
Social Psychological Theories of Computer-Mediated Communication: Social Pain or Social Gain

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INTRODUCTION AND OVERVIEW

It is a safe bet that computer-mediated communication (CMC) features in the everyday life of those likely to be consulting this volume. Less than two decades ago this would not have been the case. The growth of the Internet has meant that CMC use has become ubiquitous in the developed world, and a marker of social exclusion for those denied access. Social science has hardly kept pace with these technological changes in communication, either in terms of understanding their global impacts or their local effects. In this chapter we focus on the main social psychological theories that have been proposed to account for the effects of CMC on individuals and groups, and on the role of language as a medium and mediator for these effects. As such, this review is partial and excludes certain influential approaches, such as those with more sociological or business management underpinnings (e.g., Contractor & Seibold, 1993; DeSanctis & Poole, 1994; Valacich et al., 1992). The different

approaches reviewed below vary considerably in terms of their underlying theoretical foundations but a recurring theme is the extent to which CMC should be regarded as a medium that is capable of supporting social relations. In other words, "How social is CMC?" This issue has been vigorously debated in the literature, and has spawned theories that attempt to evaluate the relative "social efficiency" of CMC or else to identify specific conditions under which CMC may support or undermine social influence and social relations in general.

In addressing this theme, social psychological research has focused predominantly on text-based synchronous or asynchronous CMC, which have been compared both theoretically and empirically with face-to-face (FtF) communication or some other standard that controls for critical features of CMC. However, as technology advances, CMC can be realized in an increasing variety of forms ranging from electronic mail, through virtual reality systems to real-time audio/video conferencing. These newer forms of CMC have received scant attention to date within social psychological research, although the results of earlier studies on audio and video conferencing prior to the development of CMC are clearly relevant (Short, Williams & Christie, 1976; Williams, 1977).

Nevertheless, research on CMC has focused upon a range of important domains within social psychology. Social influence and group decision-making are foremost among these in that they are central to social and work groups and the wider organizational context in which much CMC is used. Similarly, the impact that CMC has on status and power differences that operate in FtF interaction has been investigated. However, even more basic is the way that CMC affects the perceptions of others and even the definition of the self. How is identity defined in "cyberspace", where some of the visual reality constraints relating to physical embodiment and FtF communication do not always apply? How CMC affects group definition and group dynamics is also a central question for developing and evaluating new ways of working with this technology (e.g., teleworking, computer-supported collaborative work). CMC not only provides a context for communication within the group, but also for intergroup communication, traversing familiar social boundaries (gender, ethnicity, social status, etc.) as well as those of time and space. In such cases the sociality of CMC can be double-edged, with the proposed insensitivity of this medium to interpersonal differences being seen either as a way to increase social contact and consensus across social divides, or else as reinforcing social boundaries and divisions (Kiesler & Sproull, 1992; cf. Postmes, Spears & Lea, 1998a).

These considerations have direct relevance for language content and language use in CMC and on the Internet. The relation between communication and language is of course an intimate and entailing one. Language both affects and reflects the relation between interlocutors, it is the major means by which we communicate affiliation and intimacy, and also power and difference. Language is also central to our focus on the social psychological process of social influence in CMC. Even where it is not directly or explicitly implicated, language will form the medium of social influence, and will be used to convey information about group membership (through headers, signatures and other identifying labels), as

well as carrying the message itself (persuasive arguments, perlocutionary acts, discourses, etc.). The text-based nature of CMC and Internet use mean that the focus on language and linguistic factors will be all the greater, especially in comparison with other communication media or channels.

It almost goes without saying that language, as a means of communication, and as a shared system of signs, is a social dimension *par excellence*. On this reasoning the text-based nature of CMC and the Internet should render them highly social media. However, this is worth saying because although language and sociality are closely bound up with each other, ironically perhaps the earliest social psychological research on text-based CMC has tended to propose that sociality is somehow undermined in this medium. This is because sociality has been defined more in terms of features of interpersonal interaction than in terms of language and communication. We now develop this theme, and have organized our brief review of theoretical approaches in this literature in terms of the increasing sociality that the theories assume for CMC.

THEORIES OF CMC

A central concept common to several theoretical approaches, and one that has influenced the presumed sociality of CMC, is communication bandwidth. This engineering concept has its origins in information theory: mathematical formulations of communication potentially applicable to any situation of information transfer, by humans or machines. Central to the information theory approach is the idea that communication can be quantified in terms of bits of information required to solve problems of uncertainty (Frick, 1959). Research on CMC has been heavily influenced by communications theory approaches grounded in the bandwidth principle, where the equation of technical efficiency of a communication medium with its "social efficiency" has paved the way for evaluations of sociality based on a mechanistic analysis of information transfer (Lea & Gior-dano, 1997). The focus on concepts from engineering and information theory (rather than, say, on sociolinguistics or semiotics) meant that research was probably bound to underestimate the social dimensions of CMC. The most influential of these early approaches is the Social Presence Model, the initial development of which predates CMC. We consider first this and then related approaches that have extended or contested this theoretical tradition.

The Social Presence Model

The Social Presence Model developed by Short et al. (1976) was concerned with communication via telephone, audio and video links and has been very influential in relation to subsequent research on CMC (e.g., Daft & Lengel, 1986; Johansen, 1977; Rice, 1984; Rice & Love, 1987). According to this model the critical factor in the

communication medium is its "social presence", a factor that comprises a number of dimensions relating to degree of interpersonal contact, "intimacy" (Argyle & Dean, 1965), "immediacy" (Wiener & Mehrabian, 1968) and the personal-impersonal dimension (Champness, 1973). A series of studies suggested that communications media could effectively be ranked according to social presence (namely from business letters, telephone/single speaker audio, multiple speaker audio, television, up to face-to-face communication). CMC might be assumed to occupy a relatively low-position level in this ranking. Indeed, Rice (1993a) tested a multidimensional scale of social presence based upon perceived satisfaction or appropriateness of media for a range of communication tasks thought to be influenced by a medium's social presence (such as making decisions, generating ideas, persuasion and maintaining friendly relations). Perceptions of media appropriateness, drawn from surveys in six organizations, placed electronic mail at the lowest place in the hierarchy. However, perceptions of media appropriateness were only weakly associated with actual use of the media for the various tasks.

Other comparative media analyses have produced mixed results. Some have supported the ranking implied by the social presence model, whereas others have identified a number of conditions under which the relative positions that media occupy give way to more important considerations, or else can be overturned (e.g., Burke & Chidambaram, 1996; Daft & Lengel, 1986; Hiemstra, 1982; Lea, 1991; Reid, 1977; Rice, 1987, 1992; Rice & Love, 1987; Rice & Williams, 1984; Sproull & Kiesler, 1986; Sumner, 1988; Steinfield, 1986; see also Walther, 1992). Nevertheless the influence of this model has determined the direction of subsequent theorizing. In particular it has fostered the assumption that CMC is less social, and thus less conducive to social influence compared to higher social presence media such as FtF communication. This is somewhat ironic because the early results of Short et al. (1976) suggested that lower presence (e.g., auditory channel only) resulted in greater social influence than higher presence. However, before addressing other theories that specifically address social influence in CMC, we first consider two more approaches that are predicated upon the notion of communication bandwidth.

Media Richness Theory: The effects of choosing CMC

A similar theoretical concept, media richness, has been developed by Daft and Lengel (1984, 1986), apparently without awareness of the earlier social presence research. Although a theory of media choice rather than media effects (see, for example, Fulk & Boyd, 1991), it makes important assumptions about media effects, many of which it shares with the social presence tradition. The theory is rooted in organizational information processing theory which identifies resolving ambiguity and reducing uncertainty as the main goals of communication (Galbraith, 1973). The central proposition is that communication media can be arrayed along a continuum of media richness based on their capacity for processing equivocal information;

communication failures can be explained by a mismatch between the equivocality of a communication task and the richness of the chosen medium.

Four factors have been proposed to determine media richness: (1) the ability of the medium to transmit multiple cues, (2) the immediacy of feedback, (3) the use of natural language and (4) the personal focus of the medium. According to these criteria, it is usually assumed that CMC would be perceived as a relatively "lean" medium, at least in comparison with FtF interaction. As such it should be best suited to fairly routine and low-level communication uses. Although some studies tended to support the media richness ranking for traditional media, large variances relative to very small mean differences have been reported for electronic mail and other mid-ranking media, suggesting considerable variation in media use unaccounted for by the richness continuum (Fulk & Boyd, 1991).

An important corollary of this approach is that the richness of the medium should be chosen to match the equivocality or uncertainty associated with the particular communication task. Indeed, most tests of this theory have been concerned with the perceptions of media fit rather than evaluating actual efficiency of performance (Dennis & Kinney, 1998). However, studies that have examined the match between media have not always provided support, and in practice it seems that many factors beyond media richness affect media choice (e.g., Markus, 1987, 1994; Zmud, Ling & Young, 1990). For example, in a comparative study of a range of media, including CMC, Dennis and Kinney (1998) found little effect of media choice on decision quality and even contradictory evidence. In sum, the effects of media such as CMC do not seem to bear a straightforward relation to the amount of information exchange of the medium.

Later modifications to the model have extended it beyond its original strictly informational base. Borrowing from structural symbolic interactionism, Trevino, Daft and Lengel (1990) suggested that "external forces" or contextual factors might influence media choice. These include distance, time pressure, accessibility of the medium and the existence of a critical mass of users. Furthermore the revised symbolic interactionist perspective of media choice recognizes that symbolic meanings of different media that are independent of message content ("the medium is the message") can also affect communication outcomes.

Problems with the Social Presence/Media Richness Perspectives

To summarize, social presence and media richness are conceptually similar approaches that distinguish between communication media and their differential effects primarily in terms of the information-processing capacity of the media. Both predict that perceptions of this capacity influence the appropriateness and use of media for different tasks, particularly within an organizational context.

However, a number of criticisms can be levelled at these relatively deterministic approaches to CMC effects. In particular, the matching hypothesis equates communication efficiency with the non-redundancy of information since richer media are supposedly only used because there is more information to

communicate. However, in human communication redundancy may be useful in communicating meaning. Relatedly, both models assume that maximum communication efficiency is equated with maximum organizational efficiency. But there are situations in which media are strategically used to distance communication or increase uncertainty, especially in hierarchical organizational communications (e.g., communicating on a "need-to-know" basis for forward planning, or managing disputes). Media choice in these circumstances may not be so much a matter of increasing communication efficiency as using media to maintain and reinforce existing power relations.

More generally, these models lack specificity about the processes involved both in arriving at consensual perceptions of media and their effects. While both approaches have collapsed multidimensional scales onto single factors, recent studies have suggested the need to incorporate additional dimensions in order to account for variations in media choice unexplained by the original concepts (Rice, 1993b; Valacich et al., 1993). However, these additions further undermine the notion that a single concept is sufficient to explain media perceptions and choice. Moreover, even if social presence or media richness could be shown to provide a reliable explanation of comparison and choice between media, they are poorly placed to account for the variability of uses *within* a specific medium such as electronic mail, which may demand varying levels of information processing ability. Instead, a more refined approach to task analysis may be necessary in order to understand interaction and predict outcomes in which, for example, the nature of the group, the task, the situation and the environment are taken into account (Lebie, Rhoades & McGrath, 1996; McGrath, 1984). Nevertheless, insofar as these models rely upon the information processing capacity, or the bandwidth of a medium to explain differences between media, one should find smaller differences in effects once temporal factors in communication are taken into account. This has been a key issue in the work of McGrath and colleagues (e.g., McGrath & Hollingshead, 1993; Hollingshead, McGrath & O'Connor, 1993), and is also the central theme in the Social Information Processing approach developed by Walther (1992, 1995), considered next.

The Social Information Processing Model

We do not deal with this approach in great detail.¹ However, it is important to sketch the main features of this approach. The Social Information Processing model draws on impression formation literature and argues that these processes in CMC are unlikely to be radically different from the impression formation processes implicated in FtF, but just operate on a slower timescale, commensurate with the slower rate of social information exchange in CMC. Walther (1992)

¹ This approach is not to be confused with the similarly titled social information processing approach developed by Fulk et al. (1987) to explain patterns of media adoption and use in organizations.

argues that the limited bandwidth of CMC forces social information into a single linguistic channel that retards impression formation relative to FtF interaction, leading to more impersonal communication and negative evaluations of others in CMC relative to FtF. This model therefore attempts to clarify the effects of bandwidth restriction in CMC as retarding rather than removing social information exchange from interaction. This in turn implies that in longitudinal studies or research using longer timescales, in which information exchange in CMC was commensurate with FtF, interactants would get to a similar position in the end in terms of relational development.

Two key propositions follow from this approach, namely that more impersonal, task-focused communication and less positive social evaluations of other interactants should be observed in short-term CMC than in FtF interaction or long-term CMC. However, tests of these propositions have met with only limited success. Indeed, some studies found less impersonal focus and greater attraction in short-term CMC than in FtF, directly contrary to predictions (Walther, 1995; Walther & Burgoon, 1992). Meta-analyses of previous experimental studies also tend to contest the inevitability of impersonal task focus and reduced sociality within short-term CMC. One such analysis supported greater task focus in CMC decision-making groups, compared to equivalent FtF groups (McLeod, 1992), but a wider analysis of anonymity in group CMC did not (Postmes & Lea, 2000). A further analysis that directly examined interaction time found a small effect of time on the ratio of socially oriented communication in CMC, compared to FtF, but no effect on the level of antisocial communication (Walther, Anderson & Park, 1994). Taken together, these results suggest that limited bandwidth communication (such as in text-based CMC) has at most only small and inconsistent effects on social communication and relational development that are not well explained by temporal factors.

More recently, the social information processing determination of CMC effects has been revised to incorporate contextual factors, such as anticipation of future interaction and group salience. For example, anticipation of future interaction was found to be a better predictor of dyadic relational communication than communication channel, which in turn moderated rather than determined these effects. In group CMC, high group salience was found to support greater intimacy levels within long-term CMC groups than low group salience conditions (Walther, 1994, 1997).

To summarize, various information processing approaches that have their theoretical roots in the engineering concept of communication bandwidth have proposed that limiting information exchange will have deleterious effects on social communication. However, evidence is weak that the "social nature" of CMC can be determined in such a direct manner from technical efficiency – regardless of whether this is cast in terms of social presence, information richness, or social information processing. The next approach, while it acknowledges these implications of reduced bandwidth and social exchange in CMC, focuses instead on the social psychological states and processes that might mediate its effects particularly on communication within groups.

The Reduced Social Cues Model

The Reduced Social Cues (RSC) model evolved out of a major investigation of the processes by which the reduction of non-verbal cues and other contextual information in CMC, relative to FtF, might affect the social behaviour of individuals and groups (e.g., Kiesler, 1986; Kiesler, Siegel & McGuire, 1984; Kiesler & Sproull, 1992; Kiesler et al., 1985; McGuire, Kiesler & Siegel, 1987; Siegel et al., 1986; Sproull & Kiesler, 1986, 1991).

The basic thesis of the RSC approach is that reducing social cues encourages psychological states that undermine the social and normative influences on individuals or groups, leading to more deregulated and extreme ("antinormative") behaviour. A number of mechanisms are proposed to contribute to this outcome, chief of which is "deindividuation" (the reduced self-awareness and deregulation of behaviour accompanying immersion and anonymity in the group: e.g., Diener, 1980; Zimbardo, 1969; for a review of the deindividuation concept see Postmes & Spears, 1998). Deindividuation, it is argued, attenuates normative influence, and reduces evaluation concern, while the slowness and inefficiency of message exchange engender frustration and disinhibition. These factors are responsible in turn for greater uninhibited, antisocial behaviour, group polarization and extreme decision-making, observed in CMC (Kiesler, 1986; Kiesler et al., 1984; Siegel et al., 1986). In linguistic terms these processes manifest themselves in use of more extreme, provocative or even insulting language, a phenomenon which has been termed "flaming" (e.g., Kiesler et al., 1984).

However, reducing social cues is also considered to have "beneficial" social consequences, such as helping to undermine status and power differentials, usually evident in FtF groups, leading to more equalized and egalitarian participation (e.g. Dubrovsky, Kiesler & Sethna, 1991; Kiesler & Sproull, 1992). In linguistic terms, the question that then arises is whether eliminating the focus on cues to status and power differentials might also eliminate the linguistic markers associated with these relations. So for example, the typical power-related differences found in gendered discourse might be reduced or even eliminated if gender is not visible to communicators. However, this proposition assumes that power-related gender differences in discourse depend in part or wholly on the tangibility (visibility, identifiability, accountability) of the categories rather than (quite literally) being engendered in the discourse itself. As we shall see this, assumption is questionable.

An initial series of experiments compared the effects of computer conferencing, electronic mail and FtF communication on communication efficiency, participation, interpersonal behaviour and group choice (Kiesler et al., 1984). Significantly more group polarization was observed in CMC conditions, accompanied by significantly less information exchange. There was also more uninhibited language ("flaming") in CMC (particularly anonymous CMC) than in FtF in two out of four experiments (Kiesler et al., 1985; Siegel et al., 1986). In addition, greater task focus and lower attraction responses were found in CMC

(Kiesler et al., 1985). However, a subsequent experiment found significantly more decision proposals, uninhibited behaviour and equality of participation in electronic mail, compared to FtF, but no difference in group polarization (Dubrovsky et al., 1991).

A major contribution of the RSC approach has been to develop a more sophisticated approach to understanding CMC effects that is grounded in established social psychological theory of group behaviour, rather than borrowing from information theory. More generally, it has helped to undermine the rationalist assumptions underlying many media comparisons, namely, that lack of social cues increases the rational efficiency of communication (Lea, 1991). Indeed, the very features identified as undermining sociality and thus leading to social dysfunction are those factors considered by group decision support theory to improve group productivity and efficient decision-making by managers (for example, by reducing pressures to conform, or group-think) through the use of computer-mediated group-decision support systems (e.g., Jessup, Connolly & Tansik, 1990; Pinsonneault & Heppel, 1998; Valacich, Dennis & Nunamaker, 1991; Valacich et al., 1993; for a review see Postmes & Lea, 2000).

These very differing views highlight the futility inherent in making general claims about the benefits and losses of CMC (social pain in one context may be interpreted as social gain in another), but more fundamentally they rest on certain difficulties and inconsistencies in the underlying social psychology theory and its mobilization to explain CMC effects. As a consequence, a number of specific criticisms have been levelled at the reduced social cues model, partly because of the uneven handling of the importance of the social dimension in group interaction (e.g., Lea & Spears, 1991; Matheson, 1992; Spears & Lea, 1992, 1994).

For example, the deregulated and antisocial psychological state of classic deindividuation theory is inconsistent with the relatively reasoned deliberation argued to underlie group polarization effects (informational influence/persuasive arguments theory). The role of self-awareness within the model is problematic for similar reasons. Whereas Siegel et al. (1986) argue for a heightened (private) self-awareness within CMC, deindividuation implies reduced (private) self-awareness. Instead, isolation at the computer terminal could be regarded as individuating rather than deindividuating, and this could help to explain evidence of greater (private) self-awareness in CMC observed in independent studies (Matheson & Zanna, 1988, 1989).

A more fundamental problem concerns the central thesis that group polarization follows from a weakening of social norms in CMC, when group norms and group influence are central explanatory concepts in accounting for group polarization (Isenberg, 1986; Mackie, 1986; Sanders & Baron, 1977; Turner, 1991; Wetherell, 1987). Part of the problem for the RSC model derives from the translation of the state of disinhibition, as reflected in uninhibited behaviour, into group polarization and more risky or extreme decisions. Disinhibition and the riskiness or extremity of decisions are arguably separate phenomena. This becomes more apparent when one considers that group polarization can also

reflect shifts to caution, and not just risk, following group discussion (Fraser, Gouge & Billig, 1971; Pruitt, 1971). Hiltz, Turoff and Johnson (1989) obtained just such a cautious shift in a CMC study. These findings would seem hard to square with the idea that polarization reflects "disinhibition". Indeed there seems to be surprisingly little if any direct empirical support in the literature that CMC is characterized by an absence or weakening of social norms.

Subsequent research has also questioned whether status and power equalization is a generic consequence of CMC. There is evidence that CMC can reflect and even enhance status-related groupings (e.g., Postmes et al., 1998; Postmes & Spears, 2000; Weisband, Schneider & Connolly, 1995). For example, in the case of gender relations, if the power relations are already encoded to some extent within the discourse (e.g. Mulac, 1989; Mulac & Lundell, 1986; see also Ng & Reid, this volume, Chapter 4.19), then even individual and category anonymity is unlikely to eliminate gender speech markers or their consequences. In fact, some have argued that the anonymity associated with the CMC and the Internet may actually enhance gender differences by giving freer rein to typically uninhibited male behaviour such as flaming (Herring, 1996; see also Kramerae & Taylor, 1993; Spears & Lea, 1994; Spender, 1995). We discuss further reasons why this may be the case below, in relation to the SIDE model.

To summarize, the RSC model has been important and influential in highlighting the range of effects that CMC can have and relating these to the reduction in social cues within this medium. It has perhaps been less convincing in identifying or testing the precise mechanisms responsible for the effects. In particular, the claim that behaviour is less socially regulated or less subject to normative influences does not seem well founded. This is due in part to the theoretical eclecticism that has not always facilitated the parsimony of explanation or the clarity of predictions.

The Social Identity Model of Deindividuation Effects

Another model designed to analyse the social psychological effects of CMC has been developed by us and is termed the social identity model of deindividuation effects (SIDE). This model arose partly as a response to the reduced social cues approach described earlier, and contested the notion that CMC is less socially regulated than FtF communication (Lea & Spears, 1991; Spears & Lea, 1992). In this model an important distinction is drawn between different sorts of social cues that may be present (or absent) in CMC, namely interpersonal cues, and cues to social features, such as group identity and category membership. We argue that whereas CMC may indeed filter out many interpersonal cues that identify and individuate the communicators, group and category level cues that are communicated relatively independently of bandwidth considerations are thereby given more opportunity to influence interaction, and the definition of the self and situation.

The model extends a social identity critique of deindividuation theory previously applied to collective behaviour to the CMC domain (Reicher, 1984; Reicher, Spears & Postmes, 1995; Spears, Lea & Lee, 1990). According to this approach, deindividuation caused by immersion and anonymity in the group does not result in loss of identity or reduced self-awareness (as proposed by classical deindividuation theory and the reduced social cues approach), but rather this results in a shift of self-focus from personal to group identity. Social Identity Theory (Tajfel & Turner, 1986) and Self-Categorization Theory (Turner, 1987) provide the foundations for the model in proposing that the self is not in a fixed entity, but is socially defined in the context. Although our identity as unique individuals may be salient in many interpersonal situations, in intergroup contexts, where group identity is salient, we are likely to see ourselves and others in terms of this identity, and act in accord with the norms of this identity (Tajfel & Turner, 1986; Turner, 1987). The SIDE model extends the social identity analysis of self and behaviour by outlining how the salience and effects of social identity might be affected by key situational variables in the CMC context such as anonymity or identifiability.

According to the SIDE model, anonymity can have two classes of effects, which we have termed "cognitive" and "strategic" (Reicher et al., 1995; Spears & Lea, 1994). The cognitive effects relate to the salience of a particular identity (personal identity or a group identity) and more precisely refer to issues of self-definition. Anonymity can function to enhance group salience by reducing attention to individual differences within the group (literally "deindividuation" or "depersonalization"). The strategic dimension refers to whether the individual or group member feels able to express behaviour in line with a particular identity, given that this is salient. This is particularly relevant in intergroup contexts in which a power relation is present between groups. In this case anonymity from a powerful outgroup may enable members of the other group to express group normative behaviour that might otherwise be punished or sanctioned by this group.

Research on CMC from the perspective of the SIDE model has to date largely concentrated on the cognitive effects of anonymity in enhancing group normative behavior. It should be noted that this prediction is directly opposite that of classical deindividuation theory which would predict antinormative behaviour under conditions of anonymity (e.g., Festinger, Pepitone & Newcomb, 1952; Diener, 1980; Zimbardo, 1969), and therefore is contrary to the predictions of the reduced social cues perspective. However, there is growing evidence that anonymous CMC does lead to increased social influence in line with group norms compared to FtF interaction or conditions of identifiability (Lea & Spears, 1991; Watt, Lea & Spears, in press; Postmes et al., 1998, in press; Spears et al., 1990). Moreover, a review of the deindividuation literature more generally provides strong support for a reinterpretation of the findings of this literature in terms of the SIDE model, as opposed to classical or contemporary versions of deindividuation theory (Postmes & Spears, 1998). Recent experimental research has also provided more direct support for the processes thought to mediate the

effects of anonymity on the group, namely by enhancing group identification, self-categorization as a group member and self-stereotyping (Lea, Spears, Watt & De Groot, *in press*; Lea, Spears & de Groot, *in press*; Postmes et al., *in press*).

One of the implications of the SIDE approach is that, although behavioural effects can be accentuated by anonymity, there should be no generic effects or outcomes of CMC: this should depend on local norms relating to the particular personal or group identity. This forms a key divergence with the other social psychological approaches reviewed above, which explicitly predict an impersonal task focus in anonymous CMC, and is supported by several studies. For example, Lea, Spears and De Groot (*in press*) found no generic effect of task focus on attraction in CMC discussion groups; instead, perceived task focus increased (rather than reduced) attraction to the group for those participants who self-categorized with the group, in line with a local normative explanation of task focus effects.

Indeed there is evidence that behaviour in even short-term anonymous groups can become more socio-emotional rather than task oriented, if this is evident from group norms. Postmes et al. (*in press*) surreptitiously primed these two different types of group norms prior to a group discussion and found that subsequent group decision reflected these different norms but most strongly in anonymous groups. Moreover, evidence showed that this norm developed over time during group discussion. This group norm was also reflected in the language used by the participants, with more efficiency and task-oriented words used in the efficiency prime condition and more socio-emotional terms used in the socio-emotional prime condition. A further study showed that these norms, and the linguistic repertoires associated with them, were also transmitted to neutrally primed participants, demonstrating the operation of genuine social influence that was linguistically transmitted in group discussion.

Other research in a more naturalistic field setting using email groups has also confirmed that group norms develop over time, conforming to norms that are prototypical and distinctive for the group (Postmes, Spears & Lea, 2000). Content analysis of both the content and the form of group communication showed that over time language tended to conform to a prototypical pattern that characterized the content (but not necessarily the form) of group communication. Once again, then, this study confirmed that group-based CMC does not reflect a generic norm (e.g., impersonal, task oriented), but that norms are constructed *in situ*, and become reinforced within the group through mutual group influence.

This research also indicated that flaming was not generic to all groups but varied widely depending on the group norm. Moreover, analysis of the transcripts suggested that where flaming did occur it often did not reflect genuine insults, but was playful, ironic and reflected social intimacy rather than social distance. Once again the linguistic markers are highly variable and related to specific group norms developed in context. This confirmed our earlier review of the literature, which concluded that despite widespread acceptance of the ubiquity of flaming in CMC, it only occurred in a tiny proportion of CMC messages overall, and its absolute and relative frequency (compared to FtF)

were overestimated by observers and reporters. This systematic bias in reporting on flaming in naturalistic settings is likely due to features that increase psychological and social (network) availability of flaming instances in CMC. The permanence of messages and other specific features of the text medium make specific instances of flaming more distinctive and memorable, and the one-to-many nature of group CMC means that any single instance of flaming is likely to be widely observed (Lea et al., 1992).

Indeed, rather than flaming being a general effect of the CMC medium, it appears to be restricted to certain groups, both in experimental studies and on Internet newsgroups, in line with a group normative explanation of their occurrence (Kayany, 1998; Lea et al., 1992). Paralanguage is another feature of CMC whose effects depend on local group context. Although the term is more commonly associated with non-verbal communication in FtF interaction (Edinger & Patterson, 1983), paralanguage is also present in written communication, where it takes the form of typographical marks and other features of the text that, although they have no lexical meaning, nevertheless signify socially shared meanings. In CMC conventional marks are supplemented by "emoticons": keyboard tricks that are used to produce codes that are interpreted only within the social conventions of CMC. Lea and Spears (1992) found that in deindividuated CMC high group salience causes paralanguage users to be judged as more uninhibited and at the same time to be more positively evaluated by the group than when group salience is low. Thus, the interpretation as well as the expression of uninhibited linguistic behaviour in CMC appears to conform to norms and standards of appropriate behaviour for the local group.

The linguistic transmission of group-based effects within CMC extends also to the promulgation and perpetuation of stereotypic representations of outgroups. Recent research by Wigboldus and colleagues (Wigboldus, Semin & Spears, 2000; Wigboldus, Spears & Semin, 1999) has demonstrated that stereotypes about outgroups are linguistically transmitted in interpersonal communication by means of the linguistic intergroup bias (LIB) and linguistic expectancy bias (LEB). LIB is the tendency to communicate negative information about outgroups and positive information about ingroups in more abstract terms, thereby reinforcing the favourable standing of the ingroup (Maass et al., 1989). LEB refers to more abstract characterizations of stereotype-consistent information, which thereby perpetuate stereotypic group representations. That these effects can prosper in anonymous intragroup communication in CMC confirms that CMC is far from an asocial medium, and shows that these group-level representations can be linguistically mediated.

Research more explicitly within the context of the SIDE model confirms that anonymity increases group-stereotypical perceptions in CMC (Lea, Spears & De Groot, *in press*; Lea, Spears, Watt & De Groot, *in press*), and that stereotyping as well as group norms and social influence are transmitted more readily within anonymous CMC than under conditions of identifiability. In a study by Postmes and Spears (1999), gender stereotypes were accentuated when gender identity was salient and participants were anonymous rather than identifiable. However,

gender is a special category in the sense that it is also cued by visible features, so that identifiability may render gender salient at the same time as it individuates people. In this study cues to gender were somewhat artificially masked in the individuated conditions by presenting individual profiles of participants in order to exclude gender-identifying information. In more recent research we have tried to separate these two aspects. We have shown that under certain conditions identifiability can render gender more salient, while undermining the salience of categories that are less visibly designated, such as nationality (Watt et al., *in press*). In other words we should be wary of assuming that anonymity always leads to more group-level effects: this may depend on the nature of the group or category and whether its group essence is designated by visible features or not.

These processes relate to the cognitive dimensions of the SIDE model, and how anonymity (and in special cases visibility) can enhance the salience of group identities. However, the SIDE model also embraces a strategic dimension and once again anonymity versus identifiability can affect how people strategically present different identities depending on the groups or audiences to whom they feel accountable. For example, Reicher and colleagues have shown that people will be wary of flouting outgroup norms especially when these are punishable and when the ingroup members lack support from ingroup members (Reicher & Levine, 1994). CMC can isolate people, removing them from the co-presence of fellow ingroup members, and thereby cutting them off from visible social support (Spears & Lea, 1994). However, CMC also provides the communication medium by means of which support can be communicated. Some research suggests that resistance against outgroup norms may indeed be facilitated when communication by computers is available, and that this is mediated by social support (Spears, Lea & Postmes, *in press*).

The strategic dimensions of the SIDE model can also have implications in contexts where we feel identifiable to the ingroup as well as to the outgroup, while providing further insight into some of the linguistic mediators of these processes. An Internet study by Douglas and McGarty (*in press*) showed that people tended to stereotype a negative outgroup (right-wing racists) more clearly when identifiable to other like-minded people than when anonymous. This is contrary to the effect that might be expected from the cognitive component of SIDE, whereby group effects are usually exacerbated by anonymity. In this case, when identifiable to the ingroup, participants presumably wanted to make especially clear their opposition to a repugnant outgroup in line with the ingroup expectations. As in the research of Wigboldus and colleagues, this was reflected in more abstract linguistic descriptions of the negative aspects of the outgroup.

Consideration of these strategic effects shows the relevance of the SIDE model for understanding the effects of status and power differentials (Lea & Spears, 1995; Postmes & Spears, 1998; Spears & Lea, 1994). Identifiability to ingroup and outgroup audiences can result in behaviour compliant with norms and expectations of these groups. This results from the power of sanction in the case of powerful outgroup audiences. Greater compliance when accountable to

an ingroup more often reflects the loss of face or credibility in failing to meet the standards of this audience. These effects are consistent with the argument of previous approaches that anonymity can offer some protection from status and power inequalities. However, power may have cognitive as well as strategic effects. In line with SIDE principles anonymity can have cognitive effects on the salience of the intergroup context, and thus enhance the impact of associated power differentials. Moreover, like other group-level effects, somewhat counterintuitively, we would expect anonymity to strengthen group boundaries and reinforce power relations associated with them. For example, in the study by Postmes and Spears (2000) described above, when gender identity was salient, anonymous CMC tended to reinforce gender inequalities in participation, compared to identifiable CMC. Other research also supports the accentuation of status difference within CMC (e.g., Herring 1994; Postmes et al., 1998; Spears & Lea, 1994; Weisband et al., 1995).

The SIDE model therefore challenges the notion that CMC will always or generally equalize status and power differentials should only occur if cues to category membership themselves are eliminated. However, as argued earlier this condition may be hard to achieve even in CMC because cues to enduring social categories such as class, gender and ethnicity are often subtly communicated in language, as well as through direct category markers. Gender markers in speech are well known (e.g., Mulac, 1989; Mulac & Lundell, 1986) and evidence is emerging that these are detected and acted upon in anonymous CMC (e.g., Herring, 1996). In one bulletin board study, men's messages were longer and used more "male language" (assertions, challenges, authoritative tone) than women's, who tended to use less confrontational and authoritative styles. The salience of these cues to gender is also revealed by their effects on participants' communication behaviour, which are dependent in turn on the social context for communication. In work group discussions, women's messages tend to receive fewer responses (from men and women) and topics initiated by women were less likely to be taken up by the group (Herring, 1994). However, in recreational situations, women's messages tend to receive more attention from men (Reid, 1994; Rosenberg, 1992).

The SIDE model is not without its shortcomings and criticisms. In common with competing models, empirical studies have concentrated on evaluating outcomes and the effects of moderating variables thereon. There has been less emphasis on testing the mediational processes responsible for CMC effects, although more attention is now being paid to this issue (Lea et al., 1998, in press; Postmes et al., in press). Until now, the SIDE model has tended to focus on certain features of the medium of CMC, notably anonymity, and has neglected the effects of other forms and associated features of CMC (e.g., communicator isolation, the text-based, often asynchronous/concurrent nature of communication). Anonymity itself should not be treated as a unitary construct, but needs to be decomposed (anonymity of self vs. identifiability to others) and degrees of anonymity further elaborated and investigated (Lea et al., in press; see also DeSanctis & Gallupe, 1987; Pinsonneault & Heppel, 1998). The SIDE model is

also vulnerable to the demonstration that social influence can actually increase in identifiable rather than anonymous groups in some circumstances, and evidence of such exceptions is emerging. A distinction between different types of groups, namely those based on a common identity, and more interpersonal groups based on common bonds between group members, may be a critical moderating factor here (Spears & Postmes, 1998; Prentice, Miller & Lightdale, 1994). The distinction between the effects of categorization at the level of broader membership categories (e.g., gender, organizational affiliation) and the smaller *in vivo* groups implicated in the interaction also requires specification. Generalization to organizational contexts, further investigation of the effects of time as in the work of McGrath and Walther, and the interaction between the cognitive and strategic dimensions of the model (and the sometimes opposing predictions they make) are also areas for development. Further theoretical test and refinement therefore await.

CONCLUSIONS

To summarize, the majority of social psychological analyses of CMC have tended to focus on information loss, stressing the reduced sociality of the medium as a result. Consequently there has been a tendency for theories to argue for generic effects, deriving from the reduced or retarded social impact CMC engenders relative to FtF interaction. While various commentaries have eschewed this idea by stressing the complexity of the analysis of task, context and social interaction required in order to understand CMC effects (e.g. Fulk, Schmitz & Schwarz, 1992; McGrath, 1993; Mantovani, 1996), the SIDE model represents the main theoretical challenge from social psychology. In contrast to previous approaches it argues that sociality is not uniformly reduced, but that the interaction of features of the medium with local norms and conditions in the communication situation can accentuate the social form and content of behaviour of CMC in certain theoretically specified circumstances. Approaches that further identify localized factors and the interactions among them that influence communication behaviour and outcomes need to be further developed. Such research should probably try to steer clear from attempts to evaluate the balance between social pain versus social gain in CMC, and aim towards a greater understanding of the social implications of incorporating this new communication medium into everyday life.

What are the main implications of this analysis for language and language use in CMC and on the Internet? First it is important to note that CMC and the Internet are not linguistically unidimensional or impoverished media. Based on some analyses we could be forgiven for thinking that CMC (at least) is characterized by a rather impersonal task-oriented mono-culture that constrains the language used in this medium. On the contrary recent research and theorizing in both experimental and more ethnographic traditions point to the diversity of

structure and content engendered by this medium, and reflected in its language use. The language used reflects the local norms that emerge in situ, which are tied to existing or emergent group identities. In this sense CMC and the Internet particularly provide some of the social freedoms, and channels for expression, not present in other media. The diversity of linguistic expression in CMC also serves to remind us not only of the social differences, but also that the centrality of language and communication make this a very social medium in general. Even where interaction is more impersonal and task oriented, we would argue that this reflects local social norms, and confirms the broader sociality of this medium.

None of this should be taken to imply that constraints on language are eliminated in CMC: these local norms reflect to some extent such constraints. However, these constraints extend to power relations and this is also reflected and also mediated through language. Some of the more optimistic accounts of CMC have argued that the anonymity of CMC equalizes status relations and eliminates power differentials. Both experimental and ethnographic research suggests that this is not always true, and that one way in which gender relations can be recognized and maintained is through linguistic markers. Even gender bending designed to escape one or other gender identity at the individual level tends to reinforce gender differences in the larger scale. Once again, although language is likely to play a key role in any communication medium, its effects are likely to be even stronger in text-based media such as CMC and the Internet. In other words language use is likely to be structured by social relations in CMC every bit as much as it is in FtF communication and perhaps more so. As the basis of communication and self-definition, language ensures the inherent sociality of these media.

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