

Virtual Group Dynamics

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The various forms of Internet groups share many similarities to groups that exist in the offline world, but there are also critical differences. The authors examine traditional definitions of groups and how Internet groups fit into those existing definitions. They provide an analysis of relevant aspects that make virtual groups similar to and different from nonelectronic groups, and they examine the ways in which Internet groups function. Individual motivations for joining online groups and the consequences of virtual group membership are also discussed.

Over the past decade the number of individuals regularly accessing the Internet has increased exponentially. According to recent research by Nie and Erbring (2000) the number of Americans online has risen to 55%. Worldwide, the number of people using the Internet has risen above 450 million, and that number is expected to double within the next year. Interpersonal communication has become the primary use of the Internet at home (Kraut, Mukopadhyay, Szczypula, Kiesler, & Scherlis, 1998), and people are increasingly turning to the Internet to fulfill important social and psychological needs.

One of the most basic interpersonal needs is to “belong,” to feel that one is a member of a group of others who share similar interests and goals, and to feel that one is a valued (and unique) member of that group (Baumeister & Leary, 1995; Brewer, 1991). On the Internet, there are a wealth of venues where one can connect with like-minded others who share core interests and values and thus fulfill this important need. Chat rooms, newsgroups, electronic mailing lists, message boards, interactive games, and major interactive Web sites provide individuals with the opportunity to join existing online groups or to create their own.

The various forms of Internet groups share many similarities with groups that exist in the “real” world, but there are also critical differences. For example, features of Internet communication such as anonymity and its text-based rather than spoken nature have been shown to result in greater closeness and intimacy between group members in some cases (Postmes, Spears, Sakhel, & De Groot, in press) and in greater hostility and aggressive behavior in others (Siegal, Dubrovsky, Kiesler, & McGuire, 1986). Unlike a weekly coffee klatch, many virtual groups are always in session, and one can participate at any time of the day or night. Still other aspects of the Internet facilitate close group relationships by providing meeting places for those who share very specialized interests or needs. Given that there are such differences, do Internet groups function in the same way as do traditional groups? Does active participation in a virtual environment result in the same rewards and consequences for the individual members’ sense of self-esteem and social identity as does participation in nonvirtual groups?

Below, we briefly examine traditional definitions of groups and how virtual groups fit into those existing definitions, and then we discuss various motivations an individual may have to join an online group. Next, we turn to an analysis of relevant aspects that make Internet groups similar to, and different from, nonelectronic groups (for additional ways in which Internet interactions differ, see McKenna & Bargh, 1999). The way in which virtual groups function is then examined. Finally, the consequences of virtual group membership are discussed.

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What Is a Group?

Loosely defined, groups consist of two or more individuals interacting in such a manner that each person is influenced by and exerts influence on the other individuals (e.g., Shaw, 1976). Definitions often maintain that members must be copresent for a group to exist, such as Hogg's (1992) statement that the group is "essentially a numerically small face-to-face collection of individuals interacting to perform a shared task or fulfill shared goals" (p. 30). This assumption does not take into account the social influences that exist in widely dispersed groups, groups too large to physically assemble, and now, with the emergence of computer technology, on-line groups.

Turner (1982) proposed a cognitive redefinition of the social group, arguing that the perception of membership in some common social identity is sufficient for a group to exist. Turner's social identity model proposes that it is not the physical makeup of the group that is important but instead the psychological state, "the subjective sense of togetherness, we-ness, or belongingness" (Turner, 1982, p. 16) that constitutes group formation. Thus, one can feel oneself to be a member of a social unit that has its own identity without requiring that the members of the group be physically present. It is this definition that most closely encompasses virtual groups.

Members of online groups can be completely anonymous, known to one another only by nicknames, and have no readily available physical identity. They interact with one another from far-flung locations and environments and have no physical meeting place. And yet despite the fact that these group members are physically isolated from one another, when they are all gathered in the shared virtual space of a newsgroup, multiuser dimension (MUD), or chat room, the feeling of being in closer proximity, of being together, is often experienced by these members. People frequently talk about "getting together to chat" in a chat room much as they talk about "getting together for coffee," and they use phrases such as "when I'm in the MUD with my friends" as if they were all together in one physical locality. Thus membership in a virtual group involves the subjective sense of "we-ness," often combined with a subjective sense of physical togetherness.

Motivations for Joining an Online Group

Individuals join groups, whether in the virtual or the real world, to achieve an important goal or combination of goals (e.g., Fiedler, 1964). For some, the goal may be to alleviate loneliness; for others it may be to gain social support on issues such as grief or illness; still others may be seeking to have important beliefs, attitudes, and opinions reinforced, and so forth. Why then would one be motivated to join a virtual group rather than seeking out a more traditional group?

Lack of "Real-World" Counterparts

Individuals who have specialized or unusual interests may find it difficult to find groups corresponding to their interests in their everyday social environments. For instance, someone who lives in rural Nebraska and who is passionate about Indian cooking may find it difficult to find others who share that interest. For those who have socially stigmatized core aspects of self, the situation is starker, particularly when the identity can be concealed from others. People with concealable marginalized aspects of identity (e.g., nonmainstream sexual preferences or political views) are generally barred from connecting with similar others for the very reason that such identities are not conspicuous and those who share them are not readily identifiable in society (Frale, 1993; Jones et al., 1984). Furthermore, the embarrassing nature of the identity and the perceived risks of disclosure place additional barriers to approaching others who may well share this self-aspect. The risks of disclosing a culturally devalued identity are quite real, even when such disclosures are made to one's closest family members and friends (Derlega, Metts, Petronio, & Margulis, 1993; Pennebaker, 1990). These people are thus likely to feel alone and different and to strongly desire to find others who share this social identity.

While finding others who share mainstream but specialized interests or who share culturally devalued identity aspects may be quite difficult in one's everyday social world, groups devoted to these specialized interests can be readily found with a click of the mouse on the Internet. There are a multitude of available newsgroups, electronic mailing lists, Web sites, and chat rooms devoted to every conceivable topic on-

line. And, as is discussed in greater detail below, the fact that one can communicate anonymously in these groups on the Internet affords greater protection from possible ostracism (or worse) from others in one's daily life.

Time Constraints

Provided that one can find a group devoted to one's interests or needs in the nonvirtual world, hectic schedules and time constraints often prohibit one from joining or taking an active part in the group. Those who work demanding jobs, or who are simultaneously balancing the demands of a career and a family, often find that they have little time left over for participation in social groups. To participate in a group that meets once per week, for instance, not only must the meeting take place at a time that fits into one's schedule and at a locale that is not too distant, but often other obstacles, such as finding a babysitter, must be first overcome. Because the members of many kinds of online groups, such as newsgroups, do not have to be copresent at the time one chooses to participate, online groups allow people more flexibility about when they participate, scheduling social group activities at times convenient for each of them.

The fact that one can take part in virtual groups at any time of the day or night (and is likely to find a subset of members online) is a distinct advantage for many of those in need of social support. Although there do exist some real-world equivalent groups that maintain 24-hr contact availability, such situations tend to be an exception. Members of online support groups frequently comment that they often find themselves needing support in the middle of the night and that it is a great relief to have their online support group to turn to in those critical times.

Sharing a Common Predicament

Research has long shown that sharing a common problem or predicament has an effect on group attraction. Latane, Eckman, and Joy (1966) found that when individuals underwent a stressful situation together, they provided support to one another, reducing feelings of stress. An individual who is going through a stressful situation, such as a divorce, will thus tend to

bond with others in similar circumstances and may be motivated to actively seek out such others. However, it may be easier to identify and connect with such similar others on the Internet than in the relatively narrow real-world social circle in which the individual moves.

Social Anxiety and Loneliness

Making social connections and gaining a sense of belonging and acceptance in face-to-face groups can prove to be quite difficult for those who experience anxiety in social situations. Thus, they are often hindered in fulfilling their need for belonging, acceptance, and intimacy (see Leary, 1983). Although it is true that many of those who are socially anxious are also lonely, one can be lonely without being socially anxious. Many individuals find themselves in a temporary state of loneliness (e.g., perhaps they have recently moved to a new city) or in a chronic state of loneliness brought about by situational circumstances (e.g., the homebound). These individuals are more likely to turn to the Internet to meet their need to belong because this need is not met in the non-Internet realm. And, as recent research has shown, individuals who are socially anxious or lonely are indeed more likely than those who are not to form close relationships with others on the Internet (McKenna, Green, & Gleason, 2002). Furthermore, those who are socially anxious not only feel more comfortable interacting in virtual than in face-to-face groups but also are seen more positively and gain greater acceptance by online group members than by members in face-to-face groups (Green & McKenna, 2002).

What Sets Internet Groups Apart?

The Effects of Anonymity

Individuals are able to interact with others on the Internet while remaining wholly anonymous if they so wish, through commercial accounts (such as America Online) and anonymity-enabling software. Even those who interact "non-anonymously," that is, with their real names present on their newsgroup posts, or where their identity can be obtained, tend to feel at least moderately anonymous. When posting a message to an electronic mailing list or newsgroup or entering a chat room full of strangers, an individ-

ual may well feel that his or her actions become submerged in the hundreds (or thousands) of other actions going on within the group. Deindividuation and the negative effects that often accompany it (e.g., Zimbardo, 1970) thus frequently occur within groups on the Internet (see Mendels, 1999). However, effects that are more positive are produced as well, not only because of anonymity but also through deindividuation.

Deindividuation. Environmental conditions, such as darkness or the presence of a large number of people, that reduce an individual's self-awareness can produce deindividuation (Diener, 1980; Zimbardo, 1970), the process whereby submergence in a group produces feelings of anonymity (Festinger, Pepitone, & Newcomb, 1952), focusing attention away from the individual. This may increase aggressive behavior by decreasing one's self-awareness (Deaux & Wrightsman, 1988). This loss of self-awareness may produce a reduced sense of responsibility and less pressure to conform to societal norms; it may weaken people's ability to restrain their behavior, and instead they may react to immediate cues or to their current emotional state, which may result in antisocial, impulsive, and disinhibited behaviors (Zimbardo, 1970).

Conditions readily exist on the Internet that can foster a lessening of an individual's self-awareness, and the negative, deindividuating effects of anonymity, high feelings of group unity, and raised physiological arousal have been among the most discussed aspects of Internet communication. "Flaming"—the practice of engaging in an angry, hostile, and often offensive exchange—and the tendency for groups to form more polarized decisions, increased misunderstandings, greater hostility and aggressive responses, blunt rather than tactful remarks, and nonconforming behavior are more likely to occur in computer-mediated interactions than in face-to-face interactions (e.g., Dubrovsky, Kiesler, & Sethna, 1991).

Positive effects of deindividuation. Although anonymity frequently does produce deindividuation, positive effects of anonymity also have been found. Johnson and Downing (1979) found that under deindividuating conditions—when the influence of self-standards is decreased and the power of external, situational cues is increased—resultant behavior will depend on whether those external cues are associated with negative, antisocial behavior or with

positive, prosocial behavior. For instance, in the classic study by Zimbardo (1970), negative deindividuated behavior was elicited from participants through the use of anonymity-enhancing hoods associated with the Ku Klux Klan. However, when those same hoods were portrayed as those worn by recovery room nurses, the elicited behavior was more positive than a control group's (Johnson & Downing, 1979). In a different study, when individuals met and conversed in a darkened room where they could not see one another, they not only disclosed more intimate details about themselves but also left the encounter feeling more positive about the other participants, when compared with individuals who interacted in a well-lit room (Gergen, Gergen, & Barton, 1973).

A growing body of research has documented that anonymous communication on the Internet also produces positive outcomes. The relative anonymity of the Internet allows individuals to take greater risks in making disclosures to Internet friends than they would to someone they know in more traditional, face-to-face settings (McKenna & Bargh, 1998; McKenna et al., 2002). Users are more likely to express how they truly feel and think (Spears & Lea, 1994) when interacting on the Internet, and when identity salience of the group is high, those who interact under conditions of anonymity are more likely than their nonymous, face-to-face counterparts to conform to group norms (e.g., Postmes, Spears, & Lea, 1999).

Lack of Physicality

The physical appearance of group members and the physical environment in which the group meets are important factors that shape the tone and functioning of traditionally defined groups. Physical appearance plays a major role in determining whether interactants will positively view one another, whether a relationship will start, and how it will progress (Hatfield, Aronson, Abrahams, & Rottman, 1966; Hatfield & Sprecher, 1986). Considerable research has shown that the material aspects of the meeting place, such as the temperature, decor, chair and table arrangements, and so forth, affect the functioning of the group in important ways (see Shaw, 1976). Factors such as interpersonal distance, the invasion of personal space, and the seating positions selected by members also play

important roles. For instance, research has shown that high-status individuals (or those who so perceive themselves) in the group tend to select seating positions in accordance with this perception (Strodtbeck & Hook, 1961).

When interacting on the Internet, such physical features do not play a role. Internet groups as a whole are unaffected by features such as a common temperature or seating arrangements. Because, at least initially, Internet users correspond without visual cues about the other group members, the influence of physical appearance—including but not limited to gender, age, physical attractiveness, and race—is not in operation. Feelings of liking, friendship, and attraction between group members must have bases other than physical cues, such as similarity, values and interests, and conversational style, which have also been shown to be powerful determinants of friendship and attraction (e.g., Byrne, Clore, & Smeaton, 1986). Thus, liaisons may form on the Internet that would not have formed in the face-to-face world.

Group Functioning in the Virtual Realm

Social Versus Task Needs

At the most basic level, all groups serve two main needs for members: to attain the defining goal or central task of the group (i.e., the purpose the group was formed to achieve), and the fulfillment of social needs for the members. Both of these needs are critical for the continued maintenance of the group (e.g., Fiedler, 1964). If the purpose for the group ceases to exist, so too will the group, unless or until another goal can be established. Meeting social needs is also important for the group to remain intact, for if social needs are not being met, members will not be motivated to remain in the group (Festinger, 1950; Fiedler, 1964; French, 1941). Thus, an important question for group researchers is whether virtual groups meet the social needs of members, as this bears directly on the stability and cohesion of virtual groups.

As a result of the widely publicized conclusions from two studies, researchers may believe that Internet groups do not meet members' social needs and, therefore, that such groups will be unstable and eventually dissolve. For instance, in the HomeNet study (Kraut, Patterson, et al., 1998), the authors argued that relation-

ships formed online are weak and less rewarding than offline relationships and that Internet use results in a decline in family communication, a decrease in the size of one's social circle, and an increase in loneliness and depression. However, several aspects of the design of this study and its results mitigate against the authors' conclusions (see McKenna & Bargh, 2000).

Some initial direct evidence to the contrary, however, was provided by Parks and Floyd (1995), who found from their samples of Internet users that people feel personal relationships they form on the Internet are close, meaningful, and rewarding. More recently, in a 2-year longitudinal study of randomly selected Internet newsgroup participants, McKenna et al. (2002) found not only that 84% of the participants reported their Internet relationships as being as close, important, and real as their non-Internet relationships but also that these relationships remained remarkably stable over time. Indeed, compared with studies of romantic relationships begun in a traditional face-to-face setting (Attridge, Berscheid, & Simpson, 1995; Hill, Rubin, & Peplau, 1976; Kirkpatrick & Davis, 1994), considerably fewer of the romantic relationships that formed initially over the Internet dissolved, and the majority were reported as having become even closer and more intimate. Nonromantic relationships fared equally well.

Further testifying to the importance and depth of these relationships formed over the Internet, the majority of the participants were not content with having these relationships exist solely in the virtual realm but instead were motivated to bring them into their real lives, with more than 50% meeting their close Internet friends and romantic partners in person.

However, it may well be the case that some of the very factors that can facilitate relationship formation online (e.g., anonymity, lack of physicality) also may facilitate the severance of relationships. The hurt felt by others upon being rejected is much less salient for the rejector when such actions take place in the physical absence of the other person.

Social Identity and the Self-Concept

If Internet groups successfully fill the needs of providing a group goal and meeting the social needs of their members in the same way as do

non-Internet groups, one would expect membership in online groups to produce the same outcomes for the individual's self-concept as does participation in traditional groups. According to Tajfel's (1982) original model of social identity, the central motivation for identifying with a social group is the gain in self-esteem such identification brings, and incorporating the group identity into one's social identity is sufficient to bring about such gains. Deaux (1996), however, demonstrated that one must take into account individual differences in the subjective importance of the identity—that the effect of identification alone is insufficient to affect the self-concept. Deaux and her colleagues have demonstrated the importance of the role of involvement in the group as a mediator of the benefits of identification on self-esteem (e.g., Deaux, 1996; Ethier & Deaux, 1994). Thus, strength of identification will be positively related to participation in the group, as well as to an individual's self-esteem and other aspects of the individual's self-concept.

McKenna and Bargh (1998) studied individuals with stigmatized aspects of identity to test whether models of social identity transformation based on offline group membership (e.g., Deaux, 1996) would hold for online group membership. They hypothesized that because of the difficulty in identifying similar others in society, individuals with concealable stigmatized identities would identify more strongly with Internet newsgroups devoted to the stigmatized self-aspect and would consider such groups to be more important to their identity than would individuals with mainstream or marginalized—conspicuous (i.e., obesity, stuttering) identities. In line with Deaux's model of social identity, participants in the marginalized—concealable newsgroups participated more and changed their behavior in response to feedback from other group members (posting more if the feedback was positive, less if the feedback was negative) than did participants in the mainstream and marginalized—conspicuous newsgroups. That is, those for whom the group was not as important participated less, and their behavior in the group was less affected by feedback from other group members (Study 1).

Second, the more that Internet members participated in the group, the more they incorporated the previously taboo aspect of identity into their self-concept, as measured both by self-

reports of their acceptance of this aspect as a direct result of group participation and by behaviors such as "coming out" about this aspect for the first time to non-Internet family and friends (Studies 2 and 3). In fact, more than 40% of the respondents in both studies eventually disclosed this previously secret aspect to family and friends for the first time, as a direct result of their Internet group activities. The results of these studies provided a clear replication of Deaux's (1996) model of social identity and self-transformation in the domain of Internet groups.

Development and Maintenance of Group Norms

Social identity theory proposes that individuals carry with them several possible identities, and depending on the situation one or another of these will become salient at any given time (Turner, 1982). Once a social identity becomes salient, or is "switched on," it exerts an influence on the individual's attitudes and behaviors. Spears and Lea's (1992) social identity model of deindividuation posits that once an identity becomes salient, it provides information about the group that, in turn, influences the individual to conform to the group norm and thus behave prototypically. It is through comparison and differentiation with other groups, and interaction and negotiation within the group, that group norms develop.

In support of this, Postmes et al. (1999) demonstrated that communication patterns within e-mail groups differed significantly in content and form, illustrating that different norms developed within each group and were maintained over time. As e-mail messages exchanged within groups became more prototypical in content, messages sent to members of out-groups differed significantly from the in-group prototype. In other words, norms were developed within the different groups that influenced the use of paralanguage in e-mails to other group members but did not influence behavior in messages to individuals who were not part of the group.

Reicher (1984) argued that social context influences the effect that deindividuation will have on the individual, and thus, when the group is made salient, deindividuation may actually increase social influence. Findings by

Spears, Lea, and Lee (1990) suggest that deindividuation does indeed increase the influence of social norms under certain conditions.

Spears et al. (1990) found that normative behavior increased in electronic groups when individual members interacted under deindividuated conditions and when the salience of the group was high, as compared with the deindividuated low-group-salience condition. Individuals in the two individuated conditions (high and low group salience) displayed an intermediate level of conformity to group norms. Moreover, isolated group members (those interacting via computer in separate rooms) displayed more normative behavior than copresent group members (those interacting via computer but together in the same room). Spears and colleagues argued that removing the physical appearance of group members while keeping the group identity salient enhances the prototypical image of the group by eliminating possible contaminants to this image or ideal. Anonymity and the lack of physical cues have the effect of obscuring interpersonal differences, increasing attachment to and identification with the group.

Postmes et al. (in press) provided further support that deindividuation, under conditions of high group salience, actually increases conformity to group norms. In one study, subjects were primed with either task-oriented or socioemotional social behavior and then placed into either an electronic group composed of similarly primed members who interacted anonymously under deindividuating conditions, or a nonymous electronic group of similarly primed members under nondeindividuating conditions. Members in anonymous groups demonstrated behavior consistent with the prime they received considerably more so than did those who were nonymous. Over time, prime-consistent behavior became stronger within the anonymous group (i.e., the members conformed even more strongly to the primed behavior); however, individuals in nonymous groups actually behaved prime inconsistently.

Postmes et al. (in press) replicated the above study, this time priming only 2 of the 4 members of each group. Primed individuals in anonymous groups and their nonprimed cohorts again conformed to the task- or socioemotional oriented behavior significantly more so than did both the primed and nonprimed nonymous group members. They also found that those who

interacted anonymously felt a significantly stronger attachment to their group and to other group members.

The Emergence of Group Leaders

The social identity theory of leadership (Hogg, 1999; Hogg & Reid, in press) proposes that individuals who are more prototypical of the group—that is, there is a high degree of overlap between that person's characteristics and those characteristics of group members (goals, values, attitudes) that distinguish that group from other groups—will emerge as leaders. As group membership becomes increasingly salient, members become highly sensitive to prototypical aspects and use the prototype as a model for evaluating the self and other group members. Research has shown that individuals have a heightened awareness for subtle differences in prototypicality among their fellow group members and are able to clearly delineate those members who most closely conform to the prototype (the leaders) and those who fit the prototype to lesser degrees (the followers) (e.g., Hogg, 1993). Group leaders are those individuals who are perceived by the other members to best embody the group prototype, that is, the behaviors and norms to which the less prototypical members are attempting to adhere. In established groups, leaders not only embody the prototype but actively influence the behaviors of the other group members. In new groups, those who best fit the prototype of the group emerge as leaders not because they are actually exerting influence over the other members but because they are *seen* (by the group members) to be exercising greater influence over the less prototypical members. In fact, however, it is the prototype (that the leader happens to most closely fit) that is exercising the influence (Hogg & Reid, in press).

Within Internet groups, one would expect that the social identity theory of leadership would apply even more strongly than in face-to-face groups because other influential factors for leadership, such as the physical appearance and degree of interpersonal dominance of potential leaders, are not in operation. An individual who most closely embodies the ideals, values, and goals of the group might potentially be dismissed in a face-to-face group by other members as not matching the prototype on the basis

of these issues, such as the individual's age, race, or physical attractiveness. Indeed, age and race may be implicit and not mentioned counterprototypical features. Because such factors are not in evidence in virtual groups, they would not play an influential role and thus would not hinder the perception of this individual as the prototype or his or her rise to leadership within the group.

Consequences of Virtual Group Membership

Greater Liking and Acceptance by Others

Research has found that in first-time encounters, an individual will be liked better by his or her interaction partner if the encounter takes place in an internet chat room than if the two partners meet face-to-face instead (Bargh, McKenna, & Fitzsimons, 2002; McKenna et al., 2002). This greater liking continued to hold, and indeed increased, after the interaction partners met a second time, face-to-face. Thus, meeting in person enhanced feelings of liking for Internet partners, whereas no such increase in liking occurred for those who met in person on both occasions. Providing an even stronger test of this effect was a condition in which participants met the same person over the Internet and face-to-face but did not know that it was the same person. They were told that they would be interacting with two different people, one of whom they would meet in an Internet chat room and the other they would talk with in person. In actuality, they talked with the same partner both times. Even though participants did not realize this, they reported liking that person significantly more after chatting with him or her on the Internet than after meeting face-to-face.

Why might those who meet over the Internet like one another better than if they were to meet face-to-face, and how might this increased liking affect group functioning? The above study provided some insight as to the reasons for this greater liking. For Internet partners, degree of liking was found to be a significant function of the degree to which the participant felt that he or she had come to know the partner, as well as his or her feelings about the quality of the conversation between them. Liking ratings in the face-to-face meeting conditions were entirely unrelated to ratings of the quality of conversation or

of the level of intimacy established. This finding is in harmony with research demonstrating that gating features (e.g., physical appearance) drive initial liking in face-to-face meetings (Hatfield et al., 1966; Hatfield & Sprecher, 1986). In Internet interactions such features are not in operation and thus do not prevent bonds based on more substantive features of the encounter from being established.

Both interpersonal attraction and quality of interaction have been found to be important factors in group cohesiveness (French, 1941; Shaw, 1976). Back (1951) found that members of highly cohesive groups were active in seeking out information as a team effort and in reaching agreement, whereas low-cohesive group members tended to act independently and without regard for the other group members. When group cohesiveness was based on interpersonal attraction, members wanted to prolong the interaction and to engage in additional pleasant exchanges. Members of highly cohesive groups have been found to engage in more social interaction, to have more positive exchanges, to be more cooperative (and successful) in their efforts at group tasks, and to exert greater influence over their members (see Shaw, 1976).

Negating the Effects of Social Anxiety

Individuals who experience a great deal of shyness and anxiety when interacting in face-to-face situations have been shown to have more difficulty forming social bonds with others and to frequently be less liked and accepted by others when they do engage in such interactions (Leary, 1983). Research has shown that socially anxious individuals are significantly more likely to form friendships and intimate relationships with people they meet on the Internet than are those who are not socially anxious (McKenna et al., in press). On the Internet, many of the situational factors that foster feelings of social anxiety (e.g., having to respond on the spot, talking to someone face-to-face) are absent. Thus, interacting via the Internet places these socially anxious individuals on more equal footing, enabling them to more easily form social bonds but also to behave and to be perceived by others as confident, nonanxious individuals.

In a study comparing Internet and face-to-face interactions, Green and McKenna (2002) preselected individuals scoring at the high and low extremes of Leary's (1983) Interaction Anxiousness Scale and randomly assigned them to interact in small groups. Anxious individuals in the face-to-face condition reported feeling a great deal of anxiety, shyness, and discomfort during the interaction. Their anxious counterparts who interacted in an Internet chat room, however, not only reported feeling significantly less shy, anxious, and uncomfortable, but had self-reports on these measures that were nearly identical to those of nonanxious individuals in the face-to-face condition. In other words, when a socially anxious individual takes part in a group discussion on the Internet, he or she will feel as comfortable, outgoing, and anxiety-free as nonanxious individuals typically feel in face-to-face discussions. Furthermore, anxious individuals were perceived as outgoing, likable, and confident by other group members on the Internet, in stark contrast to the negative ratings they received on these measures by face-to-face group members. Again, anxious individuals who interacted in the online groups looked identical to those who are not socially anxious and who interacted face-to-face and were slightly more outgoing and confident than nonanxious individuals who interacted on the Internet according to peer ratings. Confident and successful exchanges over the Internet may well lead to increases in self-efficacy for these individuals (Bandura, 1977).

Such findings have strong implications for effective group functioning. Socially anxious individuals have been found to respond more slowly and less consistently than nonanxious individuals in group settings (Cervin, 1956), to engage in opinion shifts more readily (Kogan & Wallach, 1967), and to be better satisfied with the group's performance than nonanxious individuals (Zander & Wulff, 1966). Their anxiety may inhibit them from introducing relevant ideas and suggestions to the group and from taking an active role. When interacting in groups on the Internet, however, these individuals appear to function as do nonanxious individuals. Indeed, behaving and being perceived and treated as a confident and nonanxious individual by others in the virtual world may enable anxious individuals to become more confident and less anxious in the offline world as well.

McKenna et al. (in press) found that after two years of active participation with others via the Internet, reported levels of social anxiety experienced in offline interactions significantly decreased for participants.

Decreased Feelings of Isolation and Loneliness

Marginalized individuals who actively took part in newsgroups related to that aspect of identity directly benefited from such participation through decreased feelings of isolation and estrangement from society (McKenna & Bargh, 1998). Participation in virtual groups also benefits those with mainstream identities. Although amount of Internet use was associated with a slight increase in feelings of loneliness for a subset of the HomeNet study participants (Kraut et al., 1998), there was a significant decrease in feelings of loneliness for the sample as a whole (see McKenna & Bargh, 2000). Similarly, McKenna et al. (in press) found a significant decrease in loneliness for participants after 2 years of active Internet participation.

Increasing One's Social Network

The Internet not only enables people to maintain and reforge existing ties with far-flung family members, friends, and social groups, it also enables individuals to create new ties and to have memberships in groups that would otherwise not be available to them. It is not surprising, then, that the majority of Internet users report having strengthened ties with family members and friends who do not live in close proximity as a result of the Internet (Moore, 2000; Pew Internet Research, 2000) and that their social circles have increased through their contacts with individuals they meet on the Internet and the virtual groups they join (McKenna et al., in press).

"Coming Out" and Coming Together

Membership in virtual groups can have very real consequences for an individual's nonvirtual life. When membership in a virtual group is incorporated into and becomes an important part of an individual's social identity, he or she is likely to be highly motivated to make this

identity a part of his or her nonvirtual life. According to self-completion theory (Wicklund & Gollwitzer, 1982), an individual is motivated to make new, important aspects of identity a social reality by making sure that other people know about them. Such was the case with a significant percentage of the participants studied who took part in marginalized newsgroups (McKenna & Bargh, 1998). More than 40% of these respondents had, as a direct result of participation in the identity-relevant groups, revealed this previously embarrassing and socially sanctioned aspect of identity to important family members and friends. In "coming out" about this aspect of identity—making what could have been left private and anonymous on the Internet a social reality—these group members demonstrated how important the virtual group was to their identity.

Recent relational models of the self (e.g., Baldwin, 1992; Chen & Andersen, 1999) posit that just as one incorporates important social group identities into one's self-concept, so too will one incorporate one's important relationships. An individual is thus likely to be motivated to bring important virtual relationships into his or her everyday life. Indeed, such real-world meetings between virtual friends are becoming increasingly common. In a study of nearly 600 newsgroup participants, McKenna et al. (in press) found that in 1997 slightly more than 50% of the respondents had taken the step of getting together with their closest Internet friend in person. Two years later, that number had increased to 73% of the participants. Meetings take place not only between dyadic friendship pairs, however. Large and small real-world gatherings of virtual group members also take place, where members travel across countries and continents to attend "MUD gatherings," "knitting circles," and countless other group "socials" to mingle in the flesh with their fellow group members.

Conclusions

Online groups are indeed real; however, just as with traditional groups, active participation plays a key role in determining whether an individual will experience self and social benefits from group membership. To the extent that membership in the group matters to the individ-

ual, virtual groups can and do exert powerful social influence on the participants.

Participation in Internet social groups provides individuals with the opportunity to widen their social networks and to integrate new online relationships and identities into their everyday lives. For those who are socially anxious and lonely, the Internet affords a less threatening environment in which to meet others and to form strong social bonds. Being able to interact in an outgoing and confident manner, coupled with the positive reinforcement of these abilities that these individuals receive from others on the Internet, may have the downstream results of increasing their confidence and decreasing their anxiety in face-to-face interactions. Thus, the Internet may be a venue that increases their self-efficacy (Bandura, 1977), and this will be an important area for future research. It will also be important to investigate issues such as the emergence of leaders in online groups, additional motivations for joining virtual groups, and the implications of such participation for those individuals, as well as the efficacy of online versus offline group functioning.

Finally, we note that virtual groups, like face-to-face groups, are shaped by the individual members of which they are composed. If group salience is weak and the group fails to meet the task and social needs of the majority of its members, it will dissolve. When it is successful at meeting those needs, it will thrive. On the Internet, as in "real life," whether the group stands or falls depends on the individual motivations and needs of its members.

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