Classifiers in Singapore Mandarin Chinese:
A Corpus-based Study

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Abstract. While the study of classifiers in Modern Standard Mandarin Chinese has been discussed extensively in the literature, there are also key differences in the classifiers between Singapore Mandarin Chinese and other varieties of Modern Standard Mandarin Chinese, such as Mainland China Mandarin Chinese. Yet, classifiers in Singapore Mandarin Chinese have been minimally explored. With a corpus-based approach, involving both the written and spoken data sampled from Singapore Mandarin Chinese, this study aims to carry out a comprehensive and systematic investigation of the classifiers in Singapore Mandarin Chinese, and thereafter compare the classifiers between the (a) written and spoken data of Singapore Mandarin Chinese, and between (b) Singapore Mandarin Chinese and Mainland China Mandarin Chinese. In addition, this study will also look into the "adjective+classifier" adjectival phrase structure in Singapore Mandarin Chinese. The findings of this study will not only serve as an important reference for future studies of Singapore Mandarin Chinese classifiers, but also contribute to the theoretical discussion on classifiers in general and language variation and change.

Keywords: Singapore Mandarin Chinese, classifier, corpus-based approach, "adjective+classifier" adjectival phrase structure

1   Introduction

Singapore Mandarin Chinese (SMC) is a variety of Modern Standard Mandarin Chinese (henceforth Mandarin Chinese). Thus, SMC is generally similar to other varieties of Mandarin Chinese in terms of phonology, vocabulary and grammar ([1], [2]). However, due to a variety of factors, such as the influence of societal background and language environment ([1], [2]), there are key differences between SMC and other varieties of Mandarin Chinese such as Mainland China Mandarin Chinese (MMC). These differences encompass aspects including the usage of classifiers.

To date, few research studies have been carried out to investigate the differences in terms of grammatical use between SMC and other varieties of Mandarin Chinese – particularly on the usage of classifiers. Furthermore, these studies were either limited

to written data (such as newspapers, literary works, etc.), or based on the judgments of a few researchers. Studies conducted have yet to systematically explore and analyse the classifier system and hence, the classifiers in SMC. The present study is the first systematic study of the classifier system and classifiers in SMC, based on both the written and spoken data obtained from two fairly large corpora of SMC.

2   Methodology

2.1   Data

The data analysed in this study is based on two fairly large corpora, each representing the written and spoken data sampled from SMC.

The written data is obtained from the Chinese Gigaword Corpus Second Edition ([3]). This corpus consists of an archive of newswire text data from Lianhe Zaobao (Singapore), totaling approximately 30 million Chinese characters, collected from year 2000 to 2003. The spoken data of this study is represented by a selection of Singapore variety shows broadcasted in year 2012 to 2015, including "Behind Every Job S3" (2012, Ep. 1-6), "Home Decor Survivor S5" (2013, Ep. 1-5), "Finding 8 Launch 1" (2014, Ep. 1-8) and "Mars vs. Venus" (2015, Ep. 1-6). These variety shows were selected for the following reasons. First, the spoken data is relatively large with approximately 390 thousand Chinese characters. Second, the spoken data contains a total of 19 hours of unscripted and spontaneous conversations, involving demographically diverse speakers of SMC from Singapore. This is important as the relatively naturally-occurring conversations are able to reflect an accurate representation of the structure of the language. The two corpora of SMC mentioned above have been tagged with part-of-speech (POS) to facilitate linguistic analysis.

2.2   Design

The classifier system adopted in this study mainly follows Huang and Shi's [4] taxonomy of Mandarin Chinese classifiers, with references made to previous comprehensive studies by Tai and Wang [5], Tai [6], Huang and Ahrens [7] and Zhang [8]. The categories of classifiers and their corresponding subcategories in the classifier system are illustrated below in Figure 1.

Specifically, a distinction is made between classifiers (otherwise known as "sortal classifiers" by Huang and Shi [4] to differentiate from the broader grammatical category of "classifiers"; henceforth "sortal classifiers") and measure words "in order to better understand the cognitive basis of a classifier system" ([5], [6]). As Tai and Wang [5] and Tai [6] pointed out, the semantic distinction between classifiers and measure words are as follows: "A classifier categorizes a class of nouns by picking out some salient perceptual properties, either physically or functionally based, which are permanently associated with the entities named by the class of nouns; a measure word does not categorize but denotes the quantity of the entity named by a noun." ([5], [6])

This semantic distinction between sortal classifiers and measure words can be further justified on the basis of two syntactic tests, as pointed out by Tai ([5], [6]). First, "a classifier in Mandarin Chinese can be substituted with the general classifier *ge* without changing the meaning of the expression, whereas a measure word cannot." ([6]) Second, "the modifier marker *de* can be added between a measure word and its head noun but not between a classifier and its head noun." ([4], [6], [7])

Based on the semantic and syntactic distinction, sortal classifiers can be classified into three types: individual classifier, event classifier and kind classifier; whereas measure words can be classified into four types: container measure word, standard measure word, proximation measure word and activity measure word. ([4], [7])
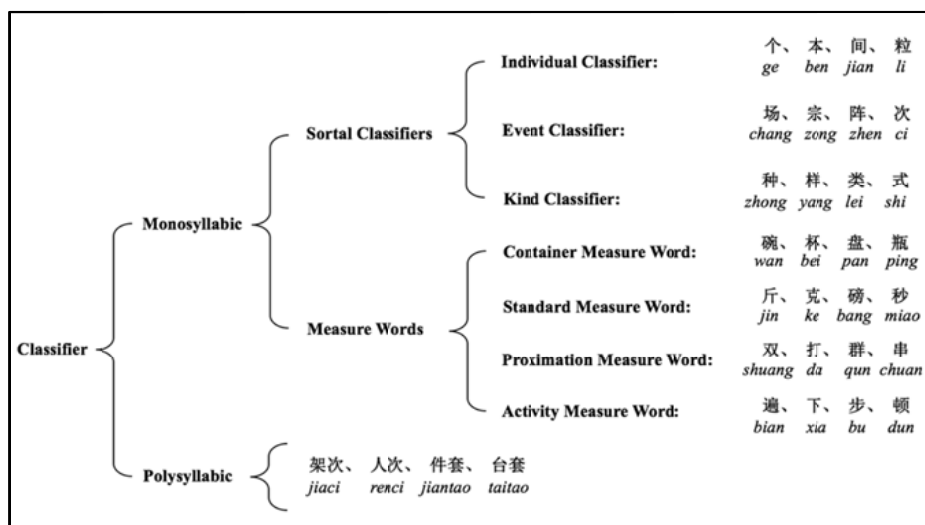

Fig. 1. Classifiers in Singapore Mandarin Chinese

3   Key Findings

3.1   Comparison of classifiers between the written and spoken data of Singapore Mandarin Chinese

Based on data obtained from the two corpora mentioned above, a total of 334 classifiers are divided into their respective categories. Of which, 125 classifiers are shared in common by both the written and spoken data, 199 classifiers only in the written data, and 9 classifiers only in the spoken data. A comparison of the classifiers across the written and spoken data of SMC showed considerable differences in categories of standard measure words and individual classifiers (See Table 1). The classifiers in each of the categories are listed in Table 1.

			Classifiers shared in common by both the written and spoken data	Classifiers in the written data	Classifiers in the spoken data
Mono-syllabic	**Sortal Classifiers**	**Individual Classifier**	支 *zhi*, 本 *ben*, 名 *ming*, 幅 *fu*, 把 *ba*, 部 *bu*, 集 *ji*, 朵 *duo*, 头 *tou*, 段 *duan*, 块 *kuai*, 张 *zhang*, 粒 *li*, 辆 *liang*, 栋 *dong*, 根 *gen*, 艘 *sou*, 副 *fu*, 滴 *di*, 扇 *shan*, 件 *jian*, 所 *suo*, 片 *pian*, 颗 *ke*, 尊 *zun*, 期 *qi*, 堵 *du*, 盏 *zhan*, 座 *zuo*, 位 *wei*, 个个 *gege*, 个 *ge*, 条 *tiao*, 间 *jian*, 面 *mian*, 只 *zhi*, 枚 *mei*, 坨 *tuo*, 棵 *ke*, 首 *shou*, 页 *ye*, 门 *men*, 道 *dao*, 口 *kou*, 家 *jia*, 句 *ju*, 台 *tai*, 轮 *lun*, 份 *fen*, 层 *ceng*	炷 *zhu*, 尾 *wei*, 峰 *feng*, 柱 *zhu*, 出 *chu*, 枝 *zhi*, 进 *jin*, 瓣 *ban*, 卷 *juan*, 档 *dang*, 弯 *wan*, 帧 *zheng*, 具 *ju*, 丸 *wan*, 开 *kai*, 叶 *ye*, 付 *fu*, 株 *zhu*, 曲 *qu*, 匹 *pi*, 册 *ce*, 管 *guan*, 蓬 *peng*, 柄 *bing*, 项 *xiang*, 重 *chong*, 顶 *ding*, 截 *jie*, 款 *kuan*, 封 *feng*, 纸 *zhi*, 通 *tong*, 首首 *shoushou*, 阕 *que*, 则 *ze*, 架 *jia*, 辑 *ji*, 栏 *lan*, 袭 *xi*, 客 *ke*, 眼 *yan*, 篇 *pian*, 员 *yuan*, 幢 *zhuang*, 角 *jiao*, 方 *fang*, 户 *hu*, 处 *chu*, 节 *jie*	片 片 *pianpian*, 边 *bian*, 楼 *lou*, 等份 *dengfen*
		Event Classifier	趟 *tang*, 餐 *can*, 段 *duan*, 班 *ban*, 件 *jian*, 宗 *zong*, 期 *qi*, 阵 *zhen*, 回 *hui*, 顿 *dun*, 门 *men*, 场 *chang*, 起 *qi*, 圈 *quan*, 盘 *pan*, 局 *ju*, 台 *tai*, 步 *bu*, 轮 *lun*, 道 *dao*, 次 *ci*, 波 *bo*	码 *ma*, 档 *dang*, 折 *zhe*, 届 *jie*, 通 *tong*, 桩 *zhuang*, 堂 *tang*, 幕 *mu*	环 *huan*
		Kind Classifier	样 *yang*, 番 *fan*, 种 *zhong*, 式 *shi*, 类 *lei*, 门 *men*, 级 *ji*, 号 *hao*	味 *wei*, 档 *dang*, 种种 *zhongzhong*, 款 *kuan*, 路 *lu*, 介 *jie*, 派 *pai*	NA
	Measure Words	**Container Measure Word**	碗 *wan*, 瓶 *ping*, 杯 *bei*, 桌 *zhuo*, 箱 *xiang*, 盆 *pen*, 包 *bao*, 桶 *tong*, 盘 *pan*	茶匙 *tangchi*, 壶 *hu*, 坛 *tan*, 盒 *he*, 床 *chuang*, 盅 *zhong*, 缸 *gang*, 篮 *lan*, 勺 *shao*, 袋 *dai*, 匙 *chi*, 箩 *luo*, 罐 *guan*, 瓢 *piao*, 筒 *tong*, 池 *chi*, 锅 *guo*, 箩筐 *luokuang*	NA
		Standard Measure Word	公斤 *gongjin*, 小时 *xiaoshi*, 日 *ri*, 分钟 *fenzhong*, 毫米 *haomi*, 平方米 *pingfangmi*, 块 *kuai*, 点 *dian*, 票 *piao*, 分 *fen*, 秒 *miao*, 年 *nian*, 寸 *cun*, 公分 *gongfen*, 秒钟 *miaozhong*, 股 *gu*, 毫分 *haofen*, 尺 *chi*, 级 *ji*, 毫升 *haosheng*, 周 *zhou*, 磅 *bang*, 位 *wei*, 岁 *sui*, 毛 *mao*, 代 *dai*, 元 *yuan*, 米 *mi*, 天 *tian*, 公尺 *gongchi*, 号 *hao*, 度 *du*	微克 *weike*, 公顷 *gongqin*, 立方英尺 *lifanggongchi*, 斤 *jin*, 吨 *dun*, 微米 *weimi*, ℃, 瓦 *wa*, 码 *ma*, 品脱 *pintuo*, 盎司 *angsi*, 公升 *gongsheng*, 斗 *dou*, 克 *ke*, 升 *sheng*, 英里 *yingli*, 卡路里 *kaluli*, 海里 *haili*, 平方公里 *pingfanggongli*, 仞 *ren*, 宿 *su*, 晚 *wan*, %, 圆 *wan*, 更 *geng*, 英尺 *yingchi*, 里 *li*, 厘 *li*, 英寸 *yingcun*, 英亩 *yingmu*, 马克 *make*, 分贝 *fenbei*, 伏特 *fute*, 哩 *li*, 坪 *ping*, 刻钟 *kezhong*, 里拉 *lila*, 厘米 *limi*, 钧 *jun*, 港元 *gangyuan*, 兆赫 *zhaohe*, 月 *yue*, 立方公尺 *lifanggongchi*, 公厘 *gongli*, 公里 *gongli*, 日元 *riyuan*, 美分 *meifen*, 美元 *meiyuan*, 日圆 *riyuan*, 英镑 *bang*, 镑 *bang*, 法郎 *falang*, 旬 *xun*, 载 *zai*, 周年 *zhounian*, 时 *shi*, 钱 *qian*, 卡 *ka*, 千瓦 *qianwa*, 平方公尺 *pingfanggongchi*, 公克 *gongke*, 铢 *zhu*, 瓦特 *wate*, 文 *wen*, 钟 *zhong*, 加仑 *jialun*, 公吨 *gongdun*, 两 *liang*, 便士 *bianshi*, 畦 *qi*, 顷 *qin*, 亩 *mu*, 贯 *guan*, 毫克 *haoke*, 安培 *anpei*, 星期 *xingqi*, 卢比 *lubi*, 角 *jiao*, 折 *zhe*, 方 *fang*, 路 *lu*, 席 *xi*, 棒 *bang*	新币 *xinbi*

		Approximation Measure Word	幅 *fu*, 把 *ba*, 串 *chuan*, 段 *duan*, 点 *dian*, 票 *piao*, 套 *tao*, 行 *hang*, 班 *ban*, 副 *fu*, 片 *pian*, 组 *zu*, 束 *shu*, 股 *gu*, 些 *xie*, 堆 *dui*, 群 *qun*, 对 *dui*, 笔 *bi*, 声 *sheng*, 摊 *tan*, 排 *pai*, 双 *shuang*, 刻 *ke*	抹 *mo*, 腔 *qiang*, 剂 *ji*, 绺 *liu*, 撮 *cuo*, 捆 *kun*, 丛 *cong*, 点儿 *dianer*, 手 *shou*, 批 *pi*, 帮 *bang*, 缕 *lv*, 丝 *si*, 滩 *tan*, 胎 *tai*, 泓 *hong*, 拨 *bo*, 列 *lie*, 伙 *huo*, 帖 *tie*, 线 *xian*, 窝 *wo*, 簇 *cu*, 泡 *pao*, 打 *da*, 袭 *xi*, 叠 *die*, 队 *dui*, 团 *tuan*, 口 *kou*, 付 *fu*, 派 *pai*, 席 *xi*, 幕 *mu*	阵阵 *zhenzhen*, 系列 *xilie*
		Activity Measure Word	遍 *bian*, 趟 *tang*, 把 *ba*, 番 *fan*, 下 xia, 阵 *zhen*, 周 *zhou*, 笔 *bi*, 声 *sheng*, 顿 *dun* , 招 *zhao*, 圈 *quan*, 任 *ren*, 步 *bu*, 回 *hui*, 度 *du*, 次 *ci*	刀 *dao*, 拳 *quan*, 着 *zhao*, 脚 *jiao*, 掌 *zhang*, 遭 *zao*, 记 *ji*, 鞭 *bian*, 通 *tong*, 针 *zhen*, 架 *jia*, 响 *xiang*, 枪 *qiang*, 眼 *yan*, 箭 *jian* , 关 *guan*	步步 *bubu*
Poly-syllabic	NA				

<p style="text-align:center">Table 1. Classifiers in the written and spoken data of Singapore Mandarin Chinese</p>

First, loanwords classified under the category of standard measure words, such as 盎司 *angsi* 'ounce', 便士 *bianshi* 'penny', 伏特 *fute* 'volt', etc. are only adopted in the written data than in the spoken data. Second, units of currency classified under the category of standard measure words, such as 法郎 *falang* 'franc', 英镑 *yingbang* 'pound', 日元 *riyuan* 'yen', etc. are commonly found in the written data as compared to the spoken data, in which only 新币 *xinbi* 'Singapore dollar' has been adopted in the spoken data. In addition, it is also noteworthy to mention that words in different forms with the same meaning are used in the written and spoken data. For instance, 'cents' is expressed as 角 *jiao* in the written data, whereas it is expressed as 毛 *mao* in the spoken data. Third, classifiers denoting a vast variety of shapes classified under the category of individual classifiers, such as 丸 *wan* 'sphere-like', 方 *fang* 'square-like' and 弯 *wan* 'stream-like' shapes, etc. are found in the written data, whereas the spoken data only adopts prototypical classifier, such as 颗 *ke* and 粒 *li*, which denote shapes that are small and round.

3.2 Comparison of classifiers between Singapore Mandarin Chinese and Mainland China Mandarin Chinese

A further comparison of the classifiers across SMC and MMC [9] revealed differences in the category of measure words, particularly in standard measure words (See Table 2). A total of 35 classifiers are found only in SMC, whereas a total of 289 classifiers are found only in MMC. The classifiers in each of the categories are listed in Table 2.

			Classifiers in Singapore Mandarin Chinese	Classifiers in Mainland China Mandarin Chinese
Mono-syllabic	**Sortal Classifiers**	**Individual Classifier**	进 *jin*, 丸 *wan*, 首首 *shoushou*, 客 *ke*	张张 *zhangzhang*, 颗颗 *keke*, 粒粒 *lili*, 滴滴 *didi*, 瓣瓣 *banban*, 盏盏 *zhanzhan*, 条条 *tiaotiao*, 棵棵 *keke*, 根根 *gengen*, 只只 *zhizhi*, 顶顶 *dingding*, 朵朵 *duoduo*, 栋栋 *dongdong*, 篇篇 *pianpian*, 块块 *kuaikuai*, 间间 *jianjian*, 句句 *juju*, 门门 *menmen*, 道道 *daodao*, 方方 *fangfang*, 件件 *jianjian*, 事事 *shishi*, 户户 *huhu*, 层层 *cengceng*, 丝丝 *sisi*, 家家 *jiajia*, 节节 *jiejie*, 处处 *chuchu*, 枝枝 *zhizhi*, 重重 *chongchong*, 锭 *ding*, 樘 *tang*, 塵 *chan*, 廑儿 *jieer*, 兜儿 *douer*, 兜 *dou*, 菀 *dou*, 躯 *qu*, 肩 *jian*, 厢 *xiang*, 铺 *pu*, 轴 *zhou*, 撇 *pie*, 抬 *tai*, 例 *li*, 发 *fa*, 章 *zhang*, 帐 *zhang*, 垛 *duo*, 炬 *ju*, 领 *ling*, 吊 *diao*, 挺 *ting*, 驾 *jia*, 丘 *qiu*, 蓬 *peng*, 版 *ban*, 湾 *wan*, 编 *bian*, 孔 *kong*, 杆 *gan*, 钩 *gou*, 围 *wei*, 份儿 *fener*, 圈儿 *quaner*, 片儿 *pianer*
		Event Classifier	波 *bo*	回回 *huihui*, 道道 *daodao*, 件件 *jianjian*, 顿顿 *dundun*, 场场 *changchang*, 餐餐 *cancan*
		Kind Classifier	式 *shi*, 介 *jie*	样样 *yangyang*, 门门 *menmen*, 款款 *kuankuan*, 品 *pin*, 流 *liu*, 辈 *bei*
	Measure Words	**Container Measure Word**	茶匙 *tangchi*, 匙 *chi*, 箩筐 *luokuang*	斛 *hu*, 杯杯 *beibei*, 簸箕 *boji*, 盂 *yu*, 卡车 *kache*, 塑料袋 *suliaodai*, 盆盆 *penpen*, 盘盘 *panpan*, 麻袋 *madai*, 箪 *dan*, 筐 *kuang*, 篓 *lou*, 脸盆 *lianpen*, 锨 *xian*, 口袋 *koudai*, 锹 *qiao*, 听 *ting*, 碟 *die*, 挑 *tiao*, 车车 *che*, 船 *chuan*, 桶子 *tongzi*, 网 *wang*, 篮子 *lanzi*, 车子 *chezi*, 书架 *shujia*, 犁 *li*, 钵 *bo*, 框 *kuang*, 江 *jiang*, 炉 *lu*, 板 *ban*
		Standard Measure Word	公分 *gongfen*, 毫分 *haofen*, 公尺 *gongchi*, 微克 *weike*, 立方英尺 *lifangyingchi*, 品脱 *pintuo*, 晚 *wan*, %, 日圆 *riyuan*, 英呎 *yingcun*, 伏特 *fute*, 坪 *ping*, 月 *yue*, 立方公尺 *lifanggongchi*, 公厘 *gongli*, 平方公尺 *pingfanggongchi*, 公克 *gongke*, 瓦特 *wate*, 时 *shi*, 两 *liang*, 新币 *xinbi*, 楼 *lou*	毫 *hao*, 平米 *pingmi*, 英寸 *yingcun*, 摄氏度 *sheshidu*, 立方米 *lifangmi*, 千伏 *qianfu*, 马力 *mali*, 千克 *qianke*, 千米 *qianmi*, 平方 *pingfang*, 大卡 *daka*, 千卡 *qianka*, 立方 *lifang*, 赫兹 *hezi*, 市两 *shiliang*, 平方英尺 *pingfangyingchi*, 华里 *huali*, 克拉 *kela*, 平方厘米 *pingfanglimi*, 平方英里 *pingfangyingli*, 铺 *pu*, 旦 *dan*, 市斤 *shijin*, 比特 *bite*, 毫秒 *haomiao*, 立方厘米 *lifanglimi*, 纳秒 *namiao*, 安 *an*, 吨 *dun*, 秤 *cheng*, 公里 *gongli*, 伏安 *fuan*, 帕斯卡 *pasika*, 毫安 *haoan*, 毫米汞柱 *haomigongzhu*, 牛顿 *niudun*, 毫微米 *haoweimi*, 毫微妙 *haoweimiao*, 土方 *tufang*, 毫厘 *haoli*, 总吨 *zongdun*, 晌 *shang*, 雷姆 *leimu*, 兆位 *zhaowei*, 费丹 *feidan*, 垧 *shang*, 蒲式耳 *pushier*, 赫 *he*, 工日 *gongri*, 丈 *zhang*, 伏 *fu*, 焦耳 *jiaoer*, 纳米 *nami*, 千瓦时 *qianwashi*, 澳元 *aoyuan*, 欧元 *ouyuan*, 卢布 *lubu*, 韩元 *hanyuan*, 比索 *bisuo*, 加拿大元 *jianadayuan*, 瑞士法郎 *ruishifalang*, 先令 *xianling*, 第纳尔 *dinaer*, 戈比 *gebi*, 芬尼 *fenni*, 克朗 *kelang*, 塔卡 *taka*, 林吉特 *linjite*, 兹罗提 *ziluoti*, 科朗 *kelang*, 列伊 *lieyi*, 兰特 *lante*, 瑞尔 *ruier*, 谢克尔 *xiekeer*, 玻利瓦尔 *boliwate*, 雷亚尔 *leiyaer*, 吊 *diao*, 世 *shi*, 代代 *daidai*, 辈 *bei*, 辈子 *beizi*, 季 *ji*, 周岁 *zhousui*, 周周 *zhouzhou*, 岁岁 *suisui*, 年年 *niannian*, 日日 *riri*, 天天 *tiantian*, 夜夜 *yeye*, 分分 *fenfen*, 朝 *zhao*, 寻 *xun*, 国 *guo*, 乡 *xiang*, 站 *zhan*, °, GB, L, cm, nm, T, M, mm, K, V, W, DB, MB, MW, Kg, KV, KW, A, mmHg, ppm, kv, CC, HZ, KB, MHz, Mpa
		Approximation Measure Word	NA	股股 *gugu*, 堆堆 *duidui*, 套套 *taotao*, 对对 *duidui*, 团团 *tuantuan*, 排排 *paipai*, 丝丝 *sisi*, 双双 *shuangshuang*, 声声 *shengsheng*, 点点 *diandian*, 股子 *guzi*, 丁点儿 *dingdianer*, 塵 *chan*, 苙 *cha*, 摞 *lei*, 沓 *ta*, 嘟噜 *dulu*, 墩 *dun*, 拨儿 *boer*, 帙 *zhi*, 刻刻 *keke*, 畈 *fan*, 挂 *gua*, 园 *yuan*, 溜 *liu*, 垄 *long*, 联 *lian*, 札 *zha*, 服 *fu*, 子 *zi*, 身 *shen*, 肚子 *duzi*, 脸 *lian*, 掬 *ju*, 捧 *peng*, 拱 *gong*, 坝 *ba*, 圈儿 *quaner*, 臂 *bi*, 帘 *lian*, 缗 *min*
		Activity Measure Word	箭 *jian*, 关 *guan*, 掌 *zhang*	跤 *jiao*, 苙 *cha*, 仗 *zhang*, 转 *zhuan*, 巴掌 *bazhang*, 拍 *pai*, 梭 *suo*, 和 *huo*, 镐 *gao*, 巡 *xun*, 匝 *za*, 炮 *pao*, 圈儿 *juaner*, 下子 *xiazi*, 画 *hua*, 次次 *cici*, 招招 *zhaozhao*
Polysyllabic			NA	航次 *hangci*, 人次 *renci*, 架次 *jiaci*, 场次 *changci*, 艘次 *souci*, 船次, 卷次 *juanci*, 人份 *renfen*, 人公里 *rengongli*, 人年 *rennian*

Table 2. Classifiers in Singapore Mandarin Chinese and Mainland China Mandarin Chinese

First, units of specific measurement that are classified under the category of standard measure words in SMC, such as 公分 *gongfen* 'centimeter', 公尺 *gongchi* 'meter', 毫分 *haofen* 'millimeter', etc. are expressed in different forms such as 厘米 *limi*, 米 *mi* and 毫米 *haomi* in MMC respectively. Second, standard measure words such as GB 'gigabyte', K 'kelvin', Hz 'hertz', V 'volt', etc. are also expressed as symbols in SMC, whereas these are only expressed as Chinese characters in MMC such as 赫兹 *hezi* 'hertz' and 伏特 *fute* 'volt'. Third, loanwords that are classified under the category of standard measure words such as 帕斯卡 *pakasi* 'pascal', 焦耳 *jiaoer* 'joules', 牛顿 *niudun* 'newton', etc. are commonly found in MMC as compared to SMC. Fourth, temporary measure words (nouns borrowed temporarily as measure words) such as 麻袋 *madai* 'sack', 肚子 *duzi* 'stomach' and 巴掌 *bazhang* 'palm' classified under the categories of container measure words, approximation measure words and activity measure words in MMC respectively, are common in SMC. Fifth, reduplicative classifiers in MMC, such as 张张 *zhangzhang* 'sheet', 场场 *changchang* 'classifier for events', 款款 *kuankuan* 'models', 堆堆 *duidui* 'pile', etc. are commonly expressed in monosyllabic forms in SMC such as 张 *zhang*, 场 *chang*, 款 *kuan,* 堆 *dui* respectively. Sixth, polysyllabic classifiers such as 航次 *hangci* 'number or sequence of voyages or flights', 架次 *jiaci* 'number of sorties', 场次 *changci* 'number of showings of a play, movie, etc.' are only adopted in MMC than in the SMC.

4   The "adjective+classifier" adjectival phrase structure in SMC

According to Lu et al [2], there is an "adjective+classifier" (henceforth "adj+CL") adjectival phrase structure in SMC, such as 那么大间的旧屋 *name da jian de jiu wu* 'a huge old house', 这张纸很大张 *zhe zhang zhi hen da zhang* 'a large sheet of paper', etc. As Lu et al [2] point out, the "adj+CL" phrase structure exhibits syntactic properties similar to that of adjectives such as: (1) occurring in the predicative position and (2) able to be modified by adverbs, particularly degree words such as 很 *hen* 'very', 更 *geng* 'much more', 越 *yue* 'the more…the more', etc. It is also pointed out that the adjective 大 *da* 'big' is frequently used in this phrase structure. In addition, this structure only occurs in SMC and not in MMC.

Despite the above investigation conducted by Lu et al, there are areas on the adjectival "adj+CL" phrase structure that has yet to be explored in detail, such as, the types of classifiers and adjectives which can be used in this phrase structure. The present study therefore aims to conduct an investigation on the "adj+CL" adjectival phrase structure.

4.1   Data and Procedure

The present study conducts the investigation on the "adj+CL" adjectival phrase structure in two stages, namely internet searches and a survey among SMC and MMC native speakers. The following first describes the scope and results of the internet searches, followed by the survey.

4.1.1   Scope of Study (Internet Search)

Internet searches were conducted using the Google site:sg function. The scope of the present study includes the following: (1) To test the types of adjectives which can be used in the phrase structure, a total of 4 adjectives including 大 *da* 'big', 小 *xiao* 'small', 长 *chang* 'long' and 短 *duan* 'short' were selected; of which, 大 *da* 'big' was mentioned by Lu et al [2]; (2) To test the types of classifiers which can be used in the phrase structure, a total of 134 classifiers are taken from the spoken data of SMC. This is due to the reason that the "adj+CL" phrase structure occurs most frequently in spoken SMC; (3) To test if the phrase structure allows reduplication of adjectives. The present study takes into account the first 50 relevant results for each classifier and adjective tested.

4.1.2   Results of Study (Internet Search)

Results of the first stage of study are as follows: First, besides appearing in the predicative position, the syntactic properties of the "adj+CL" adjectival phrase structure also include, occurring in the (a) attributive position, such as 很大只的蜜蜂 *hen da zhi de mifeng* 'a huge bee', 那么大片的蛋糕 *name dapian de dangao* 'a big slice of cake', etc.; in the (b) complement position, such as 长得很大盆 *zhang de hen da pen* 'grown into a huge pot', 变得很小只 *bian de hen xiao zhi* 'became smaller in size', etc.

Second, the "adj+CL" adjectival phrase structure can occur in (a) comparative sentences, such as 选购比较大棵的圣诞树 *xuan gou bijiao da ke de shengdanshu* 'to purchase a bigger Christmas tree', 花生米也都选的比较大粒 *huashengmi ye dou xuan de bijiao dali* 'select the larger pieces of peanuts', etc.; can be (b) modified by adverbs, particularly degree words, such as 阿婆的船很小艘 *apo de chuan hen xiao sou* 'the boat that belongs to the old lady is very small' and 有钱人换的车越来越大辆 *you qian ren huan de che yue lai yue da liang* 'the rich are increasingly getting bigger cars'; (c) adjectives in the "adj+CL" adjectival phrase structure can be reduplicated, such as 一块大大块的鸡肉 *yikuai dada kuai de jirou* 'a large piece of chicken', 让他们每一个都眼睛大大粒 *rang tamen mei yige dou yanjing da dali*, 'leaving everyone astonished, with their eyes wide open', etc. In addition, it is also observed that the "reduplicated adj+CL" phrase structure and "adj+CL" phrase structure exhibit similar syntactic properties mentioned above, thus indicating that it is also an adjectival phrase structure.

Third, the types of (a) adjectives that can be used in the "adj+CL" adjectival phrase structure is limited to 大 *da* 'big' and 小 *xiao* 'small', whereas 长 *chang* 'long' and 短 *duan* 'short' cannot; (b) classifiers that can be used in the "adj+CL" adjectival phrase structure include individual classifiers (支 *zhi* 'classifier for guns, songs, etc.', 幅 *fu* 'piece', 颗 *ke* 'classifier for small and round objects', 尊 *zun* 'classifier for statues, cannons', 棵 *ke* 'classifier for trees, plants', 个 *ge* 'classifier for objects, people, etc.', 条 *tiao* 'strip', 艘 *sou* 'classifier for ships, vessels', 朵 *duo* 'classifier for flowers, clouds', 间 *jian* 'classifier for small buildings, rooms, etc.', 只 *zhi* 'classifier for animals, one of a pair, etc.', 辆 *liang* 'classifier for vehicles', 张

zhang 'sheet', 粒 *li* 'classifier for small and round objects', 块 *kuai* 'lump', 件 *jian* 'classifier for clothing, things', 份 *fen* 'portion', 枝 *zhi* 'classifier for pencils, sticks, etc.', 片 *pian* 'classifier for objects which are flat and thin', 副 *fu* 'classifier for pairs, set of things, etc.'), event classifier (件 *jian* 'classifier for events'), container measure words (碗 *wan* 'bowl', 瓶 *ping* 'bottle', 杯 *bei* 'cup', 包 *bao* 'bag', 桶 *tong* 'pail') and approximation measure words (束 *shu* 'bundle', 群 *qun* 'group'), whereas kind classifiers, standard measure words and activity measure words cannot. The above also applies to the "reduplicated adj+CL" phrase structure. It is noteworthy to mention that the kind classifier 样 *yang* 'kind' only occurs in the "adj+CL" adjectival phrase structure, but does not occur in the "reduplicated adj+CL" phrase structure.

Compared to Lu et al [2], results from the internet searches have not only shown the types of adjectives and classifiers that can be used in the "adj+CL" adjectival phrase structure, but also revealed further syntactic properties of the phrase structure. However, results from the internet searches did not reflect that prototypical classifiers such as 本 *ben* 'classifier for books, periodicals, etc.', 双 *shuang* 'pair', etc. can be used in the "adj+CL" adjectival phrase structure. Furthermore, Shi [10] has also pointed out that the "adj+CL" adjectival phrase structure appears in MMC. In order to ascertain the abovementioned, this study has also conducted an investigation through a survey.

4.1.3 Scope of Study (Survey)

A total of 22 classifiers were selected as tests for this survey. These 22 classifiers form a total of 50 sentences with the "adj+CL" phrase structure occurring in two positions, namely (1) attributive position and (2) predicative position. In other words, 22 classifiers each form a total of two sentences. Two adjectives, 大 *da* 'big' and 小 *xiao* 'small' were then randomly placed in two of the sentences formed by each classifier. Out of the 22 classifiers, 7 classifiers (只 *zhi* 'classifier for animals, one of a pair, etc.', 杯 *bei* 'cup', 棵 *ke* 'classifier for trees, plants, etc.', 碗 *wan* 'bowl', 幅 *fu* 'piece', 包 *bao* 'bag', 束 *shu* 'bundle') which were tested in the first stage of study were also included to control for reliability, while 4 classifiers forming five "adj+CL" phrase structures (很长柄 *hen chang bing* 'long handle', 太整只 *tai zheng zhi* 'whole piece', 很整段 *hen zheng duan* 'whole section', 很长段 *hen chang duan* 'long section', 非常长条 *fei chang chang tiao* 'long strip') mentioned in Shi [10] were included to test for acceptability in SMC and MMC. With the exception of the five "adj+CL" phrase structures mentioned above, the remaining sentences were formed using the adverb 很 *hen* 'very'. 20 participants, inclusive of 15 speakers of SMC from Singapore and 5 speakers of MMC from Mainland China were assigned the survey administered on the Google Form platform. Participants are required to rate the acceptability of the sentences on a 5-point scale, with 1 being the least acceptable and 5 being the most acceptable. Results from the survey would reveal the level of acceptability towards sentences with the "adj+CL" adjectival phrase structure.

4.1.4   Results of Study (Survey)

The responses collected from the survey were computed using the mean value. A mean value greater than 3 indicates high acceptability and vice versa. The tabulated results from the survey are shown in Table 3.

Data	Classifier	Attributive		Predicative	
		Mean		Mean	
		SMC	MMC	SMC	MMC
Spoken Data (Test for acceptability)	1. 大 / 小本 *ben*	3.8	2.2	3.6	2.3
	2. 大 / 小盏 *zhan*	3.6	1.2	3.6	2.2
	3. 大 / 小坨 *tuo*	4.1	2.0	3.5	1.1
	4. 大 / 小盘 *pan*	4.1	1.8	3.3	1.8
	5. 大 / 小箱 *xiang*	3.1	2.2	3.9	2.4
	6. 大 / 小盆 *pen*	3.7	2.7	3.4	2.0
	7. 大 / 小串 *chuan*	4.1	2.6	3.5	1.8
	8. 大 / 小 双 *shuang*	3.5	2.0	3.9	2.0
	9. 大 / 小座 *zuo*	3.7	2.4	2.5	1.6
	10. 大 / 小滴 *di*	3.5	1.4	2.5	1.8
	11. 大 / 小段 *duan*	3.1	2.4	1.9	1.4
	12. 大 / 小样 *yang*	3.4	1.6	2.3	1.6
	13. 大 / 小宗 *zong*	2.8	1.8	2.7	1.2
Spoken Data (Control for reliability)	14. 大 / 小棵 *ke*	3.9	2.0	3.7	2.2
	15. 大 / 小只 *zhi*	3.9	2.0	3.7	1.6
	16. 大 / 小幅 *fu*	3.0	2.4	3.0	1.8
	17. 大 / 小碗 *wan*	4.1	2.6	3.7	1.8
	18. 大 / 小杯 *bei*	3.3	1.8	4.0	2.4
	19. 大 / 小包 *bao*	4.3	2.8	3.7	2.6
	20. 大 / 小束 *shu*	3.3	2.2	3.3	2.0
Shi (2013) (Test for acceptability)	21. 很整段 *hen zheng duan* 'whole section'	1.4	1.2	1.5	1.4
	22. 很长段 *hen chang duan* 'long section'	2.0	1.8	1.7	1.2
	23. 很长柄 *hen chang bing* 'long handle'	1.7	2.0	1.6	1.8
	24. 太整只 *tai zheng zhi* 'whole piece'	1.5	1.2	1.5	1.2
	25. 非常长条 *fei chang chang tiao* 'long strip'	1.5	1.8	1.5	1.4

Table 3. Acceptability towards "adj+CL" phrase structure

First, the types of classifiers that can be used in the "adj+CL" adjectival phrase structure has been extended to include kind classifiers such as 样 *yang* 'kind'. Second, with the exception of the five "adj+CL" phrase structure mentioned in Shi [10] and 宗 *zong* 'classifier for cases (legal, medical, etc.)', the remaining sentences with the "adj+CL" phrase structure have been rated as high acceptability by SMC speakers. In addition, "adj+CL" adjectival phrase structure in the attributive position are of higher acceptability than in the predicative position. Second, the five "adj+CL" phrase struc-structure mentioned in Shi [10] have been rated as low acceptability by both the SMC and MMC speakers. This indicates that the phrase structures mentioned in Shi [10] are different to that of the "adj+CL" adjectival phrase structure in SMC. In other words, the "adj+CL" adjectival phrase structure is unique to SMC.

5   Conclusion and Future Studies

This study is the first systematic study of the classifier system and classifiers in SMC, based on both the written and spoken data obtained from two fairly large corpora of SMC. A comparison between the written and spoken data of SMC and between SMC and MMC is made. In addition, this study has also conducted an

investigation of the "adjective+classifier" adjectival phrase structure in Singapore Mandarin Chinese. The findings of this study will not only serve as an important reference for future studies of Singapore Mandarin Chinese classifiers, but also contribute to the theoretical discussion on classifiers in general and language variation and change.

The next stage of this study would involve recruiting more participants for the survey, including participants from Mainland China, Taiwan and Hong Kong, to investigate if the "adj+CL" adjectival phrase structure occurs in other varieties of Modern Standard Mandarin Chinese. In addition, classifiers from both the written and spoken data need to be included to obtain more comprehensive results.

Acknowledgements

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