Engaging in Email Discussion: Conversational Context and Social Identity in Computer-Mediated Communication

Leon A. Watts[1], Yanuar Nugroho[2] & Martin Lea[3]

[1]Department of Computation, UMIST, Manchester M60 1QD, UK
[2]Sahid University of Surakarta, Surakarta 57144, INDONESIA
[3]Department of Psychology, University of Manchester, M13 9PL, UK

leon.watts@co.umist.ac.uk

Abstract: For millions of people, text-based computer-mediated communication (CMC) is a convenient and engaging way to exchange information and opinion. Research shows that the social ambiguity of text-based CMC, such as email, can both promote participation and group cohesion and lead to misunderstanding, offence and social division. We report a field experiment that attempted to expose some of the social influences at work in email exchange. GNU Mailman was configured to promote either individual or group perspectives during email discussions. It was used for political debate by two groups of Indonesian NGO members during the Indonesian constitutional crisis of 2001. We assessed changes in their perceptions of their groups and in their political attitudes. Our findings suggest that CMC for socially loaded topics relies upon two complementary factors: the ability of the medium to underwrite participants' Social Identity and its support for expression of the group's conversational aims.

Keywords: CMC, email, anonymity, Common Ground, Social Identity Theory, GNU Mailman

1 Email, Separation and Sociability

Indonesia is a vast archipelago. Many of its islands are difficult to reach and suffer from poor infrastructure. For many Indonesians, email has been something of a revelation in terms of connection to the outside world and communicating within Indonesia.

It is easy to assume that the future of CMC lies in "rich media" technologies, such as 3G videophones or collaborative virtual environments. Yet the simplicity, ubiquity and modest technological requirements of email have thrust it into a very contemporary role as a major coordination tool (Ducheneaut & Bellotti, 2001).

Email is a tried-and-trusted technology, used daily by millions of people as an easy way to overcome the barriers of time and space. It is easily the most successful kind of groupware application and its popularity shows no sign of abating. HCI and CSCW research on email has for the main part concentrated on interface and coordination issues that relate to information management (Gwizdka, 2002).

However, CMC interfaces should also be considered in terms of their ability to convey social information (Erickson et al., 2002). As the messages people exchange become more socially loaded, so much more complex are the social problems posed by the use of this medium. It supports more than work-focused communication in the workplace; it is used to support an extended social network within and beyond (Preece, 2000). There have been several recent attempts to represent information about social groups in "lean media", thereby facilitating social processes. Instant messaging systems commonly use 'buddy lists' as groupings and show who is available to take part in conversation (Herbsleb et al., 2002). BABBLE augments text communication with simple graphical representations of collective communicative activity (Erickson et al., 2002). The richer-but-still-lean audio-based ChatCircles encodes social distance into animated representations of individuals in a chat space (Viegas & Donath, 1999). We wish to expose some of the factors that govern the effectiveness of lean media in supporting socially loaded communication.

Email cannot simply be viewed as a substitute for physical contact. All CMC technologies bring changes to the way people interact with one another

- email is no exception. These differences are most evident in those CMC technologies that omit non-verbal information, such as gesture, facial expression or intonation in speech. Non-verbal cues can serve a number of purposes, including identifying objects and membership of a communicating group, regulating turn-taking or indicating emotional state. Consequently, the inclusiveness, reference, fluidity and semantics of conversation are all impacted by the absence of non-verbal information (Finn et al., 1997; Monk & Watts, 2000). Whereas video-based CMC systems can preserve non-verbal richness in each of these respects, the relatively impoverished nature of text-based CMC sets it apart from ordinary conversation. Indeed, it can have dramatic effects on the way people communicate with one another (Dubrovsky et al., 1991).

2 Mediation, anonymity and effectiveness

Lack of social information, or "social cuelessness" seems to relax normal constraints on behaviour, promoting a less inhibited, more democratic exchange of views. If this potential is to be harnessed to good effect, a design-relevant theoretical account needs to be developed.

Most of the work that has looked at social cuelessness has focused on a generalized idea of anonymity within CMC systems (Baltes et al., 2002). Anonymity is typically achieved by using CMC systems that do not identify senders to receivers, and vice versa. In a recent meta-analysis, Baltes et al. argues that email is never a better alternative than a real meeting unless some level of anonymity is involved (Baltes et al., 2002). However, they do not find any consistency in the evidence to suggest that anonymity always exerts a positive influence. This means that anonymity is of *potential* benefit for group communication and, in fact, underlies the only benefit of using lean CMC when copresent meetings are viable. It also suggests, however, that misidentifying the components of anonymisation, or the situational factors that govern its interpretation, are likely to be damaging. It just isn't enough to assume that good things will happen if participants in an email discussion are anonymised.

3 Anonymity, Conversational Grounding and Social Identity

Interpersonal communication is about building understanding. Many theoretical approaches have been proposed to account for communication, each intended to address some aspect of this process. This makes it impossible to choose "the best theory" for the design of effective communication systems or anything else; as Littlejohn notes, communication is more than one activity (Littlejohn, 2002). We draw upon two theories for insights into the design and experience of using communication and collaborative systems. We do so on the grounds that they have already proven useful in studies of CMC. These are Social Identity Theory and Common Ground (Spears et al., 2000; Watts & Monk, 1998).

3.1 Social Identity and communication

Social Identity Theory attempts to explain how a person's attitudes and behaviour are affected by their membership of social groups (Tajfel & Turner, 1986). It claims that everybody has to manage several identities. Social Identity refers to the part of an individual's self-concept that comes from membership of a particular group. Membership of different groups implies a shifting balance between the elements of how one views oneself, depending on the social conditions that prevail at any time.

Whenever the salience of a particular Social Identity is high, one typically experiences an increased sense of identification with the group concerned. This means a closer adherence to an internalized norm for this group, especially for "intergroup contexts on which a power relation is present between groups" (Spears et al., 2000). Unfortunately, in negotiations between groups, progress can be difficult or impossible to achieve without compromise. Precisely this kind of flexibility and openness to other ideas is put under threat by a high salience of the competing Social Identities of those individuals who take part in the discussion.

3.2 Common Ground

According to Clark, communication between individuals relies upon mutual knowledge and common aims. Mutual knowledge is established and then maintained by interlocutors through a process of offering, assessing and responding to information (Clark, 1996). When a speaker believes that an interlocutor's response is incompatible with their original statement, the speaker attempts to redress the listener's gap of comprehension by 'repair'. The purpose for which people communicate is not clearly known in advance but negotiated through the ex-

change of utterances. People reach a level of agreement about the purpose, or purposes, of their discussion and work together to pursue them as a 'joint project'. Grounding in communication is therefore a continuous and evidence-based process, to do with action yet to be taken as well as about the meaning of things so far discussed.

4 A Real-World Comparative Study

We wanted to shed some light on the social process of anonymization in terms of the attitudes and involvement of people talking about things that really mattered to them. Building upon insights from Common Ground and Social Identity Theory, we studied activists from several Indonesian non-governmental organisations (NGOs) who engaged in politically motivated discussion. This inter-organizational and interpersonal setting meant that the discussions were psychologically real for the participants. The discussions fitted into their existing Social Identities, reflecting their knowledge and values.

4.1 Social and technical context of study

After months of political unrest, the Indonesian parliament was dissolved on 23rd of July 2001, sparking widespread public disorder and violent demonstrations. This act was a watershed in Indonesian politics and followed on from several years of active debate within the Indonesian populace about the direction of their country's political system. As well as official political parties, Indonesian political processes involve many NGOs, bodies that are dedicated to raising awareness and lobbying for specific policy changes.

The dissolution of parliament took place exactly one week before this study was due to begin and after volunteers had been recruited.

Email is the most accessible asynchronous technology for remotely distributed groups in Indonesia. High-speed Internet connections are rare and, when available, unaffordable for most people. For our NGO users, internet connections are typically encrypted and run over conventional copper phone lines at between 9.6 and 14.4 kBps. Even the least graphics intensive web-based CMC tools are too slow to be a realistic proposition at such data rates.

4.2 Defining democratic communication

In order to make any statements about the "democracy" of a discussion group, it is necessary to describe how the term is being used here. Rather than couching the use of the term within a broader political context, it refers to equality of access, ability to overcome social barriers and openness to the consideration of alternative positions (Mantovani, 1994). Access and openness here are limited to the immediate members of the group. The mechanism of influence is in terms of making a contribution, i.e. sending a message. It is also necessary to consider that which is being influenced: in this case, it is a set of political opinions about matters discussed by the group. We also take the view that a corollary of effective democracy within discussion groups is that members begin to recognize themselves as social groups.

4.3 Research questions

4.3.1 Communication Dynamics

Democratic decision-making processes are based upon a notion of equality of contribution. In this case, the decision-making arena and population were an email discussion group. Here, we treated a posting as a unitary expression of contribution. More even distribution of posting among participants would serve as evidence of a more democratic system of contribution within the group. The overall level of posting would serve as an indication of the level of engagement of individuals with one another and with the matters under discussion.

4.3.2 Social Identity and Discussion Grounding

Our contention is that lean CMC systems are capable of supporting both social relations and mutual understanding within and between social groups in the same way as social relations and understanding are normally supported. In other words, the *relevant psychological mechanisms remain intact,* albeit having to deal with differing qualities and quantities of information. If a *superordinate* Social Identity can be established for people who come together from several independent social groups, they are in a good position to constitute Social Identity for this new group. If at the same time their individual identities are hidden, the participants' focus will be more influenced by their collective identity. Simultaneously, if framing statements accompany discussion, the participants' ability to build a joint conversational project will be enhanced. Our second research question was: "if a discussion group is cued to its social and conversational aims, whilst cues for individual identity are reduced, is the result a greater sense of belonging to the discussion group?" An adjunct to this question concerns the participants' degree of social identification with groups outside of the discussion group. "Do participants in groups cued to social and conversational aims experience

more dissociation with external groups than participants in a group without such cues?"

4.3.3 Attitude change

It is not true that all discussions are the same. Some have little in the way of emotional overtone, such as asking about the colour of someone's bicycle, or for the time of day. Whenever people discuss matters in which they feel a personal involvement, the critical outcomes concern the exchange of opinions and the formation or stability of attitudes. The influence of CMC technologies is far greater for attitude-based discussion, where conversations are characterized by "interpersonal or interparty factors" (Short et al., 1976). To assess the effectiveness of a CMC system intended for such usage, we need to gauge changes in participants' attitudes.

Our third research question was thus: "if people converse with others, whilst being cued to the purpose and Social Identity of the discussion group, do their opinions show more evidence of change?"

4.4 Method

The study was rather unusual in methodological terms. It has elements of control normally associated with a laboratory study. At the same time, the participants in the study were fully situated within their normal environments. Furthermore, they were carrying out one of their core activities – debating their political situation. For this reason, we describe our study as a "field experiment".

4.4.1 Design

The study compared two communication conditions, KU and KITA, on a single independent variable which we shall call Identity. The conditions were defined by configurations of an email distribution program (see *Materials* below). In a field setting, one cannot make strong claims about control of extraneous influences. A field experiment trades off the observational validity given by strict control of influences against the ecological validity of the activity carried out.

For the KU condition, the participants' normal email addresses were visible in the usual way. The name given to the KU group's distribution list was **indonesiaku** – "my Indonesia". This was a deliberate attempt to reinforce the notion of *individual* rather than *collective* identity within the group. No special instructions were given to KU participants about the way they should present themselves to one another via the distribution list.

For the second condition, KITA, the distribution program did not forward real email addresses; instead, the generic distribution address was substituted as the sender identity. The KITA group distribution list was named **indonesiakita** – "our Indonesia". Any member of indonesiakita to post to the group would simply be identified as an "our Indonesia" person. Furthermore, any messages sent by KITA members were subject to the addition of predefined header and footer text blocks. These were designed to cue, or psychologically predispose, KITA members to consider their joint political situation (see Figure 1). These manipulations were an attempt to promote both the Common Ground idea of "joint project", and the notion of a superidentity.

4.4.2 Participants

The participants in the study were Indonesian NGO activists communicating by email to exchange opinion of direct relevance to their NGO activities.

Thirty volunteers were recruited by one of the authors through his existing links with Indonesian NGOs. The NGOs involved were primarily ELSPPAT (Institute for Development Studies and Technological Assistance), UNISOSDEM (Social Democracy Union) and PUSDAKOTA (Center for Urban Empowerment). The volunteers were separated into two groups, counterbalanced for gender, age and NGO/political affiliation. Of these volunteers, nine withdrew just before the discussion phase of the study began, due to the escalation of political tension throughout Indonesia. The membership of KITA was thus reduced to twelve and KU to nine, with three women in each group. The KITA and KU groups did not know about each other until the end of the study.

4.4.3 Materials

GNU Mailman v. 2.0.6 (see www.list.org) is an open-source object-oriented email distribution program. It incorporates a privacy filter, as an anti-spam posting option, that may be used to strip email addresses out of the "*sender:*", "*from:*" and "*reply-to:*" message header fields. This facility was used for the KITA group but not for the KU group. Mailman also permits any message to be relayed with the addition of predefined text blocks before and after the message body. This facility was used for the KITA group, but not for the KU group, to add contextualizing information to the discussion (see **Figure 1**).
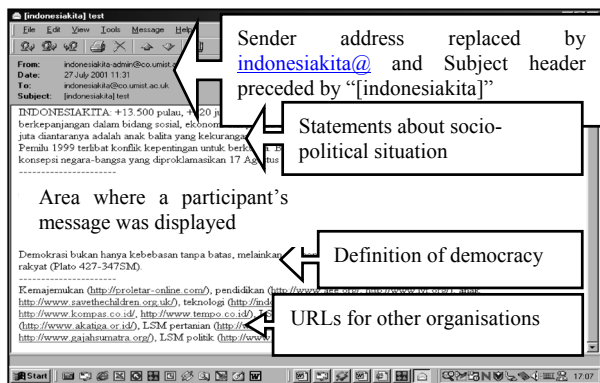
Figure 1: Annotated screen shot of an email message for the KITA group

4.4.4 Procedure

After agreeing to participate, volunteers were sent a document containing instructions and two initial questionnaires. They were informed that their discussion would focus on the sociopolitical situation in Indonesia; that the discussions should allow all participants to exchange views; that the discussion would last for two weeks, and that a moderator would intervene midway through the period to prompt them to reach agreement on a number of political issues.

The first questionnaire was made up of twenty politically sensitive assertions, each requiring an agreement rating on a nine-point Likert scale.

The second questionnaire comprised twelve items that were intended to assess the participants' attitudes towards the discussion group in terms of Social Identity Theory, again using a nine-point Likert scale (see **Table 1**). These items were based on established scales (Spears et al., 2000) and were used to assess five aspects of Social Identity: Group Identity (GI - items 1, 3, 4 & 5), Accountability (item 2); Organisation Identity (OI - item 6), Group Salience (items 9, 10 & 11) and Organisation Similarity (items 8 & 12).

When the volunteers had completed and returned the questionnaires, they were assigned to either the KITA or the KU group, registered to the relevant distribution list and sent an introductory email message. The KITA introductory message explained that the participants' email addresses would be substituted with *indonesiakita@co.umist.ac.uk* and that participants should not sign or otherwise indicate their individual identity within the body of their messages.

In contrast, the KU introductory message asked participants to choose how to identify themselves to their fellow group members and to use this identifier consistently thereafter, whether by name .sig file or

email address. KU members were thus prompted to think about their self-presentation whilst not being directed to adopt a particular persona or mechanism for its projection.

Social Identity Questionnaire Items
1. I see myself as a part of this discussion group
2. I feel accountable to the other members of this discussion group
3. I feel a bond with this discussion group
4. At this moment I can identify with this discussion group
5. It is important to show solidarity within this discussion group
6. I identify with the organisation I am currently working with
7. I expect this discussion group will relevant to my thinking about the political situation in Indonesia.
8. All NGOs are similar
9. I identify with the pro-democracy movement for Indonesia
10. I see myself as an active participant in the pro-democracy movement for Indonesia
11. I feel a bond with the pro-democracy movement for Indonesia
12. The views and perspectives of the organizations fighting for democracy for Indonesia are similar

Table 1: Items from first Social Identity questionnaire

Both groups were asked to quote sparingly from previous messages, to respect the bandwidth constraints under which they were operating, and to note that the email groups were closed and unmoderated: anything they chose to write would be distributed directly to all other members of their discussion group without any moderator censure or intervention.

During the discussion period, the exchanges between the participants in each group were monitored daily. Seven days after the discussions had begun, the moderator emailed both groups with four of the twenty political statements from the original questionnaire. The groups were asked to reach a consensus on these four items within the remaining seven days. If they had not reached consensus, a vote would be taken to determine the groups' tendency to agree. Since consensus was not finally reached in either group, on day 14 of the discussion period a message was sent to both groups asking all members to vote on the four issues by email.

Finally, all participants were emailed two post-discussion questionnaires. One was a repeat of the original political attitude items, the other was an expanded version of the Social Identity questionnaire. Again, nine-point Likert scales were used to

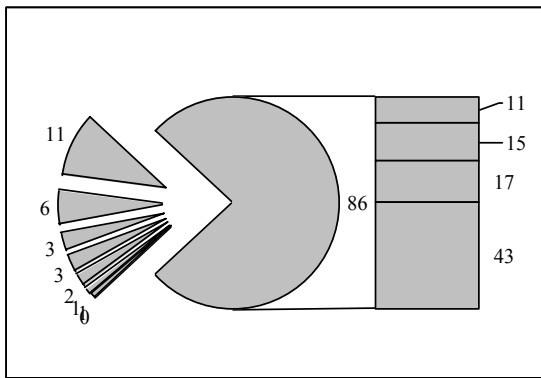assess the participants' level of agreement with each statement.

Figure 2: Number of messages posted by each KITA member (Pie slices), with the four most active members' output totaling 86 (broken down in column)
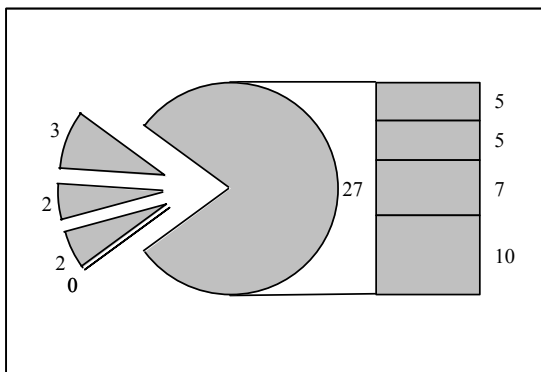

Figure 3: Number of messages posted by KU members (Pie slices); four most active contributed 27 (column).

4.5   Results
4.5.1   Communication equality and involvement
The overall message-posting rate by different members of KITA and KU was surprisingly similar. **Figure 2** and **Figure 3** represent the number of messages sent by each group member. In both groups, about three quarters of all messages were sent by only four group members, with one of these generating about 25% of traffic. However, the overall level of involvement in the communication activity was very different. KU messages were posted at a rate of about 2.5 per day, compared to the 8 per day KITA rate.

4.5.2   Social Identity
As described above, questionnaires were used to gauge the participants' sense of Social Identity before and after the discussion period. KITA and KU showed differences on two of the five scales. These were GI and OI, the scales that assess the individu-

als' Social Identity within the discussion group and with respect to their external affiliations.

	Group Identity			
Item	*1*	*3*	*4*	*5*
before	**7.2**	**5.3**	**4.0**	**6.7**
KITA	(1.9)	(2.5)	(1.5)	(1.7)
after	**6.2**	**5.2**	**5.4**	**5.7**
	(2.6)	(2.2)	(2.4)	(2.3)
before	**7.4**	**6.0**	**6.0**	**6.9**
KU	(0.9)	(2.0)	(2.1)	(2.7)
after	**6.1†**	**4.5**	**5.5**	**5.1†**
	(1.5)	(1.6)	(2.1)	(2.0)

Table 2: KITA and KU **mean ratings** (SD) of "Group Identity" questionnaire items, before and after the discussion period. † indicates significance at .05 level

		Organisation Identity		
KITA	before	**5.8** (2.3)		
	after	**3.5** (2.5)†	**3.0** (2.0)†	**3.6** (2.9)†
KU	before	**5.6** (2.4)		
	after	**4.8** (2.4)	**3.6** (2.1)	**3.9** (1.8)

Table 3: KITA and KU **mean ratings** (SD) of "Organisation Identity" ratings, before and after, using three post-test items matched with a single original item.

In terms of Group Identity, KU members did not feel as much a part of the discussion group after the trial as before (**Table 2**, Item 1, t(7)=2.72, p<.03). They also felt less of a sense of solidarity with the group (**Table 2**, Item 5, t(7)=2.82; p<.03). KITA members' ratings did not show such differences.

KITA members showed a clear shift in Organisation Identity (see **Table 3**). The post-discussion items matched with Item 6 (**Table 1**) were:

- *During the discussions I felt a commitment to the organization I work for*
- *During the task I thought about how I was presenting myself as a representative of the organization I work for*
- *During the discussions I was aware of myself as a representative of the organization I work for*

It would seem on this evidence that KITA members felt themselves to be less constrained by their external organizations than KU members.

4.5.3   Stability of political attitudes
Political attitudes were assessed by questionnaire both before and after the two-week period of study. The KITA group showed a shift in opinion on two of the 20 political attitude items. One of these shifted by one scale point from 5.2 to 6.2, which might be interpreted as a move from a general

ambivalence to mild agreement (t(8)=3; p=.017). The other item is more interesting since, besides shifting by two scale points from 6.2 to 4.0, it shows a change in direction of the KITA group's opinion, from agree to disagree (t(8)=2.6; p=.030). KU ratings did not change at all.

4.6 Discussion of results

We anticipated that two weeks of political discussion would result in some change or evolution of opinion concerning the matters discussed. We did find evidence of such a change; although modest it was confined to the KITA group. Out of the five Social Identity scales that were probed with the questionnaires, two showed differences over the course of the discussion. KU members' feeling of identification with the discussion group seems to have reduced during this period, while KITA ratings imply no such change. KITA members ratings imply a greater sense of independence from influences external to their group, whereas KU members did not. KITA members communicated far more often than KU members. We therefore tentatively suggest that our predictions have been supported in respect of the joint effects of individual anonymity, and the promotion of discussion group's Common Ground and Social Identity. However, we did not find an equalization of participation. Whilst the general level of involvement in KITA was greater to that in KU, a third of KITA members barely contributed at all. Furthermore, one cannot entirely discount the possibility that a critical mass factor was at work: with twelve participants, KITA should have generated more traffic than the nine members of KU.

4.6.1 Common Ground and Social Identity

In many ways, the study we report here is a first step. The effects we report are subtle but are internally consistent. Methodologically, the highly unusual context of investigation lends support to the validity of the study. Unfortunately, it also precluded the kind of experimental control that might have allowed a separation of the influences at work. Theoretically, we cannot separate the effect of cueing for joint project and cueing to a superidentity. However, our view is that Grounding and Social Identity reflect different aspects of the same process: building understanding by clarifying the terms of reference of the communicating group. By devising an interface that promoted a common viewpoint of the framing issues, we facilitated the formation of KITA Social Identity.

5 Implications of Study

Our findings suggest that the effects of anonymization are directed by the prevailing evidence of the Social Identity of a discussion group and the group's collective understanding of its conversational remit. It would be convenient, but misguided, to describe KU as an identifiable and KITA as an anonymous group. This, we believe, would be to fall into the same trap as has bedeviled previous work of this kind. Besides the elimination of cues for individual identity, KITA gained a set of cues associated with the nascent group identity. These were based on a pre-existing superidentity, given their known political affiliations. This additional set of cues was not available to KU, and they retained the ability to project their own individual identities however they saw fit.

The setting of our study was highly specific. Caution must be exercised in generalizing the value of contextualizing statements used alongside anonymization of individuals. These manipulations were motivated by established psychological theory but local conditions will always have to potential to override psychological predispositions. The building of a group identity is inseparable from the influences of external social groups. To understand and design for this duality is to appreciate the subtlety of evidence gleaned from the use of the discussion medium. The idea that lean CMC is inherently democratizing must be considered as one factor among many. It is very likely that social processes reliant upon establishing and maintaining value frameworks for social groups will always be affected by the ability of mediating technologies to promote and demote their salience.

Our study assumed equal access to the CMC resource but it did so on grounds of inclusiveness for the constituency of our participants. We opted to use a lowest-common-denominator technology that could cross socioeconomic divides. Where members differ in their ability to send and receive messages, a different participation dynamic would be at work.

5.1 Future directions for lean CMC design

Current attempts to support social activity in lean CMC tend to emphasize behavioural cues for participation and engagement in discussions. We support this move, with its commitment to the value of 'translucent' rather than 'transparent' representation of activity. However, we suggest in addition that much could be gained from thinking again about the forms of linguistic evidence that might serve as tangible and active components of Social Identity and Grounding processes. Whereas in our study the contextualising information was predetermined by a

domain expert, future work would profit from looking at facilities for group members to define and refine their own contextualising information, as well as automatic generation of context statements from the evolving corpus of messages exchanged by particular groups.

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