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Stephen A. Rains, Geoffrey R. Tumlin and Mark L. Knapp

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Electronic bumper stickers: the content and interpersonal functions of messages attached to e-mail signatures

STEPHEN A. RAINS
UNIVERSITY OF ARIZONA, USA
GEOFFREY R. TUMLIN AND MARK L. KNAPP
UNIVERSITY OF TEXAS AT AUSTIN, USA

ABSTRACT   The two-phase study reported here examined the content and communication function served by electronic bumper stickers (EBSs). EBSs consist of the sayings that are included in an e-mail signature file following personal identifiers such as one's name, phone number, and postal address. In the first phase, 334 EBSs were gathered and content analyzed into one of five message categories. In order of frequency (greatest to smallest frequency) they were: wisdom, humor, advice, religious, and socio-political commentary. In the second phase, open-ended responses from 134 EBS users were coded into one of six motives for interpersonal communication (Rubin et al., 1988). The relationship between one's motive for using an EBS and the content of one's EBS was not statistically significant. The implications of EBSs and e-mail use for mediated communication competence are considered.

KEY WORDS: *bumper stickers, computer-mediated communication, e-mail, e-mail signature, memorable messages*

Since the development of electronic mail (e-mail) in the early 1970s, it has become a pervasive channel for communication. Researchers at the Pew Internet and American Life Project (Fallows, 2002; Horrigan and Rainie, 2002; Madden and Rainie, 2003) estimate that, in the United States alone, approximately 57 million people have access to e-mail at their workplace and over 100 million have access at home. Further, e-mail use is steadily increasing. In 2004, approximately 58 million Americans used e-mail during a typical day – up from 45 million in 2000 (Rainie and Horrigan, 2005). Although a single e-mail message may not go any further than the intended recipient, many are forwarded to others (Lin et al., 2006) – some of whom forward the original e-mail again. As such, the potential audience and influence for any single e-mail message is vast.

The widespread use of e-mail makes research on this medium for communication a priority (see Weber, 2004). Through an examination of e-mail's

features one can obtain a better understanding of personal and professional relationships in this mediated environment. One feature of e-mail, in particular, that warrants study are the sayings or quotations which are sometimes added at the end of e-mail messages. Such saying or quotations are typically pre-programmed to appear automatically in one's e-mail signature block following other personal identifiers like name, phone number, and postal address. These messages, which we call electronic bumper stickers (EBSs), are illustrated at the bottom of the following signature block – for example:

H. Thomas
South Town Commission
555 Vista Place
Somewhere, ZZ 55555
(555) 555–5555
"Why do so many people labor under the delusion that freedom of speech is the right to be listened to without criticism?" – Sara O'Hare[1]

Given the number and variety of people any single communicator can reach with the many e-mail messages he or she sends in a day, each with a signature block attached, an EBS has the potential to affect a sizeable audience. It would not be inappropriate to view an EBS as the distribution of a personal advert-isement, making the sender's beliefs, attitudes, and/or values explicit to message receivers.

The nature of EBSs and the decision to append an EBS to one's signature file raises a number of important communication issues. What types of mes-sages are included in EBSs? What communication functions are EBSs intended to serve? Is there a relationship between the communication function intended by an EBS user and the nature of one's EBS? Drawing from research on e-mail signatures, bumper stickers, and the interpersonal functions of communication we attempted to answer these questions. In the following, we report a two-phase study conducted to examine the content of EBSs and the interpersonal func-tions they serve for those who use them. Such an examination makes it possible to better understand e-mail as genre of communication as well as the implications of new communication technologies in personal and professional relationships.

The content and communicative function of EBSs

Ray Tomlinson is credited with creating the first e-mail program in 1972 making it possible to send and receive electronic messages over ARPANET, a precursor to the contemporary Internet (Leiner et al., 1997). Since that time, e-mail has flourished into what industry experts refer to as the 'killer application' on the Internet (Pink, 2001; Tweney, 1998). More people use the Internet for e-mail than any other function (Fallows, 2002; Horrigan and Rainie, 2002; Madden and Rainie, 2003; National Telecommunication and Information Agency, 2002). Despite claims that it is appropriate for only unambiguous tasks (Daft and Lengel, 1986) or filters too many cues to be useful for social communication (Dubrovsky et al., 1991; Siegal et al., 1986), e-mail is currently used for almost

any purpose. Studies have been conducted exploring the use of e-mail for exchanging task-related (Fallows, 2002; Weber, 2004) and social (Hovick et al., 2003) information at work; discussing worries with friends and family members (Cummings et al., 2002; Horrigan and Rainie, 2002; Stafford et al., 1999); seeking advice from one's health care provider (Delbanco and Sands, 2004; Fox and Fallows, 2003; Houston et al., 2003); and participating in politics and the public sphere (Horrigan et al., 2004; Stromer-Galley and Foot, 2002).

Although e-mail is a relatively new communication technology, some defining linguistic characteristics of it are emerging (Barron, 1998, 2002; Herring, 2001). Barron (1998: 162) refers to e-mail as a 'Creolizing modality' consisting of features of spoken and written language. Baron explains:

> When the linguistic profile of e-mail is compared with those of other evolving communicative systems, it becomes clear that the seemingly schizophrenic character reflects ongoing creolization. Users of e-mail . . . have considerable choice over how to formulate and respond to messages, stressing the character of one progenitor or another. (p. 164)

In composing an e-mail message, one has the opportunity to send a formal correspondence in the tradition of written prose or an informal note devoid of any proper forms of address or salutations that is similar to a water cooler conversation. EBSs may be an artifact of this creolization of e-mail as a communication genre. EBSs are included as a component of one's e-mail signature – a feature that may serve to make e-mail messages appear more formal (Rains and Young, 2006) – along with one's title and contact information; yet EBSs are often whimsical or personal in nature.

Although we could not locate any research focusing specifically on EBSs, we were able to find research demonstrating the importance of similar messages used in electronic support groups. Braithwaite et al. (1999) conducted a study of the social support messages posted on an online discussion forum, identifying signature lines as a unique form of social support in this context. They defined signature lines as the 'personal axioms, jingles, quotations, and other short strings of text' appearing at the end of (and separate from) messages posted to the discussion forum (p. 140). A key difference between these types of messages and EBSs is that the signature lines examined by Braithwaite et al. appeared on posts to a discussion forum and, as such, were specific to the discussion group. Unlike EBSs, these messages were not necessarily relevant to the sender's legal identity and only appeared in the context of the forum.

Two studies examining e-mail signatures also provide insights regarding the content and possible functions served by EBSs. Sherblom (1988) studied the use of a redundant signature – that is, typing one's name at the conclusion of one's e-mail messages – as a function of one's organizational role. He found that messages sent upward through the organization were signed more frequently than those sent in other directions, attributing this difference to the development of an 'electronic paralanguage that reflects and interacts with the hierarchical structure of the organization' (p. 50). In a more recent study, Rains and Young (2006) argued that signatures are a tool for impression

management, communicating key information about the sender's organizational identity. In their study, 10 percent of approximately 200 signatures they analyzed included an EBS. Included among the EBSs were sayings about the respondent's organization of employment, including organizational slogans, recent awards won, and recent events. Respondents also used quotations that were more personal in nature and reflected their individual beliefs; these may or may not have been consistent with the values of the organization.

An additional source of information about EBSs worth considering is what may be their offline equivalent: bumper stickers. EBSs and bumper stickers are similar in form, both consisting of a single statement or idea fixed to an artifact presumably under the control of a particular individual. Although an automobile is quite different from one's e-mail signature file, bumper stickers and EBSs are both typically located in the same rhetorical space – as an addendum located at the rear of one's car or at the conclusion of one's message and signature. Further, both are largely broadcast indiscriminately without regard for their audience. A bumper sticker is seen by all who happen to look at the rear end of a particular automobile; similarly, anyone receiving a message with a sender's signature block included, including those to whom a message may be forwarded, is exposed to the EBS.[2]

Given these similarities, research on bumper stickers may provide further insights into the content and function served by EBSs. Several studies have content-analyzed the messages contained on bumper stickers (Case, 1992; Endersby and Towle, 1996; Newhagen and Ancell, 1995). These studies identified the following bumper sticker message categories: educational institutions, advertising, political and ideological/philosophical expressions, sports, social issues, safety, geography, and patriotism. Turner et al. (1975), among others, note the value of bumper stickers as an instrument for self expression. Case (1992: 107) argues that bumpers stickers '(a) interject one's own perspectives, values and statements into the environment of mass mediated messages, (b) proclaim a unique personal identity . . . and (c) observe new, often creative messages, symbols and usages being introduced in the cultural environment of ideas'. Newhagen and Ancell (1995: 321) further contend that 'bumper stickers represent a highly personal vehicle for the public discussion of social morality and etiquette'.

The research on e-mail signatures, signature lines, and bumper stickers suggests that EBSs may serve important communicative functions related to identity, impression management, and possibly social support. Yet new communication technologies such as e-mail likely serve a broad range of objectives for users. To understand the variety of motivations prompting the use of EBSs, we draw from research on the interpersonal functions of communication (Rubin et al., 1988). Rubin and her colleagues' work utilized research on functional approaches to interpersonal communication (Schutz, 1966) and uses and gratification theory (Blumler and Katz, 1974), and is founded on the assumption that interactions with others allow us to satisfy personal needs and achieve specific goals. Rubin et al. (1988) found five primary communication motives in their initial study that are served through interpersonal interaction, including:

inclusion (communicating to share feelings and be with others), control (instrumental communication to gain compliance), affection (communicating to express caring or appreciation for others), escape (communicating to avoid other activities or fill time), relaxation (communicating to unwind), and pleasure (communicating because it is fun or entertaining).

Rubin and her colleagues' initial work on interpersonal motives has been established in several additional studies (Barbato and Perse, 1992; Graham et al., 1993; Paulsel and Mottet, 2004; Rubin and Rubin, 1992), including those involving the use of new communication technologies (Perse and Courtright, 1993; Westmyer et al., 1998). Westmyer et al., for example, conducted two studies and found differences in perceptions of the appropriateness and effectiveness of six communication media to fulfill different communication motives. In general, face-to-face, and in some cases the telephone, were seen as most effective and appropriate for satisfying interpersonal needs. E-mail lagged behind these oral channels for each of the interpersonal motives on ratings of appropriateness and effectiveness.

RESEARCH QUESTIONS

Given their ubiquity and potential influence, we wanted to find out more about the messages people attached to their e-mail signature files. As previously noted, the goal of this study was to investigate the content and function of EBSs. Rubin et al.'s (1988) work on interpersonal motives for communication provided a foundation for such an endeavor by offering a systematic approach to better understanding this relatively recent development in e-mail-based interaction. Operating from the assumption that EBSs are used to achieve a goal for the sender, we sought answers to the following questions: *What types of messages are included in EBSs? What functions do EBSs serve for users? What is the relationship between the functions EBSs are intended to serve and the nature of one's EBS?*

Method

To answer our research questions, we conducted a two-phase study. In the first phase, a sample of EBSs was gathered and examined to better understand the content of EBSs. In the second, EBS users were surveyed to explore the interpersonal functions served by EBSs.

PHASE I: COLLECTING AND ANALYZING EBSs
Procedure
Data were collected using a snowball sampling procedure. Undergraduate students in introductory communication courses received extra credit for identifying up to five individuals who include an EBS in their signature file. Students were instructed to examine recent e-mail messages they had received and identify up to five messages containing an EBS. They were encouraged to identify non-student EBS users and informed that any information they provided must be from individuals at least 18 years of age. Students were given

a booklet containing instructions and a worksheet to record demographic information. Students reported the EBS user's gender, approximate age (i.e. younger than 30, between 30 and 50, and older than 50), and whether or not the individual was a full-time student. Students also reported the user's e-mail address; this information was used to recruit participants in Phase II of this study. To ensure the integrity of the sample, the students were informed that the researchers may contact one or more of the individuals listed on their worksheet. This procedure yielded approximately 350 responses. After reviewing the sample, however, it was clear that a few students misunderstood the instructions.[3] After removing these responses, we were left with 334 EBSs.

Data analysis

The content of the EBSs in the data set was analyzed using an iterative procedure (Glaser and Strauss, 1967). All three authors first read through all of the EBSs, and one author constructed categories of message content. These categories were discussed with the other two authors and refined, resulting in five categories of EBS content (see Table 1). Two authors then coded a sample of 20 percent of the EBSs into the five categories to assess intercoder reliability. Scott's pi (Potter and Levine-Donnerstein, 1999), which accounts for intercoder agreement due to chance, was .81.

PHASE II: EXAMINING THE FUNCTIONS SERVED BY EBSs

Procedure

Participants for Phase II were recruited in two steps. First, the 334 individual EBS users in Phase I were sent an e-mail questionnaire and asked to participate. The response rate for these individuals, however, was low (12%). To increase the sample size for Phase II, undergraduate students from communication courses at a southwestern university were used to assist in enlisting additional participants. In the second step, students were given extra credit for recruiting individuals who include an EBS in their e-mail signature. Students were sent an e-mail explaining the study and providing directions for recruiting participants. Students directed potential participants to compete the questionnaire on the Web or via e-mail. These two steps resulted in a total of 134 completed questionnaires from EBS users.

The questionnaire sent to EBS users asked them to provide a copy of their EBS and contained two sets of open-ended questions. First, participants were asked why they include the EBS in their signature, to identify the origin of their EBS, and what it means to them. The second set of questions addressed the influence they perceived their EBS to have on others. Respondents were asked if they intended the EBS to have a particular effect on others, whether or not they have reason to believe that the EBS had an effect, and if their EBS goes out to everyone they e-mail. Responses to the first set of questions were used to conduct the data analysis.

Data analysis

The data from Phase II were analyzed in two steps. Students served as coders for both steps of the analysis. First, the EBSs provided by respondents in Phase II

were coded into the five categories developed in Phase I. A sixth category, labeled 'other', was also included to account for the EBSs that did not fit into any of the preceding categories.[4] Both coders coded the entire data set and disagreements were resolved by randomly selecting one coder's response. Scott's pi was .74.

In the second step, coders first unitized the respondents' motivations for using an EBS. A unit was defined as a single, distinct reason for using an EBS. The first motivation listed by respondents was then coded into one of the six functions of interpersonal communication established by Rubin et al. (1988). A seventh 'other' category was included for reasons that did not fit into any of the afore-mentioned categories (e.g. 'Because the option exists to do so'). Although some participants listed multiple motives, we treated the first as the most salient. It was necessary to only code one reason to facilitate the chi-square analysis that was conducted to answer the third research question. Again, both coders coded the entire data set and disagreements were resolved by randomly selecting one coder's response. Scott's pi was .74.

Results

PHASE I: THE CONTENT OF EBSs
Sample demographics
Approximately 60 percent of the 334 EBSs collected from e-mail messages in Phase I were from females. Sixty-seven percent of those using an EBS were younger than 30, 26 percent were between 30 and 50, and approximately eight percent were older than 50. A majority (60%) of the EBSs collected were from non-students.

Categories of EBSs
Five categories were constructed out of the EBSs gathered from participants. In order of frequency (from greatest to least) they were: wisdom, humor, advice, religious, and socio-political commentary. EBSs in the wisdom category include those messages which offer insights about the world. These statements are typically general observations and do not include any specific directives for action. For example, one participant reported using the following EBS attributed to J. Herman Blake: 'There is no known limit to the capacity of the human mind to learn, grow, develop, and change.' Another EBS in this category said: 'All great things require time.' EBSs in the humor class include those messages containing sarcasm, puns, and quotes by actors/comedians. One respondent, for example, indicated using the EBS: 'I have never taken any exercise except sleeping and resting.' EBSs in the advice category include those messages that proffered specific directives to message receivers. These messages advocated for receivers to take action. One EBS included in the advice category included the following quip attributed to the playwright Aeschylus: 'Delay not to seize the hour!' Another EBS in the advice category said: 'Never forget who you are.' Religious EBSs include quotes from religious texts, messages about religious figures, or statements affirming one's religious beliefs. One EBS, for example, said: 'I can do all things through

Christ that strengthen me.' The final category of EBSs addresses contemporary political and social issues. EBSs in the socio-political category include statements about education, freedom of speech, and race. One respondent reported using the following EBS attributed to Soren Kierkegaard: 'People hardly ever make use of the freedom which they have, for example, freedom of thought; instead they demand freedom of speech as compensation.' Another EBS in this category said: 'Whenever a change leaves the internal mechanism untouched, we have reform; whenever the internal mechanism is changed, we have revolution.' The frequency of EBSs collected and examples from each category are available in Table 1.[5]

PHASE II: FUNCTIONS SERVED BY EBSs

Sample demographics

One hundred and thirty-four respondents completed the questionnaire for Phase II. Of those who reported their gender, approximately 66 percent were female. Forty-two percent of those using an EBS were younger than 30, 45.5 percent were between 30 and 50, and 12.5 percent were older than 50.[6]

Functions served by EBSs

The primary goal of Phase II was to better understand the motivations for using an EBS. Responses to the open-ended questionnaire were coded into one of the six functions of interpersonal communication established by Rubin et al. (1988). Control was the most frequently listed motivation for using an EBS, comprising 47.8 percent ($n = 64$) of the total valid responses. Control motives consist of an attempt to get others to do something and include reminding, motivating, or in some way persuading. For example, respondents reported using their EBS to 'make people think about where they are in life today' and 'to inspire those to live to their fullest, regardless of other's judgment'. One person even reported using his/her EBS 'to diffuse misunderstandings'. The second most frequent motivation was the need for inclusion, cited among 43.3 percent ($n = 58$) of the respondents. Participants in this category were motivated to share something about themselves and, as a result, provide insight into their life. One respondent, for example, explained that his/her EBS 'show[s] people the one thing which to me is an important value in life, and [I hope that readers] associate it with my personality'. Another respondent noted that, 'I am a full time mediator and this saying epitomizes my personal theory of the legal system.'

The third most popular reasons listed by 3.7 percent ($n = 5$) of respondents was pleasure. The dominant reason these individuals used an EBS was a source of fun or frivolity or to make others happy. One respondent, for example, reported including a quote simply 'because I thought it was pretty funny'. Affection, identified by 2.2 percent ($n = 3$) of respondents, was the fourth most frequently cited category. These individuals used an EBS to show concern for others in the form or caring or appreciation. For example, one respondent reported using an EBS 'to let my clients know how very much I appreciate them and look forward to assisting them again'. Another stated he/she uses an EBS simply 'to try to make

TABLE 1. *Categories, frequencies and examples of EBSs collected in Phase I*

Category	Frequency	Examples
Wisdom	136	'Kindness is wisdom.' – Philip J. Bradley 'After silence, that which comes nearest to expressing the inexpressible is music.' '"To affect the quality of the day; that is the art of life.' – Henry David Thoreau 'Every exit is an entry somewhere else.'
Humor	67	'When you get upset, remember it takes 42 muscles to frown, and only 4 to extend your middle finger!' 'To know me is to like me. To know me fully will reveal how disgusting I really am.' – Larry Crabb 'Very funny, Scotty, now beam down my clothes.' 'I don't want to achieve immortality through my work. I want to achieve it through not dying.' – Woody Allen
Advice	65	'Dance as though no one is watching. Sing as though no one can hear you. Love is though you've never been hurt before.' 'Every time you choose to do, you choose to leave something else undone. Choose wisely.' 'Follow your bliss. Find where it is and don't be afraid to follow it.' – Joseph Campbell 'Always remember to treasure yourself, for you are loved.'
Religious	32	'We know that all things work together for good to them that love God and are called according to His purpose.' Romans 8:28 'Yet for us, there is but one God, the Father, from whom are all things, and we exist for Him; and on Lord, Jesus Christ, by whom all things, and we exist through Him.' Corinthians 8:6 'God loving . . . God fearing Christian . . . gotta love Him!!!(!=)' 'For he will command His angels concerning you to guard you in all your ways.' Psalm 91:11
Socio-political	25	'You can love globalism, or you can hate it, but you can't ignore it!' 'Men are born ignorant, not stupid. They are made stupid by education.' 'Why do so many people labor under the delusion that freedom of speech is the right to be listened to without criticism?' – Sara O'Hare 'Mankind must put an end to war – or war will put an end to mankind.' – John Fitzgerald Kennedy

the staff I work with feel special'. None of the respondents reported relaxation or escape-related motivations for using an EBS. Six responses were coded into the 'other' category.

The final research question posed in this study addresses a potential relationship between one's motivation for using an EBS and the nature of EBS content. In the sample for Phase II, 134 respondents included their EBS. The frequency of EBSs in each category was as follows: wisdom ($n = 58$), advice ($n = 37$), humor ($n = 14$), socio-political messages ($n = 10$), religious messages ($n = 3$), other ($n = 9$). Granted the relatively small frequencies in some of the categories, those motivations for using an EBS and categories of EBS content with less than 10 responses were excluded from the analysis. A chi-square analysis was conducted for the remaining two categories of EBS motivations (inclusion, control) and four categories (wisdom, humor, advice, socio-political). The relationship between one's motivation for using an EBS and the content of one's EBS was not statistically significant, $\chi^2(3, N = 109) = 2.76$, $p = .43$.

Discussion

Given their ubiquity and potential influence, the purpose of this study has been to examine the content and interpersonal functions of EBSs. To this end, we have collected and content analyzed 334 EBSs in Phase I. In Phase II, open-ended questionnaires were completed by 134 EBS users who described their communicative motivation for using an EBS.

The content analysis of the data collected in Phase I revealed five different categories of EBSs, including: advice, socio-political statements, humor, wisdom, and religious. The EBSs were dominated by messages in the wisdom category consisting of meditations about life such as: 'It is only with the heart that one can see rightly, what is essential is invisible to the eye' and 'What is a friend? A single soul shared by two people.' Humor and advice were the second and third most frequently cited categories. Together, these three categories accounted for over 80 percent of all the EBSs collected. Religious and socio-political messages were less frequent among the EBSs in the sample. The wide range of content addressed in the EBSs is consistent with the creolization of e-mail style described by Barron (1998). Some EBSs were very serious and formal in nature such as messages in the socio-political category (e.g. 'Only when people can speak their minds does education have a chance to happen'), while others like those in the humor category were whimsical (e.g. 'If we don't succeed, we run the risk of failure').

There are some key similarities and differences between the results of this research and studies of bumper stickers. An important similarity is that both EBSs and bumper stickers (Case, 1992; Newhagen and Ancell, 1995) may represent an avenue for discussion of values and morals. Beyond the messages in the socio-political category that contain explicit ideological statements, a theme throughout the remainder of the categories is that EBSs are ideologically charged. Consider, for example, a quote attributed to Albert Einstein from the wisdom category: 'Not everything that can be counted counts, and not everything

that counts can be counted.' Even the following message in the humor category subtly articulates a particular moral perspective: 'The problem with resisting temptation is that you may not get another chance.' As these examples illustrate, the discourse that comprises many EBSs is far from neutral. EBSs often attempt to summarize the sender's beliefs about life and, in doing so, privilege a particular belief about the world or a way of being.

EBSs differed from bumper stickers, however, in their actual content. The EBSs collected in this study were dominated by those in the wisdom, humor, and advice categories. In contrast, Case (1992) reported that the majority of bumper stickers he found consisted of self-identity statements. He explained that, 'given the opportunity to communicate with an audience of thousands, most users of this medium choose to announce what school they attended, what exciting activities they engage in . . . or how much they "♥" their family' (p. 117). Although some EBSs clearly pertained to the sender's identity, many EBSs consisted of statements about the nature of the world. The wisdom and advice categories, in particular, included insights or musings about topics such as life, love, and happiness (e.g. 'To have friends is to be honored. To have a love is to be happy. To have a love for a friend is to be truly blessed.').

Four of Rubin et al.'s (1988) motives for interpersonal communication were cited by respondents as reasons for using an EBS. Inclusion and control were the dominant motivations listed by respondents consisting of attempts to share something about one's self with others and as a means to get others to do or believe something. The prevalence of the inclusion motivation is consistent with previous research suggesting that e-mail signatures function to manage identity information (Rains and Young, 2006). As one respondent noted, EBSs represent 'a subtle way for me to project a little of who I am into the message – identity management I guess'. The large number of respondents who cited a control-related motivation suggests that senders view EBSs as a platform to advocate or otherwise influence receivers. Whether or not such attempts are effective is unknown and would be a valuable avenue for future research. It may be that senders view EBSs as a type of memorable message (Knapp et al., 1981) that they are offering receivers. As with EBSs, Knapp et al. note that memorable messages are essentially generic phrases or clichés. A key distinction between EBSs and memorable messages, however, is that memorable messages are per-ceived and labeled by *receivers* as memorable. Recipients perceive memorable messages 'as a unique insight – providing a hitherto unknown or unusual per-spective on a situation' (p. 34). In fact, senders are frequently not even aware of the impact of the message or that the receiver deems it as memorable. For those motivated by control needs, EBSs may represent an attempt at manufacturing a message containing an insight about the world that receivers should deem memorable and adopt.

Pleasure and affection were cited less frequently and involved making the receiver happy or showing concern for the receiver's well-being. Perhaps those people who are motivated by pleasure and affection attempt to accomplish these goals by composing an individualized e-mail message, as opposed to a some-what static EBS. Finally, relaxation and escape were not identified as a motivation

by any of the respondents. Going through the trouble to find an EBS requires effort and seems antithetical to relaxation or as a means for escape. In general, the interpersonal motives listed by EBS users suggests different underlying perspectives of e-mail as a communication channel. Those whose primary motivation is control may view e-mail as a means for task accomplishment, while those motivated by affection may see e-mail as an opportunity to relate with others. It would be worthwhile for future research to explore EBS users' orientation toward e-mail as a medium for communication.

There was no relationship among respondents' motivations for using an EBS and the nature of their EBSs. One explanation for this result may be that the actual EBS used by individuals is relatively unimportant. Multiple types of EBSs may satisfy one's specific motivation for using an EBS. A second explanation for this outcome may be related to the fact that there was not a great deal of variance in the types of motivations for using an EBS. Most respondents reported using an EBS to fulfill inclusion or control needs.

The findings from this study raise broader questions about computer-mediated communication (CMC) competence in personal and professional relationships (Bunz, 2004; Spitzberg, 2006). Because one's EBS may be presented simultaneously – and, thus, bound symbolically – with the one's name and other identifying information, communication competence is an especially important issue to consider. CMC competence consists of the motivation and knowledge to implement skills leading to the selection of a channel and message that foster outcomes such as appropriateness and effectiveness (Spitzberg, 2006). Although e-mail senders can modify, delete, or replace signature block items, the relative effort required to do so and frequency with which e-mail is used makes it unlikely that adaptations were made very frequently by respondents in this study. It seems reasonable that respondents were more likely to adapt to the audience in constructing their message, and not in their signature file and/or EBS.

In the context of EBSs, in particular, e-mail is an interpersonal tool that requires mass communication thinking. Consider, for example, the following EBS focused on Hiroshima: 'I never saw such a beautiful light in my life . . . then the blast hit.' Other EBSs from the sample we collected include the following: 'I finally discovered my alcoholic personality. I'm sex-on-the-beach', and 'We are therefore Christ's ambassadors, as though God was making His appeal through us. We implore you on Christ's behalf; Be reconciled to God.' Although all of these EBSs may be perfectly acceptable in the context of interpersonal interactions with select partners, they may have detrimental consequences when sent to a wide spectrum of receivers as is often the case with e-mail. Receivers encounter the EBS as a postscript to the primary message in the e-mail; receivers are asked to focus on the EBS, regardless of its relevance to the content of the primary message. Although appending an EBS to one's signature file may present an efficient way to share wisdom or advice with others, these messages may not serve any special purpose for receivers. Unlike memorable messages (Knapp et al., 1981), which are selected by receivers in times of uncertainty such as organizational entry and socialization (Barge, 2004; Stohl, 1986) or coping with the loss of someone close (Keeley, 2004), EBSs are delivered to receivers whether

or not they feel it is important or are psychologically ready. These messages may even lose some of their luster with neutral or favorable receivers when they are repeatedly exposed to the EBS. Future research should explore the communicative competence of EBS users and receivers' perceptions of e-mail messages containing an EBS.

The previous findings and discussion of EBSs should be considered in light of the limitations of this study. The most substantial limitation is that the procedure used to sample respondents was non-random. As such, it is difficult to make definitive generalizations regarding the representativeness of the EBSs or motivations listed by respondents. Given the nature of EBSs, however, the snowball sampling procedure used in this study provided the most realistic means to efficiently identify a range of adult EBS users. A second limitation of this study is that our analyses assumed that respondents had a single, stable EBS. This assumption was made to facilitate data analysis. Some respondents, however, noted in Phase II that they have used more than one EBS over time. As such, exploring the dynamic nature of e-mail users' EBSs would be a useful avenue for future scholarship on this topic. It may be that as we age and go through identity changes or have experiences that profoundly affect us our EBSs evolve. Some individuals may even be motivated to stop using an EBS in their signature block entirely.

Conclusion

The ubiquity of e-mail as a tool for communication worldwide makes research on this medium essential. This study offers an initial attempt at exploring the social implications of e-mail through examining the content and interpersonal communication functions served by EBSs. As the findings illustrate, EBSs are multi-faceted messages that are used for a variety of purposes. Through future research on features of e-mail like EBSs, it will be possible to better understand the impact of communication technologies in personal and professional life.

NOTES

1. Although the individual (H. Thomas), organization and contact information in the example e-mail signature are fictional, the EBS is not. This EBS is in use and was collected by the researchers.
2. EBSs are unique from traditional bumper stickers in that they are shared electronically and, in many instances, along with information about the owner/sender's identity.
3. Instead of identifying an EBS in a sender's signature file, the student included what appeared to be the final sentence of the e-mail message. For example, one student listed the following as an EBS: 'much love –'. A total of 16 responses like this one were excluded from the analysis.
4. EBSs in the other category consisted of organizations slogans, quotes in human languages other than English, and one snippet of computer-programming language.
5. Nine EBSs were not coded into any of the five categories. These responses were school names or fraternity/sorority designation – for example, 'ΑΣΠ for life'.

6. An error was made in some of the e-mail based questionnaires, resulting in the omission of demographic items for approximately one-third of the respondents in Phase II. However, the demographic characteristics of those respondents who reported such information is consistent with the sample who completed Phase I.

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STEPHEN A. RAINS (PhD, University of Texas at Austin) is an Assistant Professor in the Department of Communication at the University of Arizona. His research examines new communication technologies and social influence. ADDRESS: Department of Communication, University of Arizona, Tucson, AZ 85721–0025, USA. [email: srains@email.arizona.edu]

GEOFFREY R. TUMLIN (PhD, University of Texas at Austin) is the Assistant Director of the Center for Ethical Leadership in the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin. His research examines generational differences and trends, employee–supervisor relations, and the communication of difficult messages. ADDRESS: Lyndon B. Johnson School of Public Affairs, The University of Texas at Austin, Austin, TX 78713, USA. [email: gtumlin@mail.utexas.edu]

MARK L. KNAPP (PhD, Pennsylvania State University) is the Jesse H. Jones Centennial Professor Emeritus in Communication and Distinguished Teaching Professor Emeritus at the University of Texas at Austin. ADDRESS: Department of Communication Studies, The University of Texas at Austin, Austin, TX 78712, USA. [email: mlknapp@mail.utexas.edu]