

Hidden Messages in E-Mail Text

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Disclaimer

The research site is the author's workplace. The discussions in this research are meant only to provide insight. The author is not responsible for creating policy or guidance concerning e-mail use. In addition, the author is neither responsible for the remuneration, nor the duties of any of the participants. Participation for this research was voluntary. All samples used in the study were approved under the Access to Information Act. The study was undertaken with the approval of the Alberta Ethics Review Board at the University of Alberta.

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Abstract

Electronic mail (e-mail) is a relatively new communications medium. Users have primarily borrowed speech and print conventions to work in this medium, but e-mail is neither speech nor print. E-mail is still an emerging technology which may be carrying hidden meaning, not yet fully understood. As found in an abundance of research on face-to-face communication, a large portion of communication is transmitted apart from the words (Martin, 1995). E-mail users may be unintentionally sending subtle yet powerful messages, through the choices they make with this medium. There is little research on the subtle messages that may be woven into text attributes of e-mail messages. Understanding the message beyond the words may assist e-mail users to use this communications medium more effectively.

The focus of this research was to search for these hidden messages. Text attributes of 180 e-mail messages from four levels within a Canadian government department, Human Resources Development Canada (HRDC) were analyzed. In December, 2003, HRDC was divided into two departments, (Human Resources and Skills Development Canada and Social Development Canada, HRSDC/SDC).

Content analysis was used as the methodology to explore text attributes in e-mail messages: use of salutations, average message size, formality/informality and response time. In addition comparisons were made between genders.

The findings reveal some overall differences between use of salutations, message size, level of formality and response time. However between the different levels of the organization, only the text attributes, use of salutation and message size were significant. In addition, no gender differences were found. There were fewer differences in text attributes found in e-mail messages between different levels in HRSDC/SDC than was found in similar research. This may indicate the culture in HRSDC/SDC supports a flatter organization, with less of a pronounced hierarchal structure than other organizations.

Without doubt effective communication in any organization today is of paramount importance. The Canadian government departments of Human Resources and Skills Development Canada (HRSDC) and Social Development Canada (SDC) (formerly Human Resources Development Canada) are responsible for assisting Canadians thrive and prosper, and for securing Canada's social foundation. HRSDC supports human development in the workplace and community, by supporting human capital and labour market development, and by establishing a culture of lifelong learning. HRSDC clients include employers, employees and students. SDC assists Canadians overcome challenges in their lives. SDC clients include families with children, people with disabilities and seniors (Government of Canada, 2004). Like most organizations, these departments are acutely aware of the critical importance of effective communication. Although there are many communication mediums used within HRSDC/SDC, like with many organizations, electronic mail (e-mail) has become the main communications medium. As e-mail is an emerging technology, with little established protocol, users have borrowed mainly speech and print conventions to work in this medium. However e-mail is neither speech, nor print. Baron (2002) compares the abbreviated language of e-mail messages emerging today, with the abbreviated language of the telegraph. Taylor & Saarinen (1994) use the term "telewriting" to describe e-mail as a cross between the telephone and writing. Rice (1997) suggests the mix of formal

and informal discourse found in e-mail texts is due to the clash of users simultaneously attempting to combine elements of oral and written discourse in an interactive environment. Through experimentation and development of this new communications medium comes an abundance of hidden meaning, yet to be explored.

As found in a large body of research on non-verbal face-to-face communication, these subtle messages can speak volumes. For example, most people are taught that communication is conveyed only through words, and so are unaware of the powerful effect of non-verbal language (Sal, 1996). It is therefore not uncommon to be "saying the right words but sending the wrong signals" (Martin, 1995, p. 28). In face-to-face communication, it is estimated that only approximately 7% of communication is found in words (Martin, 1995). Communication experts have generally agreed that 38% of face-to-face communication is vocal (e.g. tone, pitch, speed at which words are delivered) and 55% is visual (e.g. body movements, posture) (Martin, 1995). Accents, volume, pauses and breaks can all override message content (Frank, 1990). There are hidden messages in face-to-face communication and there are also hidden messages in electronic communication.

There is limited research on hidden messages that may be woven into text-based attributes of e-mail messages. Without being aware, e-mail users may be sending subtle yet powerful unintended messages. This can

create, not only lack of communication, but misunderstanding, confusion and frustration, and consume a great deal of unnecessary resources. (Keller Johnson, 2002; Sibley, 2002). In addition, as carriers of information, e-mail messages are being sent at an increasingly accelerated rate (Perry, 1992); therefore competition for a reader's attention span has also increased. It is therefore increasingly important that e-mail users are aware of hidden messages and that e-mail messages communicate as closely as possible that which the sender intends.

The focus of this research is to search for and illuminate these hidden messages. This research provides insight specifically for employees within HRSD/SDC and comparable organizations concerning this communications medium, towards enabling more effective use of this communications medium. In this study, the question of interest is: Do text-based attributes of e-mail messages vary between different levels in the hierarchal structure of HRSDC/SDC?

Theoretical Alternatives

Sociologists, psychologists and people involved in information systems have all studied electronic text; the theoretical frameworks that have been used are wide and varied. They include a broad spectrum of theories, from the Richness of Information Theory (Lee, 1994; Markus, 1994; Panteli, 2002) to Complexity Theories to Systems Theories (Beeson & Davis, 2000). The following sections review the applicability of each of these theories to the study of e-mail.

Systems Theories

Systems theories emphasize maintenance, balance and order in a shifting environment. A system, from an organizational view, is a set of interacting elements which acquires input from the environment, transforms these elements and then discharges them back to the external environment (Daft, 2001). Systems theories when applied to organizations are discussed as organic or cybernetic models (Beeson & Davis, 2000). The goal of the organic model is to maintain balance in a shifting environment. This goal is accomplished by action taken by a system's control centre. Boundaries, feedback and responses are primary characteristics of the organic model. In comparison to the organic model, the cybernetic model provides a slightly more elaborate perspective in that it includes potential for proactive intervention. However the cybernetic model still views the goal of any

intervention (proactive or reactive) as maintaining balance or order (Beeson & Davis, 2000).

Regardless of the specific systems theory, from an organizational perspective, studying e-mail using systems theories would have its advantages. E-mail, as a communications medium is a system. From a macro perspective, using the e-mail system to explore boundaries, and explore either proactive or reactive responses to this medium, could prove useful. There's little doubt the e-mail system within HRSDC/SDC is part of a shifting environment, in which maintaining balance is necessary. With large systems, control centres are viewed as effective mechanisms to keep order and maintain this balance. The e-mail system within HRSDC/SDC is without question a large, but also a very centrally used system. Maintaining order and balance is critical in day to day operations.

For the purposes of this research however, systems theories are limiting as they place too much emphasis on the maintenance of order and the ability of a control centre to manage actions in an organization (Beeson & Davis, 2000). Systems theories neglect to address the immense potential of individual human contribution (Beeson & Davis, 2000). Also, as Beeson and Davis (2000) found, systems theories place too much emphasis on order, (the goal) and do not deal well with change (the process). The purpose of this research is to explore the variability between e-mail text messages by users, in the adaptation of e-mail as an emerging

communication medium. The base for this research therefore requires a framework which deals more sufficiently with the process (change).

Complexity Theory

Although systems theories are still found to be useful in some situations, the centrality of order and control found in systems theories is more recently being challenged by complexity theory, which deals with non-linear systems and where cause and effect are not accepted as constant (Beeson & Davis, 2000). Complexity theory recognizes the power that many small contributions can have, resulting in huge consequences. Complexity Theory also deals with the unpredictability of systems, which is no doubt an attractive feature in today's shifting and unpredictable environments. Complexity Theory deals better with change and strikes a better balance between order and disorder than Systems theories. In addition, Complexity Theory deals with human action (Beeson & Davis, 2000). The unpredictability feature in Complexity Theory is an attractive feature that could be used to explore the non-standardized and unpredictable behaviour of e-mail users. As an emerging communications medium, with little established protocol, e-mail conventions being used are not only wide and varied but also unpredictable. Another attractive feature of Complexity Theory is that it deals with human interaction. This feature is essential in exploring hidden meaning in e-mail text. Although Complexity

Theory seems to more closely reflect the non-linear, unpredictable nature of e-mail, the question being investigated in the present research, attempts to probe areas beyond the non-linear aspect and the unpredictable use of the medium, into elements less transparent such as the emergent unique patterns (filled with value-laden information), created by humans. This research attempts to search for the richness of meaning, silently being conveyed through e-mail text attributes. Hence in the current research context, Complexity theory cannot/does not provide/explain, the patterns emerging with e-mail messages, which are being created by e-mail users working within these unpredictable and complex organizations.

Richness of Information Theory

In order to study hidden meaning in e-mail text messages, it is important to use a theoretical framework which can sufficiently address the richness of communication based on the medium and also address the role of social construction. "E-mail users are not passive recipients, but active producers of meaning"" The users themselves (along with the social construction that they appropriate and that, in turn appropriates them) join the hardware and software of the e-mail system as processors (or even better, co-processors) of the data" (Lee, 1994, p. 154).

"Information Richness is defined as, the ability of information to change understanding within a time interval." (Daft & Lengel, 1986, p. 560).

The level of richness varies depending on factors such as, capacity of feedback, number of social cues, personalization, and language variety (Panteli, 2002). Using The Richness of Information Theory as a framework, Panteli (2002) found that electronic text actually creates a richer communications medium than is stated in the theory.

A number of social changes have emerged through the use of e-mail from, new discourse style and new conventions influencing writing and language (Baron, 2002; Cha, Kim, Lee, Seo & Shim, 2002; Rice, 1997) to changes in hierarchical structures. Perry (1992) stated that e-mail by its very nature, has shattered typical hierarchies. "When communication lacks dynamic personal information, people focus their attention on the message rather than on each other" (Perry, 1992, p. 28). However more recent research shows communication through e-mail is socially constructed by the environment of the organization within which it is used, and that communication through e-mail actually accentuates hierarchical differences, rather than alleviates these differences (Panteli, 2002). For example, Panteli (2002) shows the number of signatures on e-mail messages decreased from 67.3% to 16.5%, as the level of authority of the sender decreased. It is also suggested that e-mail has proliferated because of social rewards. Users have found e-mail helps them be winners, sometimes in unexpected ways (Vance Wilson, 2002). Friedman & Currall (cited in Keller Johnson, 2002), found that conflict is more easily escalated with e-mail than in face- to-face

conversations, due to the structural properties of e-mail (e.g. low feedback). In a study by Rice (1997) it is suggested that the reduced social cues in e-mail, cause writers to focus on themselves, instead of their audience. Other research has found that subtle social cues woven into e-mail text attributes, illuminate social differences amongst senders and receivers, seriously damaging working relationships. These cues are so subtle most people have difficulty finding appropriate metaphors to predict what these social differences mean in terms of actual communication (Vance Wilson, 2002). Allen Lee (1994) used hermeneutic interpretation to study e-mail exchanged between managers. Lee (1994) suggests richness or leanness of communication occurs as an emergent property of the interaction of e-mail within its organizational context, not because of the medium itself. Therefore, given that social elements and cues impact e-mail use considerably, Information Richness Theory, with its focus on social construction, provides a viable theoretical framework within which to examine e-mail use.

Methods Used to Study E-Mail

In prior research several methods have been used to study the social impact of e-mail. Lynn Markus (1994) in her study on e-mail as a managerial medium choice, used survey questionnaires as a main data source and a transcript of comments written in response to one open ended

question; but also used data from interviews, and samples of actual e-mails. Te'eni, Sagie, Schwartz, Zaidman & Amichai-Hamburger (2000) used a field study to examine the content of text-based communication in letters, memos, facsimiles and e-mails. The study was done in an academic setting and focused on written and recorded communication. Te'eni et al (2000) chose to do their study in a natural setting, rather than in a controlled laboratory, as they agreed that judging this type of communication as it was produced, without having to probe the sender was of great practical value. To further clarify some of their findings, Te'eni et al (2000) also used open ended interviews. Panteli (2002) analyzed e-mail messages, using textual and deconstruction analysis. By using textual analysis, visible characteristics such as language patterns, signatures and forms of address were examined. Panteli (2002) analyzed these e-mail messages to see whether they differed amongst people at different levels of the hierarchy. Deconstruction analysis was used to closely focus on the actual wording, to understand what social meaning was intertwined (Panteli, 2002). Lee (1994) also studied e-mail text messages, but used the hermeneutic interpretation approach. Watts Sussman & Sproull (as cited in Maday, 1999) used document analysis to study the effectiveness of e-mail to deliver bad news. They asked 117 students to rate each others' resumes using different medium (in-person, phone or e-mail). All the research above, except Watts Sussman & Sproull (1999), used content analysis to examine actual e-mail messages, either as

the only source of data or along with other methods. Watts Sussman & Sproull (1999) were comparing different communication mediums, and not e-mail text per se. Although Markus (1994) analyzed e-mail text, using a sample size of 153 e-mail messages, these e-mails were obtained in only one, typical day. As this timeframe was very limiting, additional methods for retrieving data would have been required. Survey questionnaires can provide an additional rich source of data for many studies. However as the timeframe for the present research was limited, retrieving data from several sources was not possible. It was therefore important to choose a method for data collection that would produce the most useful data. As this research is exploring hidden messages (assumed to not be obvious), asking participants to respond to something they may be unaware of, would not have provided the same value as data already captured in a natural environment. As suggested by Te'eni et al (2000) it is the unbiased source of content analysis (e-mails that have been written in the natural course of day to day business) that makes content analysis an attractive method for study.

As stated above, several researchers, who have studied e-mail messages, have used content analysis. Markus (1994) used content analysis to study e-mail patterns of managers in a large company and Panteli (2002) used e-mail messages to study hierarchical structures in a university environment. Markus (1994) analyzed 153 e-mail messages. In the first

phase the messages were coded according to: sender, receiver(s), time of sending and length of message. One of the samples chosen, from an effective senior manager, was used to explore e-mail pattern usage of managers, by analyzing the contents of the entire e-mail conversation (approximately a 200 page transcript). The second phase of the sample message analysis was interpretive, where messages were grouped according to topic and individuals (sent to and from). These samples were qualitatively interpreted to understand the communication task and the social meaning of e-mail from the participants' perspective (Markus, 1994). Panteli (2002) analyzed 213 e-mail messages, written by four different levels of an organization, in order to assess the level of richness in e-mail communication. Variables tested were: presence of opening salutations and signatures and signatures by direction. In addition, Panteli (2002) used deconstruction analysis to analyze the wording and the implicit meaning of the texts. Te'eni et al (2000) used content analysis in a field study, at an academic institution to research the implications on designing and implementing computer based technology. They were given access to the institution's communication which included letters, memos, facsimiles and e-mails. Te'eni et al (2000) coded 252 messages using the variables: medium interactivity, message size, message organization, message formality, strategy of involvement, strategy of contextualization and strategy of affectivity. In a content analysis study, outside the work

environment, involving candidates for a United States election, four to six different variables were used to compare two candidates. Speeches from the two candidates were analyzed for the frequency and presence of specific themes mentioned in their speeches (Holsti, 1969). Content analysis has been used as an effective method for analyzing communication content, in many areas, for many years.

Content analysis is an appropriate technique for studying organizations, attitudes and human relationships. Examination of text can reveal hidden messages about relationships. Content analysis allows the researcher to study key variables across large numbers of text messages, in different situations, and at a distance. The non-reactive nature of content analysis prevents the researcher from influencing the content, therefore reducing bias, and improving validity (Neuman, 2003).

There are at least two advantages in using content analysis to study text attributes in e-mail messages. The first is the obvious benefit of analyzing communication which was produced without participant and researcher bias. The second benefit in using content analysis to analyze e-mail messages is the fact that e-mail is a relatively new communication medium, with few agreed upon conventions, and therefore the text composition in these messages is widely varied. As Panteli (2002) suggests the fact that e-mail has not been established as either a formal or informal medium, allows users to individually choose their own composition style.

This choice however may be unconsciously made because of user's experience with prior conventions, rather than because the user is consciously making a deliberate decision as to whether e-mail as a medium is formal or informal. The diversity in composition provides added richness and forms part of the hidden meaning in the messages, adding increased value to content analysis as a method for this study.

Method

Participants

All participants are employees of the Canadian Government Departments of Human Resources and Skills Development (HRSDC) or Social Development (SDC), within the Alberta/Northwest Territories/Nunavut Region.

Site Selection

The research site is the researcher's work place. When the study began the name of the research site was Human Resources Development Canada (HRDC) a department within the Government of Canada. In December, 2003, with the change of Prime Minister, HRDC was divided into two departments, Human Resources and Skills Development (HRSDC) and Social Development (SDC). Employees who used to work for HRDC are now employed by either HRSDC or SDC. Although there are employees employed by HRSDC and SDC across Canada, the research site is restricted to the Alberta/Northwest Territories/Nunavut Region, the region the researcher works in. HRSDC and SDC employ hundreds of people across Canada and the Alberta/Northwest Territories/Nunavut Region.

Type of Information

One-hundred-eighty e-mail text message samples (from 70 participants), collected over a two month period, October and November, 2003, were analyzed.

Materials

Text attributes found in the samples were recorded using an electronic recording sheet (see Appendix 1). A separate recording sheet was used for each level (see Appendix 1). The units of analysis and instructions for coding are defined in the Guidelines for Coding Data (see Appendix 2).

The text based attributes coded are: participant level, gender, whether salutation was used, number of words and formality/informality. If the e-mail was a response to a specific request, time taken to respond and whether the level of the respondent is higher or lower than the requestor, was also recorded. The unit of measure for response is time, measured in days, hours and minutes. Days and minutes were converted to hours, for comparison purposes.

Computerized software, Microsoft WORD was used to analyze specific variables and Microsoft EXCEL was used to record data. As well the statistical package in Microsoft EXCEL was used for statistical computations.

Procedures

All e-mails received by the researcher between 1 October, 2003 and 30 November, 2003, were saved in both print and electronic form. The e-mails were sorted, both in hard copy and electronically, into four different categories based on the four levels, as per the Guidelines for Coding Data

(see Appendix 2). The e-mails were then coded with individual identifiers, as per the Guidelines for Coding Data (see Appendix 2).

Using software (Microsoft Excel), a separate worksheet, for each level, was created, listing the date each e-mail was received, along with individual identifiers, for each e-mail, as per the Guidelines for Coding Data (Appendix 2). The listing on each worksheet was also sorted by individual (i.e. all the e-mails received from each individual was listed in a column under a code for the individual).

Stratified and random sampling was then used to draw 50 samples from each level (i.e. stratified sampling was used to draw samples from each sub-population, to ensure maximum population representation). An application was made under the Access to Information Act, requesting use of these 200 samples for this study. The application was approved, with minor exclusions in a few of the samples. The words that were excluded, by the Access to Information Act, were not used in the study.

Consent to use the e-mails samples, was requested from each potential participant (see Appendix 3).

For the e-mail samples, from participants whose consent was received, each randomly chosen sample was recorded on the Recording Sheet (see Appendix 1). Using the Guidelines for Coding Data (see Appendix 2), data regarding the variables tested, was also recorded on the Recording Sheet (see Appendix 1).

Sampling Methodology

Total population

The population for the research was defined as, e-mails received by the researcher, over a two month period, from 1 October to 30 November, 2003. A test pilot conducted in July, 2003 indicated the researcher receives approximately 350 e-mails per month. Therefore the total population of approximately 700 e-mail messages, collected over a two month period, was deemed to be an appropriate number for the study. Neuman (2003) defines a small population as fewer than 1,000. Neuman (2003) suggests a sampling size of 30% for small populations. 30% equals 210 messages. Other studies involving content analysis of e-mail messages used similar sample sizes. Markus (1994) used a sample size of 153 e-mail messages. In the Panteli (2002) study 213 messages collected over a 10 month period, were analyzed and in the Te'eni et al (2000) study 252 messages collected over 12 months were analyzed. The time limitation for this study did not allow for data collection from 10 to 12 months. Based on this prior research, a sampling size of 180 appears reasonable.

Levels of Analysis

E-mails from four levels of e-mail users within HRSDC/SDC were analyzed. The number of levels analyzed was based on a pilot study conducted in July, 2003, along with comparisons of similar studies. Lynn Markus (1994) also analyzed four levels of e-mail users, in a study on

frequency of e-mail use by managers. Markus (1994) used a large organization, with approximately 7500 employees, for her study and analyzed levels: Vice-president, Director, Manager and Supervisor. The Panteli (2002) study on e-mail use in a university hierarchy, also analyzed four levels: Professor, Lecturer, Researcher, and Administrative staff. The site of this research, HRSDC/SDC, is also a large organization, with several levels of staff who all have access to, and use e-mail. Therefore the four distinct levels chosen for this study appear to be appropriate for the size and structure of the research site.

The levels being analyzed are: Director/Manager, Regional Consultant, Middle Manager and Administrative staff. These titles are general categories which contain different positions within them. However all the positions hold the same level of responsibility in their respective areas. They are grouped together for the purposes of increased sampling and confidentiality. For example, in order to maintain confidentiality and be able to extract enough samples, all e-mails received from the most senior levels were coded as position, Director/Manager. Although there may be salary differences between Directors and Managers, they are in the same position in the hierarchy (i.e. all Directors and Managers are at the most senior position in their respective areas). The same occurs for Regional Consultants. Within this category are positions: Regional Consultant and Regional Officer. The same also occurs for Middle Managers. Within this category are positions:

Service Delivery Manager, Service Delivery Operational Consultant and Team Leader. Although there may be salary differences, these positions are all considered as middle management in their respective areas.

Confidentiality is also strengthened by the fact that HRSDC/SDC, within the Alberta/Northwest Territories/Nunavut Region, employs many more people, within these four levels, than are included as participants of this study.

Others, within these levels, could not be participants simply because they did not send an e-mail, received by the researcher, during the two month period when the data was gathered.

Sampling

Random sampling and stratified sampling was used to ensure maximum population representation (Ness Evans, 1992; Neuman, 2003). Samples were located from e-mail messages sent to the researcher during the months of October and November, 2003. For each month the total population was divided by position level. Then each position level was divided into sub-populations (strata) of participants. As there were a disproportionate number of e-mails received from the levels and the participants, stratified and random sampling ensured selection of a wide representation of e-mails and participants. Table 1 illustrates the total number of e-mails received from each level. The 756 e-mail messages were received from 78 different potential participants.

Fifty samples were drawn from each position level, for a total of 200 samples from the two month period. Stratified and random sampling was achieved using computerized software (Microsoft EXCEL-Tools/Data Analysis).

The e-mails were sorted and assigned an identifier, indicating participant, position, whether it was received in the first or second month, placement of the sample in the total sequence of e-mails received from the level in the month and placement of the sample in the total sequence of e-mails received from the participant. For example, the 10th e-mail received in the first month for level Director/Manager, which is also the 2nd e-mail received from participant tt, would have been assigned the identifier:



Print copies were placed in file folders and stored in a locked cabinet to ensure security and confidentiality. Electronic copies were protected by a password requirement access to the system. By keeping all the e-mails, the researcher had the advantage of adjusting the sample size or reviewing different text attributes at a later time. An application was made under the Access to Information Act. All the samples were provided with the application and reviewed for personal information. A small number of the e-mail messages qualified for partial exemptions pursuant to subsection 19 (1) and pursuant to paragraphs 20 (1) (b) and 21(1) (a) (b) of the Access to information Act (February, 2004). The results of the study are not affected

by these exemptions. In addition eight of the potential participants chose not to provide consent, reducing the total number of participants to 70 and the total number of e-mail message samples to 180. From the 180 samples, 54 were received from males and 126 from females.

Variables

The variables used in the study were:

⇒ Independent variable- position level, gender

⇒ Dependant variables-response time, salutation, formality or informality and message size (number of words)

The following sections characterize the importance of these variables and give examples of how they have been measured in previous research.

In the study by Te'én et al (2000), seven variables were used (medium interactivity, message size, message organization, message formality, strategy of involvements, strategy of contextualization, and strategy of affectivity). Panteli (2002) analyzed e-mail messages, using the variables: presentation, language patterns, signature, and forms of address. Markus (1994), in the first phase of her study, coded the variables, sender, receiver(s), time sent and length of message.

Rice, (1997) in a study on stylistic variables in e-mail, found evidence of both formal and informal discourse. The medium itself encourages informality and therefore strict formal discourse is not common. However the range of formality from, more formal (use of paragraphs, correct

spelling etc.) to less formal (abbreviated words, spelling errors etc.) is an interesting variable to test between different levels in an organization, as it illuminates the liberties users have taken with this medium.

In this study, computerized software (Microsoft WORD-Tools/Spelling) was used to identify spelling errors. Commonly used and well understood acronyms such as HRSDC and SDC, although identified by Microsoft WORD-Tools/Spelling, as spelling errors, were not considered as spelling errors for the purposes of this study, as use of such acronyms are accepted as part of standardized language within the departments. In order to incorporate this internally accepted standardization of language, the variable of formal/informal is discussed as more formal, as opposed to strictly formal.

Message size is also an interesting variable to test, from more than one perspective. Baron (2002), citing Shapiro & Anderson, 1985, p. 23) states early use of e-mail contained short messages, basically one screen worth of text. As e-mail usage expanded, so did the length of the messages, into multi pages (Baron, 2002). However, Baron (2002) suggests that with the advance of other technologies (e.g. instant messaging, hand held devices, cell phones), quick turn around times are encouraging shorter messages and so e-mail may well need to follow this pattern.

In this study, computerized software (Microsoft WORD-Tools/Word Count) was used to determine message size. Only words composed by the author of the e-mail being sampled were included. That is, if a message was

simply forwarded, and the words in the subject were not changed, the words in the subject were not counted. Also, automatic footnotes containing names, titles, phone numbers, facsimile numbers, internet e-mail addresses and quotes, were not included in the word count.

Kucker and Maloney (2000) studied the effects of e-mail using the variables: e-mail use, e-mail use for professional use, e-mail use for research use, email use by gender, e-mail effects and e-mail use and work organization. Walsh et al (2000) also used gender as a variable. Although Walsh et al (2000) did not find gender differences with e-mail use, they did find some evidence that women were being more impacted by e-mail than men. Gefen and Straub (1997) found gender differences in oral discourse translated into gender differences in e-mail. As is suggested by Gefen and Straub (1997), if gender differences in e-mail use are found, it is important for managers and co-workers to be aware of these differences.

The variables used in this study, have all been used in similar research, as discussed above, and so appear appropriate for this line of inquiry. The pilot test done in July, 2003, assessed all the variables (except formality/informality), for practicality purposes. The number and specific variables were chosen, taking into consideration: the method used (content analysis), the number of samples, the time allotted for the research and the specific research question.

Hypotheses

The independent variable, level, was compared to each dependent variable: response time, salutation, formality or informality and the total number of words, to determine whether there are significant differences between the levels. The independent variable, gender, was compared to each dependent variable: salutation, formality or informality and the total number of words, to determine whether there are significant differences between text-based messages composed by males and females. Based on the findings of similar studies, the following hypotheses were tested:

H1a: Higher levels of the organization use salutations less frequently

H1b: Higher levels of the organization use fewer words

H1c: Higher levels of the organization use less formal language

Panteli (2002) found that the highest level in the organization (professors), were the least likely to use salutations (28.6%). Lecturers used salutations 58.2% of the time and Researchers 100% of the time. However, interestingly enough, the Administrative staff, used salutations only 43% of the time, higher than Professors, but lower than Lecturers and Researchers. Te'eni et al (2000) found a wide range in message size in the written communication samples analyzed (letter, memo, facsimile and e-mail). The number of words ranged from 3 to 663 words, with e-mail messages showing a mean of 47.43 words, and a standard deviation of

43.90. When assessing formality/informality, Te'eni et al (2000) also found a wide range due to some assumed liberties with the perceived informality of e-mail. Te'en et all (2000) found support for less formality, when e-mail authors were describing affectivity (mood or emotion) such as feeling good. It is suggested mixed messages are sent when combining affectivity in formal style (Te'eni et al, 2000). In Panteli (2002), an e-mail written by an employee addressed to more senior members in the organization, was written in a formal style of writing. However this same e-mail when shared between several senior members of the organization, was much more informal, short and to the point, spontaneous and conversational. It is assumed this pattern of the use of salutations, message size (number of words) and formality/informality will be duplicated within HRSDC/SDC.

H2a: Response time is shorter when the position of the respondent is lower, than the position to whom the response is addressed.

The debate as to whether or not networked communications have flattened hierarchal structures continues. Thomas Stewart (1998) suggests hierarchal structures are already dead but yet the Panteli (2002) study suggests hierarchical structures are being reinforced through e-mail. Although technology may be changing hierarchical structures in organizations, larger organizations with well established histories of hierarchical structures, like the one in the Panteli (2002) study and like the

one in the present research, have not likely been significantly altered by e-mail, at the present time. Therefore communication from higher levels of an organization, that require a response, are likely viewed as more urgent, and therefore are responded to in a shorter time frame, than communication from lower levels.

H3a: Males use less formality than females

H3b: Males use salutations less frequently than females

H3c: Males use fewer words than females

Kerr and Hiltz (cited in Walsh et al, 2000) found no gender differences in the use of computer mediated communications, but did find gender differences in style of usage. Preisler (cited in Gefen & Straub, 1997) found discourse to be characterized by different oral speech patterns between men and women. Gefen and Straub (1997) suggest these variations in patterns of communication between men and women, affect meaning. In their research, Gefen and Straub (1997) tested whether the speech pattern differences found in oral speech were also present in e-mail. Their findings support evidence that gender differences in oral discourse translated into gender differences in e-mail. Women view e-mail as being higher in social presence and more useful than men (Gefen & Straub, 1997). It follows that if women perceive more usefulness in e-mail, they will be more inclined to compile more formal, longer messages and use salutations more often.

Results

The following section provides a description of the findings of the study.

Analysis Overview

Using the statistical procedure of one way ANOVA ($p < .05$), the independent variables (level, gender) were tested against the dependent variables (use of salutation, message size, level of formality and response time). The exception to this was that gender and response time were not tested.

Using the statistical procedure of one way ANOVA ($p < .05$), all four levels were tested to see whether there were findings of a significant difference between the four groups (Simon, 2003, p. 221).

Descriptive Statistics

Descriptive statistics were calculated for the entire sample for each of the variables.

Salutations

As shown in Figure I, salutations were found in only 30% of the e-mails sampled. In 70% of the e-mails sampled, no salutation was present. Where no salutation was present, the authors simply began with the body of the message. This may indicate that for the most part, e-mail users in

HRSDC/SDC do not closely associate the text based messages in e-mail, with other text based communication such as letters or memorandums, where salutations are considered a standard requirement.

Message Size

In the present study the mean message size was found to be 86.55 with a standard deviation of 129.11. In the Te'eni et al (2000) study, a message mean size of 47.43 was found with a standard deviation of 43.90. However the Te'eni et al (2000) study included not only e-mail but also non-electronic text such as letters and memorandums. As the present study includes only electronic text, the increase in message mean, may be attributed simply to the ease of using electronic communication. However, Te'eni et al (2000) also found a wide range in message size in the written communication samples they analyzed (letter, memorandum, facsimile and e-mail) from 3 to 663 words. In the present study, there was also a wide range in message size, from 0 to 1139 words. Table 2 shows the range of message size for all groups. The message size was given a value of zero when a message was simply forwarded, with no additional text added. Only words composed by the author were considered in the message size. Words in the subject, composed by a different author and automatic footnotes with pre-filled names, position titles etc. were not included in the message size. The variability in message size may indicate that e-mails users view e-mail as a communications medium, very differently. For example, using e-mail to

simply forward a message, previously composed by another author, is to use the technology as a carrier or container of information, simply a mechanism to move information, as opposed to a technology for creating information. Lynn Markus (1994) referred to this practice of simply forwarding messages as mosaic messaging. A zero word message count may be illuminating an unintended consequence of this technology.

At the other extreme in message size, an e-mail user who composes an e-mail message consisting of 1139 words is using this medium as both a tool to create, and as a mechanism to share, a fair amount of information.

Formality/Informality

As shown in Figure 2, only 29% of the e-mail messages sampled were written in a more formal manner, with no spelling errors, complete sentences and separate paragraphs (where required). Seventy-one % of the messages contained spelling errors, incomplete sentences or did not demonstrate use of separate paragraphs (where required). Although the tool used to determine spelling errors, Microsoft WORD, highlighted all acronyms as spelling errors, commonly understood acronyms, such as HRSCD and SDC were not considered spelling errors. Acronyms are a common part of the language within the organization. Even in the e-mail messages which were considered more formal, acronyms were commonplace. Therefore, formality was assessed as more formal, as opposed to truly formal, by strict grammatical rules. If commonly used

acronyms had been considered informal, the level of informality would have been much higher.

As was found with the low percentage in use of salutations, the high level of informality found in most of the e-mail samples in HRSDC/SDC indicates that most e-mail users do not view e-mail similar to more formal communication mediums such as memorandums and letters. Liberties taken with e-mail use appear to favour less formality, a more casual approach to communication, than is found in other text based communication.

Response Time

Out of the 180 e-mails sampled, 24% specifically requested a response from someone or a group of people. The average time taken to respond, to an e-mail requesting a response, was 4 hours and 59 minutes ($M=4$ hrs. 59 mins., $SD=7.03$).

However, there was a wide range in the response time, from 0 minutes to 3 days, 4 hours and 54 minutes. This wide range in time taken to respond may be related to the amount of preparation needed before a response could be given, or it may also indicate different perspectives of this medium. For example, the instantaneous ability to respond to e-mail was evident by the fact that a response was made in 0 minutes. However the longer response times may indicate a different perspective on the purpose of this medium (e.g. more in line with paper mail).

Hypothesis Testing

One way Analysis of Variance (ANOVA), with $p < .05$, was used to determine if there are significant differences in the text-based attributes of e-mails between four levels in HRSDC/SDC (Director/ Manager, Regional Consultant, Middle Manager and Administration).

H1a: Higher levels of the organization use salutations less frequently

Panteli (2002) found that the highest level in the organization (professors), were the least likely to use salutations (28.6%). Lecturers used salutations 58.2% of the time and Researchers 100% of the time. The Administrative staff used salutations only 43% of the time. In the present research, there were also statistically significant findings for differences in the use of salutations between the four levels analyzed, Director/Manager, Regional Consultant, Middle Manager and Administrative, $F(3, 176)=2.70, p < .05$). To detect where the differences occurred, the Scheffe procedure was used to control for Type I error for a family of posthoc contrasts to test for significance at .05. There were statistically significant differences found in the use of salutations between levels Director/Manager and Regional Consultant, $t(91)=-2.78, p < .05$) and Director/Manager and Middle Manager, $t(85)=-2.38, p < .05$). There were no statistically significant differences found between levels Director/Manager and Administrative, $t(84)=-1.77, p > .05$), Regional Consultant and Middle Manager, $t(92)=.33,$

$p > .05$), Regional Consultant and Administrative, $t(91) = .93$, $p > .05$), and Middle Manager and Administrative, $t(85) = .59$, $p > .05$). Figure III illustrates the differences in use of salutation between the groups and Table 3 illustrates the mean and standard deviation for each group.

H1b: Higher levels of the organization use fewer words

There was also a significant finding in message size between the four different levels, $F(3, 176) = 8.27$, $p < .05$). Figure IV illustrates the mean message size for each level.

However it was not the most senior level of the organization, Director/Manager, but the Administrative level that showed the smallest average message size. There were also significant findings between all the groups: Director/ Manager and Regional Consultant, $t(91) = -2.96$, $p < .05$), Director/Manager and Middle Manager, $t(85) = -1.98$, $p < .05$), Director/Manager and Administration, $t(84) = 1.77$, $p < .05$), Regional Consultant and Middle Manager, $t(92) = 1.95$, $p < .05$), Regional Consultant and Administrative, $t(91) = 3.66$, $p < .05$ and Middle Manager and Administrative, $t(85) = 3.68$, $p < .05$). Table 4 illustrates the mean and standard deviation for each group.

H1c: Higher levels of the organization use less formal language

There were no significant findings between the levels in the use of more formal or informal language. Although Panteli, (2000) found differences in formality, with e-mails written by more senior members of the organization to be more spontaneous, shorter and to the point (as opposed to e-mails from employees addressed to more senior members which were more formal), these findings were not duplicated in the present study. Although there were differences found in the e-mail samples (refer to Figure V), regarding level of formality, between the four groups, the differences were not found to be statistically significant, $F(3,176)=2.04$, $p > .05$). Table 5 illustrates the mean and standard deviation for each group.

H2a: Response time is shorter when the position of the respondent is lower, than the position, to whom the response is addressed

There were no significant findings between the levels in the time taken to respond to an e-mail message that specifically asked for a response from a person, or a group of people, $F(2,40)=1.24$, $p > .05$). Table 6 illustrates the mean and standard deviation for each level.

*H3a: Males use salutations less frequently**H3b: Males use fewer words**H3c: Males use less formal language*

Although Kerr and Hiltz (cited in Walsh et al, 2000) found gender differences in style of e-mail usage, and Preisler (cited in Gefen & Straub, 1997) found gender differences in the different oral speech patterns between men and women to be present in e-mail messages, there was no evidence found in the present research to support similar findings. One way ANOVA tests ($p < .05$) were used to compare gender with presence of salutations, message size and presence of formal or informal language. The findings for Gender/use of salutation, $F(1, 178)=1.64, p. > .05$), Gender/message size, $F(1, 178)=.56, p. > .05$) and Gender/level of formality, $F(1, 178)=.05, p. > .05$), were not found to be significant. Tables 7, 8 and 9, show comparisons between males and females for use of salutation, average message size and level of formality.

Discussion/Conclusion

Although there were differences in the overall e-mail samples analyzed, with use of salutation, message size, level of formality and response time, between levels in the organization, significant findings were found only with use of salutation and message size. Between the different levels of the organization, there were no significant findings with formality or response time. Also, there were no gender differences found with use of salutation, message size and formality.

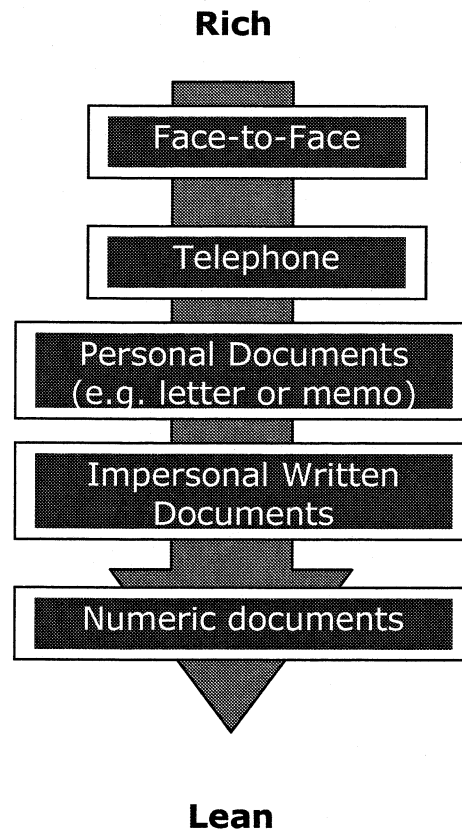
Research Question: Do text-based attributes of e-mail messages vary between different levels in the hierarchical structure of HRSDC/SDC?

Overall, in HRSDC/SDC between different levels of the organization, text-based attributes of e-mail messages do not vary significantly. There is no evidence in the present research to indicate that hierarchical structures are being reinforced through e-mail, as was found in the Panteli study (2002). This may indicate that HRSDC/SDC is actually a flatter organization than some of the organizations in the other research cited, where text-based attributes varied a great deal between different levels. This may also indicate, as Perry (1992) suggested that e-mail users within HRSDC/SDC are focusing on the message itself, and not on the senders.

Testing the Explanatory Power of the Information Richness Theory

“Information richness is defined as the ability of information to change understanding within a time interval.” (Daft & Lengel, 1986, p. 560). According to Daft & Lengel (1986), communication transactions that clarify ambiguity and have the ability to change understanding quickly are considered to be rich. On the other hand, communication transactions that have minimal learning capacity and take a long time to clarify ambiguity are considered to be lean (p. 560). Daft & Lengel (1986) offer the following scale to assist in understanding the level of richness found in different media, as explained by the Information Richness Theory.

Communications Media/Capacity to Process Rich Information



Richness of information is assessed by the medium's capacity for:

1. Immediate feedback
2. Number of cues and channels utilized
3. Personalization
4. Language variety

(Daft & Wiginton, cited in Daft & Lengel, 1986)

With electronic communication being a primary communication conveyor in many organizations, it is critical for organizations to be aware of the quality or richness of information being shared through e-mail. It has been suggested that because of the characteristics of electronic

communication, increased use of electronic communication may actually reduce organizational performance instead of enhancing it (Markus, 1994). Assessing the quality or richness of information found in e-mail, is obviously of paramount importance.

Face-to-face communication is considered to be the richest because of the presence of non-verbal language cues and the opportunity for immediate feedback (Daft & Lengel, 1986; Lee, 1994). According to Information Richness Theory, e-mail on the other hand, has been considered a lean medium, because of its lack of capacity for immediate feedback and lack of cues (Lee, 1994). Although e-mail does not provide the same cues as face-to-face communication, to conclude that e-mail lacks cues is overly simplistic. Many cues can be found in text based attributes of e-mail messages, once one begins to probe. In the present research, a great deal of variation was found between message size, use of salutations, level of formality and response times.

Richness in face-to-face communication is also attributed to message content being conveyed in natural language (Daft & Lengel). However, e-mail messages also resemble natural language to some extent, perhaps even more than previously considered. For example, the informality found in many e-mail messages resembles natural language, more than the formal language found in written letters and memorandums. In the present research, 71% of the e-mail messages were composed using informal

language (spelling mistakes, incomplete sentences or lack of the use of paragraphs (where required)). This spontaneous expression of language, without regard for rules of established grammar, resembles natural language more than written language. Also, this informality and the liberties assumed in composing e-mail messages, contribute to increased personalization, a feature used to assess richness of information, which assumes richer information.

The liberties taken by e-mail users in composing messages, has produced a great deal of language variety, not previously found in formal language found in written letters and memorandums. In the present research, the length of e-mail messages varied from 0 words to 1139 words. 71 % of the samples contained informal language and 29 % contained more formal language. Thirty % of the e-mails sampled contained salutations and 70 % were composed with no salutation. This diversity resembles the diversity of language used in speech associated with technologies such as the telephone, more closely than the standardization of language found in written communication such as letters and memorandums. At first glance, the text based component of e-mail messages may lead one to believe that e-mail resembles more lean communication mediums such as letters and memorandums more closely than richer communication mediums, such as the telephone. However the instantaneous ability of e-mail is a feature more closely aligned with the telephone than with paper letters and

memorandums. For example, in the present research, a response to a request in an e-mail message was received in 0 minutes (the time was recorded by the e-mail system as exactly the same), as instantaneous as phone communication, or other instant messaging technologies. As time is a main component of the Information Richness Theory, the instantaneous ability of e-mail will increase the richness of the information. The telephone has been considered a fairly rich medium partly because of its instantaneous feature. However, this instantaneous feature is controlled by individuals. With additional technologies such as voice mail, the telephone may no longer be retaining this instantaneous element as strongly. In fact, in some organizations one may even find workers to be more responsive to e-mail than to telephone calls, received by voice mail and responded to when the receiver deems appropriate. Also, as mentioned by Markus (1994), e-mail may actually be considered a richer communications medium than the telephone, as e-mail messages can be generated to many people at the same time, in a fraction of the time it would take to phone the same number of people. This feature supports the time factor, adding richness to this medium's capability.

Daft & Lengel (1986) considered face-to-face communication richest because of the availability of non-verbal cues. The variability in message length, use of salutations and level of formality and informality found in e-mail text attributes are also cues. It is up to the users to become aware

search for and capitalize on these cues, to produce the richest information possible.

Markus (1994) found that e-mail can actually be more effective at solving complex issues than face-to-face communication. What is most important is not the medium per se, but the behaviour of the users, or the social processes surrounding the medium. It is these social processes that determine its richness (Markus, 1994). E-mails users are not passive recipients, but "active producers of meaning" (Lee, 1994, p. 154). The more media sensitive e-mail users are, the more they will be able to increase the richness of information within this medium. Daft & Lengel (1986) believed the level of information richness is determined by the communications medium. More recent research gives users an active role and recognizes that users can vary the richness or leanness of information by their interaction with the medium.

As Lee (1994) suggests richness or leanness of communication occurs as an emergent property of the interaction of e-mail within its organizational context, not because of the medium itself. In other words the richness or leanness of information conveyed through e-mail, may have much more to do with how users view this medium and adapt this medium to their working environment, rather than a property of the technology itself. The fact that there is little evidence found for differences in text-based attributes between different levels within HRSDC/SDC, may indicate this medium is

being shaped more by the overall organizational culture than any components within the organization, or because of the technology itself. Whatever social processes are at play, e-mail, considered to be a lean medium, can exchange rich communication when supported and encouraged by an organization (Markus, 1994).

The Richness of Information Theory was chosen as the base for this research as it emphasizes individual behaviour. Although individual behaviour is of paramount importance, it's nonetheless important to remember that individuals, to some degree, will shape their behaviour through the influence of the environment or the organizational culture to which they belong. Although the findings in the Panteli (2002) study were different than the present study, Panteli (2002) also suggested that e-mail use was being influenced and shaped by the environment of the organization, where the participants worked.

With the influence of organizational culture, e-mail is being shaped as a communication medium, one e-mail at a time. It is perhaps the hidden messages, the variety found in text attributes in each one of these e-mail messages that is adding to the richness of information, not considered by earlier researchers, when applying the Richness of Information Theory to communication technologies. The focus of earlier researchers was on the capability of the technology. However as has been found in more recent research and in this research, e-mail users have taken what the technology

had to offer and have carved many different paths, using the same technology. This adaptation and personalization takes information richness to a new level.

Weaknesses and Validity Issues

Although the number of samples gathered appear sufficient for the study, the limited time period (two months), limited the potential participants and therefore limited the samples available.

Due to the constrained timeframe for this study, data collection was limited to quantitative data. Triangulating the results with the addition of qualitative data would have added to the study. It would have been interesting to interview some of the participants to inquire as to why they made the choices they did when composing e-mail messages. As there are always limitations with perspectives in one type of data collection instrument, using different methods can enrich the research overall.

Recommendations for Further Study

This research is meant to illuminate some of the hidden messages in text based attributes of e-mail messages to provide insight for e-mail users within HRSDC/SDC, and possibly others. However this research is also meant to be a building block, contributing towards a much larger body of research on this topic. E-mail is still an emerging technology. To date, there

is limited research on its social implications. Therefore, there are still a number of questions remaining to be explored.

Are the variances found in e-mail text attributes between levels in HRSDC/SDC, at least partially due to the nature of the work within each level, as opposed to the level, per se? What are the variances within levels? What messages are these variances sending? In this research there was a great deal of variation in the composition of e-mail messages found within groups, suggesting the adaptation of this medium may only partially be based on the group to which one belongs. Comparing differences within one's own group (with co-workers) would illuminate further the individuality people bring to their work, exploring this topic with yet more depth.

Do long formal messages communicate a hidden message implying better thought-out, more valid information, or do long formal messages communicate a hidden message of being out of sync with today's instantaneous and informal communication, necessary because of increasing volumes of information being transmitted? After all, a reader's time and attention span is more limited all the time and formality may no longer have the appeal it once did. If short, quick messages are in fact more useful, people may be wasting time and resources and in fact hampering communication by taking the time to compose longer formal messages.

In the present research, time was an element considered when assessing response time, but time is a much larger feature in e-mail communication that could be extensively explored. That is, e-mail as a communications medium, has both the advantage of not taking any time in being able to respond instantaneously, and the advantage of taking the time to re-read and re-compose messages, as many times as one wishes. E-mail, as a technology has given users complete control, an active role, instead of a reactive role where time can be used to shape the use of this communications medium. Time is a critical factor in communication and in day to day business of organizations. Exploring how time is being used with e-mail, may assist organizations in better understanding the realities of their operations and assisting in finding efficiencies.

Is the increased use of electronic communication, such as e-mail, having an effect on verbal communication skills? When one can take the time, to re-compose messages, over and over, will this luxury be at the expense of skilled spontaneous verbal communication, where one cannot rehearse or change the message? If e-mail is diminishing some skills and amplifying others, organizations may want to consider finding ways to balance this, by providing opportunities for increased verbal communication, particularly in areas of the organization where verbal skills are deemed to be critical.

What are the changes in text based attributes of e-mail messages, as this communications medium is more extensively used? Why are the messages changing? How is this communications technology being affected by the larger impact of global communications technologies? As no organization exists in isolation, comparing an organization's adaptation to a new technology, with other organizations, may be important in building important relationships.

Should HRSDC/SDC attempt to establish guidelines, with the goal of more effective communication, based on findings of this and related research or will e-mail be a more effective communications medium if left to individuals to experiment with, and shape according to individual use? As e-mail is the main communication medium within HRSDC/SDC, it is important that this medium is used optimally to produce the most effective communication possible in this environment. As a main communications technology, e-mail is instrumental in shaping organizational communication, one e-mail at a time, every day. Is it the shape the organization desires?

Perhaps the most important question is, how much of an e-mail message is found in the words and how much of the message is found in the text-based attributes? Everyone has an intended message in mind, when composing e-mail messages. How closely does the message sent, resemble the message intended, and how much is being clouded by other factors. In verbal communication, experts have agreed very little of the

message is found in words. Text-based attributes found in e-mail communication may well be the non-verbal language of electronic communication. Certainly, this study would suggest that there is an abundance of non-verbal (i.e. beyond the words) communication woven into text-based attributes of e-mail messages.

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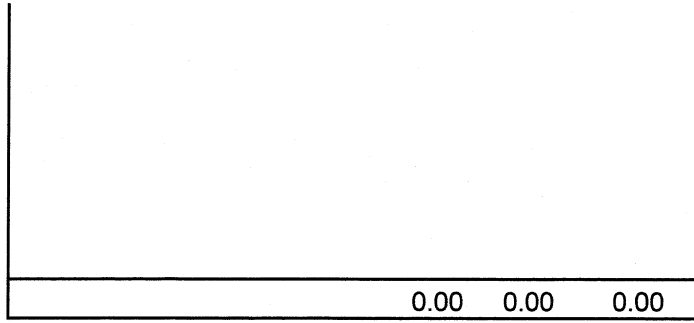
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Hidden Messages in E-Mail Text 61

43
44
45
46
47
48
49
50

Total/averages



Guidelines for Coding Data

E-mail

- The unit of analysis is the entire e-mail text
- E-mails will be coded (top right hand corner) for further reference
- The random samples will be recorded on the recording sheets

Position

- The unit of analysis is the participant level based on title as shown in the HRSDC/SDC electronic directory.
- The positions that will be coded are:
 - i. Director/Manager coded as **dir/man**
 - ii. Regional Consultant (includes Regional Officer). As most of these participants are Regional Consultants, this position will be coded as **regc**
 - iii. Middle Manager (includes Service Delivery Managers, Service Delivery Operational Consultants, and Team Leaders). As most of the participants are Service Delivery Managers or Service Delivery Operational Consultants, this position will be coded as **sdm/sdoc**
 - iv. Administration staff coded as **admin**

Identifier

- Identifier indicates:
 - i. participant
 - ii. level the participant belongs to
 - iii. month the sample was received (i.e. 1st or 2nd)
 - iv. placement of the sample in the total sequence of e-mails received from the level in the month
 - v. placement of the sample in the total sequence of e-mails received from the participant, in the month
- Example- (tt)dir,man-1/40(2) indicates:
 - i. participant as tt (participant's initials)
 - ii. level the participant belongs to as director, manager
 - iii. month the sample was received as the 1st
 - iv. placement of the sample in the total sequence of e-mails received from the level in the month as the 40th
 - v. placement of the sample in the total sequence of e-mails received from the participant, in the month as 2nd

Gender

Gender will be coded **1** for male, and **2** for female

Response

- I. The unit of analysis is the entire e-mail text
- II. The unit will be coded as being a response if the message is responding to a previous request.
- III. **y** will be used to indicate, yes, it is a response
- IV. **n** will be used to indicate, no, it is not a response

Higher/Lower/Same

The unit of analysis is the level of the person being responded to based on title as shown in the HRSDC/SDC electronic directory

The positions are:

- I. Director/Manager
 - II. Regional Consultant
 - III. Middle Manager
 - IV. Administration
-
- If the person being responded to is at a higher level than the sender, **h** will be recorded.
 - If the person being responded to is at the same level as the sender, **s** will be recorded.
 - If the person being responded to is at a lower level than the sender, **l** will be recorded.

Time

- I. The unit of analysis is numerical, indicating working days (8:00-4:30), hours and minutes
- II. Time is determined by calculating the difference between the initial request and response, for those samples that have been determined to be responses
- III. Days and minutes will be converted to hours, for comparison purposes

Salutation

- I. The unit of analysis will be one or more words, or a sentence intended to be used as a greeting. For example, hello, good morning, hi, hope you are doing well, first name of addressee, would all be considered salutations
- II. The unit of analysis will only be considered a salutation if it is placed at the beginning of the message
- III. **1** will be used to indicate a salutation was not used
- IV. **2** will be used to indicate a salutation was used

Formal/Informal

- I. The unit of analysis will be the entire e-mail message
- II. The unit of analysis will be considered more formal if there are no spelling errors, complete sentences and separate paragraphs, in the message. Spelling errors will be determined by using the Spelling Tool in WORD.
- III. If the unit of analysis is considered informal, it will be coded as **1**
- IV. The unit of analysis will be considered informal if there are spelling errors (other than common acronyms), incomplete sentences, obvious grammatical errors and paragraphs that are not separated, in the message.
- v. If the unit of analysis is considered more formal, it will be recorded as **2**

Words

- I. The unit of analysis will be the entire body of the e-mail message, composed by the sender
- II. Words that are generated automatically, such as all recipients of the message, date and automated footnotes will not be counted as words
- III. Words in the subject line that are not the author's, but part of an e-mail forwarded or responded to, will not be counted.
- IV. The number of words will be calculated with the use of a computer (Microsoft WORD, Tool-word count).

Participant Consent Form**A Study on Hidden Messages Woven into E-mail Text Attributes**

Researcher-Connie Simonsen

Purpose of the Study

E-mail is a primary source of communication. For the most part users borrow print and speech conventions to work in this medium. However e-mail is neither speech, nor print. It is an emerging communication medium, yet to be explored. The limited research that exists in this area suggests that, as with non-verbal language in face-to-face communication, electronic communication also contains messages beyond words. This study is meant to explore these messages, by examining text attributes (e.g. level of formality, average word count, use of salutations, response time), between different levels in the organization.

Methodology

200 e-mails received by the researcher, during the months of October and November, 2003, were randomly chosen as samples for the study.

Confidentiality

The e-mails have all been approved through the Access to Information Act.

The study is undertaken with the approval of the Alberta Ethics and Review Board.

No personal information will be used.

Only summaries of text attributes will be included in the final report (i.e. no text will be copied and no one will be identified).

Time Commitment

There will be no time required to participate in the study, other than reviewing and responding to this form.

Any Questions?

Please contact Connie Simonsen, Regional Employment Insurance Consultant at, connie.simonsen@hrdc-drhc.gc.ca or (780) 495-5374.

Withdrawal from Study

You are free to withdraw from the research study at any time. There are no known risks or benefits for participating in this study.

Participant Informed Consent

I acknowledge that the research has been explained to me, and that any questions I have asked have been answered to my satisfaction. In addition, I know that I may contact the person designated on this form, if I have further questions either now or in the future. I have been assured that the personal records relating to this study will be kept anonymous. I understand that I am free to withdraw from the study at any time and I will not be asked to provide a reason.

(Date)

(Printed Name of Participant)

(Signature of Participant)

Table 1Total Number of E-mails Received by the Researcher(October-30 November, 2003)

Level	<u>n</u>
Director, Manager	227
Regional Consultant	348
Middle Manager	111
Administrative	70

Table 2Message Size Range

Group	Range
Director, Manager	0-213
Regional Consultant	0-1139
Middle Manager	0-375
Administrative	1-148

Table 3Mean Use of Salutation by Group

	<u>M</u>	<u>SD</u>	<u>n</u>
Director/Manager	1.16	.37	43
Regional Consultant	1.42	.50	50
Middle Manager	1.39	.49	44
Administrative	1.33	.47	43

Table 4Mean Message Size by Group

	<u>M</u>	<u>SD</u>	<u>n</u>
Director/Manager	56.51	63.48	43
Regional Consultant	153.44	206.18	50
Middle Manager	88.41	84.94	44
Administrative	36.91	35.40	43

Table 5Level of Formality by Group

	<u>M</u>	<u>SD</u>	<u>n</u>
Director/Manager	1.26	.44	43
Regional Consultant	1.42	.50	50
Middle Manager	1.25	.44	44
Administrative	1.21	.41	43

Table 6Response Time by Level

	<u>M</u>	<u>SD</u>	<u>n</u>
Higher	4.39	6.09	22
Same	3.24	6.97	10
Lower	7.73	8.61	11

Table 7Use of Salutation by Males & Females

	Salutation Used	
		<u>n</u>
Male	26%	54
Female	36%	126

	No Salutation Used	
Male	74%	54
Female	64%	126

Table 8Mean Message Size by Males& Females

	<u>M</u>	<u>SD</u>	<u>n</u>
Male	97.54	195.11	54
Female	81.84	87.50	126

Table 9

Level of Formality by Males &
Females

	Formal Language	<u>n</u>
Male	28%	54
Female	29%	126

	Informal Language Used	
Male	72%	54
Female	71%	126

Figure Captions

Figure I. Percentage of use of salutation in e-mail message, for all participants.

Figure II. Percentage of e-mails where more formal language was used, for all participants

Figure III. Percentage of use of salutation in e-mail messages, by level.

Figure IV. Mean message size by level.

Figure V. Percentage of e-mails where more formal language was used, by level.

Figure I. Overall use of salutation.

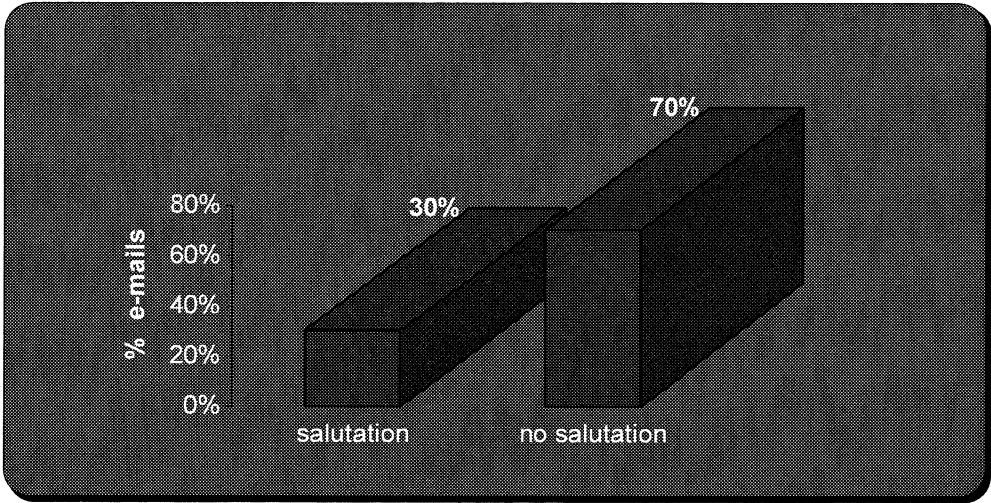


Figure II. Overall level of formality.

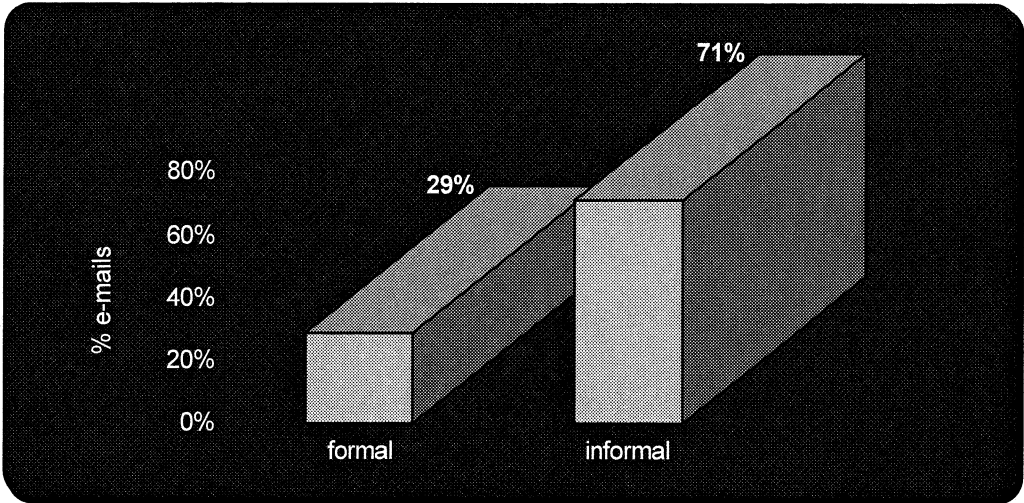


Figure III. Use of salutation by level.

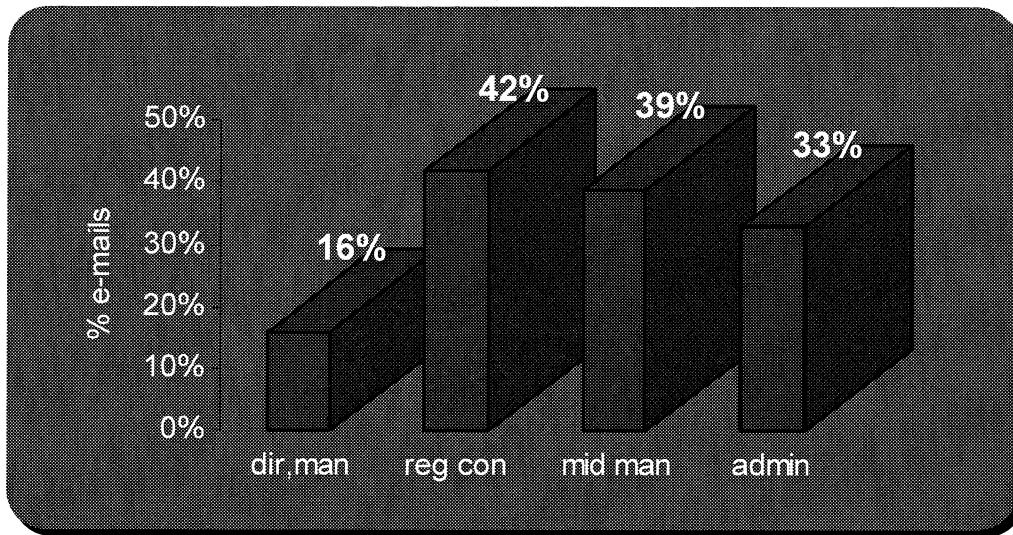


Figure IV. Mean message size by level.

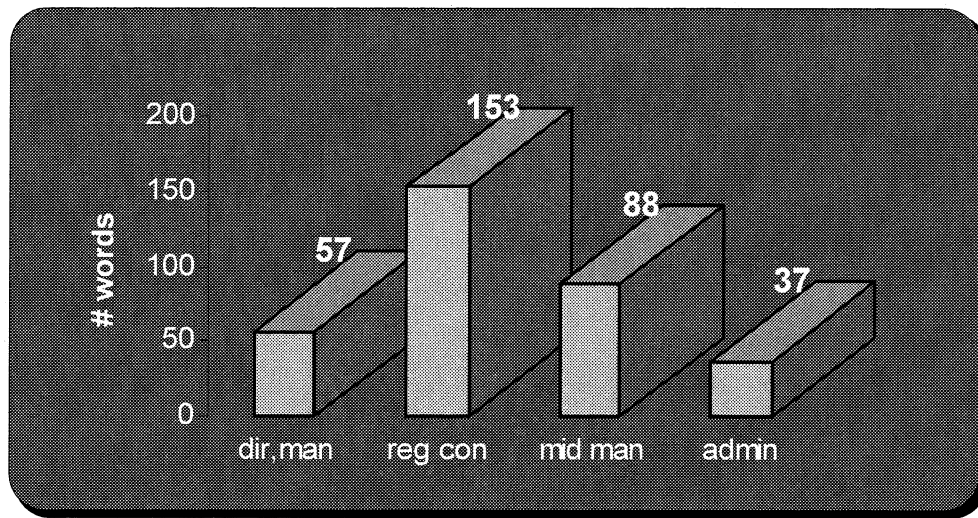


Figure V. Use of formality by level.

