized perceptions of the self in mediating anonymity effects on perceptions and behaviour within the group. Self-categorization was found here to significantly increase group conformity. This result extends earlier findings that anonymity increases stereotypical perceptions of group members and group attraction, and consolidates the central position of self-categorization in mediating these effects. Furthermore we delineate two routes by which self-categorization increases group consensus. First, self-categorization with the group directly increases adherence to the

specific group norm. Second, self-categorization increases a sense of duty to the group and this in turn increases adherence to the group norm. This latter process may represent a more abstract level of social influence whereby being a member of the group induces a sense of duty to go along with the group consensus, even if one does not agree with the specific group norm (i.e., because the group is internalized, even if the specific norm is not).

Conclusions

The results of these studies provide support for some aspects of SIDE and together suggest how the model might be further developed.

Mediation

There are clear indications from these studies that anonymity has reliable effects on processes relating to self-definition and definition of others in terms of a salient interacting group, and that these processes are in turn responsible for a range of additional attitudes towards the group as well as group behaviour. Self-categorization in particular has a primary mediating role, increasing the tendency to stereotype others in terms of the group, attraction towards the group, sense of duty towards the group, perceptions of accountability within the group, attention to the group task and conformity to group norms. Anonymity effects on these variables can be considered under three headings: depersonalization processes (which we have also referred to as social deindividuation processes), social identification processes, and social influence processes. Our earlier formulations of SIDE implied that anonymity effects on depersonalization processes were of two kinds and that depersonalized perceptions of others within the group was, if not the main process driving anonymity effects on group behaviour, then was at least of equal status with the process of depersonalized perceptions of the self. It appears from these studies however that within an intragroup context anonymity's effect of increasing perceptions of others in terms of the group prototype is not directly felt

but instead is mediated by self-categorization with the group.

The effect of anonymity on social identification processes (defined in terms of its cognitive self-definitional aspect, self-categorization, and its affective aspect, group attraction) similarly appears to be driven by self-categorization. Anonymity's effects on group attraction were mediated by self-categorization, and also but to a lesser extent by depersonalized perceptions of others. This too would seem to suggest that our earlier presumption that anonymity achieves its effects primarily, or at least strongly, by reducing perceptions of individuality in others, which subsequently influences self-definition, may need to be re-specified to give primary status to the direct effect of anonymity on social comparison processes involving the self. It remains to be seen however how far this respecification may apply to more explicitly intergroup contexts and specifically the degree to which it can account for the effects of anonymity on perceptions and behaviour towards outgroups.

Confirmation was found in these studies for the SIDE specification of anonymity effects on social influence processes within the group, and further developments are suggested by the results. Our primary measure of normative influence was conformity to the group consensus and once again, self-categorization had a primary role in mediating anonymity's effect of increasing conformity, although other processes were also implicated. Self-categorization had not only a direct effect on conformity, but also increased perceptions of accountability within the group and a sense of duty in the groups. As discussed above, we consider that these different routes to conformity reflect different levels of social influence that go beyond simple conformity to a specific group decision. The effect on sense of duty to agree with the group suggests a broader level of social influence that is also distinct from mere compliance to the group decision. It is closer to the concept of conformity arising from responsibility towards the group, or as an expression of support for the group, and therefore

implicates moral or social rather than purely instrumental concerns. The latter is captured more by our accountability measure, and it was interesting to observe that a sense of belonging to the group increased perceptions of accountability, leading to more attention to the task and increased conformity in turn.

<u>Cognitive and strategic SIDE</u>

This leads us to consider the cognitive and strategic aspects of SIDE, and in particular the extent to which they should be regarded as two independent sides of SIDE. Our current formulation of SIDE suggests that opposing effects of anonymity on cognitive and strategic processes are to be found in intragroup contexts, with anonymity increasing cognitive, depersonalization processes, and identifiability increasing strategic, accountability and support processes within the ingroup. However, our studies now suggest that this position oversimplifies the effects of anonymity and underestimates the interplay between depersonalization and accountability processes. We found that identifiability increased accountability within the group, but this was offset by the effect of anonymity increasing perceptions of accountability, by increasing self-categorization in terms of the group. Clearly then cognitive, self-definition processes also have implications for the strategic aspect of SIDE in ways that we need to elaborate.

There are other reasons why we should be wary of assuming that anonymity inevitably increases the influence of the social group. While anonymity may often depersonalize perceptions, there are also circumstances in which visibility appears to depersonalize perceptions, if cues to the social group are readily visible. Gender was one kind of social grouping that we identified as having this effect, the argument being that cues to gender are readily apparent and may therefore have stronger influence when visible irrespective of other depersonalization processes that may be operating contemporaneously.

<u>Transient identifications</u>

This brings us to consider a further point about the level of SIDE effects that is highlighted by these studies. Whereas our earlier studies aligned definitions of local interacting groups with wider social categorizations, they did not allow us to specify the social level of the observed effects. One might argue that contextual variables such as anonymity are more likely to influence relatively transient identifications rather than long-standing identifications such as nationality, gender or perhaps political affiliations, for which the group definition and one's relation to it are relatively stable. Our studies highlight the need for research on this aspect of SIDE. While they suggest that anonymity has stronger effects on transient identifications, its effects are not always confined to this level and identification with relatively stable social categories such as gender also appears to be influenced by relative anonymity. Moreover, the relation of anonymity effects to the salience of these social categories is unclear, as is the underlying dimension. It earlier formulations we have drawn a distinction between local identifications and identifications with wider social categories, however the crucial dimension may turn out to be the relative transience of the identifications rather than distinctions between the local and global contexts.

<u>Contemporaneous processes</u>

Taken together, our studies also suggest that anonymity can have many effects operating simultaneously some of which are antagonistic to others. Thus far we have tended to position SIDE processes as occurring in simple opposition to one another or in opposition to processing occurring outside of the boundaries of the model implied by social identity theory. Thus we conceive of cognitive versus strategic aspect of SIDE; identity-based groups versus aggregates of interpersonal relationships, and more recently common identity groups versus common bond groups. The studies here highlight that these distinctions refer to alternative group processes but do not necessarily imply that processes operating in a

particular group are restricted to one form or another. We found for example, that visibility increased group attraction directly (implicating interpersonal attraction) and at the same time that anonymity of self increased self-categorization, which in turn increased group attraction (implying depersonalization in the group attraction process). This observation may reflect that different processes operating concurrently may have implications for one another. For example, groups of friends should not be assumed to be defined solely by the presence of interpersonal bonds; the presence of such bonds may also reflect a shared identity ("we are all friends together") that further defines that group.

Types of anonymity and decomposing anonymity

In previous discussions of anonymity we have tended to think of it as a relatively monolithic concept. However different types of anonymity can be distinguished, such as visible anonymity (lacking physical nonverbal cues to the self), nominal anonymity (lacking a name or personal identifier), biographical anonymity (lacking details of self), or domiciliary anonymity (lacking a traceable address). These different forms of anonymity may have similar or different effects, and some forms may have additional effects over others, which crucially depend upon contextual conditions, as well as intra- versus inter-group contexts. For example domiciliary anonymity may have more implications for accountability in some contexts. In these studies we focused primarily on visual anonymity and also nominal anonymity. However we need to explore further the effects of different forms of anonymity in different contexts.

Conceptually SIDE draws a useful distinction between two aspects of anonymity: anonymity of self to others, and anonymity of others to self. However, investigation of these two components of anonymity may not be straightforward. In one study here for example, we saw that an asymmetrical configuration of anonymity with the group can produce effects suggestive that the asymmetry creates a cross-cutting categorization within the interacting

group. Furthermore these two components of anonymity appear as if they activate interrelated rather than independent processes.

SIDE theory and SIDE applications

A final point for consideration returns us to the intimate relationship between the development of the SIDE model and its primary domain of investigation, computer-mediated communication described at the start. That is whether the SIDE project is best considered as one in which we attempt to develop general principles of group behaviour that we then apply to specific contexts such as computer-mediated communication, or public crowds, and measure the extent to which these general principles hold in these specific domains. Such a view represents a strong distinction between the content of the model and the context of application. However, as the number of studies of SIDE accumulates and the complexity of the results increases it may become increasingly difficult to maintain the boundary between the content of the model and the contexts of its application. We should perhaps be wary of over-elaborating the social psychological content of the model as a response to this potential crisis without considering the need to elaborate context. The studies described here represent an attempt to elaborate upon the context of application (by investigating different forms and sub-components of anonymity) as well as the range of social psychological processes that they implicate. However, we need to develop the range of contexts that we explore, and our future research should also seek to develop the nonrecursive dimensions of SIDE in which the effect of group processes on the construction of the group context is given equal attention.

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