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Language Choices between Government Sector Colleagues: A Hong Kong Case Study of English Language Adult Learners' Plurilingual Practices in Computer-Mediated Communication

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Abstract

Early studies on practices of Cantonese-English code-mixing focused on university students in Hong Kong and in the late 1970s. These tended to focus on face-to-face interactions (Gibbons, 1979, 1983, 1987), but with the rapid proliferation of computer-mediated communication (CMC) in the past three decades, it has been observed that chat participants switch between English and Cantonese in online chats such as on Signal, WhatsApp, Telegram etc. (e.g., Lee, 2002, 2007a, 2007b). As Cantonese characters and romanized forms of Cantonese words are often mixed into their online discourse where English is the dominant language, attention has gradually shifted to the emergence of this English-Cantonese mixed code. Such phenomenon can also be seen among Chinese Hongkongers in the workplace, especially in instant-messaging (IM) communication. This study examines the linguistic phenomena of Cantonese-English code-switching and code-mixing in an unexplored domain- the government sector. The findings suggest that, in plurilingual contexts like Hong Kong, the development of an English language pedagogy that recognizes the need for the constructive but judicious use of translanguaging and plurilingual practices as English learners are engaged in workplace communication is justified.

Keywords: Code-mixing, code-switching, English language pedagogy, instant-messaging (IM) communication, plurilingual practices, translanguaging

Introduction

Earlier studies on practices of Cantonese-English code-mixing between university students in Hong Kong can be dated back to the late 1970s. These tended to focus on face-to-face interactions (e.g., Gibbons, 1979, 1983, 1987), but with the rapid proliferation of computer-mediated communication[1] (CMC) in the past two decades, it has been observed that chat participants alternate, or switch between English and Cantonese in online chats such as *ICQ*, *MSN Messenger* or *WhatsApp* (e.g., Lee, 2002, 2007a, 2007b). As Cantonese characters and Romanized forms of Cantonese words are often mixed into online discourse where English is the dominant language, attention has gradually shifted to the emergence of such a mixed code[2] – the English-Cantonese mixed code. In addition, such phenomenon can also be seen among Chinese Hongkongers beyond the education sector, especially in instant-messaging[3] (IM) communication. The aim of this study is to examine the linguistic phenomena of Cantonese-English code-switching and code-mixing in an unexplored domain – the government sector.

Despite a variety of research on analyzing Cantonese-English code-switching and code-mixing made in ESL classrooms (Ariffin & Husin, 2011; Tien & Li, 2014), the linguistic phenomena of Cantonese-English code-switching and code-mixing in Hong Kong's government sector, with regard to the differences in educational background of the interlocutors, have not been explored and elucidated. It is therefore instructive to see how the practices of code-switching and code-mixing differ in the government domain of Hong Kong and may be affected by the speaker's educational background. Thus, the present study attempts to observe another facet of the linguistic phenomena – whether practices of code-switching and code-mixing differ according to the civil servants varied educational background. With the proposed theoretical framework, the investigation into the research issue provides a comprehensive guide for understanding the practices of code-switching and code-mixing in Hong Kong. In particular, code-mixing among

[1] Traditionally, computer-mediated communication (CMC) refers to synchronous or asynchronous communication via computer-mediated formats. There are electronic mail systems and bulletin board systems in delay communication (asynchronous) and ICQ, MSN Messenger, WhatsApp and chatrooms in real-time communication (synchronous).

[2] Mixed code per se does not have a unified notion, but it is often discussed as the Hong Kong-style mixed code. Generally speaking, Cantonese interspersed with English elements is referred to as the Cantonese-English mixed code, which is the focus of the present study. Another variety of mixed code is the English-Cantonese mixed code, where English interspersed with Cantonese linguistic elements.

[3] Instant messaging (IM) allows participants to communicate in a nearly synchronous setting; and it is a type of online chat (e.g., mobile apps) that offers asynchronous/synchronous exchanges over the smartphone.

local civil servants who use instant messaging applications for communication in their everyday life.

Earlier studies on the practices of code-switching and code-mixing in text-messaging[4] mode are insufficient as earlier studies (e.g., Friermuth, 2001; Lam, 2004; Tepper, 1997) mainly investigated synchronous online chatting as a distinctive form of communication in the virtual world (Wei, 2014) such as online chat rooms. Given that the 'language of CMC' is relatively similar to the language used in mobile instant messaging (Baron, 2003), the linguistic features identified in CMC was used in the present study, and was further elaborated in the Findings Section-Code choice in WhatsApp chats.

In the following section, the literature on language use in the CMC context was reviewed, focusing on studies which have addressed the most common language choices in (near) synchronous communication among computer users, as well as literature on the extra-linguistic motivations of Cantonese-English code-mixing.

Literature Review

What is Code-Switching?

Code-switching has been examined extensively in the past few decades. The term "code-switching" has been defined in different ways by many scholars (Bell, 1976; Blom & Gumperz, 1972; Hudson, 1980; Wang & Kirkpatrick, 2019). However, it is important to clearly define the term "code-switching" used in this paper. According to Li (1999), code-switching can be defined as "a phenomenon in which Cantonese and English are mixed within sentences (English words are always used as signal word)" (cited in Chan, 2019). In this paper, the above definition suggested by Li (1999) was chosen to be the working definition of code-switching that underlies the analyses which were conducted. I hold the belief that this definition can be used effectively to refer to "intra-sentential code-switching typical of Hong Kong bilinguals' informal language use both in speech and in print" (Li, 2000).

[4] Text-messaging, also called SMS (short message service), was one of the most prevalent forms of communication. It is a service for sending short messages (of up to 160 characters) with mobile devices, which usually charge mobile phone users. Instant-messaging (IM), on the other hand, have now become a new way of communication for smartphone users because most IM apps are free to use, and it is SMS over the internet as opposed to a phone network. However, both text-messaging and instant-messaging are similar in terms of accessibility as these two types of communication are accessed from a portable device (e.g., smartphones) for everyday communication among teenagers and adults.

Language Use in the CMC Context in Hong Kong

Lee (2002, 2007a) claims 'standard written English', 'attempted standard English', 'standard written Chinese', 'character representation of Chinese', 'coined Cantonese Romanization' and 'morpheme-for morpheme translation', which are also referred to as the *Six Forms of Codes*, are the most common language choices among his study participants' emails and online chats such as with MSN Messenger and FB Messenger texts. All his study's participants were either possessed a university qualification when the study was conducted. Conclusions were drawn on the basis of Lee's (ibid) study that both 'standard written English' and 'attempted Standard English' are common linguistic features in the CMC context.

Motivations of Cantonese-English code-mixing in Hong Kong

As noted by Yau (1993), bilingual speakers code-mix differently as their proficiency in their second language can vary. The varied proficiency levels of Cantonese-English bilinguals tend to make consistent errors in grammar or lexical choice in their second language, which functions as the embedded language. In other words, Cantonese-English bilinguals insert syntactic elements of English – the language that Hongkongers usually learn as their second language through education – into their discourse when they speak in their mother-tongue – Cantonese, also known as the matrix language (Chan, 1998). Following Yau's studies, a substantial amount of research has been done on the study of Cantonese-English code-mixing by bilingual speakers in Hong Kong. Chan (*ibid*) applied the *Matrix Language Frame Model* as explained above, to his analysis and has documented the main features of Cantonese-English code-mixing. The major findings of Chan's studies include (Chan, 1998, pp.195-196):

(1) English nouns are inserted into Cantonese sentences
(2) Code-mixed English verb is treated like a Cantonese verb
(3) English adjectives are treated like Cantonese stative verbs
(4) English phrases function as whole units in Cantonese utterances

The Present Study

Certain perceived functions of code-mixing should receive more detailed and in-depth analysis as previous researchers believe that bilingual speakers code-mix because the proficiency level of their second language ('standard written English' and spoken English) is lower than their

native language (‘standard written Chinese’ and spoken Cantonese). As a result, two research questions are formed for the present study:

1. What types of code-mixing could be found in civil servants’ WhatsApp chats?
2. Do the practices of code-switching and code-mixing differ (in the government domain of Hong Kong) according to the speaker’s educational background?

Methodology

In order to examine the code-switching phenomena found among civil servants in the context of Instant Messaging applications, the research was divided into two stages: 1) WhatsApp chat histories were collected to study the practices of code-switching and code-mixing between civil servants and; 2) some participants were invited for follow-up interviews, in which they were asked about their language background, education level, as well as details about their WhatsApp chat episodes and their habitual online practices (see Table 1). A few of the participating subjects’ chat partners were also asked to do follow-up interviews, resulting in a more in-depth analysis on the practices of code-mixing for this study.

Participants

Initially, twenty participants were invited for the research. However, the collected data from two subjects cannot be used for analysis because informed consent was not obtained from their chat partners, and the chat data provided by eight other subjects contained insufficient instances of code-mixing. Hence, the WhatsApp chat database consisted of merely chat histories from ten civil servants (five males and five females) from the Tuen Mun District Leisure Service Office of the Leisure and Cultural Services Department of the Government of the Hong Kong.

To control the confounding factors which would interfere with the findings, the Chinese inputting methods were taken into consideration. As a few participants noted that some of the examples in their WhatsApp chat episodes were inadequate because they had chosen not to code-mix as they experienced much inconvenience when switching from a Chinese inputting method to inputting English characters and vice versa. Consequently, an overall of 16 ‘chat history’ records between a total of 39 chat participants were selected for analysis, forming an approximate of 6,000 word mini-corpus of code-mixed text collated from WhatsApp.

Table 1. Profile of Ten-Participating Subjects in the Study

	Gender	Educational Level	Mother-Tongue	Selected Chinese Character Inputting Method(s) in IM	Percentage of Inputting Languages in IM*
Fred	M	Professional Diploma	Cantonese	手寫輸入法 Handwriting Input	C: 60% E: 40%
Harry	M	Degree	Cantonese	倉頡輸入法 Cangjie Input Method	C: 70% E: 30%
Lawrence	M	Master's Degree	Cantonese	手寫輸入法, 速成輸入法 Handwriting Input and Quick input method	C: 50% E: 50%
Ron	M	Master's Degree	Cantonese	手寫輸入法 Handwriting Input	C: 60% E: 40%
Wilson	M	Degree	Cantonese	手寫輸入法 Handwriting Input	C: 50% E: 50%
Florence	F	Degree	Cantonese	速成輸入法 Quick input method	C: 70% E: 30%
Gabriella	F	Professional Diploma	Cantonese	手寫輸入法 Handwriting Input	C: 60% E: 40%
Karman	F	Master degree	Cantonese	簡易輸入法或手寫輸入法 Simple input method and Handwriting Input	C: 50% E :50%

Maria	F	Degree	Cantonese	手寫輸入法 Handwriting Input	C: 50% E: 50%
Yaven	F	Master's Degree	Cantonese	手寫輸入法 Handwriting Input	C: 50% E: 50%

*This is included to verify that all the subjects are Cantonese-English bilinguals as all of them use both Chinese and English inputting methods in WhatsApp chats.

Corpus-Based Approach and Sequential Approach to Analysis

In order to discuss the general patterns and frequencies of the types of code-mixing, a corpus-based approach is adopted for the study and metalinguistic comments were also gathered in follow-up interviews with the participants, which are supplemented throughout the study for further analysis. In addition, observations on how chat participants use mixed code or switch from one code to another to meet their interactional needs by analyzing with the sequential approach.

Findings

Table 2 shows the details of WhatsApp chat episode made by Lawrence including the date, time, participants involved and verbatim.

Discussion on Lee's Six Forms of Codes

Table 2. Lawrence's WhatsApp Chat Episode

Date and Time	**Participant**	**Verbatim I**
10/01/2019, 08:49	Frank	Coming now
10/01/2019, 08:51	Alice	🤙
10/01/2019, 08:51	Frank	Now go to SH.
10/01/2019, 08:53	Greg	Thanks
10/01/2019, 08:57	Frank	Leave SH going to Tin Hau.
10/01/2019, 09:02	Lawrence	TH到了8個 8 have arrived in Tin Hau.

10/01/2019, 09:03	Frank	欠那2個？Carson or Bong? *[him3 na5 2 go3]* still owe 2 people, Carson or Bong?
10/01/2019, 09:03	Lawrence	Peter
10/01/2019, 09:04	Alice	佢地自己去 *[keui5 dei6 ji6 gei2 heui3]* They will go there themselves.
10/01/2019, 09:05	Alice	會跟車返 *[wui6 gan1 che1 faan1]* (They) will take the return journey by car.
10/01/2019, 09:05	Frank	Ok. He just told you?
10/01/2019, 09:06	Lawrence	told Edwin
10/01/2019, 09:06	Frank	Tks
10/01/2019, 09:06	Frank	Now pass World Trade Centre (*而家過咗世界貿易中心*) *[yi4 gaa1 gwo1 zo2 sai3 gaai3mau6 yi6 zung1 sam1]*
11/01/2019, 08:34	Alice	Fergus I can't join the Tai po festival on coming Sunday
11/01/2019, 08:48	Lawrence	me too. Marathon. Mr. Chiu will come but may need someone to be the ref.
11/01/2019, 09:48	Frank	Understand
11/01/2019, 09:55	Greg	I'll attend
12/01/2019, 07:11	Frank	Attached please find the schedule of the Taipo Festival at King's Park. As mentioned before that 1. U6, U7, U8, U10 are playing in the morning; 2. U9, U11 are playing in the afternoon.

	3. We have submitted 2x U6 teams, all U6 and PG, please join.

From Table 2, it can be observed that participating subjects with adequate proficiency in both Chinese and English may use only either one of the language choices in their utterances. As illustrated in Table 2, Frank produced utterances in the English language without any elements of Cantonese mixed into his utterances (e.g., examples highlighted in light blue). Nonetheless, he chose to code-switch from 'standard written Chinese' – "*欠那2個?* " [him3 na5 2 go3] to spoken English – "*Carson or Bong?*" when he mentioned about his co-workers (example highlighted in dark blue). In the follow-up interview, he explained that the code-switch was made unconsciously. As investigated in Chan's (1998) study, code-mixers do not need to learn code-mixing consciously, as speakers do when learning a second language: "…code-mixing is a kind of spontaneous behavior of bilinguals, and it is doubtful whether a bilingual consciously makes a choice before he or she code-mixes" (p.211).

Furthermore, it is hypothesized that Lee's 'standard written English' and 'attempted Standard English' are the major language choices in the civil servants' WhatsApp chats. According to Lee (2002), however, the occurrence of both of these 'codes' are uncommon language choices in CMC. These two varieties could be found in Frank's speech repertoire when he interacted with his colleagues. While he informed his co-workers about the schedule of the upcoming Tai Po Festival at King's Park, 'standard written English' was used by him such as "*Attached please find…*" and "*As (I) mentioned before…*". Generally, the marked choice takes place in a formal situation because the speaker feels the need to address the matter officially and therefore, he uses 'standard written English' to communicate with his chat participants and by doing so, he is trying to alert the colleagues about the timetable for the various sport teams competing on the day of the festival.

'Attempted Standard English' refers to the phenomenon where a chat participant tries to type an utterance in Standard English, but fails to do so due to the speaker's lack of proficiency in English. "*Now pass World.trade (centre)"* is an example that shows how English is used and constructed into a Cantonese syntactic structure, which can also be understood as a 'morpheme-for-morpheme translation'; it is very likely that Hongkongers who lack English proficiency to

produce English utterances that are generated word by word from Cantonese to English, also known as morpheme-to-morpheme translation.

Discussion on the Types of Cantonese-English Code-Mixing

It is observable how a civil servant code-switches from 'Standard written Chinese' to spoken English without knowing one made the switch automatically, and how some language choices that may not be used between university students are in fact used among civil servants due to their varied language abilities or the purpose of using a code to achieve a certain effect; consequently both 'written Standard English' and 'attempted Standard English' can be found in their WhatsApp chats with English being the matrix language, but in some cases, Cantonese is the matrix language among other chat participants (see Table 3).

Table 3. Fred's WhatsApp Chat Episode

Date and Time	Participant	Verbatim Two
29/10/2019, 19:55	Brooke	昨天黎到FSB由Hall1行到Hall11，淨睇唔問都未睇晒。今日只有半日睇，見到D新嘢，入去問野，1個鐘只睇到 2 /3個booths. 康體世界太大，香港太細了。 *[jok6 tin1 lai4 dou3 FSB yau4 Hall1 hang4 dou3 Hall11，jing6 tai2 m4 man6 dou1 mei6 tai2 saai3。gam1 yat6 ji2 yau5 bun3 yat6 tai2, gin3 dou2 D san1 ye5，yap6 heui3 man6 ye5，1 go3 jung1 ji2 tai2 dou3 2/3 go3 booths. hong1 tai2 sai3 gaai3 taai3 daai6，heung1 gong2 taai3 sai3 liu5。]* Yesterday, (I) went to FSB and went from Hall 1 to Hall 11, but I just walked around the hall without entering any shops. Today I only had a half-day visit.

		I saw some new things in booths so I went inside. I only visited 2/3 booths in an hour. The world of sports is too big, and Hong Kong is too small.
29/10/2019, 19:55	Brooke	D play equipment不知幾好玩 *[bat1 ji1 gei2 hou2 waan2]* There's lot of fun if you play such equipment.
29/10/2019, 19:57	Brooke	現在潮流興玩tramp. 可考慮係新場裝翻個 *[yin6 joi6 chiu4 lau4 hing1 waan2 tramp. ho2 haau2 leui6 hai6 san1 cheung4 jong1 faan1 go3]* Now the trend is to play tramp. Consider installing one in a new outfit.
29/10/2019, 19:59	Brooke	好感慨，以前政府都會用歐洲靚野，自從鬥平，用D土炮，不停要維修 *[hou2 gam2 koi3，yi5 chin4 jing3 fu2 dou1 wui6 yung6 au1 jau1 leng3 ye5，ji6 chung4 dau3 peng4，yung6 D tou2 paau3，bat1 ting4 yiu3 wai4 sau1]* I'm very impressed. The government used to import European made items. Since there is a cut-throat competition, the government started using many locally produced items, and they need to be repaired frequently.
29/10/2019, 20:02	Brooke	Schelde 真係好好，點會斷或跌板 *[jan1 hai6 hou2 hou2，dim2 wui5 tyun5 waak6*

		dit3 baan2] Schelde is really good. It won't break or fall.
29/10/2019, 20:04	Hayden	Oversea training 😁大開眼界 *[daai6 hoi1 ngaan5 gaai3]* Oversea Training can broaden your horizon.
29/10/2019, 20:06	Brooke	報告住咁多，現在去睇pool ｄ 野。然後再去睇fitness equipment. *[bou3 gou3 jyu6 gam3 do1，yin6 joi6 heui3 tai2 pool ｄ ye5。yin4 hau6 joi3 heui3 tai2 fitness equipment]* So this is what I want to report so far. Now, (I) go to the pool to have a look. Then (I will) go to check fitness equipment.
30/10/2019, 08:14	Fred	要俾啲料訓練組，等佢哋安排同事參觀相關展覽以增進知識。 *[yiu3 bei2 di1 liu6 fan3 lin6 jou2，dang2 keui5 dei6 on1 paai4 tung4 si6 chaam1 gun1 seung1 gwaan1 jin2 laam5 yi5 jang1 jeun3 ji3 sik1。]* It is necessary to provide information to the training team and wait for them to arrange colleagues to visit related exhibitions to enhance their knowledge.
30/10/2019, 20:13	Brooke	我知道十幾年前，部門曾經安排過想當年既development 的LSM同事睇依個展覽。唔知係咪，後來development執笠，所以失傳。其實應該SLM/CLM grade既同事要去之外，ASD做新

project既同事更應該去。我去咗一個專起stadium既architect company既booth八卦。香港唔幫襯，聽吓人地講都好。

[ngo5 ji1 dou6 sap6 gei2 nin4 chin4， bou6 mun4 chang4 ging1 on1 paai4 gwo3 seung2 dong1 nin4 gei3 development dik1 LSM tung4 si6 tai2 yi1 go3 jin2 laam5。m4 ji1 hai6 mai6，hau6 loi4 development jap1 lap1， so2 yi5 sat1 chyun4。kei4 sat6 ying1 goi1 SLM/CLM grade gei3 tung4 si6 yiu3 heui3 ji1 ngoi6，ASD jou6 san1 project gei3 tung4 si6 gaang1 ying1 goi1 heui3。ngo5 heui3 jo2 yat1 go3 jyun1 hei2 stadium gei3 architect company gei3 booth baat3 gwa3。heung1 gong2 m4 bong1 chan3， teng1ha5 yan4 dei6 gong2 dou1 hou2。]

I know that more than ten years ago, the Department had arranged an exhibition for LSM developmental colleagues in the past. I was not so sure if such practice was lost because of the closure of the developmental team. In fact, not just SLM/CLM grade colleagues should visit the exhibition, but also those colleagues who are in charge of the new projects in ASD. I'm going to visit a booth in the exhibition hall held by an architectural company, specializing in building stadiums. (We) won’t do business with Hong Kong-based firms, but it's good to listen to their presentations.

30/10/2019, 20:13	Brooke	我仲去咗幾個專做artificial turf既 in-fill 的booths, 問佢d rubber係點？US話驚有毒，開始轉用 organic in-fill，佢地都update咗我—D 資料。可以俾多個角度我地睇依件事。唔用歐洲野，了解吓行情也好？ *[ngo5 jung6 heui3 jo2 gei2 go3 jyun1jou6 artificial turf gei3 in-fill dik1 booths, man6 keui5 d rubber hai6 dim2 ？US wa6 geng1 yau5 duk6， hoi1 chi2 jyun3 yung6 organic in-fill，keui5 dei6 dou1 update jo2 ngo5—Dji1 liu2。ho2 yi5 bei2 do1 go3 gok3 dou6 ngo5 dei6 tai2 yi1 gin6 si6。m4 yung6 au1 jau1 ye5，liu5 gaai2 ha5 hong4 ching4 ya5 hou2 ？]* I have been to a few booths that specialize in both artificial turf and in-fill, and I asked them what to do with rubber? The US-based company was worried about the rubber is poisonous, so it started to switch to organic in-fill, and the company updated me some information about the quality of rubber. So, we can see things from multiple angles. Even though we don't use the European products, it's okay to understand the market trend.
30/10/2019, 20:20	Bowie	攞多啲資料返來給training unit，等佢知道好有用，下次可以派人去學習下。不過……近年機會都係微啲啦！因為部門冇錢。 *[lo2 do1 di1 ji1 liu2 faan1 loi4 kap1 training unit，*

		dang2 keui5 ji1 dou6 hou2 yau5 yung6，ha6 chi3 ho2 yi5 paai3 yan4 heui3 hok6 jaap6 ha6。bat1 gwo3…… gan6 nin4 gei1 wui6 dou1 hai6 mei4 di1 la1！yan1 wai6 bou6 mun4 mou5 chin2。] (Try to) get as much information as possible to the training unit. When the training unit knows it is useful, someone will be sent to explore it next time. But there have been few opportunities in recent years because the department has no surplus.
1/11/2019, 16:21	Hayden	坪石遊樂場 *[ping4 sek6 yau4 lok6 cheung4]* Ping Shek Playground
1/11/2019, 17:13	Bowie	咿，第一次見，好似幾好玩。不過我覺得消防梯挑戰性大啲。多謝分享。👍 *[yi1，dai6 yat1 chi3 gin3，hou2 chi5 gei2 hou2 waan2。bat1 gwo3 ngo5 gok3 dak1 siu1 fong4 tai1 tiu1 jin3 sing3 daai6 di1。do1 je6 fan1 heung2。]* Huh, seeing you for the first time, it seems like a lot of fun. But I think the fire ladder is very challenging. Thanks for sharing.
1/11/2019, 17:31	Brooke	以前我地都有依D slide, 不過後來SE唔敢用，淘汰晒。聽聞最後一條係HKP，早幾年都無埋。

		[yi5 chin4 ngo5 dei6 dou1 yau5 yi1 D slide, bat1 gwo3 hau6 loi4 SE m4 gam2 yung6]，*tou4 taai3 saai3* ◦ *teng1 man4 jeui3 hau6 yat1 tiu4 hai6 HKP*，*jou2 gei2 nin4 dou1 mou4 maai4* ◦*]* We used to have some slides, but then SE didn't dare to use it and eliminated it. I heard that the last one is HKP, and it has not been used for a few years.
1/11/2019, 17:33	Brooke	小朋友真係要挑戰. That's why we are professional. We need to strike the balance of safety and challenge. *[siu2 pang4 yau5 jan1 hai6 yiu3 tiu1 jin3]* Children really have to face challenges. That's why we are professional. We need to strike the balance of safety and challenge.

From the above table, it can be realized that while Fred, one of our participating subjects, communicated in a comparatively 'standard written Chinese' manner, his chat partners tended to code-mix in a greater amount, except Bowie. With Chinese being the matrix language in this chat episode, "*Schelde真係好好，點會斷或跌板*" "Schelde [jan1 hai6 hou2 hou2， dim2 wui5 tyun5 waak6 dit3 baan2]" is an example of an English noun inserted into a Cantonese sentence, as identified as a type of code-mixing in Chan's study (1998). There are many other examples of this particular type of code-mix that can be found in the above example (e.g., "*ASD做新project既同事更應該去*" [ASD jou6 san1 project gei3 tung4 si6 gaang1 ying1 goi1 heui3。], but an English letter can also be seen in Table 3, where 'D' is borrowed to represent a Cantonese plural morpheme, in which些 is the Standard Chinese character equivalent of the borrowed English letter 'D'. For instance, "*以前我地都有依D slide…*" [yi5 chin4 ngo5 dei6 dou1 yau5 yi1 D slide] is a

Cantonese utterance, where 'D' functions as the plural marker for '*slide*'. As a result, 'letters of the English alphabet are borrowed into written Cantonese for their phonetic values' because they are 'homophonous with the Cantonese morpheme' (Bauer, 1988).

Moreover, the participant who has the habit of code-mixing on WhatsApp chats, also made an unpredicted code-switch in Table 3 (example highlighted in dark blue). Through interviewing her, it can be comprehended that she wanted to establish a strong stance, signaling to her colleagues that it is indeed important to continue selecting play equipment that is challenging enough for children to play, but that its safety should be guaranteed as well. Therefore, she chose to code-switch to English in order to show her stance point to her co-workers, regarding the selection of play equipment for public parks in Hong Kong.

The present result is consistent with Sumartono and Tan's (2018) work that deals with the Malay-English Bilinguals' Code-switching Behavior in Singapore, pinpointing that code-switching between bilinguals is treated as means of communication, and not a linguistic incompetence. It is important to note that the occurrence of code-mixing in this particular WhatsApp chat episode is relatively higher when compared to Table 2.

Conclusion

The present study used quantitative data to explore the code-switching linguistic phenomena in an unexplored domain- the government sector. In the present study, key concepts have been developed in studies of language choices among Cantonese-English bilingual speakers, including the classification of varieties in the *Six Forms of Codes* in online chats and the main features of Cantonese-English code-mixing with the support of the *Matrix Language Frame Model*, which are proposed by Yau (1993) and Chan (1998), respectively. From the collected data, 'character representation of Chinese', 'coined Cantonese Romanization' are the only two codes that have not been identified in the civil servants' WhatsApp exchanges. Despite the overwhelming evidence of its occurrence in university students' online chats, this study found that 'attempted Standard English' and 'standard written Chinese' are the most common codes in IM communication in the government domain.

Regarding the first research question, the data suggests that 'attempted Standard English' is the most used variety by participants, who have relatively lower educational background. Participating subjects who have at least obtained a Master's degree would use more 'Standard

written English' codes than those limited English proficiency subjects who tend to have the habit of inputting Chinese. Most of the participating subjects with relatively higher academic attainment, however, would choose to code-mix Cantonese and English from time to time.

There are limitations to the current study, for example, even though confounding extra-linguistic factors such as the inconvenience of converting between Chinese and English inputting methods were controlled, age and gender should also be considered as they are other sociolinguistic variables which may affect the code-mixing patterns of the participating subjects. In addition, further research to explore WhatsApp chats in other domains (e.g., vendors/buyers, doctors/nurses and insurance agents/clients) to gain a better understanding of patterns of Chinese-English code-mixing in other Hong Kong speech community can be made in future.

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Appendix

Glossing Scheme

Some English examples are given in the following two-line glossing:

1. Cantonese Characters (italicized and in parenthesis).
2. Cantonese Romanization (italicized and in square brackets).

Example:

I don't know!
(*我唔知*)
[ngo5 m4 zi1]

In this article, the Cantonese romanizations provided follow the Linguistic Society of Hong Kong (LSHK) Cantonese Romanization Scheme (2004), also known as Jyutping "粵语粵拼".