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Individuality and Social Influence in Groups: Inductive and Deductive Routes to Group Identity

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A distinction between forms of social identity formation in small interactive groups is investigated. In groups in which a common identity is available or given, norms for individual behavior may be deduced from group properties (deductive identity). In groups in which interpersonal relations are central, a group identity may also be induced from individual group members' contributions, making individuality and individual distinctiveness a defining feature of the group (inductive identity). Two studies examined the prediction that depersonalization produced by anonymity has opposite effects for groups in which social identity has been induced or deduced. Results confirmed the prediction that depersonalization increases social influence in groups whose identity was more deductive. In contrast, depersonalization decreases social influence in inductive identity groups. Implications for the role of social identity in small groups are discussed.

Keywords: identity, social influence, group polarization, communication, small group

The study of social influence is characterized by a recurrent debate about whether influence exerted within groups is primarily an interpersonal phenomenon (e.g., brought about through attraction or interdependence) or whether it is better explained by social identity-related factors (such as group norms). The present article aims to resolve this individual–group dualism and suggests that social identities in interactive groups can be based on idiosyncratic contributions of its members as well as on preexisting social categorizations. Two studies used a group polarization paradigm (Moscovici & Zavalloni, 1969) to examine the consequences of these two routes to identity formation for social influence. We suggest that polarization may occur in groups formed on the basis of interpersonal relations and a shared identity and that the content of these groups' identities is informed by separate processes that are involved in the achievement of a consensually shared group position.

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Individuality and Group Identity as Opposing Forces

Although it is generally recognized that individual and social levels of analyses are not independent, contemporary group research has a tendency to treat individuality (or individual identity) and group identity as mutually exclusive. For example, the contrast between collective and individual outcomes is at the heart of interdependence theory, exemplified by the work on social dilemmas (Kelley & Thibaut, 1978). Likewise, self-categorization theory (SCT) has emphasized the functional antagonism between the salience of individual and social levels of identity (Turner, 1985, 1991). The preferred level at which group processes are explained also shifts from approach to approach, and in this sense, interdependence theory and SCT are sometimes pitted against each other. Whereas some interdependence scholars have, for example, explained a variety of group processes by reference to interpersonal processes to which individuality is central (e.g., reciprocity, similarity, and attraction), SCT scholars have emphasized group attraction and depersonalization as the mechanisms by which groups exert influence over their individual members (Hogg, 1992; Hogg & Hains, 1998). In all of this, a distinction is maintained between factors existing at an interpersonal level and factors at a group level.

Of course, such attempts to explain a wide variety of group processes exclusively at one level of analysis (individual or group) are bound to run into difficulties, especially in contexts such as small groups, in which interactions may form the basis for many group-level processes of influence (including, it should be noted, emergent consensus about in- and out-group stereotypes, Haslam, Turner, Oakes, McGarty, & Reynolds, 1998). To meet this challenge, contemporary social psychology has distinguished types of groups in which the individual and interpersonal interaction are

either central or not. Thus, distinctions have been proposed between common bond and common identity groups (Prentice, Miller, & Lightdale, 1994), between interpersonal and collective identities (Brewer & Gardner, 1996), or between dynamic and categorical groups (Wilder & Simon, 1998; see also Lewin, 1948). Empirical studies of lay theories and group typologies broadly confirm and extend such distinctions (Deaux, Reid, Mizrahi, & Ethier, 1995; Lickel et al., 2000). All these perspectives argue that there is a fundamental difference between personal groups (e.g., interactive teams at work), in which interpersonal relations are central to the development of, among other things, social influence processes within the group, and categorical groups (e.g., political parties), in which superordinate identities are pivotal (Postmes, Baray, Haslam, Morton, & Swaab, in press; Postmes, Haslam, & Swaab, 2005). In some cases, this has led to suggestions that processes of social identity are less relevant or salient in personal and interactive groups (Moreland, Argote, & Krishnan, 1996), whereas processes of an individual and interpersonal nature are subservient or inconsequential in other types of groups that are more categorical in nature (Hogg, 1996).

Cross-cutting all types of groups, however, there is a long and strong tradition within social psychology of emphasizing the need for an interactive social psychology, which attempts to overcome the individual–group dichotomy, if only because the individual is the raison d′être of the group, and vice versa (Asch, 1952; Cooley, 1902; Durkheim, 1984; Lewin, 1948; Mead, 1934; Sherif, 1936; Turner & Oakes, 1986). Indeed, some research has explored the way in which intragroup dynamics inform intergroup processes (Deaux & Martin, 2003; Drury & Reicher, 2000; Haslam, Turner, Oakes, Reynolds, et al., 1998; Lyons & Kashima, 2003; Stangor, Sechrist, & Jost, 2001; Stott & Drury, 2004).

Yet, despite the sound theoretical basis for a more interactionist social psychology, there have been rather few empirical attempts to study the process by which individual and group-level factors interact in the domain of small groups. The current article argues that we may need to rethink the role that identity plays within interactive groups if we want to make progress on this front. As a first step in this direction, and to resolve the apparent tension between individuality and social identity, we propose that individuality (or individual distinctiveness) can play a more or less central role in the formation of social identity in small interactive groups.

Can Individuality Bolster Solidarity?

A key problem in current social-psychological conceptions of group types, we argue, is that they implicitly or explicitly reinforce the idea that the expression of individuality, which is so prominent in small interactive groups, is irreconcilable with the formation of a social identity. In recent research, we have argued that an emphasis on diversity, heterogeneity, and individuality, in addition to being evidence of a lack of unity, can also be an expression of solidarity and collective identity (Hornsey & Jetten, 2004; Jetten, Postmes, & McAuliffe, 2002; Postmes, Spears, & Cihangir, 2001). Others have noted, too, that the expression of individuality within the group does not appear to obstruct or minimize the capacity for social attachment (e.g., Bettencourt & Sheldon, 2001; Deci & Ryan, 1991; Swann, Kwan, Polzer, & Milton, 2003; Vignoles, Chryssochoou, & Breakwell, 2004). In the present article, we take this one step further and argue that expressions of individuality can even form the basis for the inference of a social identity.

The idea that individual distinctiveness can be the very basis for solidarity within a group can be traced back to the work of Durkheim (1984). Durkheim makes a distinction between mechanical and organic solidarity (see also Haslam, 2001; Postmes, Baray, et al., 2005). Mechanical solidarity, he argues, arises out of the recognition of similarity: The collective takes precedence over individual personality (a phenomenon that can be found within small groups as well as within social categories). On the other hand, Durkheim talks of organic solidarity, which arises out of differentiation within the group, between individuals (and subgroups), and out of the roles, attributes, and skills that those individuals bring to the collective.

To illustrate organic solidarity, Durkheim's (1984) favored metaphor is of the village, where the division of labor is a conditio sine qua non for the very existence and success of a community. In such cases, a strong group identity can emerge only when each group member makes a unique and effective contribution or when they have, in Durkheim's words, a "personality." Thus, he argues, organic solidarity is strengthened by diversity as much as mechanical solidarity is weakened by it (see, e.g., Haslam, Eggins, & Reynolds, 2003). What Durkheim's distinction highlights is that individualism and collectivism may both serve as means to achieve solidarity and that, by exension, individualism does not preclude solidarity (e.g., Jetten et al., 2002; Postmes, Spears, & Cihangir, 2001).

The implication of this is that a sense of solidarity cannot be just mechanically superimposed on a collection of individuals through a common categorization but can also be achieved and promoted organically through intragroup interaction, in which individuals may express themselves in a more or less idiosyncratically individual way. This is a small step removed from the notion that individuality can give rise to a sense of social identity (Postmes, Haslam, & Swaab, 2005; Turner, 1982), which we seek to advance here (see also Deaux & Martin, 2003; Sheldon & Bettencourt, 2002). The importance of this idea is, on the one hand, that it may help us understand the role that individuals play in the construction of group-level consensus about norms and stereotypes of out- and in-group. On the other hand, it also opens an avenue to understanding the multiple forms of social influence that are (indirectly or directly) exerted in small interactive groups through individual inputs, interpersonal relations, and group-level factors such as social identity.

A Model of Individuality in Social Identity

The model we propose here builds on the ideas mentioned above. Like Durkheim (1984), we suggest, through our model, that there is a difference between personal (organic) and superordinate identity (mechanical) sources of influence in groups. Going beyond Durkheim's theory, this is not a distinction between types of groups; we propose these are properties that can be found to varying degrees in all groups. What matters, according to this model, is that organic and mechanical sources of influence contribute to the mutual constitution of group identity and individual autonomy. Thus, the model argues for two continua, along which the content of group identity is more or less grounded in individuality and superordinate identity, respectively.

Along one continuum, groups can be characterized as having a more or less *deductive* social identity (cf. Turner, 1982). What defines the social identity of a deductive kind is that group members are differentiated from a background (the population at large or a specific comparison group) by a property (or set of properties) that they have in common with the group. This property may be an attribute (e.g., a skin color); an attitude (e.g., a political view); a common interest, goal, or organization (e.g., at work); or related factors (such as some form of entitativity or essence; see also Lickel, Hamilton, & Sherman, 2001; Spears, Scheepers, et al., 2004; Yzerbyt, Corneille, & Estrada, 2001). It is important to note that it is not the case that the people in the group need to like each other or recognize their similarities as individuals. Rather, members of such groups recognize and share a certain common attribute that is given meaning at a supraindividual level and within an intergroup context (i.e., features that are shaped by historical and sociostructural factors and by intergroup dynamics; see Reicher, 1996, for a rich description of the variables involved). From these, individual group members then deduce properties to construct an internalized group identity comprising stereotypes and norms. Through this top-down process of applying superordinate group properties to the self, the group's norms, stereotypes, and such provide the boundaries within which its individual members define their identity further, by seeking either distinctiveness or conformity. As a result of this, individuality within the group is expressed by reference to those dimensions that are normatively relevant to the group (e.g., Turner, 1991).

Examples of interactive groups in which identity is deduced can be found in those contexts in which a group is part of a clearly defined larger (inter)group context. Political working parties are likely to deduce part of their identity from the ideological content of the overarching political movement, which channels and constrains group activity, and part of it by contrasting themselves to comparable working parties of the out-group. Similarly, units in the military derive their identity and work practices largely from the organization they are in and by contrasting themselves to other units within the larger organizations or to their enemy (depending on context). Similar processes may be observed in larger social categories as defined by gender, race, and social class. However, interpersonal influences are not likely to be irrelevant to the formation of social identity, even in such groups (Postmes, Haslam, & Swaab, 2005). Moreover, there are numerous group contexts in which we may find a strong sense of social identity but in which overarching identity or intergroup context are rather less obvious and pertinent.

Along a second continuum, group identity can be characterized as being formed more or less inductively (cf. Turner, 1982). We argue that social identities can also be constructed from the bottom up (through communication) and, thus, ultimately inferred from expressions of individuality (i.e., expressions of idiosyncratic positions; cf. Sassenberg & Postmes, 2002). Thus, it is through this process of induction that the individual actions of group members (whether they be ordinary group members, powerful individuals, or leaders) can shape group identity, and it is partly through this process that social change becomes possible (Postmes, Baray, et al., in press). It is important to stress that this does not necessarily mean that the formation of an inductive identity depends on the existence of dissimilarity within the group. An inductive identity can derive from interpersonal similarities (which can be contrasted from the group-level similarities characterizing deductive identities) as well as from distinct individual contributions.

Social Identity Induction Through Interaction and Communication

There are various ways in which intragroup interactions can inform the content of social identity. It is a well-known fact that the observation of in-group member actions gives rise to spontaneous inference of norms or conventions (Asch, 1952; Festinger, 1954; Postmes, Spears, & Lea, 2000; Sherif, 1936). Moreover, group members may engage in active negotiation over identity (Reicher, 1987; Reicher & Hopkins, 2001). More counterintuitively, diversity may also directly lead to solidarity via several routes. The ability to individuate an other is, in itself, a marker of shared identity or common in-group membership (Marx, 1857/1993), and by implication, the group may interpret a display of distinctiveness as a sign of trust in the collective on the part of the deviant. Finally, a display of diversity may strengthen the group's ability for coordinated action and enhance its efficacy and associated feelings of collective power.

A variety of factors might help this process of induction along. Interdependence and interpersonal attraction undoubtedly create conditions under which people are increasingly willing to assimilate behaviorally to each other. However, they are certainly not essential. In recent research, we have shown that priming individual preferences prior to interaction led to the induction of a group norm during interaction, even when group members did not know each other individually, they were completely anonymous to each other, and there was no expectation of future interaction (Postmes, Spears, Sakhel, & De Groot, 2001). At the same time, this process of induction does not appear to depend on categorization as an in-group in the SCT sense that there is an explicit or implicit contrast with a certain out-group (or out-groups). Indeed, Sherif's (1935) classic study of norm formation, as well as more recent studies of linguistic accommodation (Postmes et al., 2000), suggest that the inference of social norms, at least, can be a relatively automatic process occurring through interaction within a group.

This is not to say that this form of induction occurs in all groups. An important boundary condition to its occurrence, we suggest, is that the other group members are not categorized as out-group members. In recent research we showed, for example, that intergroup communication led to convergence on a common position, but only if group distinctions were blurred (Postmes, Spears, & Lea, 2002). Similarly, a tendency for seemingly automatic behavioral assimilation turns into a tendency for seemingly automatic behavioral contrast when the target other is an out-group member (Schubert & Haefner, 2003; Spears, Gordijn, Dijksterhuis, & Stapel, 2004). Induction occurs, we suggest, only when others are perceived as potentially valid sources of social confirmation (cf. Festinger, 1954; Turner, 1991).

A good example of inductive processes of identity formation can be found in the small interactive group of most social psychology experiments. These groups are formed within an artificial context that may impose some interdependence or common fate on people but that rarely offers salient cues from which a social identity can be readily inferred (in contrast to experiments in which individuals are experimented upon as members or perceivers of social categories). It would seem that such groups can most

easily induce a social identity from contributions made by individual participants during, say, a group discussion, unless of course the experimenter provides a context from which identity can be deduced (e.g., the presence of competing out-groups, the opportunity to contrast the group from the experimenter, or group norms).

Social Identity Formation and the Nature of Social Influence

The distinction between inductive and deductive identity has implications for our theorizing of social influence in groups. Insofar as inductive identity is concerned, social influence of the group over its members can be traced back to the characteristics of the group, which emerge as a function of individual personalities and interpersonal attractions within the group. However, and in contrast to interpersonal models of social influence based on attraction or interdependence, it should be noted that this influence is ultimately social as much as individual, in that individuals negotiate the definition and direction of the group as a whole and thereby influence the definition of who "we" are (Haslam & Platow, 2001; Reicher & Hopkins, 2001).

Conversely, in deductive identity groups, we expect that influence is based on the underlying similarity or essence upon which the group is founded (e.g., Yzerbyt et al., 2001). It is from this, encompassing comparisons and interactions with relevant out-groups and group history, that norms are deduced that influence the behavior of individual members. Hence, deductive identity has repercussions for individual group members, who will seek to express their individuality more or less distinctively within its boundaries (Codol, 1975).

In sum, we propose a distinction between different paths to social identity formation as induced from individual qualities within the group and as deduced from commonality at a superordinate group or category level, or a mixture of both. In conjunction with the inductive or deductive basis of social identity, the origin of social influence exerted within the group may be traced back to more (inter)personal or more identity-based and normative factors. We illustrate and examine this proposal in the domain of group polarization, because this is an area in which there exist unambiguous competing explanations of a group phenomenon established on intrapsychic, interpersonal, or identity-based premises (Turner, 1991).

Prior Research on Group Polarization

The phenomenon of group polarization was, for many years, the testing ground for different models of social influence. Social psychologists have argued that group discussion polarizes the attitudes of group members either through social comparison (e.g., Brown, 1965; Sanders & Baron, 1977) or informational influences (e.g., Burnstein & Vinokur, 1977). Reviewers have concluded that both types of influence are to some extent responsible for this effect (e.g., Isenberg, 1986) and that the predominance of each is determined by contextual factors such as the type of issue under discussion (e.g., Kaplan & Miller, 1987).

SCT provides an alternative explanation for these polarization effects, which suggests that group polarization is a form of identity-based social influence. According to SCT, polarization is a function of social identity salience and should be understood as the convergence of group members upon a group prototypical position or norm (Turner, 1982; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). In small groups, SCT argues, this norm is inferred from comparisons (explicit or implicit) with an out-group. A critical aspect of this explanation (for the current article at least) is the distinction this entails between convergence upon the average opinion of group members and consensualization upon a polarized norm (Turner, 1991, pp. 50–51). Convergence upon the average, according to SCT, could signal a process of social agreement within groups on the basis of processes of informational validation, in which interpersonal attraction or interdependence could also play a role (Asch, 1952; Festinger, 1954; Sherif, 1935). However, unique to SCT is the prediction that the group uses polarization to signal its consensual and distinctive position. Group polarization, therefore, reflects a concrete instantiation of the identity that a group assumes through intragroup interaction within a particular social context, in which the group seeks to achieve intergroup distinctiveness.[1]

Evidence supporting the SCT account of polarization has been most forthcoming in studies examining isolated individuals. People respond more favorably to persuasive arguments from the in-group (e.g., Mackie, 1986; Wilder, 1990) and polarize when an intergroup context is made salient (Hogg, Turner, & Davidson, 1990; Turner, Wetherell, & Hogg, 1989). However, in studies using interactive groups without explicit reference to an out-group, the evidence for SCT's explanation has been less compelling. It has been argued that SCT does not find support in such paradigms because "members of such ad hoc groups are unlikely to feel much cohesiveness or sense of identity" (McGarty, Turner, Hogg, David, & Wetherell, 1992, p. 16).

This lack of support in face-to-face groups can be contrasted with research on groups interacting via computers, where SCT predictions have received strong support. This research has examined the impact of individuation (i.e., the ability to individually identify others) on group processes. It shows consistent evidence that under specific conditions (when a common identity and norms are salient), group polarization in the direction of the group norm occurs when group members cannot be individually identified (see, e.g., Postmes, Haslam, & Swaab, 2005; Spears, Postmes, Lea, & Wolbert, 2002, for reviews). Thus, when individual distinctions within the group are obscured, and group members are in this limited sense "depersonalized" (Turner, 1985), polarization is at its strongest. It is noteworthy that in these studies, polarization occurs precisely when accountability pressures and interpersonal influences are likely to be weak and that these effects occur even when the content of discussion is controlled.

In sum, the question of whether group polarization is a function of persuasive argumentation, social comparison processes, or social identity processes remains a moot point. Yet we argue that it would be a disappointing conclusion, and a missed opportunity for theoretical specification, to simply extend Isenberg's (1986) suggestion to SCT and conclude that many different processes are

[1] There is a possibility that groups converge on a prototypical position that coincides with the average position of a group, as would be the case in a centrist political party comparing itself to parties on the left and right simultaneously (Turner, 1991).

probably involved. The problem is that such a conclusion lacks theoretical parsimony and fails to do justice to the empirical variability of the polarization phenomenon: Different processes would appear to play a role in different contexts. In this article, we focus on the question of when different factors will be implicated in causing polarization by examining how the social identity of the group in question is formed.

We propose that the distinction between inductive and deductive paths to identity formation may partially explain the presence of interpersonal or group influences in group polarization. In line with SCT, we assume that group polarization is an epiphenomenon of the expression of group identity on a particular attitude topic. When a group is confronted with a question to discuss a particular attitude topic, they will use their interaction to search for a position on the attitude continuum that mutually expresses the position of the group and the individual within it. We propose that there are inductive and deductive aspects to this search, the prevalence of which is determined by, among other things, the group's history, within which the individual may have been more or less central. When groups have been formed around individuality and relationships, group identity on the specific attitude dimension under consideration is induced from individual contributions to the group. Conversely, when groups have been formed around a shared identity at the group level, group identity on the attitude topic is deduced. As noted above, research has demonstrated that social influence exerted by social identity may be particularly strong under conditions of depersonalization (i.e., an inability to individuate group members because of relative anonymity), whereas interpersonal influences may be stronger when group members are individuated (i.e., personally identifiable).

We therefore expect, consistent with SCT and the social identity model of deindividuation effects, that social identities are most easily deduced when group members are depersonalized, as evidenced by group polarization and norm formation (Postmes & Spears, 1998; Reicher, Spears, & Postmes, 1995; Spears & Lea, 1992). We predict the reverse for the induction of identity, which should be most easily achieved when group members are individuated. This latter prediction is also consistent with some theories of social influence in small groups, which are based on interpersonal influence mechanisms and interdependence (Cartwright, 1968; Deutsch & Gerard, 1955; Diener, 1980; Latané & Nida, 1980; Lott & Lott, 1965).

Overview

The studies consisted of an orthogonal experimental manipulation of two independent variables: individuation and group formation. These manipulations, and all subsequent treatments, measures, and analyses, were conducted at the level of the group. The purpose was to demonstrate that both groups formed on the basis of interpersonal relations and groups with a shared identity can show evidence of group polarization. It was expected that polarization and identity-based social influence would be most strong in groups formed around interpersonal relations when members were individuated, as compared with when members were depersonalized. Conversely, identity-based social influence in groups formed around a shared identity was expected to be stronger in depersonalized groups compared with individuated groups. These predictions were investigated in a group polarization paradigm in which students a priori had slightly pro or anti attitudes toward the topics they debated. The degree to which groups were polarized after discussion was the main index of identity-based social influence.

Study 1

Method

Participants and Design

Undergraduate students at the University of Amsterdam (66 women and 30 men, age 21 on average) participated in exchange for course credit. They were randomly assigned to 32 groups of 3 persons, with each group randomly assigned to an experimental condition. Because of software failures, two groups could not complete the study, and their data were discarded. The design was a 2 (depersonalization: depersonalized vs. individuated) $\times$ 2 (group formation: interpersonal vs. shared identity) factorial design. There were 8 groups in each shared identity condition and 7 in each interpersonal condition. Depersonalization was manipulated during the group discussion, in which group members were either individually identifiable through portrait pictures (individuated) or not (depersonalized). The manipulation of group formation was achieved through an elaborate false-feedback procedure, in which participants were ostensibly assigned to interpersonal or shared identity groups.

Procedure and Independent Variables

To manipulate individuation successfully, we selected participants who did not know each other prior to the experiment. Moreover, two or three groups of participants were present in the laboratory simultaneously, so that the ostensible assignment to interpersonal or shared identity groups would be credible. Upon entering the laboratory, each participant was individually escorted to an isolated cubicle, where a digitized picture was taken. In the cubicle there was an Apple Performa PC, which was used to administer the entire experiment. After giving brief instructions about PC usage, the experimenter left the cubicle, and participants received their instructions via the PC.[2]

Participants were told that the experiment was concerned with "online behavior of personal bond and shared identity groups." Then, participants were informed that personal bond groups exist because group members like and value each other: Members have a mutual bond, as in a group of friends, for example. It was also explained to participants that in shared identity groups these personal friendships are less important. Shared identity groups, they were told, exist because its members share a common outlook or unite behind a shared goal, as is the case in political parties, for example. The understanding of these instructions was verified with two multiple-choice questions about the nature of each group type. If they answered incorrectly, participants received the instructions again.

After this background information, group formation took place. Participants were informed that the computer would subject them to a test that would match them with their group, and this could be either a personal bond or shared identity group. In the interpersonal condition, participants completed an impressive-looking personality checklist, requiring them to select 8 of 40 adjectives that described them best and then to rank order these by their importance. Subsequently, they did the same for their two best friends or acquaintances. They were informed that prior research had generated group profiles, on the basis of which they would now be matched with a group consisting of people "who could well have been close personal friends. Thus, you are matched with a personal bond group." No information was given about how the matching took place, and in reality, allocation of participants was entirely random.

[2] A copy of the computer program can be requested from Tom Postmes.

In the shared identity condition, participants were required to complete a personal and political values questionnaire. The questionnaire consisted of 43 statements about various societal and political issues, with which participants could state their agreement or disagreement on 5-point Likert-type scales. After completion, they were informed that their responses were used to match them with a group consisting of people "who are characterized by a similar worldview to your own. Thus, you are matched with a shared identity group." Following this allocation procedure, participants were asked to recall what kind of group had been formed.

After the group formation phase, the discussions took place. Participants were briefly instructed about how the discussion software worked: They could chat with each other via IRC (Oikarinen & Reed, 1993), a synchronous communication program. They discussed two topics for 15 min each, and after each discussion they answered some questions about the discussion. During the discussion, depersonalization was manipulated with procedures identical to those reported in detail elsewhere (Postmes, Spears, Sakhel, & De Groot, 2001). In the individuated condition, participants saw pictures of the group members (including themselves) at the left-hand side of the screen, with the user ID written below (a group code plus number, e.g., "b4"). In the depersonalized condition, no individuating information was displayed, just the user IDs. Prior research has established this to be an effective manipulation of individuation (Tanis & Postmes, 2003).

The start and end of group discussions was signaled by experimenter messages on the discussion screen: one at the start, one after 13 min to warn of the end of the discussion, and one after 15 min to prompt participants to fill in a brief postdiscussion questionnaire. Two consecutive discussions were held. The first discussion topic was related to social security. Participants were told,

> Increasingly, employees are hired on a temporary basis. However, employers argue that existing governmental restrictions still hinder the flexibility they need. Now, the government also seems resigned to the fact that short-term contracts will be the norm for the immediate future, and proposals are drawn up to relax labor laws. Critics argue that this trend undermines social security, and is ultimately detrimental to the quality of work and living. Please discuss this issue with your fellow group members.

For the discussion about the second topic, participants read a similar story about governmental plans to create an island in the sea in order to build a new airport, and environmentalists' arguments against this plan. Both topics were piloted among undergraduates. The pilot data showed that students were generally opposed to temporary contracts and favored maintaining social security and that they were opposed to an airport in the sea and favored preservation of the environment over potential economical gains. Moreover, they assumed that fellow students would share their views on both issues. After the discussion, participants were debriefed about the purpose of the study and received their course credit.

Measures

The postdiscussion questionnaire after each discussion consisted of statements with 9-point scales (1 = *strongly disagree*, 9 = *strongly agree*). Attitudes of participants were measured with scales consisting of two questions each. For the first topic, the statements were "The shift toward a higher proportion of temporary contracts on the job market is a good one" (recoded) and "Social security is more important than a company's flexibility to hire people for short periods of time." The second topic's statements were "An airport in the sea is a good idea" (recoded) and "Environmental preservation is more important than economic growth."

Participants answered a number of questions about their group and the discussion. The first was a check of the effect of the depersonalization manipulation on anonymity ("During the preceding task I felt anonymous to the group members I communicated with") and individuation ("It was clear to me who said what during the discussion").[3] Interpersonal attraction within the group was measured with two questions, "I feel connected to the other people in my group" and "The other people in this group are important to me." Four questions asked about the degree to which the group atmosphere was interpersonal and friendly: "I think the people in my group get along well with each other personally," "I have the impression that the people in this group understand each other well," "The atmosphere during the discussion was good," and "The people in this group appear to follow their heart."

After the second questionnaire, a final multiple-choice question was added as a check of the manipulation of group type. Participants were asked "I would describe my group to someone else as . . .," and they could respond with "a personal bond group," "a shared identity group," or "don't know."

Results

Reliabilities of the scales were satisfactory. Cronbach's alpha's of both attitude scales were .75. The interpersonal attraction scale had an alpha of .89, and the group atmosphere scale's alpha was .70. In addition, the manipulation checks indicated that all participants understood the instructions and that all participants accurately identified what group they were assigned to. The check of the group formation manipulation indicated that after the study, 79 participants (88%) believed that the nature of their group was as intended (interpersonal or shared identity). Seven participants indicated they were not certain how to describe their group, and only 4 participants reported that their group was of the opposite type.[4] In sum, the manipulation of group formation appears to have been largely successful. All further results were analyzed with 2 (depersonalization) $\times$ 2 (group formation) analyses of variance conducted on the average group scores.

Manipulation Check of Depersonalization

The check of the depersonalization manipulation indicated that it too was successful. Results showed a main effect of depersonalization on the anonymity check, $F(1, 26) = 27.53$, $p < .001$, $\eta^2 = .51$.[5] In the depersonalized condition, groups ($n = 14$) indicated that they felt anonymous ($M = 5.69$, $SD = 1.12$) compared with the individuated condition ($n = 16$, $M = 3.78$, $SD = 0.80$). The group formation main effect and interaction were not significant (Fs < 1.20). With regard to individuation, a similar (but reversed) main effect of depersonalization was reliable, $F(1, 26) = 12.55$, $p < .01$, $\eta^2 = .33$. In the individuated condition, groups indicated that they were better able to individuate group members ($M = 6.59$, $SD = 0.75$) compared with the depersonalized condition ($M = 5.49$, $SD = 1.08$). The group formation main effect once more was not significant ($F < 1.50$), and the interaction was not

[3] Because these questions were repeated after the first and the second discussions, the statistics reported here are the averages computed across the two. The aggregate effects do not deviate substantially from their constituent parts.

[4] These four were in separate groups and separate conditions, and removing them from the analyses does not substantially alter results. Because they had earlier indicated to have understood the manipulation, they were retained in the reported results.

[5] According to Cohen (1977), effect sizes of $\eta^2 = .01$ are small, $\eta^2 = .06$ are medium, and $\eta^2 = .14$ large. Group-level effects can be larger as a result of discounting within-group variance.

reliable either, although there was a trend, $F(1, 26) = 3.71$, $p = .07$, $\eta^2 = .13$.

Attraction and Group Atmosphere

Two measures assessed the impact of the group formation manipulation on the interaction within the group. The group formation manipulation had the predicted impact on interpersonal attraction: Interpersonal attraction was higher in the interpersonal groups ($M = 4.75$, $SD = 0.86$) compared with the shared identity groups ($M = 3.82$, $SD = 1.25$), $F(1, 26) = 5.25$, $p < .05$, $\eta^2 = .18$. Similarly, the group atmosphere was rated to be more congenial in interpersonal groups ($M = 5.92$, $SD = 0.56$) compared with shared identity groups ($M = 5.34$, $SD = 0.58$), $F(1, 26) = 7.43$, $p < .05$, $\eta^2 = .22$. Main effects of the depersonalization manipulation and the interactions were not reliable (Fs < 0.90).

Polarization

Finally, the attitude scales showed the predicted interaction. Across both measures the main effects of depersonalization and group formation were not reliable (Fs < 0.20). The predicted interaction, however, was very reliable, $F(1, 26) = 9.70$, $p = .004$, $\eta^2 = .27$. As can be seen in Figure 1, this effect was as predicted. Examination of simple main effects confirmed that the impact of depersonalization on polarization was opposite across group formation conditions: Whereas individuation increased polarization in interpersonal groups, $F(1, 26) = 5.94$, $p = .02$, $\eta^2 = .19$, there was a trend for depersonalization to increase polarization in shared identity groups, $F(1, 26) = 3.81$, $p = .06$, $\eta^2 = .13$. Thus, the predicted cross-over interaction was obtained: Attitudes were most polarized in the shared identity groups when its members were depersonalized ($M = 6.93$, $SD = 1.05$) compared with when they were individuated ($M = 5.88$, $SD = .74$). Conversely, in interpersonal groups, the opposite effect was found: Attitudes were more polarized when its members were individuated ($M = 7.17$, $SD = 1.04$) compared with when they were depersonalized ($M = 5.76$, $SD = 1.42$). Further, simple main effects showed that the difference between interpersonal and shared identity groups was significant both within the depersonalized condition, $F(1, 26) = 4.36$, $p = .047$, $\eta^2 = .14$, and that the reverse effect was significant within the individuated condition, $F(1, 26) = 5.36$, $p = .03$, $\eta^2 = .17$.

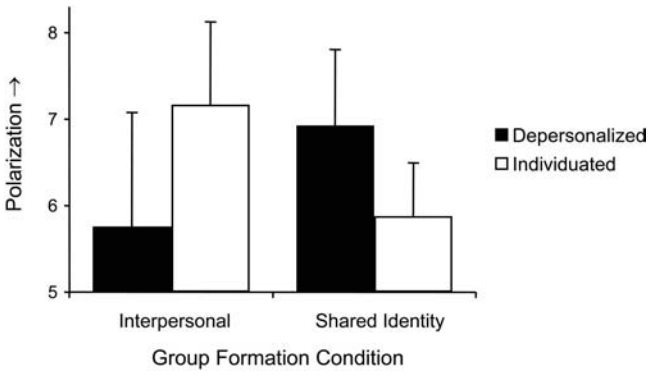

Figure 1. Postdiscussion attitudes and 95% confidence intervals as a function of depersonalization and group formation conditions, Study 1.

Discussion

Results support the predictions. Groups that were formed on two different bases, interpersonal relations or a shared identity, performed differently during group discussions. Groups formed on the basis of interpersonal relationships were most influential in shaping their members' views—as evidenced by attitude polarization on two issues—when group members were individuated and personally identifiable to each other. We believe this is consistent with the idea that the expression of individually distinctive attitudes is required for the induction of a group normative identity with regard to the issue discussed. This finding, therefore, is consistent with the notion that the expression of individuality is a prerequisite for inductive identity groups to witness identity-based social influence. However, it is also consistent, of course, with theories of social influence, which are based on interpersonal influence mechanisms and interdependence.

The opposite effect was obtained in shared identity groups. In these groups, which are defined and formed around a shared property that provides the nucleus for the group's social identity, social influence is minimized by individuation. This finding is consistent with previous findings showing that the influence of social identities and the associated social norms is greatest under conditions of depersonalization (Lea, Spears, & de Groot, 2001; Lee, 2004; Postmes & Spears, 2002; Postmes, Spears, Sakhel, & De Groot, 2001; Sassenberg & Postmes, 2002; Spears, Lea, & Lee, 1990). These results are somewhat more difficult to reconcile with theories of social influence based on interpersonal influence mechanisms and interdependence, as with persuasive arguments theories.

It is important to emphasize that main effects of neither the interpersonal nor the shared identity manipulation had a significant influence on attitude change. Thus, in the interpersonal conditions, interpersonal attraction and group atmosphere were not the reason why groups polarized. Although the manipulation of interpersonal group formation did influence attraction and did improve the atmosphere in the group, neither factor mediated the effects of condition on attitude polarization. Moreover, neither the correlation between attraction and polarization ($r = .19$) nor the correlation between atmosphere and polarization ($r = .08$) were significant.

It is also important to stress that groups polarized to varying degrees despite the fact that there was no explicit demand of the experimenter to come to an agreement—group members were left entirely free during the discussion phase. Moreover, attitudes varied considerably from condition to condition despite the fact that postdiscussion attitudes were assessed in private. Both factors suggest that we are dealing with social influence in the sense of a change in individually held attitudes and not mere public compliance.

A possible limitation of the study was that the manipulation of group types was very explicit: We informed participants directly that groups were formed on the basis of assumed interpersonal attractions or shared identity. Our assumption that such instructions about group formation would have a strong impact on subsequent perceptions of the group was confirmed by the manipulation checks and the measures of attraction and group atmosphere. However, we believe that experimental demand is not a likely explanation for the results. Most important, the effects showed a

cross-over interaction of the group type manipulation with that of depersonalization; despite the fact that the explicit instructions changed the tone and content of group discussions, they did not have straightforward consequences for the pattern of social influence. Also, the anonymity of participants within the group was varied across experimental conditions, but anonymity toward the experimenter was not. Thus, compliance with the experimental demand did not vary across depersonalization conditions because of anonymity toward the experimenter (the source of possible demands).

Nonetheless, we decided to conduct a follow-up study that tested exactly the same hypothesis, but this time we used a more inconspicuous and natural manipulation of group type. This manipulation of group type was based on the assumption that the history of the group should serve to establish its nature—in other words we sought to manipulate group formation more directly by giving groups a particular kind of experience in collaborating with each other. Indeed, prior research has confirmed that relatively brief prior tasks may serve to establish aspects of group identity such as norms (Postmes, Spears, & Cihangir, 2001). In this follow-up study, we also wanted to use more direct measures of the perceived nature of the group identity than those used in Study 1. Thus we added an identification measure and a measure of the perceived group norm to support our claim that changes did not occur merely at the level of individual postdiscussion attitudes but that discussion also served to alter the (perceived) nature of the group. We conducted two pilots to inform our choice of group type manipulation, to verify the ecological validity of the inductive-deductive identity distinction, and to develop additional dependent variables to assess the nature of group identity. Finally, the follow-up also provided us an opportunity to examine the content of group discussions in order to speak to the interactive processes involved in the polarization and identity formation effects.

Pilot Study 1

The purpose of this pilot study was twofold. First, we wanted to explore whether participants would recognize the characterization of the inductive versus deductive identity groups and explore what real-life groups they would associate with each type. Second, we wanted to see what adjectives they would associate with each type and use this list to inform the development of a measure of both types of group properties.

Method

Undergraduate students ($N = 45$) at an English university completed a questionnaire. The instructions informed them that the social psychological literature has distinguished between two types of groups, one being "built on personal interaction and relationships . . . the basis for these types of groups is the personal bond existing between members." Subsequently the other type was described as being "founded on shared ideals, opinions, goals or characteristics . . . the basis for these types of groups is the commitment to the ideals or characteristics that form the identity of the group." Participants were asked to list as many examples of each type of group as they could (stressing that they need not belong personally to these groups). In addition, we asked participants to generate adjectives that best described each type of group.

Results and Discussion

On average, participants listed 2.3 examples of interpersonal groups and 2.7 examples of shared identity groups. When thinking about real-life examples of interpersonal groups, participants mentioned groups of friends (mentioned by 93%), family (71%), romantic partners (38%), and housemates (16%). The shared identity groups listed were more diverse. Most frequently mentioned were groups of work colleagues (53%), study groups (49%), sports teams (42%), and political groups (36%). Among the other groups mentioned were student societies, religious groups, and ethnic and national groups. Two things should be noted here. First, shared identity groups comprised some broad social categories but mostly smaller groups in which each member knows the other. Second, the groups mentioned were unique to their category: There was no overlap with groups being mentioned in both lists.

Each type of group was also associated with its own characteristic adjectives. Participants listed 2.4 adjectives for interpersonal groups and 2.7 for shared identity groups. Interpersonal groups were seen as loving (31%); friendly (29%); fun (22%); caring (8%); and trusting, supporting, relaxed, and close (all 13%). Shared identity groups were most often identified as goal directed (13%); formal and motivated (both 11%); united, impersonal, focused, and teamwork (all 9%); and organized, interesting, objective, and intellectual (all 7%). What is striking about this list, aside from the fact that teamwork is an adjective according to 4 participants, is the degree of consensus about the nature of both types of groups. For the adjectives associated with interpersonal groups, this is especially evident, with large numbers of participants converging on a cluster of adjectives with comparable meanings or connotations. For shared identity groups, there is much less consensus about the most descriptive adjectives, but at the same time, there appears to be a semantic homogeneity in the terms selected.

Pilot Study 2

The purpose of this pilot study was to establish the effectiveness of the manipulation of group formation (interpersonal or shared identity). The method that we developed to manipulate this feature took into account what we were told about both types of groups in the previous pilot. Thus, we designed a manipulation to ensure that interpersonal (inductive identity) groups went through formative stages in which they carried out activities that were fun and caring and accentuated interpersonal relations, whereas shared (deductive) identity groups collaborated on a more instrumental task that required them to unite (literally) behind a common banner. Groups underwent the manipulation and were then asked to complete several scales to assess its effects.

Method

Participants were 32 undergraduate students (11 men and 21 women) who were assigned to groups of 4 that were randomly allocated to group formation conditions. The group formation manipulation was inspired by team-building exercises designed to enhance trust among members of teams (so called "trust games," Jones, 1998; Newstrom & Scannell, 1998). We combined several small group exercises that were designed to foster group formation around interpersonal relationships (inductive identity)

versus around a collective stance on a political issue (a shared, deductive identity).

The interpersonal group formation manipulation consisted of three elements: name learning, a trust game, and a creative task. In the name-learning phase, group members were placed in a circle and given one ball. They were to throw the ball to another group member as fast as possible while calling out that person's name. In the trust game phase, participants let themselves fall over to be caught by another participant. Finally, in the creative task, participants were instructed to make a poster about the group. They were given glossy magazines, scissors, glue, and a large, poster-sized white sheet. Each participant was instructed to depict another group member on this poster, seated to their left. Thus, the end product was a representation about each member of the group as perceived by a fellow group member. The total time allowed for these tasks was 20 min.

The shared identity group formation manipulation also consisted of the elements self-expression, feedback, and creative task. In the first and second phases, the group used a disconnected microphone, which they passed around and through which only the person holding it could speak. During self-expression, participants expressed their view on a purposely selected political issue (see below), giving one argument to support their view. In the feedback phase immediately following this, each group member was asked to reflect on what had just been said, with the instruction to "give *positive* feedback." Finally, the creative task phase was similar to that above, but now the group was requested to make a poster to express the group's views about the issue at hand.

The political issue used in the shared identity condition was pretested in a separate pilot ($N = 48$). Participants were presented with 10 attitude statements and asked for each of these whether they agreed and whether other students agreed. We selected an issue on which groups would easily reach consensus but in which there was still value in learning others' opinions as a means of social validation and identity formation. Thus, the issue (a) had to have a priori consensus, but (b) without there being any awareness of this consensus (i.e., similar to false uniqueness and pluralistic ignorance; Miller & Prentice, 1994). One issue met these criteria, and this was a proposal for a graduate tax: "It has recently been proposed that graduates should be required to pay more tax than nongraduates due to having the privilege of higher education." On a 9-point scale (1 = *disagree strongly*, 9 = *agree strongly*), the average agreement was well below the midpoint of the scale ($M = 2.06$, $SD = 1.62$), $F(1, 47) = 158.51$, $p < .001$, 90% disagreement, $\eta^2 = .45$. Asked how much other students would agree with this statement, participants actually believed that other students would somewhat agree with the proposal ($M = 6.15$, $SD = 2.78$) compared with the midpoint of the scale, $F(1, 47) = 8.18$, $p < .01$, $\eta^2 = .17$.

Returning to the procedure of the pilot at hand, the group formation phase was followed by an individual questionnaire consisting of three scales. A measure of shared identity consisted of seven items ($\alpha = .91$). Participants indicated their agreement with statements on 7-point scales (1 = *do not agree at all*, 7 = *agree completely*): "This group has a clear identity," "This group has a view of its own," "This group has its own personality," "This group has character," "This is a strong group," "It is clear what this group stands for," and "This group has one voice." Participants then completed a scale consisting of words describing interpersonal and shared identity groups (see Pilot Study 1). Participants were asked how well each word defined the group on a 7-point scale (1 = *does not define my group at all*, 7 = *defines my group very well*). The shared identity words were *focused*, *goal directed*, *like minded*, *motivated*, *organized*, *practical*, *teamwork*, and *united* ($\alpha = .81$). Interpersonal words were *caring*, *close*, *friendly*, *fun*, *loving*, *rapport*, *relaxed*, *safe*, *supportive*, and *trusting* ($\alpha = .85$). We then subtracted the average of the interpersonal words from the average of the shared identity words to arrive at an identity index, with scores ranging from −6 (*most interpersonal characteristics*) to 6 (*most shared identity characteristics*).

Results and Discussion

Analyses were conducted at the group level. One-tailed *t* tests were conducted because of the directional hypothesis and because of the small number of groups. Scores on the shared identity check were higher in shared identity groups ($M = 5.47$, $SD = 1.16$) than in interpersonal groups ($M = 4.12$, $SD = 1.01$), but the difference was only marginally significant, $t(6) = 1.76$, $p = .06$, $d = 1.24$. On the identity index, the same difference was more pronounced. Groups in the shared identity condition thought that the shared identity words described their group relatively better ($M = 0.54$, $SD = 0.88$), whereas groups in the interpersonal group formation condition thought interpersonal words were a better description of their group ($M = -0.77$, $SD = 0.35$), $t(6) = 2.50$, $p < .05$, $d = 1.77$.

Thus, the manipulation had the desired effect according to the identity index. Results on the shared identity check showed a trend consistent with the hypothesis that the manipulation worked in the predicted direction. One possible reason why only one effect was statistically reliable at $p < .05$ is that power in this pilot was low—looking at the effect sizes, the difference between conditions was large. However, the transcripts of the discussion also revealed that although groups in the shared identity condition appeared to be completely unanimous on the issue they discussed, some participants played devil's advocate in the first round when they expressed themselves. In Study 2, we therefore gave explicit instructions that they should not do this.

Study 2

In this study, we used the manipulation developed in Pilot Study 2 to test the same hypothesis as in Study 1. One important change to the procedure of Study 1 was to add a postdiscussion measure of the perceived social norm: We asked participants not just their individual attitude but also how they perceived their group's attitude. Another change was inclusion of a pretest of the attitude, so that we were able to assess attitude change. To control for possible reactivity of the attitudes, we pretested only one of the two discussion issues. Finally, we added a content analysis to gain some more insight into the process by which groups come to consensus.

Method

Participants and Design

Undergraduate students at the University of Amsterdam (45 women, 27 men) in 24 groups of 3, which were randomly assigned to an experimental condition. The design was the same as in Study 1: a 2 (depersonalization: depersonalized vs. individuated) × 2 (group formation: interpersonal vs. shared identity) factorial design.

Procedure

Participants entered the lab in groups of 3. They filled out a consent form, which also contained the pretest for the attitude issue. Then, participants' pictures were taken. This was followed by the group formation manipulation, which was identical to Pilot Study 2 except for one minor variation: In the shared identity condition, we stressed that participants should express their own views and not play devil's advocate.

After the group formation manipulation, participants were individually placed at networked PCs. The procedure from then on was identical to Study 1 except for minor variations. They discussed one topic for 15 min: "Information on the Internet should be regulated. Do you agree?" This topic was piloted among undergraduates of the same university. The pilot showed that they were moderately opposed to Internet regulation and assumed that fellow-students would share their views (i.e., there was a basis upon which they could deduce a local group norm from the overarching group). Another minor variation was that during the group discussion, participants in the individuated condition were identified not just by their portrait pictures but also by their first name (which was also their user ID during discussion). In the depersonalized condition, participants were not given any pictures and were identified with similar user IDs to those used in Study 1. They were asked not to disclose their identity.

Measures

As a premeasure of the attitude, participants were asked to indicate whether they agreed with the statement "Information on the Internet should be regulated" on a 100-point scale. Postdiscussion attitudes were measured with two statements, one identical to the discussion issue, and one slightly different: "It is important to retain the Internet as a medium for free expression." Participants indicated agreement on 7-point scales (1 = *strongly disagree*, 7 = *strongly agree*). In addition, we included a measure of the perceived social norm within the group using the exact same items. Participants answered the question "How strongly do you think the other students in your group agree with the statement above" on a similar 7-point scale. Responses were recoded such that higher scores on each item indicated a shift toward the (implicit) norm opposing Internet regulation.

The questions that followed were also answered on 7-point scales (1 = *do not agree at all*, 7 = *agree completely*). The check of the depersonalization manipulation was the same as in Study 1. As checks of the group type manipulation, we now relied on those described in Pilot Study 2. Thus, we had a 7-item shared identity check and an identity index. We also included measures of group identification, consisting of three items: "I identify with the members of this group," "I feel solidarity with the members of this group," and "I feel strong ties with the members of this group."

Content Analysis

On the basis of prior research data, the content of the discussion logs was analyzed. Part of the content analysis was conducted through a computerized count of elements of the text. In this fashion, we counted some basic characteristics of text, such as the number of words contributed. As a measure of self-awareness, the number of self-references was counted (*I*, *myself*, *me*, *my*, and *mine*). As a measure of awareness of the group, we counted the number of references to the group (*we*, *us*, *ourself*, *ourselves*, *our*). In addition we counted the number of times the discussion referred to the subjects of the two attitude items (*regulation* and conjugations of *to regulate*, as well as the words *freedom* and *free*). Two independent raters coded whether each contribution was on topic (reliability was good: agreement rate = 89%, $\kappa = .73$). Furthermore, they identified those statements in which a clear attitude toward the topic was expressed ($n = 233$) and coded whether the statement was pro or anti regulation on a 5-point scale (1 = *pro regulation*, 5 = *anti regulation*), again with good reliability (intraclass $r = .74$).

Results

Reliabilities of the scales were acceptable. Cronbach's alphas were .62 for the attitude scale and .75 for the perceived norm scale. The shared identity check ($\alpha = .81$), identity index (αs = .87 and .86), and identification measure ($\alpha = .83$) all had good internal reliability. Results on the manipulation checks were satisfactory. Results showed a main effect of depersonalization on the anonymity check, $F(1, 20) = 7.10$, $p = .02$, $\eta^2 = .26$. In the depersonalized condition, groups indicated that they felt more anonymous ($M = 3.83$, $SD = .71$) compared with the individuated condition ($M = 3.06$, $SD = 0.74$). The group formation main effect and interaction were not significant (Fs < 2.4). As predicted, scores on the shared identity check were higher in shared identity groups ($M = 4.35$, $SD = .43$) than in the interpersonal groups ($M = 3.64$, $SD = .53$), $F(1, 20) = 11.86$, $p < .01$, $\eta^2 = .37$. On the identity index, the same difference was found. Groups in the shared identity condition thought that the identity words described their group relatively better ($M = 0.29$, $SD = 0.48$), whereas groups in the interpersonal condition thought interpersonal words gave a better description of their group ($M = -0.21$, $SD = 0.36$), $F(1, 20) = 7.91$, $p = .01$, $\eta^2 = .28$.

Group Identification

There were no between-conditions effects on identification. We find it interesting that groups in all conditions identified approximately equally strongly, Fs < 0.50, overall $M = 4.47$, $SD = 0.72$, which was above the scale midpoint, $t(23) = 3.03$, $p = .006$, $d = .65$. This is consistent with the notion that social identities were formed in both the inductive and deductive conditions.

Polarization and Perceived Norm

The findings for the attitude and perceived norm are displayed in Figure 2. To reduce error variance, we used the pretest attitude measure as a covariate in the analysis. There were no reliable between-conditions differences on the pretest, and the uncorrected scale means were therefore quite similar to the estimated marginal means; the latter are reported here. As can be seen in Figure 2, we found the predicted cross-over interaction on both measures. This is displayed against the baseline attitude derived from the pretest (transformed to make it comparable with the posttest; $M = 4.40$, $SD = 1.11$).

The posttest attitude had indeed shown the predicted pattern of change over time—the only reliable effect was the Group Formation × Depersonalization interaction, $F(1, 19) = 6.65$, $p = .02$, $\eta^2 = .26$. Inspection of the simple main effects confirmed that the impact of depersonalization on polarization was opposite for group types. As in Study 1, depersonalization increased the influence of the group norm in shared identity groups, $F(1, 19) = 4.24$, $p = .05$, $\eta^2 = .18$, and there was an opposite tendency (albeit not significant) for individuation to increase normative influence in interpersonal groups, $F(1, 19) = 2.55$, $p = .13$, $\eta^2 = .12$. Thus, a cross-over interaction was obtained in the predicted direction: Attitudes were most polarized in the shared identity groups when its members were depersonalized ($M = 5.02$) compared with when they were individuated ($M = 4.19$). Conversely, in interpersonal groups, attitudes were more polarized when its members were individuated ($M = 4.93$) compared with when they were depersonalized ($M = 4.28$). Further simple main effects showed that the difference between interpersonal and shared identity groups approached reliability within the depersonalized condition, $F(1, 19) = 3.36$, $p = .08$, $\eta^2 = .15$, and that the reverse effect approached reliability within the individuated condition, $F(1, 19) = 3.32$, $p = .08$, $\eta^2 = .15$. Thus, the effect of Study 1 was

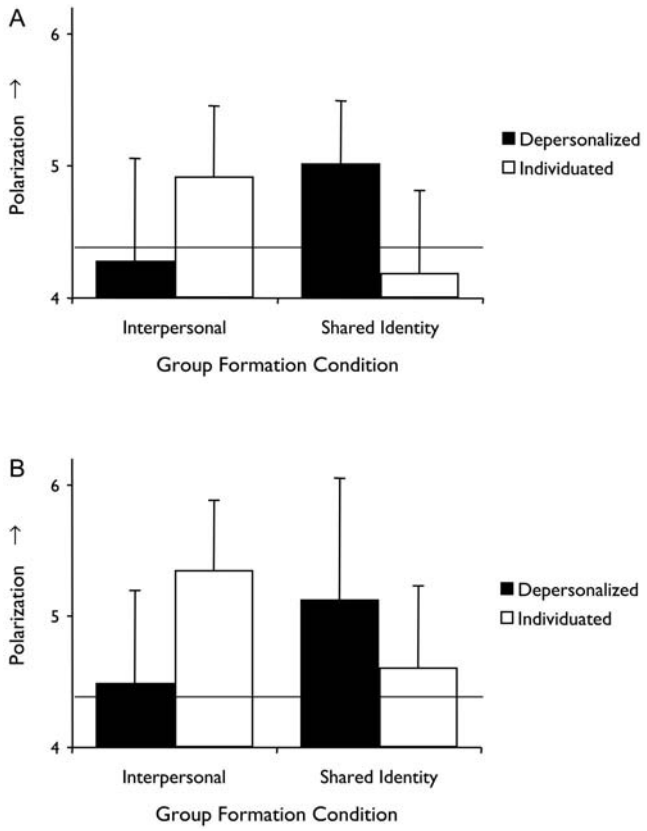

Figure 2. Mean reported attitudes (Panel A) and perceived group norm (Panel B) after group discussion set against the prediscussion base-rate attitudes and with 95% confidence intervals, Study 2.

replicated, and inclusion of the baseline of the pretest provided direct evidence of this constituting a change of attitudes during group discussion.

On the perceived social norm, a similar interaction was obtained, $F(1, 19) = 7.63$, $p = .01$, $\eta^2 = .29$. This confirms that group members did not merely change their individual attitudes on the topic at hand, but they also changed their view of the consensual (normative) group position. Simple main effects analyses confirmed that in the interpersonal condition, the norm was less extreme in depersonalized groups, $F(1, 19) = 5.95$, $p = .03$, $\eta^2 = .24$, and there was a nonsignificant tendency in the shared identity condition for the norm to be more extreme in depersonalized groups, $F(1, 19) = 2.18$, $p = .16$, $\eta^2 = .10$. Norms were perceived to be most extreme in the shared identity groups when its members were depersonalized ($M = 5.36$) compared with when they were individuated ($M = 4.61$). Conversely, in interpersonal groups, the opposite effect was found: Attitudes were more polarized when its members were individuated ($M = 5.13$) compared with when they were depersonalized ($M = 4.49$). These means are very comparable with those of the individual postdiscussion attitudes. Further, simple main effects showed a trend for interpersonal and shared identity groups to differ in the depersonalized condition, $F(1, 19) = 3.27$, $p = .09$, $\eta^2 = .15$, and a significant reverse effect in the individuated condition, $F(1, 19) = 4.44$, $p = .049$, $\eta^2 = .19$.

Content Analysis

For the number of contributions to the group discussion, there was only a main effect of group formation condition. Shared identity groups contributed fewer words to the discussion ($M = 463.33$, $SD = 180.66$) than did interpersonal groups ($M = 614.92$, $SD = 139.08$), $F(1, 20) = 5.08$, $p = .04$, $\eta^2 = .20$. For the total number of on-topic contributions, however, there were no significant main effects or interactions (Fs < 2.30). This suggests that in the interpersonal conditions, there was relatively more off-topic interaction. This impression was confirmed by the computerized counts of elements of text.

Within the on-topic conversations, the discussions were more homogeneous in the shared identity groups and more wide ranging in the interpersonal groups.[6] In the shared identity groups, the subjects of regulation and freedom were revisited more than 12 times per discussion on average ($M = 12.06$, $SD = 5.38$). That was almost twice as often as in the interpersonal groups ($M = 6.08$, $SD = 3.70$), $F(1, 20) = 9.54$, $p = .006$, $\eta^2 = .32$. The different standard deviations that go with these means are caused by a skewed distribution (often the case with counts). A square-root transformation normalized the distribution and further strengthened the main effect of group formation, $F(1, 20) = 10.98$, $p = .003$, $\eta^2 = .36$. The other main effect and interaction were not significant (Fs < 0.80).

Self- and group awareness. The number of references to self and group were also counted as measures of self- and group awareness, respectively. There were no significant main or interaction effects on the measure of self-awareness (Fs < 1.82). Main effects for group awareness were also not reliable (Fs < 0.89). However, the interaction for group awareness approached reliability, $F(1, 20) = 4.05$, $p = .06$, $\eta^2 = .17$. Inspection of the means revealed that within the depersonalized condition, there was a slight but nonsignificant tendency for group references to be more frequent in the shared identity groups ($M = 4.11$, $SD = 2.37$) than in the interpersonal groups ($M = 3.11$, $SD = 1.86$), $F(1, 20) = 0.57$, $p = .46$, $\eta^2 = .03$. Within the individuated condition, there was a reverse effect: Interpersonal groups made more frequent reference to words such as *us* and *we* ($M = 5.45$, $SD = 2.91$) than did shared identity groups ($M = 2.70$, $SD = 1.80$), $F(1, 20) = 4.37$, $p = .05$, $\eta^2 = .18$. Further analysis suggested that shared identity groups made slightly (but not significantly) more group references in the depersonalized condition than in the individuated condition, $F(1, 20) = 1.19$, $p = .30$, $\eta^2 = .05$. Within the interpersonal groups, however, there was a trend for the reverse, $F(1, 20) = 3.17$, $p = .09$, $\eta^2 = .14$.

Attitudes and attitude change. The pattern of coded attitudes expressed during the discussion effectively mirrored the self-reported attitude results. The Group Formation ×Depersonalization interaction was reliable, $F(1, 20) = 6.81$, $p = .02$, $\eta^2 = .25$. Inspection of the simple main effects confirmed that the pattern was very similar. Depersonalization increased the influence of the group norm in shared identity groups, $F(1, 20) = 4.72$, $p = .04$, $\eta^2 = .19$, and there was an opposite tendency for individuation to

[6] Reported scores are corrected for message length. For each group, the number of words directly related to the actual attitude topic was divided by the total number of on-topic words and multiplied by a constant (the average number of on-topic words across groups).

increase normative influence in interpersonal groups, $F(1, 19) = 2.30$, $p = .15$, $\eta^2 = .10$. Thus, in shared identity groups, the attitudes were more polarized toward the norm when group members were depersonalized ($M = 3.47$, $SD = 0.34$) than when they were individuated ($M = 2.80$, $SD = 0.70$). In interpersonal groups, the opposite pattern was found: Attitudes were more polarized when members were individuated ($M = 3.33$, $SD = 0.52$) than when they were depersonalized ($M = 2.87$, $SD = 0.51$).

Some insight into the process of social influence can be gleaned from the attitude changes observed during the discussion. For each group, we computed a standardized regression score, regressing the statement number on the rated attitude extremity of statements. In this way, we obtained an estimate of the standardized slopes within groups, reflecting the tendency to polarize toward the group norm (positive scores) or away from it (negative scores). Entering these regression weights into a 2 × 2 analysis of variance, we found that the interaction between depersonalization and group formation conditions was highly significant, $F(1, 20) = 11.78$, $p = .003$, $\eta^2 = .37$, but the main effects were not (Fs = 2.34 and 1.77, respectively).

The results revealed that there was only one condition in which the attitude changed significantly during the discussion (see Figure 3 for the actual slopes and means). Whereas there was no significant effect of depersonalization within the shared identity groups, $F(1, 20) = 1.81$, $p = .18$, $\eta^2 = .08$, depersonalization had a big impact on interpersonal groups, $F(1, 20) = 12.31$, $p = .002$, $\eta^2 = .38$. Moreover, group formation made a difference only in the individuated condition, $F(1, 20) = 11.35$, $p = .003$, $\eta^2 = .36$, and much less within the depersonalized condition, $F(1, 20) = 2.21$, $p = .15$, $\eta^2 = .09$. This pattern of results was observed partly because polarization occurred only in the predicted conditions. We find it interesting, however, that the polarization effect was by far the strongest in the individuated–interpersonal groups ($M_{\text{standardized slope}} = 0.83$, $SD = 0.66$). This was the only standardized slope that was significantly different from 0 (i.e., the only condition in which change over time was significant). The contrast with depersonalized shared identity groups is interesting ($M_{\text{standardized slope}} = 0.22$, $SD = 0.58$): Here, attitudes are more polarized already at the start of the discussion, and the subsequent change is not nearly as large.

Mediational analysis. Our model predicts that the process by which groups polarize is grounded in different interactive processes for interpersonal and shared identity groups. Within interpersonal groups, the emphasis should be on the expression of diversity and subsequent resolution of differences, whereas the discussion within shared identity groups should be more homogeneous and focused on relevant group issues. This fits with the pattern of results described above, in which shared identity groups contributed less overall but were more concerned with issues central to the dilemma they discussed. However, the consequences of this penchant for identity-relevant issues in shared identity groups are likely to be moderated by depersonalization.

In prior research, we have shown that as predicted by perspectives such as persuasive arguments theory (e.g., Burnstein & Vinokur, 1977), heterogeneity of discussions can lead to more polarization and convergence within individuated groups (Sassenberg & Postmes, 2002). The present study tended to confirm this: There was a trend for the correlation between homogeneity and polarization to be negative ($r = -.50$, $p = .10$). In depersonalized groups, the reverse effect occurs: Here, it is the homogeneity of discussions that leads to greater polarization (e.g., Turner, 1991). Indeed, here there was a positive correlation between homogeneity and polarization ($r = .67$, $p = .02$). Putting these two together, we see that the process by which groups polarize is opposite for shared identity and interpersonal groups: In interpersonal groups, the heterogeneity of their discussion is most likely to lead to an opinion shift in which they are able to use personal identifiability and individuation to negotiate a common group position that is, importantly, more than the sum (or in this case average) of individual positions prior to discussion. In shared identity groups, however, such individuation would only detract from expression of the consensus that they seek through a homogeneous statement of their position as a group.

This model was tested in a path analysis with group formation condition as independent variable, communication content as mediator, and polarization as dependent variable (see Figure 4). First of all, the model predicted group formation condition to have a straightforward main effect on homogeneity of discussions, such that discussions were more homogeneous in the shared identity condition. Depersonalization condition was then hypothesized to be a moderator of the effects of group formation on polarization as well as of the homogeneity of discussions on polarization (i.e., interaction effects). Thus, the analysis was one of moderated mediation (in the terminology of Baron & Kenny, 1986). Following the customary steps in such an analysis, the effects of condition (dummy-coded such that the depersonalized–shared identity groups and individuated–interpersonal groups were 1, and the other conditions were −1) on adjusted polarization scores was first assessed ($\beta = .51$, $p = .01$). Then, it was verified that the

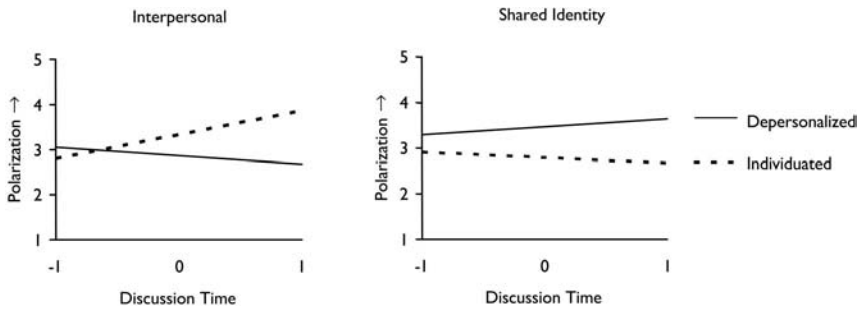

Figure 3. Attitude change over time, Study 2. Depicted are average expressed attitudes during discussion (time = 0) and developments of attitudes over time (computed as regression slopes).

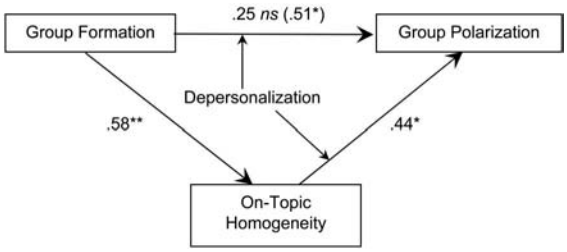

Figure 4. Analysis of moderated mediation, Study 2: In interpersonal groups, discussions are more heterogeneous, whereas in shared identity groups discussion is more homogeneous. In individuated groups, heterogeneity fosters polarization, whereas in depersonalized groups, homogeneity fosters polarization. The combination of these two effects is responsible for the pattern of attitude change in Study 2.

mediator, homogeneity, was predicted by condition code and had an impact on polarization. Because this was an analysis of moderated mediation, the homogeneity scores were *z* transformed and multiplied by −1 in the individuated condition. This moderated mediator was indeed predicted by condition ($\beta = .58$, $p = .003$), and it, in turn, predicted polarization ($\beta = .59$, $p = .003$). Putting the mediator and independent variable together revealed that where the mediator was a strong predictor of polarization ($\beta = .44$, $p = .048$), the condition effect was no longer reliable ($\beta = .25$, $p = .25$). A test of the reverse model (with polarization predicting the mediator) did not show mediation. Hence, we can conclude that mediation occurred as predicted. The Sobel test suggests that there was a trend for communication content to fully mediate the effect of condition on polarization ($Z = 1.83$, $p = .067$).

Discussion

The results of Study 2 replicate and extend those of Study 1. Social influence was strongest in groups formed around interpersonal relations when group members were individuated and personally identifiable to each other: In this condition, polarization was strongest. As before, the opposite effect was obtained in shared identity groups: Influence was strongest precisely when group members were depersonalized.[7]

The results also showed that social identification was equally strong in all conditions. It is interesting that this should be the case, as it confirms the notion that the distinction between inductive and deductive identity formation, which we introduced here, is one in which identification with the group as a whole can be strong, albeit based on different principles. Indeed, as we argued at the start of this article, the crucial difference between these two conditions is not one of the level of solidarity that they elicit but one of the processes by which identities are formed—by a process of induction from interpersonal to group or by a process of deduction from the group to the individual, and importantly, the differing contextual conditions under which each route is optimized. The consequent nature of social identity, we argue, is one in which individuality assumes a different significance as either more central (in inductive groups) or more peripheral (in deductive groups). We suggest that it is through this relation of individuality to social identity that different patterns of polarization could subsequently be witnessed. We believe the pattern of results to be supportive of this suggestion.

The results of Study 2 extend those of Study 1 in four regards. First, they show direct evidence that attitude polarization occurred through discussion—there was clear evidence of change from pre- to posttest. Second, they show that this polarization is not merely a consequence of individual change in attitudes but also of a clear shift in the perceived and actual group position. Third, they show that the process of attitude change is induced in fundamentally different ways in groups formed around a shared identity and in interpersonal groups. In groups formed around a shared identity, the discussion closely revolves around the issues central to the topic and is generally brief. To the extent that individual differences within the group are obscured, the group can converge on a polarized position expressing collective identity on the attitude dimension at hand. In interpersonal groups, however, the discussions are much longer and more divergent in nature, focusing not just on the topic at hand but also on a range of other topics as well as personal experiences of the participants. It is through this much more heterogeneous approach to the discussion subject that participants converge on a more extreme position, provided they are personally identifiable to each other. The moderated mediation analysis shows that the basis upon which the shared identity is achieved in the first (group formation) phase of the experiment is at least partly responsible for the different argumentative patterns and that the individuation during the second (group discussion) phase is responsible for the capacity of groups to consensualize around a more polarized group positions. It is important to note that this group position is no less bound up with collective identity in the interpersonal groups than in the shared identity groups—in both cases the interaction emphasized the importance of "us" achieving a collective position.

Fourth, the results show that groups formed on the basis of interpersonal and shared identity activities polarize in different ways. Commensurate with the argument that consensus is induced and, therefore, constructed through interaction in interpersonal groups, the attitude polarization is a gradual process that can be witnessed as a shift of expressed opinions over time. The pattern in shared identity groups is markedly different. Here, polarization does not express itself as a shift over time but instead as the collective assumption of a consensual and polarized position almost from the start of the discussion, and there is little change beyond that (see also Postmes et al., 2002). This, we would argue, suggests that the group position is deduced from what participants assume to be the group norm.

[7] It should be noted that although all the predicted interactions were highly reliable, some simple main effects did not quite reach $p < .05$. The lack of power in group level analyses is the likely culprit (effect sizes were typically large). Indeed, a meta-analysis across the two studies—analyzing the effects of individuation on the two group formation conditions separately—confirms that across studies, all predictions were supported even at the level of simple main effects. Within the interpersonal group formation conditions, the effects of depersonalization were moderately strong and highly reliable across both studies ($r = .39$, $Z = 2.92$, $p = .002$). Within the shared identity conditions, the effects of depersonalization were very similar and highly significant in the opposite direction ($r = .39$, $Z = 2.91$, $p = .002$).

General Discussion

Our findings suggest a resolution to some issues in small group research. First and foremost, they point to the interactive nature of the small group as a forum in which interpersonal and group level factors may mutually influence each other. On the one hand, our findings suggest that social identity concepts may be fruitfully used in small groups in understanding social influence (in processes such as group decision making, negotiation, or collaborative action; see Postmes, Haslam, & Swaab, 2005) as exerted by the content of social identities and social norms, regulating among others the expression of individuality within the group. Simultaneously, however, they show the power of interpersonal relations and individuality within the group as forces shaping and influencing the nature of this group identity. Finally, they illustrate that each of these forces may exert considerable influence on group members in their own distinctive way but to a similar effect.

This notion that individuality can be the basis of a sense of collective identity can be contrasted from mainstream assumptions in social–cognitive theories of categorization that individuality and social identity are at different ends of the same continuum (Fiske & Neuberg, 1990; Tajfel, 1978). It can also be contrasted from theories of self that revolve around the notion that individual distinctiveness and social assimilation or inclusion are somehow antagonistic (Brewer, 1991). It is also somewhat inconsistent with assumptions in the cross-cultural literature that individualism and collectivism are polar opposites (see Vignoles et al., 2004, for a recent critique). Similar ideas have made their mark on thinking about small groups. They are reflected to a certain extent in the distinction between social categories and interactive groups and in suggestions that there is a fundamental difference between the perception of groups as studied by, for example, self-categorization theorists and the interaction within groups as studied by small group researchers (Gaertner & Schopler, 1998; Kerr & Tindale, 2004; Moreland et al., 1996; Wilder & Simon, 1998). Finally, it is reflected in long-standing debates about the complementarity of interdependence and identity-based explanations of phenomena such as in-group bias (Gaertner & Insko, 2000; Rabbie & Horwitz, 1988). The present article has attempted to find a way of reconciling these two visions, not by arguing for the distinction between types of groups but by searching for a way to integrate these individual and social categorical perspectives on groups, in an attempt to make the categorical more dynamic and the dynamic more categorical.

We believe that the results of the present research attest to the utility of distinguishing between inductive and deductive routes to identity formation, at least in interactive small groups. In some group contexts, we argue, the input from individual members and their distinctive roles are essential to the group product, and the formation of a social identity is informed by individual attempts to shape consensus. But even in collaborations in which personality seems pivotal, the group is more than interpersonal alone, because from the interpersonal relations and personal positions within the group, a group identity may be induced. Our results show that in groups formed on interpersonal bases, the group can be more than the sum of its parts. As shown in two studies, the ability of such interpersonal groups to polarize the opinions of its members expressed in private after a group discussion is a direct indicator that the group exerts an influence even when interpersonal contact has been terminated. More direct evidence of this was obtained in Study 2, which showed that in the interpersonal groups, members perceived a strong and polarized group norm in the individuated conditions that allowed group members to negotiate a polarized position.

What this suggests is that in groups that have an inductive development history, social influence is strong precisely when individual distinctiveness is most visible. In itself, this result is perfectly consistent with what one could expect for common bond groups, for example (Prentice et al., 1994), or dynamic groups (Wilder & Simon, 1998). However, our results are somewhat inconsistent with these perspectives in that they suggest that influences of shared identity (or influence of a categorical nature) play a role even when interpersonal relations are the very basis upon which the group is founded. Thus, it is only on the surface that the findings for inductive groups may appear inconsistent with SCT and its explanation for group polarization (e.g., Turner, 1991).

Indeed, the results of Study 2 in particular show that the basis for group polarization within the inductive groups is really one of the construction of a consensual or normative group position through interpersonal attraction, communication, and persuasion. Through this, individuality can become a key component of the content of social identity (see also Hornsey & Jetten, 2004; Jetten et al., 2002; Jetten & Postmes, in press; McAuliffe, Jetten, Hornsey, & Hogg, 2003; Rink, 2005). The unique contribution of the present research, then, lies in the identification of the way in which a shared social identity may be constructed from diversity and differences within the group. The analyses of communication content corroborated this by demonstrating that individuated groups construct a consensual and polarized group position through heterogeneity of expressions (a process that is reversed in depersonalized groups, cf. Sassenberg & Postmes, 2002). Thus, the current data reflect and extend that of a larger program of research suggesting that individuality and intragroup heterogeneity are not necessarily antagonistic to social identity processes but may actually serve as building blocks in the formation of a distinctive group identity (Postmes, Baray, et al., in press; Postmes, Haslam, Swaab, 2005). In this way, interpersonal communication may influence local group norms (as in the present research), as well as collectively held stereotypes (Klein, Jacobs, Gemoets, Licata, & Lambert, 2003), and even norms and values at the cultural level (Newson & Postmes, in press).

It is well known that strong norms can exist in proximate and personally involving contexts (e.g., Festinger, Schachter, & Back, 1950), and hence, it may not be perceived as surprising that they can be constructed in such contexts of close proximity (albeit simulated online). However, the studies also bear evidence that under conditions in which groups are formed on the basis of a shared identity, strong social influence may be found. In fact, this social influence is particularly strong when the cover of anonymity provided by the depersonalization manipulation provides every opportunity to abandon and ignore the group and to escape any pressures to conform (cf. Deutsch & Gerard, 1955; see also Lea & Spears, 1991; Spears et al., 2002). Indeed, the very existence of strong social influence precisely when group members are anonymous to each other points to the fact that social influence in these groups is of a fundamentally different nature, as exerted by a shared identity deduced from the common perspective underlying

group formation. Thus, we believe that we have provided suggestive evidence that social influence can take on different forms in groups formed on the basis of two quite different premises, inductive or deductive identity.

It is unlikely that in any group encountered in real life will social identity be entirely induced or deduced. Most groups (and this is, of course, somewhat different for the most abstract social categories and for the most minimal groups) would have some defining property (or would develop it over the course of group life) as well as some degree of interpersonal interaction between its members. Of course, the prominence of inductive and deductive processes may vary across contexts and across groups and across group history, but this should not lead one to argue that these processes of deduction and induction would somehow be restricted to one specific group type. In parallel to this, although we believe that social influence can be partially traced to some interpersonal and identity-based origins, we believe that the search for a primary or ultimate source of social influence at either end is futile. We believe that the challenge is to study these two forms of influence in conjunction rather than in isolation, to inform our understanding of the interaction between the individual and the social and the processes by which they mutually constitute each other (see also Postmes & Jetten, in press).

The present results also provide support for the social identity model of deindividuation effects. Results support the model's assertion that the ability of individuation to increase social influence is related to the social identity of the small group involved (Postmes & Spears, 1998; Reicher et al., 1995; Spears & Lea, 1994). The data also reminds us, however, of an important limitation to the generality of this effect: These predictions are restricted to groups in which some preexisting identity could be deduced. Acknowledging this resolves the inconsistencies that have been noted in another literature that this model addresses: that of computer-mediated communication. It has often been observed that the results of using this technology for group interaction has highly variable outcomes (e.g., Hollingshead & McGrath, 1995; Postmes, Spears, & Lea, 1998; Spears & Lea, 1992; Walther, 1996), and the present findings suggest that the nature of groups and social influences predominating within them may be an important moderator of the observed effects.

In conclusion, we propose that the distinction between inductive and deductive identity is a useful one for understanding social influence processes in small groups. Associated with each are distinct patterns of social influence, based on the induction of a group position (an identity, norm, or culture) from distinctive individuality or on the deduction of a group position from more homogeneous expressions of shared identity respectively. That these inductive and deductive paths to social identity may coexist within interactive groups helps resolve theoretical tensions within the small group literature and the group literature more generally. Most important, the distinction between inductive and deductive identity seeks to do justice to the complex character of small groups as a forum in which the social and individual interact.

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