

GENDERED TYPOGRAPHY: ABBREVIATION AND INSERTION IN ITALIAN iTV SMS

Susan C. Herring & Asta Zelenkauskaitė*

Abstract: Unlike traditional genres of writing, interactive text-based computer-mediated communication (CMC) exhibits considerable typographic variability. This study analyzes gender variation in abbreviations and insertions in mobile phone text messages (SMS) posted to a public Italian interactive television (iTV) program. All broadcast SMS were collected for a period of two days from the web archive for the iTV program, for a corpus of roughly 1,500 SMS, and the frequency and distribution of abbreviations and insertions, as well as overall message lengths, were analyzed according to sender gender. The results reveal that females posted more and longer SMS and used more non-standard forms, contrary to previous gender-related findings in the sociolinguistics and CMC literatures. Differences are also found in the types of abbreviation and insertion that females and males preferred. An explanation for these findings is proposed in terms of the local and contextual norms of an implicit iTV SMS dating market.

1. Introduction

While research on spoken communication has identified numerous gender-related differences, less gender-based variation has been observed to occur in writing. What tendencies have been noted mostly involve discourse-level phenomena such as choice of topic or rhetorical style (Argamon, Koppel, Fine, & Shimoni, 2003; Brody, 1993; Janssen & Murachver, 2004). Evidence of gender differences in spelling, punctuation, or grammar is rare, perhaps because most writing that has been studied is published literature, and as such, subject to normative rules. Writing containing non-standard grammar or spelling, for example, would presumably have been rejected in most cases by editors, or else the “errors” would have been corrected before the published work saw the light of day.

In contrast, computer-mediated communication (CMC) is typically produced in a more spontaneous and less edited manner than published writing, and often manifests variability in grammar, spelling, and typography. Systematic gender differences have been noted in CMC modes such as e-mail, discussion forums, chat, and blogs, especially as regards discourse-pragmatic phenomena such as topic and politeness (Herring, 1994, 2003; Herring & Paolillo, 2006). Of particular relevance to this paper, a smaller number of CMC studies have also identified gender differences with respect to micro-level phenomena such as emoticons (Witmer & Katzman, 1997), punctuation (Waseleski, 2006), and non-standard orthography (Zelenkauskaitė & Herring, 2006).

Text messaging or Short Message Service (SMS) texting via mobile telephones is especially prone to typographic manipulation, due to spatial constraints on message length—a single SMS message is limited to 160 characters, including spaces (Anis, 2007). While SMS research that focuses on gender is as yet relatively rare, some studies have identi-

* Co-authors' names are listed in alphabetical order to indicate equal contributions.

IUWPL7: Gender in Language: Classic Questions, New Contexts (2008), edited by Jason F. Siegel, Traci C. Nagle, Amandine Lorente-Lapole, and Julie Auger, pp. 73–92. Bloomington, IN: IULC Publications.

fied gender differences, including in message length (Ling, 2005) and politeness (Yates, Mills, Lockley, & Doherty, 2004). No research has yet examined gender in relation to typographical manipulation in SMS, however, despite the great typographic variability in this mode of CMC. Is such variability exploited by communicators as a resource for conveying social information—for example, about their gender identity? If so, what kinds of typography are “masculine” or “feminine”?

This paper reports a study of gender and typographic variation in a new form of SMS: text messages posted by viewers to interactive television programs, where the messages appear on the TV screen along with regular televised content (Beyer, Enli, Maasø, & Ytreberg, 2007). iTV SMS, as this phenomenon is called, has been growing in popularity in Europe since its introduction in 2002, and it is now spreading to other parts of the world, including the United States, where its use is evident in a limited way in viewer voting on programs such as *Survivor* and *American Idol*.

This study focuses on iTV SMS broadcast in Italy, where such programming was introduced in 2004 and has been highly successful, due to the high mobile phone penetration rate (134% in 2006¹). Indeed, mobile phones in Italy are not only valued as a means of communication, they are a fashion accessory (Fortunati, 2002). Moreover, the Italian language encodes grammatical gender on pronouns, adjectives, and some verb forms. For this reason, the language facilitates the study of gender variation in iTV SMS messages, which often do not include names that identify the sender’s gender. Specifically, therefore, this paper addresses the question of whether—and if so, how much and in what ways—gender as a social category is expressed typographically in Italian iTV SMS.

2. Relevant literature

2.1 SMS language

A distinctive characteristic of SMS mobile phone text messages across languages and different cultural settings is their use of non-standard typography. Analyses of typography in private SMS have found that—similar to synchronous CMC modes such as chat and instant messaging—SMS messages tend to contain numerous shortenings and other non-standard typographic features (Anis, 2007; Bieswanger, 2007; Ling, 2005; Thurlow, 2003). A study of French SMS (Anis, 2007) classified different strategies of non-standard typography, including spoken language representations such as *moua* for *moi* (‘me’). Similarly, in studies of German SMS, Rössler and Höflich (2002) and Bieswanger (2007) pointed out shortenings based on the spoken language, such as *leida* for *leider* (‘pity’). Swedish research on SMS (Hård af Segerstad, 2002) found “grammatical reductions” such as leaving out the definite article, e.g., *strykjärn* for *strykjärnet* (‘iron’ for ‘the iron’). The limited Italian SMS research we were able to locate (Pietrini, 2001; Zarantonello, 2002) also notes the use of shortenings, such as *3no* for *treno* (‘train’), relating them to the informal nature of SMS. Brown (2000) and Thurlow (2003) analyzed SMS written by British youth and also found numerous non-standard spellings.

¹ That is, there was an average of 1.34 mobile phone subscriptions per (presumably adult) Italian. Source: *European Electronic Communications Regulation and Markets 2006*, retrieved March 18, 2008, from http://www.ebu.ch/CMSimages/en/BRUDOC_INFO_EN_361_tcm6-50763.pdf.

It has been suggested that such features are universal characteristics of a new computer-mediated language variety, “Netspeak” (Crystal, 2001). However, Bieswanger (2007) conducted a comparative analysis of shortenings in English and German private SMS corpora, quantifying the distribution of different abbreviation phenomena, and found differences not only in frequency, but in abbreviation type, due mostly to linguistic differences between the two languages. The classification provided by Bieswanger (2007) identified five types of shortenings in lexical items: 1) initialisms (e.g., acronyms), 2) clipping, 3) letter/number homophones, 4) phonetic spelling, and 5) contractions. With the exception of initialisms, which were more common in German, all of the remaining types were found to be more common in English—especially contractions, which occurred rarely, and letter/number homophones, which did not occur at all, in the German corpus.

It makes sense that SMS language would make heavy use of shortening strategies, given that abbreviation facilitates “typing” on a cramped telephone keyboard and helps keep messages within the SMS 160-character limit. In addition to studies of abbreviation, the insertion of extra characters has also been noted in CMC research. Danet (2001) and Herring (2001) underscored the playful nature of language use in CMC, which sometimes involves the expressive addition of extra characters (e.g., “helloooooo”), despite the fact that this requires additional keystrokes (and may incur extra cost). A study of Philippine texters found that playful use of language is favored and that it indexes physical as well as monetary investment (Ellwood-Clayton, 2005). More generally, CMC studies have identified a tension between abbreviation, as a strategy of efficiency, and insertion, as a strategy of expression; the two strategies often co-occur (Cho, forthcoming; Herring, 2001). One aim of the present study is to identify which strategy, if either, is preferred by Italian iTV SMS senders and what the impact of their combined use is on the overall length of the SMS.

2.2 Gender and CMC

As noted above, previous research has found gender differences in various modes of CMC, including e-mail and both asynchronous and synchronous discussion forums (Herring, 1993, 1994, 2003). These include differences in participation and pragmatic strategies such as politeness, and tend to vary according to whether the communication is public or private, with males exceeding females in message length, posting frequency, and assertiveness in public settings.

A smaller number of studies have observed gender differences in orthography and typography in CMC. Most often studied is the use of emoticons, or “smiley” face icons made out of keyboard symbols, such as :-). Consistent with findings that women smile more than men in face-to-face settings, emoticons and other textual representations of smiling and laughter are also used more often by women than by men in both synchronous and asynchronous CMC (Herring, 2003; Witmer & Katzman, 1997). Relatedly, in a study of an asynchronous discussion forum, Waseleski (2006) found that exclamation points were used more often by females. However, rather than functioning as markers of excitability, as has been popularly claimed, the exclamation points were analyzed by Waseleski as indicating friendly interaction.

Little empirical research has investigated gender differences encoded through non-standard spelling in any mode of CMC. One exception is Zelenkauskaitė and Herring (2006), who compared Lithuanian and Croatian Internet Relay Chat language by user gender. Non-

standard spelling was associated with the gender of the users in both languages, in ways that suggested that females more than males were orienting to standard writing conventions (cf. Labov, 1990).

Gender and language in SMS has also received minimal scholarly attention. Ling's (2005) study of Norwegian private SMS users partially addressed gender, noting that despite the fact that the men were earlier adopters of SMS, female users, especially younger females, are more active users of SMS. Additionally, Norwegian females wrote longer SMS messages than did males. Yates et al. (2004) found that private British texters displayed gender differences in politeness, similar to those reported in other modes of CMC by Herring (1994, 2003). That is, females did more to manage the face wants of the addressee than did males, who were more likely to violate politeness norms. As yet, to our knowledge, there have been no studies of typography or orthography in SMS that consider gender.

2.3 Italian SMS

Italian scholars have noted the occurrence of non-standard features of colloquial Italian in SMS. Zarantonello (2002) concluded that SMS messages contain various types of non-standard writing. However, he analyzed a very limited corpus of data—21 private SMS messages—on which he based his conclusion that SMS language is highly informal. Pietrini (2001) collected a larger sample of 500 SMS comprised of private SMS sent via telephone and via Internet by users 15 to 35 years old. Pietrini noted that not only were abbreviations used by her SMS writers, insertions were also used. Pietrini related insertions to playful language use. These scholars conclude that the triumph of informal writing in Italian SMS is a consequence of the informal nature of private communication. To date, however, it is unknown whether—and if so, to what extent—public iTV SMS differs from private SMS in Italian or any other language.

3. Research questions and hypotheses

The broad concern of this study is whether there are gender differences in typography in iTV SMS, and if so, what they are and how frequently they occur. Specifically, we ask:

RQ: Do men and women shorten and/or lengthen iTV SMS differently?

The previous literature generates predictions that are relevant to addressing this question. First, research on gender and participation has found that men talk more than women in public settings (Coates, 1993; Hearn, 1992; Spender, 1980). This has also been found in text-based CMC (Zelenkauskaitė, 2004; Herring, 1993, 2003; Selfe & Meyer, 1991), although in one study, women sent more and longer private SMS (Ling, 2005). Since iTV SMS is public, we therefore hypothesize the following:

H1: Men will post more and longer SMS to iTV than will women.

Second, sociolinguistic research has found that women tend to use more standard language, including pronunciation and grammar, than do men (Labov, 1990; Chambers, 2003). This was also found by Zelenkauskaitė & Herring (2006) for non-standard orthography in Internet

Relay Chat; indeed, the so-called Sociolinguistic Gender Pattern is one of the most robust findings regarding demographic variation in language (Fasold, 1990). Therefore, since abbreviations and insertions result in non-standard linguistic forms, we hypothesize:

H2: Men will use more non-standard typography in their iTV SMS than will women.

In the absence of previous research on gender and abbreviation and/or insertion, we advance no hypothesis about which of these will be preferred by each gender, beyond predicting that they will both be used more frequently by men.

Finally, given the findings of the studies summarized in section 2.1 that SMS messages tend to be abbreviated, as well as the 160-character constraint on SMS message length, we expect to find more instances of abbreviation than insertion overall. Thus, we hypothesize:

H3: Both men and women will abbreviate more than they will insert extra characters in their iTV SMS.

4. Methodology

4.1 Data

In order to test these hypotheses, we collected data on two weekdays, March 14 and 15, 2006, from the “Inbox” program on the Italian music television channel *Allmusic*. SMS broadcast on this channel can be viewed in three ways: in real time, on traditional television; in real time, through digital streaming of the TV channel on the Internet at www.allmusic.tv; and for a period of approximately six months after broadcast, from the publicly available archives of the television channel at the same website. For the sake of convenience, we collected our data from the website archive. For the purposes of this study, a corpus of 1,452 SMS messages, or all messages posted during the two-day period, was collected.

In order to post an SMS, viewers of the program must be customers of a GSM (mobile phone service) provider in a territory of Italy. Moreover, the viewers need to register for the channel service by sending an SMS to the provider. Registered users can then post SMS messages to iTV programs from their mobile phones for a small fee (0.5 euros per message) in addition to the cost of sending a regular SMS (approximately 0.10–0.15 euros). The broadcast SMS are displayed at the bottom of the TV screen, as shown in Figure 1, next to the phone number to which the messages should be sent. The SMS in Figure 1 reads, *Lele . . . Spero t starai sentendo uno schifo x quello ke hai fatto..manda inbox e' importante* ‘Lele, I hope you feel terrible for what you have done to me. Inbox, send this, it is important’. This message contains several abbreviations, such as *t* for *ti* ‘you’ and *x* for *per*² (‘for’), as well as insertions such as repeated dots and *e’* for standard Italian *è* ‘is’.

The *Allmusic* channel has specific regulations as regards the content of the text messages; these are posted on the television channel’s website. However, the regulations are rather generic; one of the criteria for the content to be broadcast, for example, is that the SMS should be *interessante* (‘interesting’). It seems that SMS are occasionally filtered for other reasons, as well. The comments of some iTV SMS senders suggest that telephone numbers,

² In Italian, *x* in the sense of ‘times’ in multiplication is pronounced *per*.

for example, are not always allowed to pass through the filter, presumably to reduce the incidence of inappropriate solicitations. This regulation will prove relevant in accounting for the frequency of insertions in broadcast iTV SMS.



Figure 1. iTV screen with SMS message

4.2 Methods

In order to answer the research questions, writer gender was first determined from grammatical cues available in the Italian language. In Italian, personal pronouns, articles, adjectives, and past participles are marked for subject gender; for example, *sono stanca* ‘I am tired’ has feminine marking on the word ‘tired.’ In addition, drawing on the parameters established by Herring (1994), the nicknames of users were considered, although, as noted above, nicknames were not always included in the messages. Gender indexical language (such as reference to a “boyfriend”) also helped to establish user gender.³

The SMS were divided into three categories according to authorship: male, female, and unknown gender. The total corpus consisted of 1,452 SMS; from this, the 253 SMS in the unknown gender category were excluded from further consideration, as they could not contribute to answering research questions related to gender. The remaining SMS posted by female users totaled 708, while male users posted 456 SMS. We further excluded from the study eight SMS that were posted by more than one person and 27 SMS that were not entirely in Italian. The final number of SMS messages analyzed by gender was 1,164. Of these, a random gender-balanced subset of 800 messages (400 by each gender) was extracted to calculate the frequency of deletions and insertions, and the full corpus was used to analyze the types of deletions and insertions that occurred.

The analysis then proceeded as follows. All of the selected SMS were first numbered according to their original broadcast order (as reflected in the web archive), placed in an Ex-

³ Our interpretations of such references assumed heterosexuality as the default. Perhaps because the *Allmusic* program was broadcast mid-day to a mainstream audience, despite the fact that many messages were flirtatious or romantic, only a handful of these appeared to have same-sex addressees.

cel spreadsheet, and each message was assigned a gender code. Deletions and insertions were then analyzed in two steps, first in terms of their frequency in relation to overall message length, and second by type.

In order to analyze the *frequency* of the deletions and insertions, each inserted or deleted character was counted. The basic unit of analysis in this part of the study was the character. The overall actual and ideal lengths of the SMS messages were also calculated in characters, counting punctuation and spaces, as well as letters, numbers, and keyboard symbols, as characters. Finally, the distribution of SMS of different lengths was analyzed.

The ideal message length was derived by converting each SMS into standard Italian. In this process, emoticons were treated as standard Italian elements. This decision was made because emoticons do not exist in standard languages, so comparison between actual and “ideal” emoticons is not possible. Only a small number of emoticons were present in the iTV SMS, at any rate.

In order to analyze the *types* of shortenings that occurred, four categories of shortenings (all except for contractions, which do not occur in Italian) from the study of SMS abbreviations by Bieswanger (2007) were adopted, and two additional categories that we observed in our data were added to these. The six types are defined and illustrated below. (Standard Italian versions are given in parentheses in the examples.)

Initialisms are shortenings that contain the first letter or letters of a phrase. The following is an example of an initialism from our iTV SMS corpus:

(1) TVB (*ti voglio bene*) ‘(I) love you’

Clipping refers to all forms of shortenings in which parts of a word are deleted. The term as used by Bieswanger (2007) refers not only to cases where deletions occur in final position (Cannon, 1989), but also to word-initial deletions and deletion of letters in the middle of a word.

(2) cmq (*comunque*) ‘anyway’

The third type is *letter/number homophones*. Letters and numbers whose pronunciation is identical with that of words or parts of words are used to replace words or letter sequences (Anis, 2007; Crystal, 2001). This is illustrated in the following examples:

(3) c (*ci*) ‘us’

(4) 1 (*uno*) ‘one’

(5) x (*per*) ‘for’

Phonetic spelling was considered to be all forms that are shorter than their representation in the standard orthography, that contain at least one character that is part of a non-standard spelling of the word in question, and that represent the spoken pronunciation of the word.

(6) perke (*perché*) ‘why’

To the above types we added *omission of punctuation marks*. Omissions of punctuation required in the standard language are popular in SMS, because punctuation requires additional effort to search for each of the symbols, which are located under different keys and differ in each brand of phone. Therefore, users tended to use plain SMS without punctuation.

- (7) Daniele mi manchi da morire Laura (*Daniele, mi manchi da morire. Laura*)
 ‘Daniele, I miss you desperately. Laura’

In example (7), the sender “saved” two characters by omitting punctuation marks.

Omission of spaces is another type of deletion. iTV SMS senders sometimes save characters by running words together (see also Anis, 2007, for French SMS), as in example (8):

- (8) tipensotrp (*Ti penso troppo*) ‘I think of you a lot’

Example (8) also illustrates clipping (omission of letters from the word *troppo*); taken together, these two deletion strategies reduce the message by five characters, compared with the Standard Italian version.

Insertions have been studied less frequently, and no taxonomy of insertion types is available in the literature, to our knowledge. We therefore classified insertions into the following five categories that emerged from our data. The first type involves *inserted (usually repeated) letters* in the non-standard writing of Italian words:

- (9) Ti voglio tanto beneeee. (*Ti voglio tanto bene*) ‘I love you so much.’

In example (9), the final vowel of *bene* ‘good’ (here, with the sense of ‘so’) is repeated three times, lengthening the SMS from 21 characters (in standard Italian) to 24 characters.

The second type of insertion involves *repeated punctuation*. In example (10), the message sender used repeated dots to separate utterances, including an extra dot at the end of the message:

- (10) Ciao Bellissimi!sn tr triste...sara di mi ...baci a tt..
 (Ciao bellissiimi! Sono troppo triste. Sara di Milano. Baci a tutti.)
 ‘Hi beautiful people! I’m too sad. Sara from Milan. Kisses to all of you.’

The third type of insertion involves *numbers spelled out* in letters. Senders sometimes spell out their phone numbers to get around the television channel regulation that filters out SMS that contain phone numbers:

- (11) Ho 37 anni di bari ki vuol conoscermi tre quattro sette sei uno otto due zerozero sei.
 (Ho 37 anni di bari, chi vuol conoscermi 3476182006.)
 ‘I am 37 years old from Bari. Whoever wants to know me: 3476182006.’

This strategy can greatly extend a message. The SMS in example (11) is fully 34 characters longer than its standard Italian counterpart.

The fourth type, *insertions of spaces within words*, can also add considerable length to a message. One of the strategies implemented by Italian users was the playful use of the space bar in order to create special effects, as in the following example:

- (12) P u o i m e t t e r e a u d i o s l a v e g r a z i e m
 (Puoi mettere audio slave. Grazie, m)
 ‘Could you play “Audioslave.” Thanks, m’

Italian iTV SMS writers sometimes used the space bar heavily, as in (12), where the strategy nearly doubles the length of the message. At other times, words are selectively highlighted by the insertion of extra spaces. In example (13), only the name of the place where Francesco is from is highlighted:

- (13) Ho bisogno di coccole c’e qualcuna interessata ?francesco da o l b i a
 (Ho bisogno di coccole, c’e qualcuna interessata? Francesco da Olbia)
 ‘I need some hugs, is there any girl who is interested? Francesco from o l b i a’

The fifth type is *inserting an apostrophe after a vowel*, instead of typing a stressed vowel (à, ò, è, é, ù, ì). Italian stressed vowels have to be searched for among the special characters on a mobile phone. In order to avoid this effort, SMS writers sometimes place an apostrophe after the vowel, which has the result of increasing the length of the message by one character:

- (14) Simone di lecce non ti dimentichero’ mai. Francesca
 (Simone di Lecce non ti dimenticherò mai. Francesca)
 ‘Simone from Lecce, I will never forget you. Francesca’

A final type is the *insertion of Zz Zz* at the beginning and end of a text message. This was used by one person to differentiate his SMS from others:

- (15) Zz Hola pantera sono io massimo mandami un tuo pensiero....fatti sentire, ti voglio bene. mi manchi Zz
 (Hola pantera, sono io, Massimo, mandami un tuo pensiero. Fatti sentire, ti voglio bene. Mi manchi.)
 ‘Hello panther, it is Massimo. Send me your thoughts. Let me hear from you, I love you. I miss you.’

After the coding categories were established as described above, each message was manually coded for the features it contained. In this part of the analytical procedure, the unit of analysis was the message; that is, we calculated the occurrence of each type of shortening and insertion per message. For both parts of the analysis, unless otherwise indicated, the numbers of all the instances in each category were calculated and normalized in relation to the overall number of messages from each gender when results from the entire sample are reported, and presented as raw numbers when results from the gender-balanced sub-sample are reported.

5. Results

5.1 SMS frequency and length

As noted in section 4.2, women posted more iTV SMS to the *Allmusic* program than men did, at a ratio of 1.6 to 1. This possibly reflects the fact that our data are from two weekdays, and women may have made up a larger portion of the audience at those times. Women's SMS were also slightly longer, at 16.6 words and 74.2 characters, on average, than were the male SMS, which averaged 15.6 words and 70.1 characters. Moreover, a gender difference is evident in the distribution of messages of different lengths: Women posted more longer SMS. In particular, they posted significantly more SMS that contained the maximum number of 160 characters than men did, as shown in Figure 2 for the entire (non-normalized) sample.

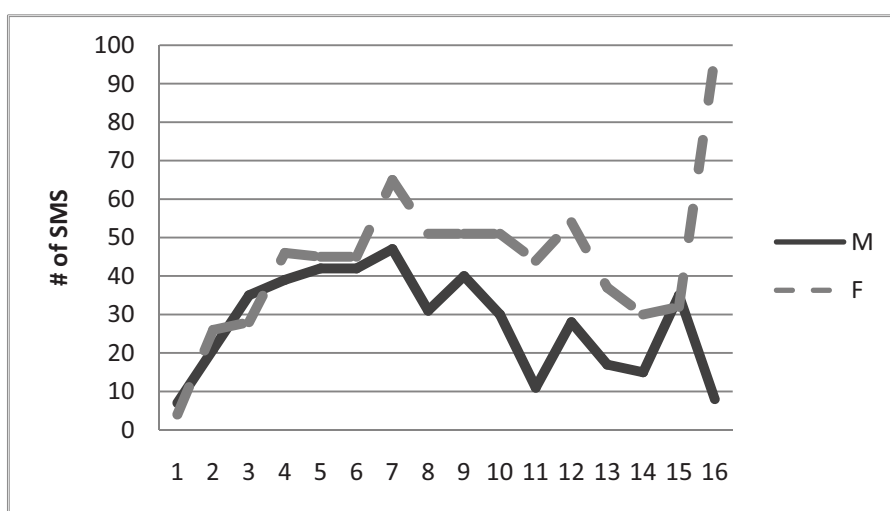


Figure 2. Distribution of message lengths (in tens of characters) by gender

5.2 Actual vs. idealized message length

A comparison between average actual SMS lengths and idealized SMS lengths reveals that if the SMS had been written in standard Italian, they would have been longer, on average; indeed, many would exceed 160 characters. This supports the view that the constraints of the technology lead people to shorten their SMS messages. There is little absolute gender difference between the percentage that messages are reduced overall: Men's actual SMS are 4.2% shorter than they would be if they had been written in standard Italian, and women's actual SMS are 4.4% shorter. This is shown in Figure 3 for the gender-balanced sub-sample.

It is clear that some deletions are taking place, and that deletions are more frequent than insertions. However, this measure indicates nothing about the frequency of insertions. A more complete picture emerges when we consider deletions and insertions separately.

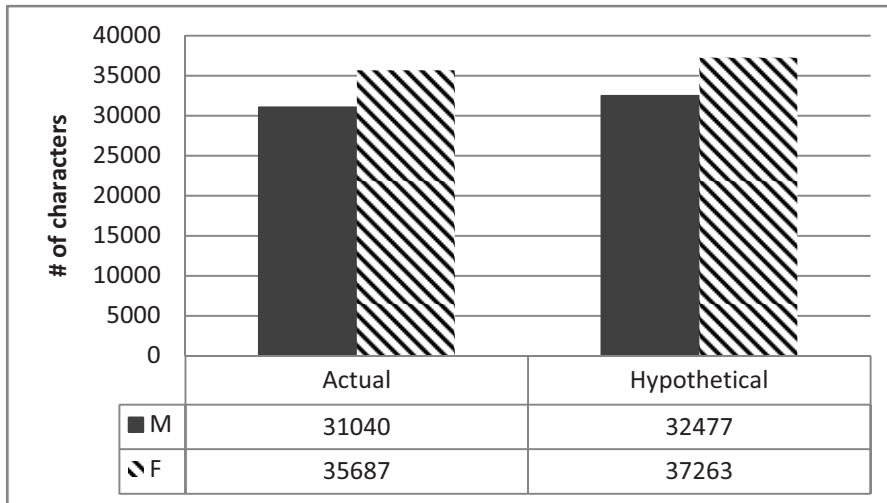


Figure 3. Actual vs. idealized message length by gender

5.3 Proportions of deletions and insertions

Upon initial inspection, it appears that men and women use equal numbers of deletions, but that men use more insertions. This is shown in Figure 4 for the gender-balanced sub-sample. It is for this reason that men's actual SMS appear to be slightly less reduced from the standard written language than women's actual SMS, as noted in the previous section.

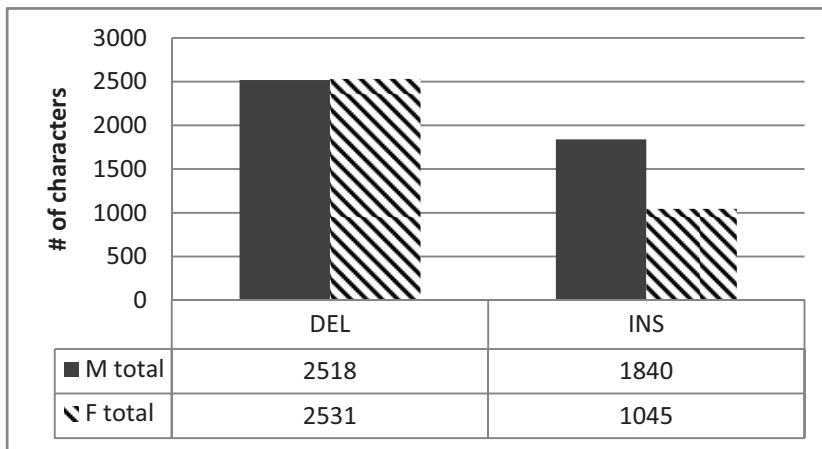


Figure 4. Number of deletions and insertions by gender

Closer inspection, however, reveals that many male insertions are the result of one particular strategy—spelling out numbers—that results in up to 50 additional letters being inserted per message. Males do this more often than females, e.g., in writing out their phone numbers to get around the *Allmusic* channel regulation that prohibits sending phone numbers via iTV

SMS. If the messages that contain spelled-out-numbers are excluded, females have more insertions than males do, and they also have slightly more deletions. The adjusted values are shown in Figure 5 for the gender-balanced sub-sample.

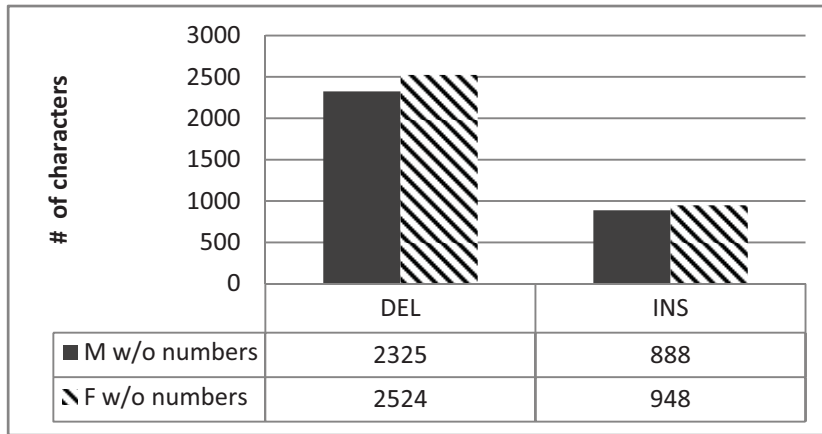


Figure 5. Deletions and insertions by gender, excluding SMS with spelled-out-numbers

5.4 Types of deletions

Figure 6 shows the breakdown of Bieswanger's (2007) shortening types by gender for the full Italian iTV SMS corpus. Contractions were not included, because the Italian language does not have contractions. Except for initialisms, which are rarely used by either gender, females use more of each shortening strategy, especially clipping (omission of letters).

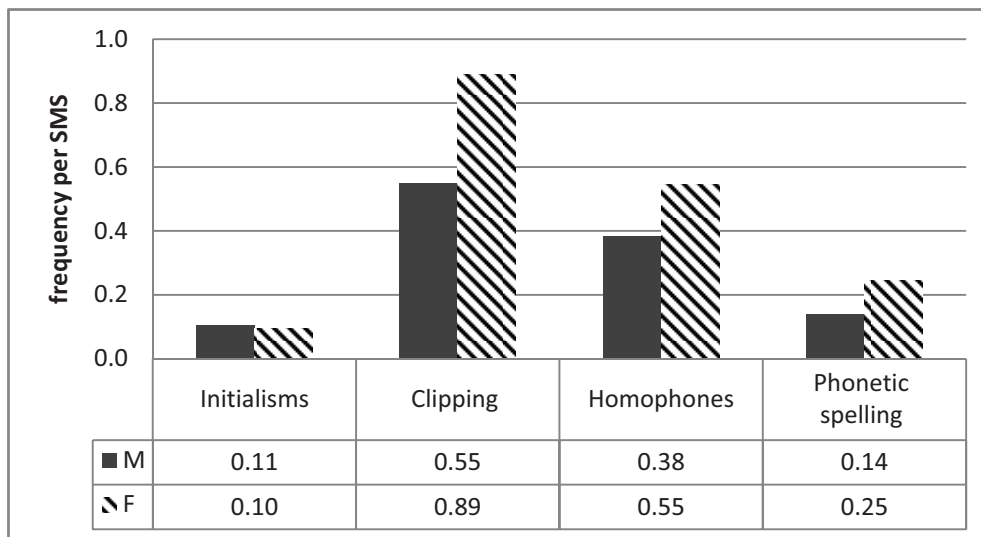


Figure 6. Frequency of Bieswanger's shortening types per SMS

In contrast, males omit punctuation more often, although this strategy is less frequent for both genders (see Figure 7). Omission of spaces is even less common.

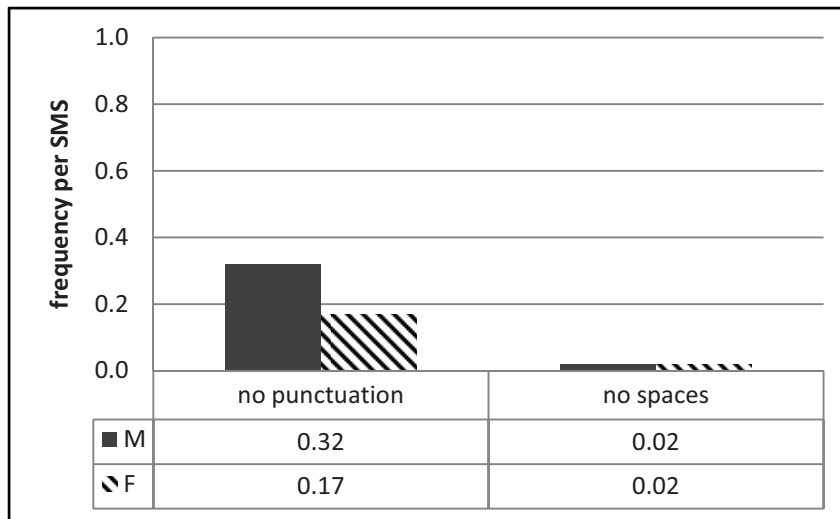


Figure 7. Frequency of other deletion types per SMS

5.5 Types of insertions

The most common types of insertion are repeated punctuation of various types. Of these, repeated dots are most frequent, followed by repeated exclamation points and repeated question marks. The main subtypes of repeated punctuation found in the full iTV SMS corpus are broken down by gender in Figure 8. (Note: The symbols ..., !!!, and ??? in the figure are used to represent any number of repetitions of the symbol greater than 1.) Females used more repeated punctuation, especially exclamation points, than did males, consistent with the finding of Waseleski (2006).

The results for the other types of insertion (with the exception of inserted Zz at the beginning and end of a message, which was used by only one person) are presented in Figure 9. Of these, most common is typing an apostrophe after a vowel to replace a diacritic that would be present in the standard written language. This clearly reflects the constraints of the technological medium, which requires extra effort to type stressed vowels. Females supply the missing “diacritic” more often than do males, and they also insert more extra letters in words. In contrast, males post more messages in which numbers are spelled out, as noted above, and insert slightly more spaces within words.

Overall, therefore, females employed more types of insertion than did males, despite some males inserting large numbers of characters by spelling out their telephone numbers. (In Figure 9, the number of SMS that exhibit this strategy is shown, rather than the number of characters, to give a more representative indication of the use of the strategy.)

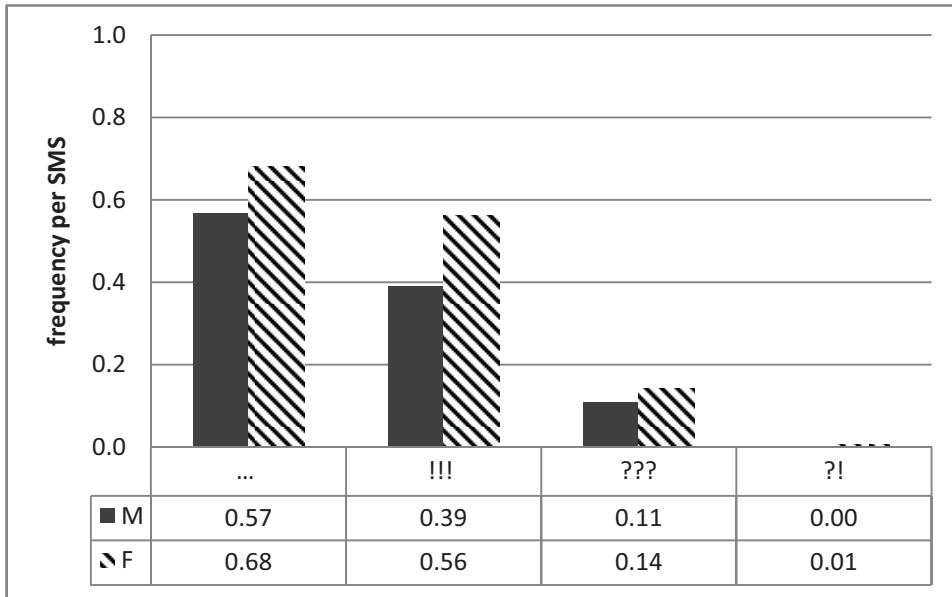


Figure 8. Frequency of repeated punctuation per SMS

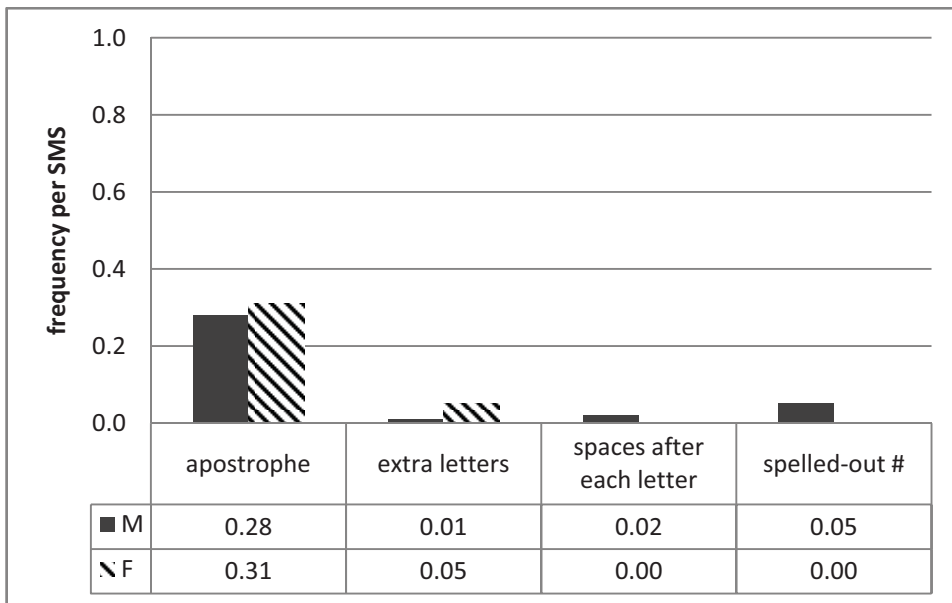


Figure 9. Frequency of other insertion types per SMS

6. Discussion

Our research question asked: Do men and women shorten and/or lengthen iTV SMS differently? The analysis of all SMS posted during two consecutive days to an Italian iTV program revealed gender differences of two main types: 1) Women wrote longer SMS, more of-

ten using all 160 available characters, and 2) the SMS written by women were more non-standard, in that women both abbreviated more and inserted extra characters more often. These findings contradict our first and second hypotheses, and require explanation. As predicted by our third hypothesis, however, abbreviations were more frequent than insertions, and the two strategies were used in roughly similar proportions by both genders.

We expected that men would post more and longer SMS to the iTV program than women, consistent with previous findings that men talk more in public settings (Spender, 1980) and post more and longer public computer-mediated messages (Herring, 1993, 2003; Selfe & Meyer, 1991). However, the opposite was found to be the case, despite the very public nature of the iTV broadcast medium. One possible explanation is that Italian women feel comfortable communicating via SMS, since it is already in widespread use as a private, interpersonal medium in Italy. Their previous associations with SMS may lead them to perceive iTV SMS as communication with a restricted audience. In support of this interpretation, Zelenkauskaitė & Herring (2008a) found that the majority of SMS posted to the *Allmusic* program are directed to individual viewers and contain personal content. The recreational topic of the program, music videos, may also contribute to creating (an impression of) an informal, social context. Moreover, the *Allmusic* program is broadcast in the afternoon, at a time when women presumably make up a significant proportion of TV viewers, in Italy as in other Western nations.

At the same time, some research has found evidence of women in non-English-speaking cultures being more active in public CMC than men (see Panyametheekul & Herring, 2003, for a case study of Thai webchat). The possibility that Italian women's participation in iTV SMS reflects a cultural pattern deserves further study, e.g., by comparing iTV SMS with other modes of CMC. Zelenkauskaitė (2004) found that men participated more than women on public Italian Internet Relay Chat (IRC) channels, however, which is consistent with the pattern for English CMC. This suggests that local and contextual rather than broad cultural factors account for the gender patterns in the present study.

The often-reported finding that women use more standard language variants than men in speech (Chambers, 2003; Fasold, 1990; Labov, 1990) and, to a lesser extent, in CMC (Zelenkauskaitė & Herring, 2006), was also contradicted by this study. Although both genders made considerable use of both abbreviations and insertions, women's iTV SMS deviated more from standard written Italian norms. Women abbreviated more, consistent with their tendency to pack as many characters as possible into a single SMS message. They also inserted more. With the exceptions of spelled-out numbers, which represent a strategy for circumventing filters that block SMS with phone numbers, and apostrophes to replace diacritics, which can be seen as an attempt to approximate the standard written forms of certain vowels, insertions appear to be mostly expressive in function: They express enthusiasm (ex. 9), sadness (ex. 10), emphasis (ex. 13), individuality (ex. 15), etc. Thus the women in this study appear to be both more economical and more expressive, which supports the observation that these two strategies tend to co-occur in CMC (cf. Cho, forthcoming; Herring, 2001).

A number of explanations have been proposed in the sociolinguistics literature for the finding that women tend to use more standard language. Consistent with the idea that women are evaluated on the basis of their appearance and surface behavior (including language use), whereas men tend to be evaluated more on their accomplishments and inner qualities (Lakoff, 1975), women are more likely to have jobs, such as secretarial work, in which standard language skills matter (Chambers, 2003). This explanation is grounded theoretically in the

notion that there is a linguistic marketplace in which speakers' degree of language standardization is symbolic capital that is valued according to their role in society (Bourdieu, 1982; Sankoff & LaBerge, 1978).

We propose that gender roles are relevant in iTV SMS communication, but that economic marketplace forces are not what determine symbolic linguistic capital in the informal, social context of the *Allmusic* program. Rather, valued gender styles are determined relative to an implicit dating market, as evidenced by previous findings (Zelenkauskaitė & Herring, 2008a) that iTV SMS messages posted to the program tend to be personally directed and are often flirtatious or romantic. In this market, men may index their seriousness and respectability as potential husbands and providers via more standard language use. In contrast, women's greater use of non-standard typography may communicate feminine qualities of expressiveness, friendliness, and playfulness (childishness); their longer, more "packed" messages may also indicate talkativeness, another stereotypically feminine quality (Lakoff, 1975). In this sense, the gender patterns evident in Italian iTV SMS messages resemble gender patterns in self-representation observed in personal advertisements, both in print (Koestner & Wheeler, 1988) and in a Lithuanian iTV SMS program devoted to personal ads (Zelenkauskaitė & Herring, 2008b), in which men tend to represent themselves as respectable and financially secure, whereas women describe their (feminine) physical attributes.

The above interpretation suggests that typographic standardness is a form of social capital in text-based CMC, much as phonological and grammatical standardness is in speech. It further suggests that local markets (such as the dating marking proposed here, or the informal social marketplace in recreational CMC more generally) can exist within larger linguistic markets (Bourdieu, 1982), assigning different values to (non)standardness according to the context. Some degree of non-standardness appears to be valued in social iTV SMS overall—and not only for reasons of economy, although technologically imposed length limits make abbreviation likely to occur. Expressive typography and orthography also signal contextually appropriate iTV SMS identities. Indeed, typographic manipulation is one of the most available means through which participants can perform identities for others to see and evaluate in the public marketplace of iTV SMS. Two questions for future research are whether similar amounts and types of nonstandard typography would be used in SMS posted to political debates or news-related iTV programs (cf. Beyer et al., 2007) and whether—and if so, how—gender roles map onto language standardness in these more "serious" contexts.

7. Conclusions

Computer-mediated communication is writing, but it is also interactive—an insight reflected in Ferrera, Brunner, and Whitemore's (1991) early use of the term "interactive written discourse" to refer to CMC. This study found that the resources of written language are employed variably to communicate social meanings in CMC. Despite the public broadcast nature of iTV SMS, the messages posted to the *Allmusic* program are person-directed and interactive in content (Zelenkauskaitė & Herring, 2008a). Accordingly, we found that typography was manipulated to reflect gendered identities and gender roles in this otherwise potentially anonymous medium.

These findings have implications for socially oriented analysis of written language. First, they predict that any unedited interactive writing, such as personal letters, would show socially conditioned variation; this is a hypothesis that could be tested in future research.

Second, and more generally, it follows that if typographic variability is socially conditioned, it can contribute to the study of linguistic variation, as an analog to the study of sociophonetics in CMC. Variationist principles and methods might usefully be adapted for the study of online variation, even when that variation takes novel forms (e.g., emoticons, extra spaces in words, apostrophes substituting for diacritics, message brackets).

The study also advances CMC research. First, it reinforces the previously limited research on typographical gender differences in CMC, thereby helping to extend the study of gender and computer-mediated language to micro-level, as well as discourse-pragmatic, phenomena. Moreover, the findings of gendered variation are consistent with previous research on gender differences in CMC. This is important, because this is the first study to look at gender differences in CMC in a convergent medium, defined as the combination of a traditional medium (such as television, video, photographs, games, newspaper) and interactive text-based messaging. This phenomenon represents an important ongoing trend (Zelenkauskaitė & Herring, 2008a), as illustrated, for example, in comments posted to YouTube videos, reader comments on online news stories, and text chat in online multiplayer games. The fact that iTV SMS language reflects sender gender may indicate that CMC in other convergent media will do so as well. More generally, it suggests that gender tends to persist as a meaningful social category despite technological mediation.

This study did not analyze all possible types of non-standard orthography and typography; nonstandard uses that did not lengthen or shorten, but rather substituted one character for another, were not included, although we observed that such substitutions were relatively infrequent in our corpus. A separate study might usefully be undertaken of non-space-affecting variants such as nonstandard capitalization, substitution of dots for spaces, and replacement of one letter with another that “sounds” the same, such as ‘k’ for ‘c’ in Italian. Moreover, we did not compare “masculine” and “feminine” typography according to addressee (individual vs. group) or sexual orientation, since most of the messages in our corpus were directed to individual viewers, and almost all of the romantic or flirtatious messages were heterosexual, consistent with our proposal that the Italian iTV SMS environment is an implicit (heterosexual) dating market. We might predict that gender differentiation would be more pronounced in personally directed, heterosexual messages than in group-directed or same-sex messages; a larger and/or more diverse sample (including SMS posted, e.g., during evening and late night iTV programs) would enable this hypothesis to be tested.

More generally, we analyzed only one iTV program, at a single point in time, from a single language and culture. More research is clearly needed into iTV SMS in other languages, as the iTV phenomenon continues to grow in popularity and expand around the globe. In particular, we would recommend that such research go beyond simply noting the extent to which SMS text is nonstandard or classifying the types of nonstandard forms that occur, to considering the social functions of typographic variation. For in *short* message service (SMS) texts, perhaps more than in other modes of computer-mediated writing, it seems that “small things matter.”

References

- Anis, J. (2007). Neography: Unconventional spelling in French SMS text messages. In B. Danet & S. C. Herring (Eds.), *The multilingual Internet: Language, culture and communication online* (pp. 87–116). New York: Oxford University Press.
- Argamon, S., Koppel, M., Fine, J., & Shimoni, A. R. (2003). Gender, genre, and writing style in formal written texts. *Text*, 24, 321–346.
- Beyer, Y., Enli, G. S., Maasø, A., & Ytreberg, E. (2007). Small talk makes a big difference: Recent developments in interactive, SMS-based television. *Television & New Media*, 8(3), 213–223.
- Bieswanger, M. (2007). 2 abbrevi8 or not 2 abbrevi8: A contrastive analysis of different space- and time-saving strategies in English and German text messages. *Texas Linguistics Forum*, 50. Retrieved March 18, 2008, from <http://studentorgs.utexas.edu/salsa/proceedings/2006/Bieswanger.pdf>.
- Bourdieu, P. (1982). *Ce que parler veut dire: L'économie des échanges linguistiques*. Paris: Fayard.
- Brody, M. (1993). *Manly writing: Gender, rhetoric, and the rise of composition*. Carbondale: Southern Illinois University Press.
- Brown, A. (2002). *The language and communication of SMS: An exploratory study of young adults' text-messaging*. B.A. thesis, Cardiff University, Wales.
- Cannon, G. (1989). Abbreviations and acronyms in English word-formation. *American Speech*, 64(2), 99–127.
- Chambers, J. (2003). *Sociolinguistic theory: Linguistic variation and its social significance*, 2nd ed. Oxford: Blackwell.
- Cho, T. (forthcoming). Linguistic features of electronic mail in the workplace: A comparison with memoranda. In S. Herring (Ed.), *Computer-mediated conversation*. Cresskill, NJ: Hampton Press.
- Coates, J. (1993). *Women, men and language*. London: Longman.
- Crystal, D. (2001). *Language and the Internet*. Cambridge: Cambridge University Press.
- Danet, B. (2001). *Cyberpl@y: Communicating online*. London: Berg.
- Ellwood-Clayton, B. (2005). Desire and loathing in the Cyber Philippines In R. Harper, L. Palen, & A. Taylor (Eds.), *The inside text: Social, cultural and design perspectives on SMS* (pp. 195–219). London: Springer.
- Fasold, R. (1990). *The sociolinguistics of language*. Oxford: Blackwell.
- Ferrara, K., Brunner, H., & Whittemore, G. (1991). Interactive written discourse as an emergent register. *Written Communication*, 8(1), 8–34.
- Fortunati, L. (2002). Italy: Stereotypes, true and false. In J. E. Katz & M. Aakhus (Eds.), *Perpetual contact: Mobile communication, private talk, public performance* (pp. 42–63). Cambridge: Cambridge University Press.
- Hård af Segerstad, Y. (2002). *Use and adaptation of written language to the conditions of computer-mediated-communication*. Ph.D. dissertation, Gothenburg University, Sweden.
- Hearn, J., Ed. (1992). *Men in the public eye: The construction and deconstruction of public men and public patriarchies*. London: Routledge.
- Herring, S. C. (1993). Gender and democracy in computer-mediated communication. *Electronic Journal of Communication*, 3(2). Retrieved January 20, 2008, from <http://ella.slis.indiana.edu/~herring/ejc.txt>.

- Herring, S. C. (1994). Politeness in computer culture: Why women thank and men flame. *Cultural Performances: Proceedings of the Third Berkeley Women and Language Conference* (pp. 278–294). Berkeley, CA: Berkeley Women and Language Group.
- Herring, S. C. (2001). Computer-mediated discourse. In D. Schiffrin, D. Tannen, & H. Hamilton (Eds.), *The handbook of discourse analysis* (pp. 612–634). Oxford: Blackwell.
- Herring, S. C. (2003). Gender and power in online communication. In J. Holmes & M. Meyerhoff (Eds.), *The handbook of language and gender* (pp. 202–228). Oxford: Blackwell.
- Herring, S. C., & Paolillo, J. C. (2006). Gender and genre variation in weblogs. *Journal of Sociolinguistics*, 10(4), 439–459.
- Janssen, A., & Murachver, T. (2004). The relationship between gender and topic in gender-preferential language use. *Written Communication*, 21(4), 344–367.
- Koestner, R., & Wheeler, L. (1988). Self-presentation in personal advertisements: The influence of implicit notions of attraction and role expectations. *Journal of Social and Personal Relationships*, 5, 149–160.
- Labov, W. (1990). The intersection of sex and social class in the course of linguistic change. *Language Variation and Change*, 2(2), 205–254.
- Lakoff, R. (1975). *Language and woman's place*. New York: Harper & Row.
- Ling, R. (2005). The socio-linguistics of SMS: An analysis of SMS use by a random sample of Norwegians. In R. Ling & P. Pedersen (Eds.), *Mobile communications: Renegotiation of the social sphere* (pp. 335–349). London: Springer.
- Panyametheekul, S., & Herring, S. C. (2003). Gender and turn allocation in a Thai chat room. *Journal of Computer-Mediated Communication*, 9(1). Retrieved March 18, 2008, from http://jcmc.indiana.edu/vol9/issue1/panya_herring.html.
- Pietrini, D. (2001). <<X' 6 :-(?>>: Gli sms e il trionfo dell'informalità e della scrittura ludica. *Italienisch*, 46, 92–101.
- Rössler, P., & Höflich, J. R. (2002, July). *Mobile written communication or email on your cellular phone: Uses of short messaging service SMS by German adolescents: A pilot study*. Paper presented at the 52nd Annual Conference of the International Communication Association, Seoul, Korea.
- Sankoff, D., & Laberge, S. (1978). The linguistic market and the statistical explanation of variability. In D. Sankoff (Ed.), *Linguistic variation: Models and methods* (pp. 239–250). New York: Academic Press.
- Selfe, C., & Meyer, P. (1991). Testing claims for on-line conferences. *Written Communication*, 8(2), 163–192.
- Spender, D. (1980). *Man made language*. London: Routledge & Kegan Paul.
- Thurlow, C. (2003). Generation txt? Exposing the sociolinguistics of young people's text-messaging. *Discourse Analysis Online*, 1(1). Retrieved March 21, 2008, from [http://faculty.washington.edu/thurlow/papers/Thurlow\(2003\)-DAOL.pdf](http://faculty.washington.edu/thurlow/papers/Thurlow(2003)-DAOL.pdf).
- Waseleski, C. (2006). Gender and the use of exclamation points in computer-mediated communication: An analysis of exclamations posted to two electronic discussion lists. *Journal of Computer-Mediated Communication*, 11(4), article 6. Retrieved September 25, 2006, from <http://jcmc.indiana.edu/vol11/issue4/waseleski.html>.
- Witmer, D., & Katzman, S. (1997). On-line smiles: Does gender make a difference in the use of graphic accents? *Journal of Computer-Mediated Communication*, 2(4). Retrieved March 18, 2008, from <http://jcmc.indiana.edu/vol2/issue4/witmer1.html>.

- Yates, S., Mills, S., Lockley, E., & Doherty, K. (2004, July). *Gender, "face" management and mediated interaction*. Paper presented at the 9th International Pragmatics Conference, Riva del Garda, Italy.
- Zarantonello, G. (2002). Nuovi media ed italiano parlato: gli sms. *Comunitàzioni.it*. Retrieved September 24, 2006, from http://www.comunitazione.it/leggi.asp?id_art=87&id_area=9&mac=1.
- Zelenkauskaite, A. (2004). *Lietuviški, itališki ir kroatiški internetinių pokalbių rašyba* [Lithuanian, Italian, and Croatian Written Chat on the Internet]. M.A. thesis, Vilnius University, Vilnius.
- Zelenkauskaite, A., & Herring, S. C. (2006). Gender encoding of typographical elements in Lithuanian and Croatian IRC. In F. Sudweeks & C. Ess (Eds.), *Proceedings of Cultural Attitudes Towards Technology and Culture 2006 (CATaC'06)*. Murdoch, Australia: Murdoch University Press.
- Zelenkauskaite, A., & Herring, S. C. (2008a). Television-mediated conversation: Coherence in Italian iTV SMS chat. *Proceedings of the Forty-First Hawai'i International Conference on System Sciences (HICSS-41)*. Los Alamitos, CA: IEEE Press.
- Zelenkauskaite, A., & Herring, S. C. (2008b). Gender differences in personal advertisements in Lithuanian iTV SMS. In: F. Sudweeks, H. Hrachovec, & C. Ess (Eds.), *Cultural attitudes toward technology and communication 2008 (CATaC'08)*. Murdoch, Australia: Murdoch University Press.