

Gender and the Use of Exclamation Points in Computer-Mediated Communication: An Analysis of Exclamations Posted to Two Electronic Discussion Lists

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Past research has reported that females use exclamation points more frequently than do males. Such research often characterizes exclamation points as “markers of excitability,” a term that suggests instability and emotional randomness, yet it has not necessarily examined the contexts in which exclamation points appeared for evidence of “excitability.” The present study uses a 16-category coding frame in a content analysis of 200 exclamations posted to two electronic discussion groups serving the library and information science profession. The results indicate that exclamation points rarely function as markers of excitability in these professional forums, but may function as markers of friendly interaction, a finding with implications for understanding gender styles in email and other forms of computer-mediated communication.

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Introduction

When elements of speech and writing are associated with female communication style, they tend to be described in negative terms (Mills, 1995). Tag questions, for example, are usually understood by grammarians to invite verification, confirmation, or consent, and by some linguists (e.g., Brown & Levinson, 1987), to function as politeness devices. When associated with female communication style, however, a tag question such as the last two words in “John is here, isn’t he?” has been claimed (most famously by Lakoff, 1975) to indicate that the speaker lacks confidence in what she has said. Similarly, reference works on grammar and English usage describe the function of exclamation points as indicators of “emotive force” (Quirk, Greenbaum, Leech, & Svartvik, 1985, p. 1,633), or as a means to demonstrate that a “preceding word, phrase or sentence is an exclamation or strong assertion” (McArthur 1992, p. 394). When considered in relation to gender, however, exclamation points are often described as “markers of excitability,” a phrase that implies instability and emotional randomness. Exclamation points are typically reported to be used by females significantly more than by males (Colley & Todd, 2002; Rubin & Greene,

1992; Scates, 1981; Winn & Rubin, 2001). However, the contexts in which the exclamation points appeared in these reports have generally not been examined for evidence of “excitability.”

The present study begins by examining a body of research relating gender and the use of exclamation points. It shows how each piece of research built on its predecessors, further developing the notion that exclamation points function as markers of excitability. Keeping in mind Mills’ caution that linguistic elements should not simply be presumed to indicate factors such as deference, power, [or emotional state—CW], that “it is necessary to analyze the multiple possible uses of each element ...” (1999, p. 27), the study then presents a 16-category coding frame as an alternative to the previous method of tallying up exclamation points and characterizing them exclusively as excitability markers. The results show that exclamation points function most often to indicate friendliness and to emphasize intended statements of fact, but only infrequently as markers of excitability.

“Markers of Excitability”

The notion that exclamation points function as markers of excitability can be traced in modern times to *The Way Women Write*, Mary Hiatt’s (1977) study of women and men’s writing styles. Extraordinarily ambitious for its time, Hiatt’s content analysis of 100 literary works incorporated the use of computers to determine whether a feminine writing style actually existed and, if so, how it differed from masculine writing style. Hiatt proposed that certain types of punctuation could be used as a yardstick to analyze qualities in the prose of women and men; for example, she held that “the frequency of use of exclamation points is one indicator of what might be called ‘emotionality’ or ‘excitability’ ...” (1977, p. 39), characteristics she believed were stereotypically associated with women. Hiatt did not formally define the term excitability, but operationalized “exclamatory style” as the use of four or more exclamation points in the 2,000-word writing samples that were randomly selected from each book. Samples were examined for the “presence (or absence) of certain elements [such as] numbers or words or other types of symbols” (1977, p. 19), and in the case of exclamation points, the elements were counted. Hiatt’s computerized tallies indicated that the occurrence of exclamation points is greater in men’s prose than in women’s prose, i.e., that “women writers as a group do *not* exclaim more often than the men” (1977, p. 44).

Carol Scates’ (1981) analysis of the gendered writing styles found in first year college students’ compositions built on Hiatt’s study, which she characterized as “the most comprehensive work on men’s and women’s writing styles to date” (Scates, 1981, p. 22). Scates analyzed many of the same stylistic elements that Hiatt had, among them exclamations. Content was analyzed to determine such elements as sentence type, syntax, use of figurative language, and approaches to topics, but some elements, such as exclamations, were simply counted. Scates’ tallies indicated that females used exclamations substantially more than did males.

Building on Hiatt's (1977) and Scates' (1981) work, Rubin and Greene (1992) expected that sentence types such as exclamations would be among the "likely candidates" (1992, p. 15) to differentiate female and male prose in their study of college students' writing. Rubin and Greene analyzed the content of writing samples for rhetorical structure and tabulated the occurrence of stylistic features such as intensifiers, de-intensifiers, first person pronouns, perceptual verbs, and so on. Stylistic features were then combined into multivariate clusters including "markers of excitability" (exclamations and underlining). Although female and male styles were shown to be more similar to one another than different, Rubin and Greene reported that "where male and female styles did diverge, they differed in predicted directions. For example, women used far more exclamation points than men" (1992, p. 7). The term "Markers of Excitability" appears as a header in a results subsection. Although they didn't examine context for possible range of meaning of exclamations, Rubin and Greene proposed that, as an alternative to regarding exclamation points as signs of excitability, "a high frequency of exclamation points can be regarded as sort of an orthographic intensifier signaling 'I *really* mean this!'" (1992, p. 27). They also point out that this might convey the writer's lack of stature; that, in fact a confident person could "affirm their views by simply asserting them" (1992, p. 27).

Giving a new twist to the study of student compositions, Winn and Rubin (2001) investigated ways in which gender identity is enacted in the written language of personal ads. In separate writing tasks, college students composed self-descriptions for simulated personal ads and later composed responses to these ads. Winn and Rubin cite Hiatt's work as a source from which they derive gender-linked variables such as "markers of excitability (e.g., exclamation points)" (2001, p. 399) for their investigation. Like Rubin and Greene (1992), Winn and Rubin counted markers of excitability, but did not analyze the context in which they appeared for a possible range of meaning. Their results indicate that women use about "3 times more" (2001, p. 409) markers of excitability than do men.

In the area of computer-mediated communication, Colley and Todd's (2002) study of the gendered style and content of email examines many of the same stylistic markers for which Rubin and Greene (1992) had previously noted gender differences. Included among these was "excitability," as denoted by the use of exclamation marks and capitalization. Deriving the majority of their style categories from previous studies of email conducted by Rafaeli and Sudweeks (1993) and Savicki, Lingenfelter, and Kelley (1996), Colley and Todd asked college students to compose emails describing a recent holiday to (imaginary) friends interested in going to the same location. As did previous researchers, Colley and Todd coded text for the frequency of language features, but did not consider any characterization other than "excitability marker" for exclamation points. Like Winn and Rubin (2001), who "found that women used more nonessentials and excitability markers than men" (2002, p. 381), Colley and Todd's results indicate that women use exclamation points, especially multiple exclamation points, far more often than men do.

The Present Study

This study reports the results of a content analysis of 200 exclamations—words, phrases or sentences that end in exclamation points—in messages posted to two electronic discussion groups: dig_ref and JESSE. The entire message in which each exclamation appeared was recorded. As was the case with tag questions in previous research, it was expected that exclamations in these messages might have a “range of meaning ... across contexts” (Cameron, McAlinden, & O’Leary 1988, p. 77); thus two raters reviewed the context in which the exclamations appeared and assigned each exclamation to one of 16 different content codes. The gender of the writer of each exclamation was also recorded, with gender being determined by the message writer’s first name.

Setting

Electronic discussion lists where “people engage in socially meaningful activities online in a way that ... leaves a textual trace” (Herring, 2004, p. 338) were chosen for this study, since their textual traces could be observed unobtrusively. Further, messages posted to electronic discussion lists reflect spontaneous discourse that is unmodified by others, and such messages have the additional advantage of being more or less permanently archived on the Internet and available for inspection by anyone (Sierpe, 2000).

The electronic discussion group dig_ref supports professionals who answer questions and provide expert information via the Internet, in settings that range from virtual library reference to online AskAnExpert services. At the time this study was conducted, dig_ref subscribership was 2,500. The electronic discussion group JESSE is not dedicated to a particular topic, but serves various professionals in library and information science (LIS) education. At the time this study was conducted, JESSE subscribership was 1,154.

The field of library and information science is predominantly female with distribution ranging from 62.7% female in academic and research libraries (Kyrillidou & Young, 2005) to 83.2% female for all types of libraries combined (U.S. Bureau of Labor Statistics, 2006). Subscribership to LIS-related electronic discussion lists, then, might reasonably be expected to be predominantly female; such is the case with dig_ref and JESSE (see Table 1). In addition, Herring (1996) has observed that electronic discussion lists serving female-predominant professions tend to exhibit features of female discourse style. Given the claim that use of exclamation points is a feature of female discourse style (Colley & Todd, 2002; Rubin & Greene, 1992; Scates, 1981; Winn & Rubin, 2001), dig_ref and JESSE seemed likely settings in which to locate exclamations.

While subscribership to dig_ref and JESSE is predominantly female, participation in both groups is predominantly male. Two samples were examined to determine female/male participation rates. The first sample consisted of the 607 messages

from dig_ref and the 1,077 messages from JESSE that were used to retrieve the 200 exclamations used for this study. A larger “back-up” sample consisting of 1,400 messages from each list was also examined. (See Appendix for additional details regarding the two samples.) Participation was determined by the gender of the name of the poster of individual messages, and messages posted by each gender were counted. Participation rates by gender were very similar in the two samples. A comparison of subscribership and messages posted in dig_ref and JESSE is presented in Table 1.

Methods

Classification Scheme

ProjectH, an international analysis of computer-mediated communication conducted by Rafaeli and colleagues (1993, 1996), provided the basis for a classification scheme for collecting and evaluating data for the present study. Both the original ProjectH coding frame and an adapted coding frame used by Savicki, et al. (1996) in their study of 27 online electronic discussion groups consist of straightforward content codes that provided a range of objective alternatives to the more subjective descriptor “excitability marker.” At the same time, when exclamations assigned to a given code (such as “Flame2”) consistently expressed either positive or negative emotionality, the code could be acknowledged as indicating “excitability.”

Examples of content codes include ACTION (meaning action or call for action by the individual posting the message, e.g., “Read e-books!”); APOLOGY (implied apology such as “I wish I hadn’t said that!” also direct apology, i.e., “Sorry!”); COALITION (agreement with or support of those in the group or elsewhere), and FACT (facts whether correct or not; also, opinions stated as fact). Content codes such as “QUESTION” and “STATUS” (titles and words that identify the personal status of the message poster) were not relevant for this study and were not included. A complete list of the content codes adapted for this study, along with definitions and examples for each code, is provided in Table 2. Some of the examples in Table 2 are from Savicki, et al. (1996), some from dig_ref and JESSE, and some were created by the author. They were chosen to provide the clearest illustration of each category for an independent rater.

Table 1 Participation in dig_ref and JESSE

	Subscribers identified as female	Subscribers identified as male	Totals	Messages (from 2 samples) posted by identified females	Messages (from 2 samples) posted by identified males	Totals
dig_ref	1,436 (72%)	558 (28%)	1994	1,138 (61%)	727 (39%)	1,865
JESSE	558 (64.5%)	307 (35.5%)	865	1,377 (63%)	794 (37%)	2,171
Combined	1,994 (70%)	865 (30%)	2859	2,515 (62%)	1,521 (38%)	4,036
Totals						

Table 2 Codebook

Content Code	Definition	Examples
Action	Action or call for action by the individual posting the message	I'm checking the search engine now! Read eBooks!
Apology	Implied or direct apology	I wish I hadn't said that! My apologies!
Challenge	Challenge, dares or bets	Prove it! Bet you won't find it!
Coalition	Agreement with / support of those in the group or elsewhere	You're right! Agnes makes a great point! I agree with those who say it shouldn't happen!
Fact	Intended statement of fact, whether or not the fact is correct; opinion stated as fact.	The world is flat! It turned my hair gray! They're freeloaders!
Firstperson 1	Self-disclosure, preferences using "I" or "my."	My hair is getting gray! I'd like to do reference at home in my robe!
Firstperson 2	Opinion using "I" or "my"	I like Blackboard! My side is better!
Friendly 1	Friendly greetings or closings	Hi! Hello everyone! Good luck! Bye!
Friendly 2	Friendliness, helpfulness, cordiality expressed within body of message	"Posts are archived at [URL] for your self-service convenience!"
Flame 1	Mild argument/annoyance	Not all answers take as long as 2 days!
Flame 2	Moderately aggressive/rude	I TOLD YOU- NOT IN THE LIBRARY!
Flame 3	Hostility, personal insult	You stupid jerk!
De-flame	Attempts to avoid tension, attempts to reverse flaming.	OK, calm down! Let's look at it another way!
Sarcasm	Sneering or cutting remarks	Big deal! Ooo, isn't that just too bad!
Thanks 1	Thanks used in closing or in opening	Thanks! Lisa
Thanks 2	Thanks expressed by sender in the body of the message.	Thanks for the information! I appreciate that!
Thanks 3	Effusive expressions of thanks.	It was wonderful of you to say that—thank you so very much!

Procedures

The data collection method for this study consisted of using Internet Explorer's Edit > Find command to locate individual exclamation points, if any, in messages posted to dig_ref and JESSE. Beginning with the posting that was current at the time the study was conducted, messages were reviewed until a total of 100 exclamations were retrieved from each electronic discussion group. In the case of dig_ref, 607 messages were reviewed. In the case of JESSE, 1,077 messages were reviewed. Each exclamation and the entire message in which it appeared was stored in a database record that also included the first name and gender of the poster and a means of identifying and

retrieving the message (e.g., a message number or a posting date) should that be required.

Exclamation points in trade names such as Yahoo! and Live!Chat were ignored. Moreover, parts or all of some messages had been copied and pasted from other sources, and those messages thus did not consist of original, spontaneously composed text. Such messages (e.g., calls for papers, announcements of trainings and conventions, job postings, requests to complete surveys, and promotional messages) were consequently ignored. Exclamations quoting other sources or other individuals (“Mary told them ‘You should have thought of that sooner!’”) were also ignored.

Inter-rater Reliability

Two raters independently reviewed the content of each of the 200 exclamations retrieved from the sample of 607 messages from dig_ref and 1,077 messages from JESSE. Some messages contained more than one exclamation; each exclamation was treated as a separate unit of analysis. Each rater coded the 200 exclamations using the codebook shown in Table 2. Inter-rater agreement was established at 81% for the messages from dig_ref and at 85% for messages from JESSE.

In addition, each rater assigned a gender code “F” or “M” (a “U” was also available for “unknown,” but was not needed) to the first name of each message poster. Gender ambiguous names were handled in different ways by the two coders. When the author encountered names of which she was uncertain, she consulted personal web sites, university web sites, and other web sources. She was able to confirm gender by viewing photos, by locating personal pronouns in “About our Staff” pages, and so on. The independent rater, however, was asked to assign gender codes based on conjecture. Interestingly, the independent rater’s assignments were exactly the same as the author’s. Thus, in assigning gender identity to the first names of the posters of the exclamations, 100% inter-rater reliability was established for both dig_ref and JESSE.

Findings

Table 3 indicates that most (i.e., 59) exclamations were statements of fact (“There’s still time to register!” “Computers had an important impact in libraries before 1970!” “That makes us kindred souls!”). The codes “Thanks 1” and “Thanks 2” (thanks expressed either within the body of the message or as closing or greeting statements) both refer to a friendly kind of thanking. Consequently, the exclamations in these categories were combined with the exclamations in the “Friendly 1” and “Friendly 2” categories (i.e., friendly greetings or closings such as “Hello, everyone!” “See you there!” or friendliness, helpfulness or cordiality expressed within the body of the message such as “I hope this helps!” and “Congratulations to Amanda!”). The adjusted results show that 62 (34%) of the exclamations were “friendly.”

Because the content of exclamations from three other categories indicated “excitability,” that is, the exclamations in these categories expressed positive or negative

Table 3 Content codes for exclamations from dig_ref and JESSE

Code	DIG_REF		Code	JESSE	
	Females	Males		Females	Males
Action	8	2	Action	4	2
Apology	1	0	Apology	0	0
Challenge	1	0	Challenge	0	1
Coalition	5	1	Coalition	3	2
Fact	21	1	Fact	27	10
Firstperson 1	7	0	Firstperson 1	4	3
Firstperson 2	0	0	Firstperson 2	1	0
Friendly 1	6	2	Friendly 1	4	1
Friendly 2	3	3	Friendly 2	9	3
Flame 1	5	3	Flame 1	3	0
Flame 2	0	3	Flame 2	0	1
Flame 3	0	0	Flame 3	0	0
De-flame	1	1	De-flame	0	0
Sarcasm	6	2	Sarcasm	2	2
Thanks 1	9	5	Thanks 1	9	4
Thanks 2	2	0	Thanks 2	3	1
Thanks 3	2	0	Thanks 3	0	1
TOTALS	77	23	TOTALS	69	31

emotionality, the exclamations in these categories were also combined. The three categories were “Flame 2” (rude or moderately aggressive comments such as “Those damn programs are out of touch with reality!”); “Sarcasm” (sneering or cutting remarks such as “Surely anyone on JESSE could write better copy than that!”), and “Thanks 3” (effusive thanks such as “Thank you so much for your comments—they are very, very helpful and the list of resources is wonderful!”). The findings are summarized below.

Overall Findings

Overall, 32% of the exclamations fell into the four “friendly” categories, i.e., Thanks1, Thanks2, Friendly1, and Friendly2. Another 29.5% of the exclamations fell into the Fact category, i.e., they were intended as statements of fact, whether or not the “fact” was correct. Only 9.5% of the exclamations fell into the three “emotional” (“excitable”) categories, i.e., Flame 2, Sarcasm, and Thanks 3, effusive thanks. (There were no exclamations in the Flame 3 category.)

Gender-based Findings

A breakdown of the results by gender indicates that 73% of all exclamations were made by females, and 27% by males. Similarly, 70% of all “friendly” statements (as defined above) were made by females, and 30% by males. Regarding statements of

“fact,” 81% were made by females, and 19% by males. Finally, females made 53% of all “emotional” statements (as defined above), compared to 47% by males.

Interpretation

While females posted 73% of the exclamations and males posted only 27%, participation rates in the two electronic discussion groups must also be factored into the analysis. Combined participation rates for both groups averaged 62% female and 38% male in both the original sample of 607 messages from dig_ref and 1,077 messages from JESSE and in the larger sample of 1,400 messages from each group. A Chi square analysis was conducted using exclamation rates (73% female and 27% male) as observed frequencies and participation rates (62% female and 38% male) as expected frequencies. Results (Chi-square = 5.136, $df = 1$, $p = .0234$) indicate that females did, indeed, use exclamations significantly more often than males did.

The results, however, do not show that exclamation points function solely—or even very often—as markers of excitability. Only 19 (9.5%) of the total of 200 exclamations examined indicated excitability, i.e., negative or positive emotionality. In contrast, exclamations functioned as markers of friendly interaction 32% of the time, and to emphasize intended statements of fact 29.5% of the time. Of the 19 “excitable” exclamations, 10 were made by females and nine were made by males. A Chi square analysis was performed using “excitable” exclamation rates (53% female and 47% male) as observed frequencies and participation rates (62% female and 38% male) as expected frequencies. The results (Chi square = 3.438, $df = 1$, $p = .0637$) suggest that a larger sample would be needed in order to better evaluate this relationship, but that the trend is in the direction of males using excitable exclamations more often than females use them.

A Chi square analysis was also attempted for use of “friendly” exclamations. Using the rates of 70.3% female and 29.7% male as observed frequencies and participation rates of 62% female and 38% male as expected frequencies, Chi square results (Chi square = 2.924, $df = 1$, $p = .0872$) again suggest that a larger sample would be needed in order to better evaluate this relationship, although the trend in this case favors female use of “friendly” exclamations. Finally, Chi square analysis (Chi square = 15.323, $df = 1$, $p = .00009$) using “intended fact” rates of 81% female and 19% male as observed frequencies and participation rates of 62% female and 38% male as expected frequencies clearly indicates that females use exclamation points to emphasize intended statements of fact significantly more often than do males.

Discussion

The results of this study do not support the notion that exclamation points function solely or even primarily as markers of excitability. However, the finding that females use exclamations significantly more than do males is consistent with the findings of Rubin and Greene (1992), Winn and Rubin (2001), and Colley and Todd (2002). Thanking, whether of the friendly or effusive type, was also a predominantly female

behavior. These findings are consistent with Herring's (1994) observation that female online discourse style is characterized by "supportiveness," which includes "expressions of appreciation, thanking, and community building activities that make other participants feel accepted and welcome" (p. 4).

Moreover, the findings in this study relating to flaming were consistent with those of Herring (1994), who found "little or no flaming and cooperative, polite exchanges" (p. 2) in online discussion lists devoted to "feminized" professions such as librarianship. Only 11 exclamations in the Flame 1 category (mild argument/annoyance) were made, eight by females and four by males. Only four exclamations fell into the more emotional Flame 2 category, three of which were made by one male who had become angry over a single issue. In other results that are consistent with what Herring (1994) observed in female-predominant electronic discussion lists, there were only two "challenges," one from a female and one from a male ("Answer that one, why doncha!" and "I'd like to talk to those who think running DE is cheap!"). Only 12 of the exclamations were sarcastic, four made by males and eight by females.

These results echo the lack of flaming and other abusive behavior observed during Sierpe's (2000) monitoring of JESSE. Noting that questions posted to JESSE were not of a type that usually lead to heated debate, Sierpe wondered whether this "absence of passionate debate was the result of a different value system and one that permeates all LIS-related electronic discussions lists or is a particular feature of JESSE" (2000, p. 287). The present study's finding of mostly cooperative, polite exchanges and lack of heated debate, as well as the lack of extensive flaming and other abusive behavior, also suggests the presence of LIS-oriented (feminized) values.

Limitations and Directions for Future Research

This study was limited to a sample of 200 exclamations that were posted to the library and information science electronic discussion groups *dig_ref* and JESSE, the latter being the subject of one of the few existing studies of gender and computer-mediated communication in library and information science (Sierpe, 2000). Although selection of LIS electronic discussion groups provided an opportunity to relate new findings to old in a field in which computer-mediated communication is becoming increasingly important, LIS-oriented values may have affected the results, limiting the possibility of generalization to other types of electronic discussion groups.

Future studies might address these limitations by comparing exclamations posted in electronic discussion lists associated with feminized professions to exclamations posted in lists associated with other, non-feminized professions. Comparisons might also be made in non-work online settings. More generally, a study of wider scope using larger samples could help to determine whether males use significantly more "excitable" exclamations than do females, or if females use significantly more "friendly" exclamations than do males. Further research should also address whether the use of exclamation points alters perceptions of, say, "friendliness" in

email environments. For example, is “Thank you!” perceived as friendlier than “Thank you” in email?

Conclusions

The results of the present study bring to mind Coates’ (1998) study of gossip, in which she points out that women’s uses of tag questions and other devices “had been interpreted as signs of weakness” (1998, p. 250). When considered in context, however, tag questions were found to “serve the function of asserting joint activity and of consolidating friendship” (Coates, 1998, p. 250). By considering the context in which exclamations were used, and by adopting a more nuanced methodology than has been adopted in the past, the present study has demonstrated that exclamation points do more than function as markers of excitability; they can also function as markers of friendliness.

This finding is important for two reasons. First, even though email is extensively used, it still lacks “universally agreed modes of behavior established by generations of use” (Crystal, 2001, p. 15) and precise means for conveying exactly the impressions the email sender wishes to convey. This study suggests that individuals of both genders can convey “friendliness” via the (non-excessive) use of exclamation points. Second, the results point to the need to re-consider the negative labels that have often been associated with female communication styles, and to investigate the multiple possible uses of linguistic elements for potential re-labeling and re-interpretation as they relate to email and other forms of computer-mediated communication.

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Appendix

Appendix Subscribership of dig_ref and JESSE as of November, 2004

	dig_ref	JESSE
Subscribers with first names identified as "female" names	1436 (72%)	558 (64.5%)
Subscribers with first names identified as "male" names	558 (28%)	307 (35.5%)
Total "identified" female / male subscribers	1,994	865
Subscribers with first names that could not be identified as either "female" or "male"	318	203
Subscribers with first names used by both genders, e.g., Terry, Leslie, Jan, Lee, Chris, Pat.	133	48
Duplicates (individuals subscribed under more than one email address)	43	27
Institutional/corporate subscribers	12	11
Total subscribership as of November, 2004	2,500	1,154

Participation Rates in dig_ref and JESSE by Gender

	dig_ref Sample 1	JESSE Sample 1	dig_ref Sample 2	JESSE Sample 2	Combined Average
Number of messages posted by subscribers with "female" first names	346 (60.38%)	598 (63.28%)	792 (61.3%)	779 (62%)	62% (rounded)
Number of messages posted by subscribers with "male" first names	227 (39.62%)	347 (36.72%)	500 (38.7%)	447 (38%)	38% (rounded)
Total number of messages with "gender-identified" names	573	945	1,292	1,226	
Number of messages posted by subscribers whose first names could not be identified as "female" or "male"	34	132	108	174	
Total number of messages reviewed	607	1,077	1,400	1,400	

About the Author

Carol Waseleski was a graduate student in an online Library and Information Science program at Southern Connecticut State University when this research was begun. She was also employed as a Library Database Specialist at Antioch New England Graduate School where the call for distance library services was steadily increasing, and where she developed a special interest in email as a form of communication. After completing her Master's Degree in Library Science, she became the director of Pettee Memorial Library in Wilmington, Vermont.