LITERACY PRACTICES IN COMPUTER-MEDIATED COMMUNICATION IN HONG KONG

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Abstract

This paper examines linguistic features of text-based computer-mediated communication (CMC) in Hong Kong. The study is based on a 70,000-word corpus of electronic mail (email) and ICQ instant messaging texts, which was mainly collected from a group of youngsters in Hong Kong. A questionnaire survey was also carried out to complement the textual findings. Some language-specific features are identified, which include *Cantonese-based shortenings*, common grammatical 'errors' such as *inappropriate verb forms and lexical choice*, *subject omission*, *code-mixing*, and *creative orthographic representations of Cantonese*. In addition, significant differences are found between email and ICQ texts in terms of the distribution of linguistic features. It is shown that these features are employed more frequently in synchronous communication via ICQ. The study suggests that these linguistic features may be seen as new 'literacy practices' i.e. how people use and think about texts in different contexts, within the theoretical framework of New Literacy Studies (NLS). The study further reveals that CMC texts should be analyzed in different CMC systems, as well as in different linguistic and cultural settings. It is concluded that language and literacy researchers and practitioners should recognize the novelty and the linguistic specificity of CMC texts.

1. Introduction[1]

The prevalence of text-based computer-mediated communication (CMC) has enormous impact on the growing amount of research into the distinctive features of the text-based CMC (e.g. Baron 1984, 1998, 2001, Herring 1996, Davis and Brewer 1997, Snyder 1998, Paolillo 1999, Crystal 2001). This paper focuses on the linguistic features in electronic mail (email) and ICQ (I-Seek-You) messaging which are specific to the Hong Kong context. The research seeks to examine the underlying relationship between language and literacy in the context of text-based computer-mediated communication (CMC) in Hong Kong.

[1] I am very grateful to my supervisor, Dr. Adams Bodomo, for his advice and support throughout the writing of this paper. I would also like to thank all the data providers and interviewees in this research.

1.1 What is CMC?

Communication which is mediated by the computer and the Internet may be described with a number of terms, including *virtual communication*, *online communication*, *electronic communication*, *cyber communication*, or even *cyber conversation*…etc.. All these are technically referred to as Computer-Mediated Communication (CMC), which can simply be defined as a domain of information exchange via the computer (Baron 1998). To be more precise, this domain includes all those electronic messaging tools and systems, which can be divided into two major categories: asynchronous (delay) communication tools and synchronous (real-time) CMC. Typical examples of asynchronous CMC are electronic mail systems, bulletin board system (BBS), newsgroups, and mailing lists. Synchronous CMC tools include instant messaging systems like ICQ (I-Seek-You), Yahoo Messenger, MSN Messenger, or chatroom systems such as Internet Relay Chat (IRC). Apart from the aspect of synchronicity, CMC systems can also be characterized in terms of to structures of interaction: one-to-one interaction, one-to-many interaction, and many-to-many interaction (also called group interaction) (Moran and Hawisher 1998). For instance, a mailing list like the *Linguist List*[2] would be an example of one-to-many CMC system, where a message is often sent to an unknown group of recipients.

December (1996) attempts to provide a more comprehensive definition of CMC as follows:

> Internet-based, computer-mediated communication involves information exchange that takes place on the global, cooperative collection of networks using the TCP/IP protocol suite and the client-server model for data communication. Messages may undergo a range of time and distribution manipulations and encode a variety of media types. The resulting information content exchanged can involve a wide range of symbols people use for communication.

This paper is more concerned with the last bit of December's definition i.e. the 'wide range of symbols people use for communication' in 'the resulting information content exchanged' in CMC. To be more specific, CMC, in this study, is defined in linguistic terms. In this paper, CMC refers to textual communication via the Internet between at least two 'participants'. Communication as such often involves the uses of human language and (or) combinations of other symbolic systems (e.g. the use of smileys, numbers...etc.) in the texts.

1.2 Why email and ICQ in Hong Kong?

The core data set for this research is drawn from two major categories of CMC, namely asynchronous CMC and synchronous CMC, in which texts of email and ICQ messages are investigated.

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[2] URL: http://www.linguistlist.org

Email is considered a universal means of electronic communication. It is widely used in many social domains and hence can be representative of asynchronous CMC for this research. Email also makes multiple forms of interaction possible, which distinguishes it from other asynchronous CMC systems like Bulletin Board Systems (BBS) or newsgroups.

In Hong Kong, the prevalence of instant messaging (IM), such as ICQ, has lowered the levels of email being exchanged (NetValue 2001a). ICQ is different from other chat systems like Internet Relay Chat (IRC) in several ways. IRC is a public chat programme i.e. any user can join any chatroom without the consent of other participants in the chat. ICQ, on the other hand, is not 'open' to an unknown public since an ICQ user often has the right of compiling his/her own contact list and choose who he or she would like to communicate with.

The characteristics of email and ICQ presented above may account for why these two types of CMC are chosen for this research. Previous studies mostly consider CMC language as a 'general' phenomenon without much cultural considerations. Hence, this research examines CMC language from the perspective of Hong Kong, where Cantonese is predominantly spoken, and explores how language is used in electronic communication in this particular cultural and linguistic context.

1.3 Formal Features of email and ICQ

Before discussing specific features in the data, it is worth introducing, in general terms, some formal features of email and ICQ.

The first electronic mail or 'network mail' was sent in 1972 in the United States (Hafner and Lyon 1996). An Email system allows a mail sender to send messages directly to the specific recipient(s). Over the years, email has become a major communication technology in business sectors as well as in academia. A typical email message consists of the following items (Crystal 2001):

- *Header*, which includes information like names and email addresses of sender and primary recipient(s), subject of the message, time and date when the message is sent. A header may also contain email addresses of people who are supposed to receive a copy of the message (by adding addresses next to *Cc:*, 'carbon copy', or *Bcc:*, 'blind carbon copy', with which a message can be sent without the knowledge of the primary recipient(s)).
- *Body of message*, which is the main text of the communication. The body of a message can be a new message, a forwarded message, a copy or a quotation of previous correspondence(s). Openings and Closures of a message are usually included.

- *Signature*, an optional feature of email which usually contains the sender's name and contact information.

With email, one can send messages an individual or a group, forward a received message to another person, or send and share files with people in all parts of the world. Email is considered to be asynchronous CMC because instant replies and recipients' presence are neither necessary nor expected.

ICQ, on the other hand, is a private chat programme that was established in July 1996 by Mirabilis Ltd. (now ICQ Inc.). The first version of ICQ was created in November 1996. Up to October 2001, there were over one billion subscribers of ICQ worldwide (though, some users might have more than one ICQ account) (ICQ.com 1998-2001). With ICQ, users can chat, send messages, exchange files, share website addresses…etc.. Unlike some 'open' chat programmes, such as IRC, where people can join in a chatroom freely without any authorization, ICQ, on the other hand, is a private chat system. A registered ICQ user has the right to choose who they would like to communicate with. Even though users can search for their chat partners with help from the system, in many cases, authorization should be sought before one can actually communicate with somebody. Every user has his/her contact list that stores information of his/her chat partners. The contact list will appear in the form of a pop-up menu (*Figure 1*) once the user has logged on to the programme.

Figure 1 An ICQ contact list (ICQ.com)

Figure 2 A message dialogue box of ICQ

There is basically no formal format of an ICQ message. In a normal one-to-one interaction, the sender first selects a person from his/her contact list. A message dialogue box pops up (*Figure 2*). To send a message, the sender types a message (usually one to two lines) into the

dialogue box and clicks the 'send' button. With ICQ, message exchanges take place in real-time. Therefore, both the sender and the recipient must be connected to the Internet at the same time in order to make instant messaging (IM) effective. ICQ messages may also be transmitted with the IRC-like 'chat' function which allows users to view the text in a character-by-character manner as it is typed.

General features of email and ICQ communication are compared and summarized in the following table:

Table 1 General features of Email and ICQ

	Email	ICQ
Synchronicity	Asynchronous (delayed replies)	Synchronous (real-time, instant replies expected)
Length limit	No restriction	No more than 450 characters
Structure of message	In paragraphs, close to a handwritten letter	One-liners, normally no more than ten words
Structure of interactions	One-to-one, One-to-many	One-to-one, One-to-many, Many-to-many (i.e. group interaction)
Presence of participants	Only sender's presence is required	BOTH sender and recipient's presence is required
Social context	Official, academic, administrative, educational…etc	Interpersonal chat
Formality	Formal and Informal	Informal
Content	Information exchange with specific subject	Free chat without any subject matter
Major Users	ALL	YOUTH (aged 15-30)

1.4 Organization of Paper

Having presented the background concepts in section 1, section 2 goes on to describe the methods of data collection and analysis for this research. Section 3 discusses specific textual features in the data collected. Section 4 attempts to discuss the formal difference between the two major CMC systems according to the features identified in section 4 and proposes that textual features of CMC must be studied in terms of different systems. Section 5 concludes the paper by arguing that CMC textual features can be regarded as 'literacy practices' within the theory of the New Literacy Studies (NLS).

2. Methodology

2.1 The Subjects

Data were collected from 72 bilinguals[3] in Hong Kong, who were mainly secondary school and university students. Demographic data and background information of the sample are summarized in the following:

[3] The notion of 'bilingual' still remains a controversy in the Hong Kong context. In this study, 'Hong Kong bilingual' is defined as someone whose mother tongue is Cantonese, with English as a second language.

Age:

13-18	16
19-25	56

Gender:

Female	53
Male	19

Education Background:

Secondary school student or leaver	20
Undergraduate student	43
University graduate	5
Postgraduate student	4

As can be seen above, the population of the subjects for this research is rather young. In fact, attempts were made to include people who are older than this age range. However, it seems that the present age groups can be considered as the 'core' groups of people who are the most likely to perform online communication. According to NetValue (2001b), the age group 15-24 accounts for the highest percentage of Internet users in Hong Kong (41.8%), followed by the group of 25-34 (26.7%). This certainly indicates that the youth constitutes the majority of Internet users in Hong Kong.

2.2 Textual Data

The aim of analyzing textual data is to observe textual features of CMC. In the course of textual data collection, the following criteria had to be satisfied:

(i) Each sample message should be one-to-one exchange i.e. only two participants are involved;
(ii) Each message should be written in Chinese/Cantonese, English, or mixture of both;
(iii) Authors of the messages should be native Cantonese speakers, with English as their second language;
(iv) Permissions were sought from data providers (at the end of the questionnaire survey, respondents were asked whether they would agree to make their CMC messages available for this research).

Email messages were primarily collected via email attachments. As for ICQ messages, data providers had to process their personal message 'history' by saving it as a text or document file. An instruction sheet was attached to the questionnaire for those who agreed to provide

data. Background information of the messages collected is summarized in *Table 2* [4]:

Table 2 Length of textual data collected[5]

	Email	***ICQ***
No. of lines	2685	6181
Total no. of words	20922	45274
No. of alphanumeric / non-Asian words [6]	16144	40307
No. of Chinese/Asian characters	4778	4976
No. of characters with spacing	90676	187197
No. of characters without spacing	75314	329563
No. of paragraphs[7]	2011	6017

CMC textual data collection often involves private correspondences. In order to protect privacy and confidentiality, identifying features such as names of participants are changed when examples are quoted in this paper.

2.3 Questionnaire Survey

The purpose of designing a questionnaire survey was to investigate the general attitudes to CMC. A total of 97 copies of the questionnaire were distributed and 72 copies were collected. The main questionnaire consists of 18 questions. The survey was administered through face-to-face interviews, telephone interviews, and respondents self-completed questionnaire in the absence of the investigator[8]. The questionnaire was originally written in English only in the pilot survey. In a main survey, it was then rewritten with Chinese translation in order to minimize the possibility of misinterpretations.

2.4 Analysis

This study mainly identifies linguistic features of CMC texts. It begins by identifying general features of the texts collected. While some of the features correspond to existing studies, this

[4] The statistical analysis was generated by the Word Count tool in Microsoft Word.

[5] Apart from the main text of the messages, headers (lines that contain information such as dates and time, subject, sender's and recipient's information, etc.), were also counted.

[6] Alphanumeric or non-Asian words include alphabetic characters and numbers. Alphabetic writing of Cantonese expressions also count as part of this category. Boundaries of a 'word' here are determined by spaces.

[7] A paragraph refers to where a user presses the 'enter' key.

[8] This involved a group of 13 secondary school students. They completed the questionnaire under the supervision of their teacher, who is also part of the sample whom the investigator had interviewed before distributing the questionnaires to her students.

study goes on to observe distinctive features which are potentially specific to the Hong Kong context. According to the native intuition of the author and by comparing features which are found in this corpus with those which have been discussed in existing works, this paper seeks to figure out the cultural and linguistic specificities of CMC features which have not been much dealt with in previous studies. However, due to limitation in space, only those cultural specific features are reported in details in this paper.

Some helpful techniques were applied for analyzing the data in this research. Textual data were compiled and word-processed with MS Word and saved as two document files (one for email data and the other one for ICQ data). Lines were numbered. Length of sample data, in terms of number of characters, words, lines, and paragraphs, were calculated and generated by the Word Count tool in MS Word. Answers to the questionnaire survey were tabulated, percentages calculated, and the results analyzed to establish trends in the form of charts and graphs. Draft notes of interviews were typed and summarized according to different topics.

3. Linguistic Features of CMC texts in Hong Kong

3.1 Shortenings

One of the most remarkable features in CMC is the creative forms of shortening[9] and abbreviation (Crystal 2001, Jansen 1995-2002[10]). Acronomy has been one of the most common ways of word formation. Traditionally, acronyms and abbreviations are found in shortened versions of long compound words that describe technical jargons (e.g. *URL* for 'Uniform Resource Locator'). Short forms for sentences or frequently used expressions are not very common until acronymy has come into the world of CMC (though some can be found in note-taking [e.g. *FYI*, 'For Your Information']). This subsection investigates CMC shortenings in the Hong Kong context.

To investigate Hong Kong CMC users' usual practice of CMC shortenings, respondents were asked to give five examples of commonly used shortenings in CMC messages. The results are summarized in *Table 3*:

[9] There are many terms available to refer to email shorthand, e.g. 'Netcronyms', 'Net Acronyms', 'Email Abbreviations'…etc. In this research, a more general term 'CMC shortenings' is used to capture all those shortened expressions used in online communication.

[10] A list of 'chat acronyms' is provided in Jansen 1995 -2002, URL: http://www.netlingo.com.

Table 3 Examples of CMC shortenings provided by the respondents

Shortening	***Target expression***	***N***	***Shortening***	***target expression***	***N***
BTW	by the way	19	**99**	nighty night	1
U / u	You	19	**ar**	are	1
asap	as soon as possible	13	**bi bi**	bye bye	1
Bb / BB	bye bye	12	**BTY**	by the way	1
CU	see you	12	**COZ**	because	1
TMR	tomorrow	9	**cya**	see you	1
Ic	I see	8	**Fd**	friend	1
B4 / B4	Before	6	**GF**	girlfriend	1
TTYL / ttyl	talk to you later	5	**n**	and	1
Y? / Y	Why?	4	**N E WAY**	anyway	1
88	bye bye	3	**Nite**	good night	1
BRB	be right back	3	**plz**	please	1
Coz	because	3	**sth**	something	1
GTG	gotta go	3	**thx / Thx**	thanks	1
LOL / lol	laughing out loud	3	**TM**	tomorrow	1
Oic	oh I see	3	**tml**	tomorrow	1
Ppl	people	3	**TMW**	tomorrow	1
R	are	3	**ToD**	today	1
ur	your	3	**tomolo**	tomorrow	1
886	bye bye lor	2	**ttul**	talk to you later	1
BF	boyfriend	2	**cc**	hee hee	1
c	see	2			
cos	because	2			
dunno	don' t know	2			
Halo	hello	2			

BTW ('by the way'), *U* ('you'), *ASAP* ('as soon as possible'), *BB* ('bye-bye'), and *CU* ('see you') were found to be the 5 most commonly used CMC shortenings.

Unlike traditional classification of abbreviations in language, CMC shortenings are no longer restricted to acronyms (e.g. *laser*) and initialisms (e.g. *TV*). While many studies of CMC language are able to discuss acronyms and initialisms, more methods of forming shortened expressions in CMC have been identified (Crystal 2001):

Table 4 New approaches to shortenings

Formation	***Example***
Acronym of sentence	*GTG* ('Got To Go'), *BRB* ('Be Right Back'), LOL ('Laughing Out Loud')
Letter homophone	*U* ('you'), *R* ('are')
Number homophone (or of similar pronunciation)	*88* ('Bye Bye' in English resembles the pronunciation of '8' in Cantonese), *886* ('Bye-Bye-lo [Cantonese sentence final particle]'), *99* ('Nite Nite' ['='good night'])
Combination of letter and number homophone	*b4* ('before')
Reduction of individual word	*tml* ('tomorrow'), *coz/cos* ('because'), *gd nite* ('good night')
Combination of letter initial and letter homophone	*TTUL/TTYL* ('talk to you later'), *OIC* ('oh I see')

It is apparent that many works on CMC shortenings have already assumed that these abbreviations and acronyms are English-based (e.g. Crystal 2001, Shortis 2001). However, the results reported above actually suggest some linguistic and cultural specificities of using CMC shortenings in Hong Kong.

For instance, the *length* of the original expressions is relatively short. As can be seen from the list in *Table 3*, none of the target expressions go beyond 4 words. However, in many English-speaking contexts, a whole complex sentence may be abbreviated (e.g. *AFAIK*, 'As Far As I Know', or even *AWGTHTGTTA*[11], 'Are We Going To Have To Go Through This Again'). This may suggest that native English speakers tend to shorten long sentences in their communication, as only *one language* is available as the major language of communication. Therefore, they tend to shorten more longer and complex sentences. However, in the context of Hong Kong CMC, levels of English proficiency may vary from user to user. This could be one of the reasons why only simple phrases and expressions are shortened (i.e. to make sure that most users can understand what the shortenings stand for).

Another feature of Hong Kong CMC shortenings would be the influence of users' native tongue i.e. Cantonese. Some of these shortenings are created out of the contact with Cantonese. Typical examples are *886*, *88*, *tomolo*:

Table 5 The impact of Cantonese on CMC shortenings

Shortening	***Original Expression***	***Cantonese Influence***
88	Bye bye	The pronunciation of the number '8' in Cantonese is *baat3*, which resembles the pronunciation of 'bye'.
886	Bye Bye 囉	囉(*lo3*): utterance particle in Cantonese which resembles the pronunciation of the number '6' (*lok6)* in Cantonese.
tomolo	tomorrow	The /r/ sound is changed to /l/. This is an attempt to resemble one of the problems faced by many learners of English in Hong Kong – the inability to pronounce /r/ or the free variations between these two alveolar liquids.

In the past, acronyms were mainly used in technical jargons. In CMC, however, employing shortened expressions could present a number of social functions. Shortened expressions in CMC are often the most common ones in everyday talk such as *CU* ('See You'), *TTUL* ('Talk To You Later'). This may indicate that shortenings are no longer confined to technical situations. In electronic communication, these shortenings may be used to indicate familiarity and intimacy between users, so as to facilitate fast typing within a short period of time.

[11] Source: Jansen, E. 1995-2002. *Netlingo: The Internet Dictionary.* URL: http://www.netlingo.com

3.2 Common Grammatical "Errors"

This section reports on findings of CMC textual features which reflect Cantonese native intuition and the so-called common grammatical 'errors' by L2 English learners in Hong Kong.

3.2.1 Verb Form Errors

In the data, wrong association between the auxiliary verb and the form of the main verb are common. This is another clear manifestation of the disregard for formal rules of language in CMC, as shown in the following examples:

Table 6 Examples of errors in verb form

Example *(highlighted items are errors)*	***Target***
*I have write you an email…. but…	*I have written you an email…*
*did he sent you flowers	*did he send you flowers*
*have u talk to 華仔？	*Have you talked to 華仔* [personal name]?
*have u start to take photo?	*Have you started taking photos?*

According to the data collected, this phenomenon exists in both email and ICQ messages but seems to be more frequent in ICQ. Similar to the reasons for *spelling errors*, as presented in the previous section, grammatical errors as the above might be attributed to the level of English proficiency. On the other hand, it could also be a matter of the 'time constraint' again. In a CMC environment, people may not always be able to proofread their messages. Hence, in CMC messages which are composed by second language learners of English, this kind of error is very likely to be found.

3.2.2 Inappropriate Lexical Choice

By inappropriate lexical choice, it is meant the phenomenon in which forms of lexical items are misused due to two major reasons:

(i) different word classes of a lexical item are inappropriately chosen;

(ii) the target word and the misused word are similar in spelling

This feature can be found in both email and ICQ messages. The following examples illustrate how inappropriate word forms are used:

Table 7 Examples of inappropriate word form in CMC texts

Example	***Target word form***	***Possible reason for the error***
* *we success ar…*	'succeed(-ed)'	The author cannot distinguished between the verb form and the noun form.
* oicic..u own me a coat ar.. haha	'owe'	Similar spellings (both words begin with 'ow')

3.2.3 Subject Omission

In the data collected, subjects of sentences or utterances (mainly personal pronouns) are often left out, as shown in *Table 8*:

Table 8 Examples of subject omission in CMC

Example	***Target***
又係講太多o野	(我) 又 係 講 太 多 o野 (pro) again be say INT much thing *'(I)'m talking too much again. Sorry about that.'*
maybe book a band room next week la^^	或者 下 星期 (我) book 間 band 房 啦 perhaps next week (pro) book CL band room PART *'Perhaps (I)will book a band room next week'*
can't remember la	*(I) can't remember* ('la': particle)
Ok...phone u later	*Ok, (I) will phone you later*.

This phenomenon may be attributed to two reasons:

(i) *The syntax of spoken Cantonese*: In natural Cantonese, subjects of sentences are often left out[12]. According to the data collected, CMC users tend to apply this knowledge even when they compose English messages.

(ii) *The nature of one-to-one CMC exchange*: As has been mentioned, the focus of this study is one-to-one CMC. In one-to-one communication, both participants are *identified*. Therefore, with this kind of self-identification, it is likely for CMC users to drop the personal pronouns in the communication.

3.3 Code-mixing

Code-mixing is known to be a common linguistic behavior in Hong Kong (Li 1998, 2000, Wu 2000). However, in the context of CMC, code-mixing is no longer restricted to 'Chinese' and 'English' mixing. A number of codes (which are created by the users themselves) are available for users to express themselves in different situations. This section proposes a classification of 'codes' that are commonly adopted and practiced by CMC users in Hong Kong. 6 forms of 'code' which are identified in the data are summarized as follows:

I. Standard written English
II. 'Attempted' Standard English
III. Standard written Chinese
IV. Character representation of Cantonese
V. Coined Cantonese Romanization
VI. Morpheme-for-Morpheme translation

[12] Syntactically, Cantonese is often technically referred to as a 'pro-drop' language.

Type I *Standard written English* refers to the variety of English that is free from remarkable errors. There is no doubt that what is considered to be SE has been a controversy. It may even be problematic to judge whether a sentence in a CMC message is composed in *standard* language. In this study, *standard* refers to the acceptable norm in education and other formal institutions. This is illustrated in the following extract of an email message:

Excerpt 1

```
>Hi,xxx
>
>I've just finished correcting the English version of your letter.
>
>I am still working on the Chinese one. You know, I don't know much
about Chinese typing. I think I will finish it and send it to you
tonight at around 11:00 PM.
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Another possible method of judgement might have to rely on the 'grammar checker' of word processor. Though it might not be reliable enough to ensure full accuracy, it may, at least, serve as a pointer of what might be considered as 'acceptable'. The above example is composed in a way where no conspicuous mistakes can be spotted. Messages written in this form of language are usually associated with more formal communicative contexts. The above example is an email sent to a colleague of the sender whom he discusses some official issues with.

Type II *'Attempted' Standard English* is similar to *Type I* but constant errors in grammar or lexical choice can be detected, as illustrated in the following excerpts:

Excerpt 2

```
>Dear Dr.Leung,
>    I would like to let u know that I will continue my work on
>Friday morning. I have already transfer (transferred) all the files to
PDF formate (format).[…]
```

Excerpt 3

```
I was a student of Language Information Science. I would like to
apply [for]the MA course of [...]I really want to understand more
before I take that course. Your kindly respond  will be greatly help
me to make the decision. [...]Thank you very much !
```

The idea of 'attempted' needs to be elaborated. Representations as shown in *Excerpt 2* and *Excerpt 3* are regarded as 'Attempted' Standard English because in such messages, it is clear that the senders have the intention to write in standard form of language, but they fail to do so by making some mistakes in grammar or lexical choice (as highlighted in the above examples). It is worth noticing that messages within this category tend to be composed in 'formal' situations. For instan ce, the sender of *Excerpt 2* is a student who reports the progress

of her work to a university professor. *Excerpt 3* is an inquiry concerning a study programme offered by a university.

Type III *Standard written Chinese*, is the kind of *formal* written Chinese that is widely accepted in domains of education, business, and other official settings. The following is an email extract:

Excerpt 4

>由於文字系統不同,因此有些中文文件必須通過電腦的"編碼",然後解碼,
>方能閱讀.你今晚傳來的文件,經將亂碼解釋,全部中文變成簡體字,就能讀出.

Translation: *Due to different character systems, some Chinese documents have to be decoded in order to be able to read them. Those email messages you sent to me tonight have already been decoded. Once all Chinese characters have been converted into simplified characters, you will be able to read them.*

SC is often characterized by the use of traditional Chinese language with character representations. Also, there is no sign of Cantonese dialect items. For example, *有些* (*jau5se1*, 'some') would be 有啲 (*jau5di1*) in Cantonese.

Type IV *Character representation of Cantonese* refers to the form of Cantonese represented in character writing. This type of representation resembles spoken Cantonese to a large extent. The following is an extract taken from the ICQ data:

Excerpt 5		***Translation***
<Andy>	聽日點玩?	*How's tomorrow? ([talking about the format of their upcoming music performance]*
<Billy>	到時好似會有張紙比我地填上台時啲嘢點擺.....	*They will give us a sheet to indicate the setting of our instruments*
<Billy>	聽日我都唔知點算呀.....	*I really don't know what to do tomorrow*
<Andy>	哎呀~~ 咩野黎咖	*oh…what's that?*
<Andy>	我都係~~呢首歌曲全部都係鋼琴	*I'm also worried. Everything in this song is played with piano.*
<Billy>	是但啦	*whatever! I don't care anyway*

The above is a series of ICQ messages between two secondary school students. No English, or alphabetic writing can be found in this sequence. The highlighted items indicate the so-called Cantonese *dialectal words*. Character writing of Cantonese is mostly found in informal interpersonal chats between friends.

Type V *Coined Cantonese Romanization (CC)* refers to the kind of Cantonese romanization system *coined* by Cantonese CMC users. According to the data, *sentence-final particles* in Cantonese are the most likely to be romanized in CMC. This is because most of the character representations of these items are not available in the standard character set. Hence, in order

to process such characters, a supplementary character set called *Hong Kong Supplementary Character Set* (香港增補字符集) has to be installed on to the computer. Some CMC users may not want to put extra efforts to install and process these characters so they would rather 'invent' some spellings to replace character representations. The most commonly 'coined' romanization would be the set of sentence-final particles in Cantonese. The following is a list of the 'romanized' Cantonese particles in the data:

Table 9A list of 'romanized' Cantonese final particles in CMC

Coined Romanized Target Particle		***Example from the data***
ar (aa/a/ah/aar)	啊/呀 (*aa3/4*)	yes ar ... just set up my computer ar ..
ga la	嘎嚩 (*gaa3laa3*)	Later you will have more things to say and more things to DO/MAKE ga la!
ga wor	嘎喎 (*gaa3wo3*)	但是幾 辛苦 ga wo *daan6si6 gei2 san1fu2 gaa3wo3* *but INT tough PART* *'but it is pretty tough'*
ga (gar/ka)	嘎/㗎 (*gaa3/4*)	hahahhahaha!! That's true ga!
ge (geh/gee)	喫/嘅 (*ge2/3*)	oh!!not waiting for me gei!!!!
gwa (kwa)	啩 (*gwaa3*)	u might argue for that gwa
jar (ja)	咋 (*zaa3*)	i don't think so just joking jar
ja(r) wor	咋喎 (*zaa3wo3*)	地鐵學徒 ja wo *MTR trainee* PART *'It's just an MTR trainee'*
la (lah/laa/lar)	啦/嚩 (*laa1/3*)	sleep la.. goodnight..:)
lei (le/nei/ne)	呢 (*ne1*)	i need to prepare a leaflet for a christams party lei...
lor (low/lo/law)	嚕/囉 (*lo1/3*)	sorry again lor
lu/loo	嚕 (*lu3*)	Hahaha...i guess there are good things tim....
mei (me/meah)	咩 (*me1*)	are u very busy now mei????
tim	添 (*tim1*)	wo,quite want u to phone me tim!!!!
wor (woo)	喎/和/喎 (*wo3/4/5*)	She seems not so interested in him wor!!

In general, most of these 'romanized' Cantonese particles are found in the ICQ data. As can be seen, the most common particle in CMC is 'la' 啦 (*laa1*), 嚩 (*laa3*), which occurs frequently in both email and ICQ texts. Not only particles are romanized, some interesting 'spellings' are found in short phrases and even sentences, as shown in the following excerpt:

Excerpt 6

<Raymond> Ken

<Kenny> muc see? (*Target Cantonese expression*: 乜事 [*mat1si6, 'What's up?'*])

The following list (*Table 10*) summarizes all the romanized items which are identified in the data:

Table 10 A list of 'romanized' Cantonese expressions in the data (partial)

'Romanized' expression	*Target Cantonese expression*	*Example from data*
bai lin	拜年 *baai3 nin4* (Relatives visiting, a Chinese custom during Chinese New Year)	we just 'bye lin' and went home! how abt u?
bei sum gei	俾心機 *bei2 sam1 gei1* 'Work hard!' (an encouragement)	then "bei sum gei": la cu next time!
Che	邪 *ce4* 'mysterious'	ng hai ah wa!!gum "che"???
che chai min	車仔麵 *ce1 zai2 min6* (a kind of Hong Kong style noodle)	We've tried a newly-opened "che chai min" shop outside the campus, very delicious ar!
cho hau	粗口 *cou1 hau2* 'swear words'	wah, u " cho hau" gir[l]!
dai wok	大鑊 *daai6 wok6* big wok 'being in deep trouble' (similar to 'Oh, No!')	Dai wok...I just realise that I will be attending a conference at CityU on your BIG day...
dim aaaaaaaa	點呀 *dim2 aa3* 'What's up?'	Dim aaaaaaaaaaaaa? I don't want to be so bad to you laa
ha jong	下莊 *haa6 zong1* 'the next executive committee (of a university society)	And ah sun quarelled with "ha jong" lor, as u know his character ga la
hau long	喉嚨 *hau4_lung4* 'throat'	actually ..my "hau long" very pain ... so ... really really don't want to eat pizza
jump dui	針對 *zam1 deoi3* 'to point directly at (a person)'	i haven't 'jump dui' u ar, just saying the fact jar
kau hey fan	搞氣氛 *gaau2 hei3_fan1* make atmosphere 'to create a pleasant atmosphere'	I think it's good coz it's not the kind of concert style we've expected! Not the very formal kind and always "kau hey fun".
leung	娘 *noeng1* woman 'outdated'	u have to change your info la!very very "leung" lei!
ma fan	麻煩 *maa4 faan4* 'troublesome'	i can use e-mail to contact ja,icq is so ma fan ar coz i have to secretly download and use it
mo liu	無聊 *mou4 liu4* 'feeling bored'	not so early, 10 sept, but in fact, i want early cos' i gain weight and "mo liu" more and more~~hee
ng chi ar	唔知呀 *m4 zi1 aa3* 'I don't know.'	<Doris> wah .. will you win a price le ? <Crystal> ng chi ar.. haha.. give luck to me and my friend la
sheung tai	相睇 *soeng1 tai2* 'match-making'	but I really don't need this kind of activity la!!Somewhat like "sheung tai", outdated la!!
siu yeah	宵夜 *siu1 je2* 'late night snacks'	oh... i just think ask u all to have "siu yeah"
yat yu gum wa	一於咁話 *jat1 jyu1 gam2 waa6* (to promise without hesitation)	<Jenny> ok!!wait u la!! <Mimi> "yat yu gum wa" la!

yau chin to	有前途 *jau5 cin4_tou4* 'prospective'	<HELEN> UST----- mechanical engineering. <Karen> Oh, "yau chin to" ar!!

It is interesting to note that, in the data, most of these coined romanizations are put in quotation marks by the message senders (e.g. We've tried a newly-opened "che chai min" shop outside the campus, very delicious ar!). This may suggest that users are actually aware of the 'non-standardness' of the Cantonese spelling. Moreover, according to the data collected, these coinages occur more frequently in ICQ than in email. This is, hence, another evidence of indicating how practices differ in various communicative contexts.

Type VI. *Morpheme-for-morpheme translation* deals with the direct transliteration of Cantonese elements into English in a syllable-by-syllable manner (or *morpheme for morpheme*). Elements of this kind are not the most common in the data. However, some interesting examples are found such as the example highlighted below:

Excerpt 7

Dear DD,
> Hee hee...dunno why I always like to send u mails ar! Part is
>becoz I wanna keep contact with u la! Another reason is I am having
>"sky and land" lessons today!

The phrase '"sky and land" lessons' is a kind of university jargon which is particularly common among undergraduate students. The target expression in Cantonese is '天地堂' *tin1 dei6 tong4*, *sky-land-lesson*, which metaphorically describes the situation where there is big distance in time between two lectures in the same day (e.g. one lecture at 9:30 am and the next one at 4 pm). These often occur when users want to add some 'colour' to the message. This cannot be achieved by 'pure' Chinese or 'pure' English. Creativity of language is the key issue in this category. Other examples (mainly found in the ICQ data) as such are summarized in the following table:

Table 11 Examples of morpheme-for-morpheme translation in the data

Example expression	***Target***
Add oil	加油 *gaa1jau2* add oil 'Work hard!' (an encouragement)
BIG-HEAD-SHRIMP	大頭蝦 *daai6 tau4 haa1* big head shrimp 'careless and absent-minded'
Black eye circle	黑眼圈 *hak1 ngaan5 hyun1* black eye circle 'darkness around one's eyes due to lack of sleep'
Duck tour	鴨仔團 *aap3 zai2 tyun4* duck little group 'guided tour'

Hand letter	手信 *sau2 seon3* hand letter 'souvenir/gift from somebody who has traveled'
No method	冇辦法 *mou5 baan6_fat3* NEG method 'There is no way out!' (I have no choice!)
Potato	薯 *syu4* potato 'outdated/ unfashionable'
Small air	小器 *siu2 hei3* 'narrow-minded'
Sudden incident	突發事件 *dat6 fat3 si_gin2* sudden happen event 'accident'

It is also very common for CMC users to combine Type V and VI (i.e. romanization and morpheme-for-morpheme translation) to form a sentence in a message, as shown in the following examples:

Table 12 Combination of 'romanized' Cantonese and morpheme-for-morpheme translation

Example	***Target and Interpretation***
Let me see see sin laa	等我睇睇先啦 *dang2 ngo5 tai2 tai2 sin1 laa1* wait 1.SG see see first PART 'Let me think about it first'.
Let me ask ask	等我問問 *dang2 ngo5 man6 man6* wait 1.SG ask ask 'Let me ask'
I try try la	我試試啦 *ngo5 si3 si3 laa1* 1.SG try try PART 'I will try'.
Ok sin tell me la	得先叫我啦 *dak1 sin1 giu3 ngo5 laa1* ready then call 1.SG PART 'Tell me when you are ready'
Eat jo dinner me a	食咗飯未呀 *sik6-zo2 faan6 mei6 aa3* eat-PERF rice yet PART 'Have you had lunch/dinner yet?'

The first three examples also demonstrate the feature of 'reduplication' in spoken Cantonese (e.g. *see see* 睇睇, *try try* 試試…etc.). The above examples also illustrate the fact that Hong Kong CMC users tend to *translate* Cantonese expressions and convert them into some interesting constructions by combining different codes.

The categorization of codes presented above is by no means a static model. New technology is shaping our language to the extent that modification to this model may change along with the dynamism of communication technology.

3.4 Orthographic Representations of Cantonese

Cantonese is the spoken variety of Chinese in Hong Kong. There is, however, no standard practice in representing Cantonese in written form, or, at least, no Cantonese writing is taught in any schools in Hong Kong. In order to communicate effectively, CMC users have created a number of strategies to represent Cantonese in online messaging, which are at the same time intelligible to the recipient. In Hong Kong, people are familiar with character presentations of Chinese. However, in CMC, alphabetic representations are even more common than character representations. This present study has observed a number of 'modified' forms of Cantonese represented in CMC messages, which has become a crucial part of the set of linguistic features in CMC in Hong Kong.

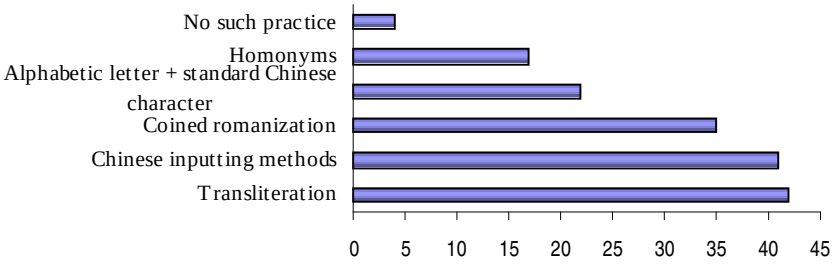
In the questionnaire survey, respondents were given a list of 5 possible 'strategies' of representing Cantonese 'dialectal' words in CMC, which involve alphabetic and character representations:

Table 13 Representations of Cantonese in CMC

Method of Representation	***Example***
Alphabetic (a): Coined Romanization	*wor* to represent 喎 (wo3)
Alphabetic (b): Transliteration	*Add oil* to represent 加 油 (an expression to encourage somebody to work hard) *gaa1 jau2* *add oil*
Character (a): Homonym	*左* (zo2) to represent *咗* (zo2)
Character (b): Supplementary character inputting (i.e. Cantonese characters [highlighted] which can only be processed when the supplementary character set is installed)	你有冇 Stand by me 嘅譜（你地玩開嗰個 version） *Have you got the transcription of Stand By Me (the version you used to play)*
Alphabetic letter + Standard Chinese character	O 個 (the letter 'o' + 個 [go3]) to represent 嗰 (go2)

Respondents were asked which of these methods they normally used in online communication. The results are set out in *Figure 3*:

Figure 3 Cantonese Representations in CMC



The standard means of inputting characters, i.e. using Chinese/Cantonese inputting method, was not the most preferred method of expressing Cantonese in CMC. The most popular method turned out to be an *alphabetic* representation - the use of 'transliteration', (or morpheme-for-morpheme English translation), in which 42 of the 72 respondents reported to have used this method. 35 respondents would like to coin their own spelling of Cantonese. 22 respondents reported that they applied the method of combining alphabetic symbols and Chinese characters to form Cantonese characters. Only 17 of the respondents indicated the use of homonyms for Cantonese representation. 4 of them said they had never composed their messages with Cantonese elements.

The fact that a large number of respondents chose to use 'alphabetic' representations of Cantonese could mean that CMC users are constrained by factors like efficiency of communication, proficiency in Chinese inputting systems…etc. However, at the same time, users are given more room to invent other means and devices for representing Cantonese. The findings have also confirmed the reason why none of the respondents would use only Chinese in CMC

3.5 Native Intuition and Textual Features in CMC texts

As can be seen in the above discussions, many of these features demonstrate linguistic specificities of CMC in Hong Kong. These features may simply be attributed to the subconscious transfer of the native knowledge of CMC users in relaxed and informal communicative situations, no matter the messages are composed in their native language (Cantonese) or second language (English). Such a phenomenon might not be treated as performance error. In many cases, it is the users' native competence which has an impact on their linguistic habits in CMC.

However, that does not mean that native intuition is always applicable to messages which are composed in English. It is noted in the data that these features are rarely identified in messages which are composed in *Standard* form of language. This has to do with the subject matter or the contents of the message. Second language speakers of English may select when they should transfer their tacit knowledge of Chinese to English messages according to different contexts and uses.

4. Distributional Variations of Linguistic Features across CMC Systems

The features which have been introduced above are identified in both the email and the ICQ data. However, significant variations in terms of the frequency of occurrences of these features are noted. In *Table 14*, features of email and ICQ are compared in terms of the

distributional differences of *shortenings*, *subject omission*, *morpheme-for-morpheme translation*, *code-mixing*, and *creative Cantonese romanization* in the two sets of data.

Table 14 Distributional differences between linguistic features in email and ICQ data

Feature	***Total no. of occurrences***	***No. of occurrences in the email data***	***No. of occurrences in the ICQ data***
Shortenings – the letter homophone 'u' ('you')	706	117	589
Subject Omission - first person singular 'I'	835	128	707
Morpheme-for-Morpheme Translation	9	2	7
Code-mixed Messages/ Exchanges[13]	223 messages or exchanges	69 out of 167 messages (41.3%)	154 out of 155 exchanges (99.4%)
Creative Cantonese Romanization – Sentence-Final Particles	1740	309	1431

The above variations, indeed, correspond to two of the general features of email and ICQ systems which were presented in *Table 1 – formality* and *synchronicity*. These features are found to be more frequent in ICQ than in email. Apparently, *formality* and *synchronicity* are the two major factors which determine the frequency of these features in different CMC systems. For instance, the large amount of shortenings in ICQ may be accounted for as follows:

(i) CMC users have less time to type in full forms in a synchronous communicative environment like ICQ.

(ii) ICQ is mainly used for informal chats between friends and hence shortenings could be signs of informality.

Apart from these two factors, cultural and linguistic backgrounds of CMC users may also explain the variations in *Table 14*. In informal, real-time communication, users may like to express themselves in the most communicative and easiest way. Since they are not obliged to use 'pure' English or 'pure' Chinese, they would like to incorporate elements of their native tongue or their everyday linguistic habits into their messages (e.g. code-mixing, Cantonese romanization).

5. Towards a Model of CMC Practices

Features presented above are found to be specific to the CMC environment in Hong Kong (or possibly, to CMC in other Cantonese-speaking contexts). These features do not exist in the

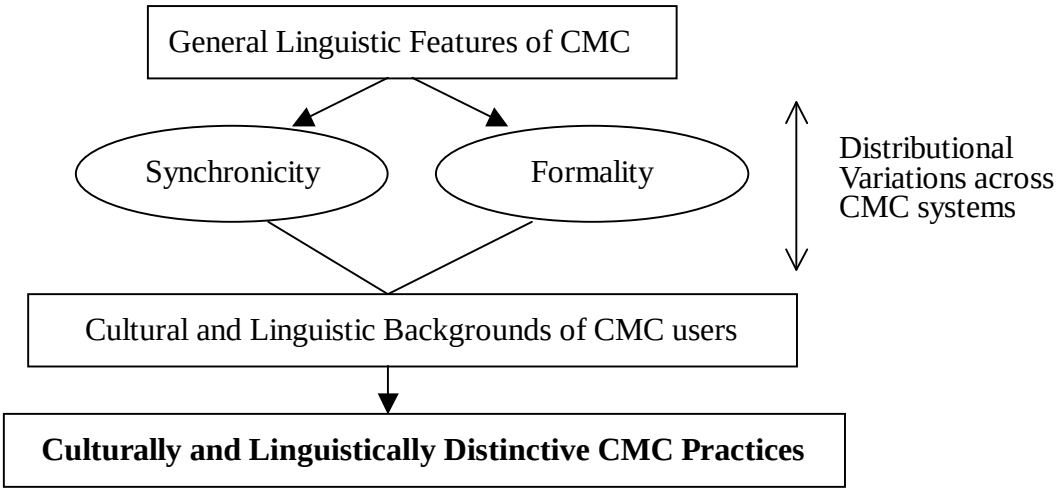
[13] An ICQ 'exchange' in this study refers to a sequence of messages from the opening to the end of an interaction between two participants (e.g. *Excerpt 5* would be treated as one exchange).

same manner in all CMC messages. Distributional variations are found across CMC systems and formality of messages, as presented in section 4.

This paper reveals that although many textual features of CMC might also be found in other cultural contexts, when these features are employed in different contexts, some distinctive cultural ways of employing such features may be observed. Hence, new forms of language which are unique to individual cultural contexts can be generated. This is actually in line with the theory of the New Literacy Studies (NLS), which assumes that literacy practices vary in different social contexts (Street 1984, Barton 1994, 2001, Barton and Hamilton 1998, Gee 1996). In the NLS, language and literacy are investigated in terms of everyday literacy practices of individuals, i.e. different ways of utilizing language. In the context of this study, those cultural-specific features of CMC may be regarded as CMC practices since it is difficult to generalize a fixed set of CMC features for all cultures. In the light of the findings of this study, it is not impossible to assume that these features vary in different CMC systems and different social settings (Lee 2001a, 2001b).

Figure 4 illustrates the process of analyzing CMC texts from a general set of linguistic features to cultural-specific practices. It begins with a set of general features of CMC which might be found in most cultural settings (e.g. shortenings). Further investigation should involve the variations of features in different CMC systems (as presented in section 4). Cultural and linguistic backgrounds of CMC users should then be taken into consideration because it is these properties which generate unique practices of CMC texts in different cultural settings.

Figure 4 A proposed model of CMC practices



6. Conclusions and Educational Implications

This paper has presented a number of new practices in CMC texts in Hong Kong, which include *shortenings*, *verb form error*, *inappropriate lexical choice*, *subject omission*, *code-mixing*, and *creative orthographic representations of Cantonese*. It has proposed that an adequate study of CMC features should take different CMC systems into consideration since this study has found significant distributional variations of CMC features in the two core data sets. The variations are mainly attributed to *synchronicity* and *formality* of the messages. In addition, linguistic and cultural backgrounds of CMC users may also determine what features should be incorporated into the messages. A thorough study of CMC textual features should go beyond the general features of CMC to the cultural-specific features. In so doing, unique practices in different cultural contexts can be identified.

What are the substantial implications of this paper for education or specifically, language education? In recent years, linguistic features generated under the impact of CMC have drawn the public's attention to the negative effect of this new form of language (SCMP 2000, Times [London] 2000, Sunday Times [London] 2001).

This paper suggests that, first of all, educators and practitioners should not deny but *recognize* the novelty of a whole new set of practices associated with CMC, which is generated by rapid technological changes (Bodomo and Lee 2001). As Street (1997:54) notes:

> An emphasis on the 'real' uses of literacy and attention to the contexts of use appears more likely to follow from these tenets than a focus on 'artificial' or formal features of supposed universal literacy. From this perspective the issue of standard English is not so much 'for or against' as recognizing that the justification needs to be presented to students themselves and that they need to be able to discuss alternative varieties of language use and learn when it is appropriate to use them, rather than simply reject them altogether from the classroom.

Street's argument can be extended to describe the issue of the influence of CMC language. The idea of 'appropriateness' is particularly important as far as CMC is co ncerned. Students (or CMC users in general) should be able to differentiate between different contexts of using CMC and use the appropriate forms of language and the associated practices (such as those which have been presented in this paper).

Another possible solution to the problem might be to introduce CMC to the pedagogy. Luke (2000) proposes the idea that while integrating CMC into the language classroom, one should also make use of community resources. It suggests that children can practice their language skills through communicating online with university students. For the sake of quality control, participants in the communication must also recognize the various contexts and linguistic properties associated with CMC (such as those presented in this study) and understand when they should use which variety of language.

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