Persuasive Linguistic Devices in Anonymous Vs Identified Computer Supported Groups: An Exploratory Study

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Abstract
An exploratory study was conducted to examine the differences in the use of persuasive linguistic devices used by anonymous and identified groups communicating electronically in order to achieve consensus on a jury decision-making task. Anonymous groups were found to cooperate together to create character identities for themselves, to make more errors of factual information and to request compromises directly. Further, anonymous groups were more flexible, and used a wider variety of linguistic devices than did identified groups. Identified groups used persuasive arguments and polling as the primary means of reaching consensus. The implications of these findings for future research are discussed.

1: Introduction

"In cyberspace, a very great deal is said...But there are no voices behind those electronic words--no timing, no emphasis...And no body language either...The result is human intercourse strained and macerated by computer chips, rather like potatoes, mechanically peeled, chopped, whipped, and fried for an airtight tennis-ball can of chips. The end is a savory, social snack food peculiarly lacking in hands-on roughage and essential social vitamins"-- [16].

This quotation alludes to the challenges that anonymity may post for computer-supported decision making groups. Anonymity has been discussed in this literature almost universally in terms of its putative benefits on group decision-making [17]. Anonymity removes social cues, mostly related to social status and contributing to evaluation apprehension, that tend to inhibit the participation of some people in traditional face-to-face meetings.

The resulting increased participation should lead to higher creativity and decision quality. Further anonymity should reduce people's reluctance to criticize ideas, thus also leading potentially to high quality ideas [17]. The potential drawbacks of anonymity primarily occur indirectly. That is, the increased participation resulting from anonymity can increase conflict, increase the difficulty in reaching consensus, and increase free riding and deindividuation [17]. The empirical evidence about the effects of anonymity in computer supported groups is based almost exclusively on studies of electronic brainstorming. Further, these studies have focused primarily on task outcomes--generally the effects of anonymity on idea quantity and quality. Other kinds of tasks, or other phases of the decision-making process have extremely low representation in this literature, and attention to process has generally been limited to the evaluative tone of group discussion e.g.,[3];[10]. These studies, taken together, suggest that anonymity results in increased participation in idea generation, e.g., [7], and that the evaluative tone of anonymous discussions is more negative than face-to-face discussions e.g., [15].

But little is known about how groups cope with anonymity over the course of an entire decision-making discussion, beyond the initial idea generation phase. The paper addresses this gap by presenting results of an exploratory investigation of how groups manage to reach consensus when communicating anonymously through an electronic channel. The main purpose of this study is to move beyond the conceptualization of anonymity represented in the current literature as dichotomous and static. Anonymity is a multidimensional construct that varies by type and level [17], and that changes
over time. We argue that the multidimensionality provides options that help groups to meet the special challenges of communicating anonymously.

1.1: Theoretical background

Valacich et al. have recently proposed a theoretical model of anonymity in electronic decision-making groups in which they define various levels and types of anonymity. According to the model, the degree of anonymity felt by group members varies as a function of group size, group history and composition, the physical proximity of the members, and features of the technology. Anonymity can also be divided into two types: content—the ability to identify the source of a specific contribution by an identifier embedded in the message—and process—the ability to determine who is participating. Valacich et al. conceive of these characteristics as independent dimensions. Process anonymity can be high and content anonymity low, and vice versa. However, the model does not address the role of time.

The work of [11] addresses the temporal patterning of interaction and performance in groups. He outlines three basic temporal problems facing all groups: 1) ambiguity about the beginning and end of events; 2) conflicts in the interests in and requirements of time-dependent activities and 3) scarcity of temporal resources. These problems imply that groups must find ways to communicate expectations about the timeliness of task accomplishment, to establish norms for smooth team dynamics and to regulate the flow of interaction.

If we examine a simple model of the process of achieving consensus through group discussion, the extent to which these challenges are even greater for groups communicating anonymously can be illustrated. Let us consider a group faced with reaching consensus on a problem for which there is not specific correct answer. There will be initial differences of opinion among the group members, otherwise there is not real need for group discussion. Let us say that there are two sets of elements of interest—the set of group members and the set of opinions. We can thus think of the process of reaching consensus as involving matching individuals with opinions, and keeping track of changes in these matches over the course of group discussion [4][5][8].

Consensus then is that point when all individual group members are matched to the same opinion. The degree of change varies across group members—and some may not change at all. Change may be thought of in terms both of difference between initial and final opinions, and the total number of different positions held over the course of discussion.

People may change opinions in response to the persuasiveness of arguments presented by other group members. Arguments can be persuasive based on their content (e.g., presented brand new information; presented a different perspective) or based on the argument's source (e.g., someone who is highly respected; someone who speaks in a forceful, confident manner.) The information simply about the positions held by all the group members may also trigger opinion change.

Without identification, the tasks of matching people with positions and keeping track of the changes in opinions are difficult. Further, from the perspective of each individual communicator, it is difficult to build a case based on persuasive arguments because no one knows whether any two comments come from the same or different authors. These problems exemplify the difficulties of ambiguity and need for synchronization that [11] discusses.

Two broad questions, therefore, guided this investigation. First, what strategies did groups adopt to help them manage the anonymity. This question rests on an assumption that reaching consensus can be quite difficult when communicating with a group for which the members have absolutely no sense of each other’s identities. We assume that there are fundamental aspects of identifying group members that are essential for consensus to be reached. We were thus interested in what these elements were and how group developed them. The second question was whether the methods used to reach consensus differed between anonymous and identified groups. For example, did anonymity affect the strategies that group members used to persuade each other? Were there differences in how they kept track of their progress toward consensus? In order to explore these questions, we examined the communication processes in electronically supported groups communicating anonymously and non-anonymously.
2.0 Method

2.1: Procedures

The data for this study were taken from a larger laboratory study on the minority influence effect in computer-mediated communication. The subjects were undergraduate business majors enrolled at a midwestern university who received course credit for their participation. Subjects were assigned randomly to four-person groups and these groups were assigned randomly to either the anonymous or the identified conditions. There were 12 anonymous and 11 identified groups. The groups were homogeneous with respect to gender; 6 groups were female and 17 were male. The task was to take the role of a jury, instructed to reach a unanimous decision within 40 minutes on the amount of monetary damages to be awarded to the plaintiff in a personal injury case [13].

The groups met in a computer lab where they were physically proximate and in full view of each other. They were instructed to talk to each other only through the computer and not to engage in verbal interaction. The study participants were seated in the lab in such a way that inhibited their ability to read from the computer monitors of the other subjects, but they could see whether someone was typing. In the anonymous condition subjects were not introduced to each other and were instructed not to attach their names to any of their comments. Subjects in the identified condition were instructed to introduce themselves to the other members of the group and to tag all of their computer comments with their names. Further, name placards were placed on top of each group member’s monitor.

The software used to support group discussion was the VisionQuest™ group decision support system marketed by Collaboration Technologies Corporation in Austin, Texas. The VisionQuest™ system provides a multi-module platform designed to support a variety of decision-making activities such as brainwriting, voting, rank ordering, and multi-attribute analysis. Operation and control of the system can be provided by the group members or through the participation of an outside facilitator. The experimental groups discussed the case by using the Comment Cards™ module of VisionQuest™, a brainwriting tool. The comments entered by each individual appear immediately on the monitor screens of all meeting participants, and the entire set of comments remains visible at all times. The discussion transcripts constitute the data analyzed in this study.

2.2: Data coding

The first step we took was to examine closely the transcripts in search of identifiable patterns in how groups approached the task. Based on this initial examination, we observed what seemed to be two major types of linguistic persuasive devices used both by anonymous and identified groups. The first was identification attempts (IDAs). That is, references to or attempts to create identities of group members. It appeared that subjects used four types of IDA devices: 1) argument content – references to the specific content of arguments or positions expressed in the discussion; 2) epithet/name – proper name of group member or label, used as a proper name would be used; 3) line number – reference to the line number of a specific comment; 4) physical location – reference to physical location in the room.

An experimenter coded the IDAs into these categories, and a research assistant independently coded a random subset (40%) of them to check on reliability. There was 97% agreement on this coding. Differences, largely due to oversight, were resolved through discussion.

The second major persuasive device was Error. There were errors, distortions or exaggerations of the factual information contained in the original case. The initial coding reliability for this category was also 97%, and disagreements were also resolved through discussion.

The initial examination of the transcripts also suggested that these persuasive devices were instrumental in helping groups achieve their task. We were able to identify six specific task functions that seemed to be served by using these persuasive devices. These were 1) request compromise; 2) offer compromise; 3) request reasons/justification; 4) offer reasons/justification; 5) request a polling of member positions; 6) offer a polling of member positions.
Although this set of categories was devised specifically for this study, were are similar to previously established discussion categorization schemes e.g., [1];[14]. Two independent coders assigned each use of a persuasive device to one of these categories (if they did not fit any of these categories, they were coded as OTHER). There was greater than 90% agreement on initial coding for each of these categories. Differences were resolved through discussion. We found that these six categories accounted for more than eighty percent of the use of persuasive devices.

3.0: Results

Figure 1 displays the distribution of all the persuasive devices for anonymous and identified groups. The use of persuasive devices, on the average, accounted for fewer than fifty percent of the total comments made within both types of groups (27% identified groups; 18% anonymous groups). For both kinds of group, epithet was the most frequently used persuasive device, especially among identified groups. In fact, identified groups used almost no other kinds of persuasive devices. In general, persuasive devices of all types were used most often to offer reasoning. There were no gender differences in the distribution of the persuasive devices, thus no specific references to gender will be made.

3.1: Effects of anonymity on strategies for reaching consensus.

Looking at Figure 1, it does appear that anonymity had an effect on the types of persuasive devices used by the groups. While for both types of groups, epithets and errors were the most frequently used devices, epithet accounted nearly for all of the persuasive devices used in identified groups. There was a very large gap in these groups between the epithet percentage and the percentage of the next most frequently used device (i.e., error).

The anonymous groups used a wider variety of persuasive devices, relying most frequently on epithet and error. In both types of groups line number references were rarely used, and physical location and argument content were never used in identified groups. On the other hand, nearly twenty percent of the persuasive devices in anonymous groups were based on argument content.

Anonymous groups made more errors, distortions or exaggerations of the factual information than identified groups. In both anonymous and identified groups, error was used for the purpose of presenting one's reasoning. The difference between the two types of groups is in the absolute frequency of using error as a persuasive strategy. Here is an example taken from the transcript of an anonymous group.

"The surgery to fix the knee was $> 30K"$

The original case did not mention surgery; the author of this comment was trying to convince one of the other group members to raise the dollar amount he had been advocating. Other examples that represent distortions or exaggerations, with the distortions underlined are presented below:

"...still the...reason he was hurt was the old woman leaving her laundry in an unlighted stairwell" (case does not mention age of the woman)
"The guy could hardly walk, so he should get more..." (case does not say he could not walk.)

One illustration of an extreme use of the error device was the member of an anonymous group who acted as an impostor and counterfeited arguments for another group member in an effort to force consensus:

S1 - this is 3000 and I settle for 6000
S2 - was that you 3000 or not?
S1 - yeah im 3K this is really me I take 6
S3 - no it isn’t

3.2: Differences between anonymous and identified groups in use of persuasive devices.

Identified groups used polling more readily than anonymous groups. Anonymous group made more direct request to compromise while identified groups used the more indirect approach of requesting people to say what their preferences would be. Here is an illustration of this contrast:

Anonymous groups
"hey, what happened to 3000, why don’t you come up and meet us at say, a nice round number like 15K”

"we need to agree at 20000, voter number 3”

"Let’s all come together, even for the odd ball...”

Identified groups
"what do you think, Bill?”

"Dave...what figure sounds more logical to you?”

"How much do you want to award him, Robin?”

Comparing between anonymous and identified groups the most frequently used devices for each meeting function reveals some potentially interesting differences. Both anonymous and identified groups used error primarily to offer reasoning. But anonymous groups on the average used error more often than identified groups, and it was the single most frequently used device for reasoning among the anonymous groups. In contrast, identified groups most often used epithet for offering reasoning.

Epithets were also used differently by anonymous and identified groups. We use the term epithet here to apply both to the use of names in identified groups, and the labeling techniques used by anonymous groups. We have eliminated the category of self-referent epithet for identified subjects because the tagging of their comments with their names represents a more passive self-labeling than an active attempt to create a self identification.

The self referent epithets in anonymous groups operated quite differently. In those groups it appeared that subjects were trying to create identifying markers for themselves and the other group members. An epithet is one specific strategy used to create these identities. In the data set, therefore, all the epithets recorded for identified groups were other-directed, while self and other directed epithets are both represented (26% and 74%, respectively) among anonymous groups.

The use of other-directed epithets served different functions in the two types of groups. It is first important to note that while it was required by the experiment for identified groups to tag comments with their own names, there was no requirement to use the names of the other group members. Thus, it was at the discretion of members of identified groups whether and when to refer to each other by name. In fact, in all groups in the identified condition the use of other group members’ names was common, but there was a pattern to the choices that members made about when to use the names. As Figure 2 shows, identified group members called each other by name most often when they were offering reasoning behind their own arguments. As illustrated by the following examples, it appears that people personalized their arguments as a way to increase emphasis and persuasiveness. Further, since nonverbal cues were absent the names were used to ensure that a comment would be directed to a specific individual:

"Joe, the knee can pop out with any pressure...to me that constitutes a lot of pain and suffering."
"Westy, Mrs. Davis knew he was coming and knew he needed to walk down the stairs; she should have cleared the way ahead of time."

"Grant, I feel that $125,000 is a good amount to award because he will have problems for the rest of his life."

In anonymous groups, epithets were used most often to request a compromise from a particular individual. These epithets were most often based on the content of a person's argument (e.g., "3000 Lady"; "Mr. 20000"). As illustrated earlier, members of anonymous groups more often than identified groups requested compromise directly, and requesting compromise was the single most frequent use of epithets (30%). The next largest category of epithet use among anonymous groups, at nearly 20% was Threat.

One of the clear substitutes for names used by the anonymous groups was argument content. This was the most frequent source for the epithets that were used. Further, identified groups never referred to the content of a person's argument when speaking to or about that individual. They used the more convenient readily available epithet -- the person's actual name.

Figure 2 Distribution of Epithet Functions

4.0: Discussion

The results of this study have suggested that there are differences in the use of persuasive linguistic devices between anonymous and identified groups communicating electronically. We can summarize the differences by saying that identified groups relied most heavily on presenting persuasive arguments, and appealed to personalization as a means of strengthening those arguments. Identified groups used only proper names in referring to each other. Anonymous group, on the other hand, developed a variety of methods for referring to each other, and also tended to use them for a wider variety of task functions. While one-third of identified groups' persuasive devices were devoted to presenting arguments, the persuasive device use among anonymous groups was not as highly concentrated on only one task function.

We speculate that these differences may reflect a generally higher degree of flexibility within anonymous groups. They are faced with more constraints than the identified groups, and must invent creative ways around those constraints. It is interesting to speculate further whether this increased flexibility might translate to greater creativity in problem solving. The task used for this study cannot be evaluated on the basis of quality or creativity, but examining this issue with a suitable task would be a useful follow-up study. Indeed, following up with other tasks is generally an important future step.
The results of this study also suggest that anonymity indeed does decrease over time, even during the short discussion period used in this study. Group members in anonymous groups had little trouble following the thread of the conversation and eventually developed a sense of continuity between the comments for the various members. This pattern of results may suggest an extension of the [17] model of anonymity. In addition to content and process anonymity, we might add character anonymity, defined in terms of the ability to recognize distinct personae in a group. We see this as different from the ability to attribute authorship of comments to a specific individual, and from knowing who is participating at a given time. For example, one may not be able to attribute a comment to a specific person, e.g., “Terri from Purchasing”, but one might be able to attribute it to “the person who always seems to play the devil’s advocate.”

It appears that there was cooperation among the group members to create a common cast of characters that they could all use. This cooperation even involved individuals adopting the identifications assigned to them by other group members (an exception to this was adopting the negative epithets that were created, e.g., “Mr. poopy pants”). We argue that group members were motivated by the demands of the task characteristics to seek ways of reducing the anonymity in their groups. The issue of identification and deindividuation in computer-mediated communication has largely been addressed from the perspective of the relational and socio-emotional tone of the discussion e.g.,[9][12][15][18][19]. These researchers’ work focuses on the role of identification in the development of social relationships. But here, these methods were used by groups for instrumental purposes. The goal for these group in developing a set of characters was not so much to find out who the other group members were, as to develop consistency and predictability in the discussion.

The final major difference observed between anonymous and identified groups in this study was that the anonymous groups took more liberties with the factual information than did the identified groups. There are two possible explanations for this. One is that people communicating anonymously might exaggerate the content of their arguments to compensate for the lack of social and nonverbal cues. The other explanation is related to the deindividuation that is commonly attributed to computer-mediated communication. The general disinhibiting effect associated with lack of identify and nonverbal cues might also loosen the social constraints on deception. Anonymous subjects, thus might have felt fewer constrains on being truthful than identified subjects. There is no evidence from our data that making errors made it more likely for groups to reach consensus. A fruitful direction for further study would be to examine in more detail the circumstances under which people use errors and deceptions in electronic communication, and the functions served by these practices.

An additional area that would be beneficial for future study in the differential effects of anonymity and lack of nonverbal cues. In the GSS literature, these two features of computer-mediated communication are largely treated as synonymous. Communication using a computer does lack nonverbal cues, but it does not have to be anonymous. We speculate that the differential effect of these two characteristics may depend on group history. In preacquainted groups communicating electronically, the addition of information on the identities of the group members will make a bigger difference than in zero history groups. In preacquainted groups, they already would have a set of characters, and thus would immediately attach different interpretations of comments as a function of the presumed author. Thus, in previously acquainted groups, process and content anonymity might be high, but character anonymity would be low, while in zero history groups, all types of anonymity would be high. A practical implication of this difference for group facilitators is consideration of the amount and type of information to give to group members about each other prior to anonymous discussion. Should they know specifically who the other members are? Should they only be told the number of group members? Only departmental affiliation? The nature of the task degree of sensitivity of the discussion issue and organizational context are examples of some of the factors that would guide these choices.
Future work on this question should draw more heavily on the literature in social psychology and communication studies. [2], for example, suggests several theoretical frames that have been used to explain interpersonal communication events. One of the things we maybe observing in this study are variations in language use as markers of emerging social relationships [6]. Particular devices may signal linguistic intensity, and facilitate message persuasiveness.

Despite its exploratory nature, this study has offered some insights into the way that anonymity operates over the course of a decision-making discussion. The study shows clearly that this is an area in which a number of questions important for both theory and practice and be pursued.

5.0: References