"Let's Move on to the Recommendations."

The Use of Phrasal Verbs in Business Presentations of University Students in Hong Kong

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Formulaic language is an area of lexical research that has been gaining popularity (Wray, 2013). Formulaic language is an umbrella term to describe the language with some sort of formulaicity, which constitutes a significant portion of any competent speaker's spoken language, with estimated proportions from 30% to over 50% (Biber et al., 1999; Erman & Warren, 2000). Besides, formulaic language not only provides a useful purpose in communication but also helps learners to be more fluent (Conklin & Schmitt, 2012), justifying the necessity of mastering formulaic language. Therefore, scholarship on formulaic language is important for the teaching and learning of English.

Phrasal verbs (PVs), a useful but challenging subtype of formulaic language, are two-part verbs which widely appear in informal spoken English (Liu, 2011). Academic English discourages the use of PVs, while in business English, PVs are useful for effective communication. The current study compiled a learner corpus from an undergraduate business English course in Hong Kong and quantitatively and qualitatively explored students' PV use in business presentations by corpus analysis. This study investigates nuances of the PV command of English learners and will provide pedagogical implications for business English instruction at the university level.

Literature review

The Definition of Phrasal Verbs

There are different operationalizations of PVs in the literature. Quirk et al. (1985) argued that PVs had a syntactic criterion of "verb + particle" and a semantic criterion of having meanings beyond the separate meanings of the two components. Biber et al. (1999) distinguished four types of PVs: 1) phrasal verbs (e.g. *pick up*); 2) prepositional verbs (e.g. *look at*); 3) phrasal-prepositional verbs (e.g. *get away with*); 4) other multi-word verb constructions, notably: verb + noun phrase + preposition (e.g. *take a look at*), verb + prepositional phrase (e.g. *take into account*). Gardner and Davies (2007) believed that ambiguity and inconsistency will eventually lead to frustrations for

English teachers and students, so they proposed a functional and objective definition that PVs are

"two-part verbs consisting of a lexical verb followed by a contiguous (adjacent) or noncontiguous

adverbial particle" (Gardner & Davies, 2007, p. 341). This definition is adopted by the current study

because it largely avoids the ambiguity of the semantic criterion in some other PV definitions and

this definition has been widely adopted by several key studies in the field (e.g., Garnier & Schmitt,

2015; Liu, 2011; Liu & Myers, 2018).

The main methods of empirical studies on PVs are either experimental studies with pre-test

and post-test (Lu & Sun, 2017; Strong & Boers, 2019a, 2019b; Teng, 2020; White, 2012) or corpus

analysis on English native-speaker mega-corpora or learner corpora (Chen, 2013; Liu, 2011; Liu &

Myers, 2018; Ryoo, 2013; Waibel, 2007; Wei, 2021). This paper will review the studies adopting

corpus analysis, before pointing out gaps in this line of research.

The Corpus Research of Phrasal Verbs

Corpus research on PV could be categorized into two strands, that is, analysis of native

speaker mega-corpora to identify high-frequency PVs and their meanings and analysis of learner

corpora to investigate characteristics of learners' PV use. In the first strand, Gardner and Davies

(2007) pioneered sorting out 100 high-frequency PVs in the British National Corpus (BNC), while Liu

(2011) took a step further to compare 150 high-frequency PVs across five different registers in the

Corpus of Contemporary American English (COCA) and BNC. More recently, Liu's (2011) high-

frequency PV list inspired subsequent analyses of the different meaning senses of the 150 PVs

(Garnier & Schmitt, 2015) and the comparison of the key meanings of the 150 PVs in spoken and

written academic English (Liu & Myers, 2018), showing the progression of this nuanced research.

As for the second strand, empirical studies have been conducted on varied samples of

second language learners to understand their PV command, such as German and Italian learners

(Waibel, 2007), French learners (Gilquin, 2015), British and American novice writers (Chen, 2013),

Brazilian (Fadanelli, 2012), Turkish (Badem & Şimşek, 2021), Malaysian (Kamarudin et al., 2019; Zarifi

& Mukundan, 2014), Chinese (Wei, 2021), and Korean learners (Ryoo, 2013). These studies used

accessible corpus analysis tools such as WordSmith software (Scott, 2008), AntConc (Anthony, 2023), or Sketch Engine (Kilgarriff et al., 2004). These studies revealed similarities and differences between English L2 learners' PV usage and that of English L1 speakers, such as overusing PVs that they know and underusing some less familiar PVs. To sum up, Brazilian, Italian, French, and Turkish learners tended to underuse PVs due to their Latin-originated L1s, while German learners overused PV because of similar linguistic structure in their L1. Malaysian secondary school learners, with their frequent English exposure out of class, used the high-frequency PVs in a similar way as the native speakers in the BNC. Among English L1 users, it was found that British novice writers used fewer PVs than their American counterparts and had clearer genre awareness by using PVs less in academic papers. In the following section, quantitative and qualitative analysis of learner corpora will be reviewed.

Quantitative Analysis

The most common direction in quantitative investigation of PVs in corpora is probably the frequency of PVs. Researchers not only count how many PVs appear in total in the given corpus, but also calculate which PVs appear most often in the given corpus (Badem & Şimşek, 2021). Besides, researchers often report the percentage of PVs in the total wordcount of the corpus, to showcase the common/uncommon presence of PVs. Lexical diversity is another direction of PV quantitative analysis. In this analysis, "type" means the number of different PVs used, with each different PV counted once, while "token" means the total number of PVs, including repeated ones. The type/token ratio can represent the diversity of PVs used by English learners. Lastly, researchers also calculate the most common lexical verbs and the most common adverbial particles in the learner corpora. Some studies reported the Top 10 PVs (Wei, 2021), while some studies reported up to 20 (Badem & Şimşek, 2021; Ryoo, 2013; Zarifi & Mukundan, 2014) or 25 (Waibel, 2007), depending on the size of the corpus. Comparing such rankings or frequencies against those in the high-frequency PV list, researchers often identified divergences such as underuse or overuse between the L2 learners' and English L1 speakers' patterns.

Based on the frequency data, avoidance of PVs is a phenomenon widely observed in learners whose L1 is a non-Germanic language (Waibel, 2007). There have been two approaches to investigate the avoidance phenomenon in learner corpus. On one hand, learners' percentage of PV use could be compared with that in the native-speaker corpora, such as BNC and COCA (Ryoo, 2013). On the other hand, their frequency of PV use could be compared against the frequency of the single-word equivalent in the same corpus (Wei, 2021). For example, by comparing the frequency of *"bring up"* and *"raise"*, we can tell which form is preferred and whether the PV was avoided by L2 learners.

Qualitative analysis

Qualitative analysis of PVs can explore the quality of the PVs produced by L2 learners. Two common directions for analysis are creative and unnaturalness of PVs (Waibel, 2007; Zarifi & Mukundan, 2014), which to some extent differs from an error analysis to understand the accuracy of PVs use. Waibel (2007) refrained from using the words 'correct' or 'incorrect', 'acceptable' or 'unacceptable", because she felt the judgment could be to some extent subjective. Due to the flexibility of PV use, there might be diverging opinions on the correctness of PVs even among native speakers. Therefore, PV errors were not quantified in her thesis. Instead, creativity and unnaturalness were examined qualitatively.

Creativity refers to the ability of students to produce PVs not documented in dictionaries according to the meanings of the adverbial particles (Waibel, 2007). Although these PVs might seem unusual at times, they showcased students' understanding of the PV meanings and flexibility in the L2 use. For example, *Wine puts you into that specific mood where you can **laugh away** the more or less trivial problems of every-day life and thus it may provide new energy for the coming day back in reality.* In this example, *"away"* means *"to a distance"*, so *"laugh away"* can be interpreted as forgetting about the problems by having a relaxing time. *After two weeks I was so tired of **lazing about** in the sun.* In this example, *"about"* indicates movement within a particular area, so *"lazing about"* illustrates a situation where someone is chilling/lying down in the sun at a resort or on the

beach. These PVs are used in an interesting and colloquial way, which is semantically and grammatically correct based on meanings of the lexical verb and the adverbial particle.

Unnaturalness means the facets of PVs that make their language sound non-nativelike or unidiomatic. The unnaturalness usually stems from three reasons. One is the wrong selection of lexical verb or adverbial particles. For instance, *Other environmental changes **brought along** by mankind which effect more people today than ever before are: …* In this scenario, *"bring about"* should be the suitable PV to express *"cause"*. Another reason is inappropriate collocations of PVs and the object, that is, whether learners can use PVs in the suitable contexts and combine them with the typical context words (Waibel, 2007). For instance, some students used *"**switch on** a series of violent events",* but *"switch on"* is usually followed by *light* or *electricity*. The inappropriateness is usually confirmed by looking up the same collocation in a native-speaker corpora, such as BNC and COCA. The last reason is using non-existent meanings of PVs, such as saying *"my interest **falls down**"* which makes the language sound unidiomatic. However, for the last reason, there might be an intricate line between creativity and unnaturalness. Therefore, having multiple raters could reduce potential researcher bias in this analysis.

Gaps in the Literature

Based on the above analysis, a few gaps in the literature were identified. First, business English usually uses plain and clear language and has a dual purpose of building rapport and effective communication (Jiang, 2015), in which PVs can play an indispensable role. However, to the best of our knowledge, most existing learner corpora were compiled based on students' essays or oral exam data and no learner corpus has tapped into the PV use in business English. Since the use of PV is highly dependent on linguistic registers, examining PV use in specific scenarios can shed new light on learners' command in specific communicative contexts and in turn provide pedagogical implications for practitioners. Second, previous analysis on the spoken PV use of Chinese learners focused only on quantitative analysis (Wei, 2021). This limitation should be addressed because it overlooks the quality of the PVs that students produced. By looking into detailed reasons of misuse,

we can find ways to tackle it in pedagogy. Therefore, mixed-methods research should be carried out to form a comprehensive understanding of learners' command of PVs in spoken communication. Lastly, the current sample has students from different L1 backgrounds, which enables examination of L1 influence on learners' PV production.

Research questions

Based on the above review, the following research questions (RQs) are put forward:

RQ1. What is the frequency of PV use in Hong Kong university undergraduates' English presentations in a business context?

a) What are the most common PVs, lexical verbs and adverbial particles used by the participants? To what extent does the usage of PVs in the learner corpus differ from that in the BNC?

b) Do the participants overuse or underuse PVs compared with their single-word synonyms?

RQ2. How appropriate are the PVs used by the participants in business presentations?

a) Do the learners use any unnatural PVs or creative PVs?

RQ3. Do the participants with different L1 backgrounds differ in the frequency of PV use?

Methodology

The participants and the corpus

The learner corpus was compiled from the video recordings of 20 case study presentations in a business English course at a university in Hong Kong. A total of 36 participants from two classes were divided into ten groups and each group delivered two presentations to showcase their work in two case studies. The participants were all undergraduate students at the School of Business and Management, and most of them were from Hong Kong (n=20), with 7 from mainland China and 9 international students (from India, Korea, and America). One case is about improving the staff relationship in a British Virgin Islands resort and the other case is about dealing with staff misconduct of a family business in Hong Kong. The problems and contexts of the two cases vary to cover different issues in business case analysis. This learner corpus is named Business Presentation

Corpus (BPC). Each presentation is about 12-minute long and the second case is followed by a 4-minute Q&A part to simulate authentic business communication. In total, the learner corpus consists of spoken data from 20 recordings that add up to 280 minutes with 41,820 words.
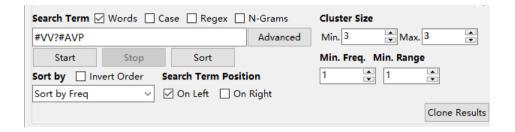
The procedure

The videos were first transcribed using Zoom (2020) software into the txt file. Manual checks were performed by one researcher in this process with a second rater further ensuring the accuracy of transcription. Additional information including the presentation group and the name of the speaker was noted down for ease of analysis. In the second step, the second author used Constituent Likelihood Word-tagging System (CLAWS) (Garside, 1987) to embed the part-of-speech (POS) annotation in the text. Although distinguishing adverbial particles and prepositions is a challenge in automatic tagging, after trialing the accuracy of CLAWS with some sample sentences, CLAWS was still adopted given that it is free of charge and has a high accuracy rate of 97% in running texts of up to 100,000 words. The txt format was used throughout the analysis because it is compatible with most corpus tools (Ryoo, 2013).

The analysis

RQ1: The frequency of PVs

Regarding quantitative analysis, the second author used AntConc (Anthony, 2023) for its versatile features in lexical analysis. First, we generated the PV list via the function of Clusters by inputting the search code "#VV?#AVP" and constraining the cluster size as Min.3-Max.3 (Figure 1). The PV list displayed the total numbers of tokens and types of the PVs and the frequency of each PV type. Supplementary searches were done by considering one to two intervening words. Previous studies suggest that the search of PVs with three or more intervening words will yield many "false PVs" (Gardner & Davies, 2007). In fact, the pilot search of AntConc in the present study already yielded a large number of irrelevant combinations when searching PVs with two intervening words, which further validated our decision and the necessity of manual check.

Figure 1

The Search of PVs

The second step was to list the lexical verbs and adverbial particles of the existing PVs through the function of Collocates in AntConc and rank them by frequency in Excel. Separate searches were executed for PVs with one or two intervening words. It is worth mentioning that all the PVs and lexical verbs on the lists were in their inflectional forms. Therefore, these forms were amalgamated into the same lemma later. For instance, *go, went, gone, going, goes* were counted altogether and grouped under the lemma GO (Gardner & Davies, 2007). Manual check was performed to correct the tagging errors and discard the false tokens for replication searches. For example, the PV "*hand over*" was not captured in the automatic search because *hand* was tagged as noun in the first place. To enhance reliability of results, we triangulated the results by analysing the 20 txt files separately and a master txt file, which yielded consistent results.

In order to explore the potential avoidance of PV use of the participants, we selected the single-word counterpart that matched the most common sense of each PV and compared the frequencies of occurrence between them. The Merriam-Webster Dictionary was used to help select the most appropriate synonym as it provides a wide range of choices and WordNet (Princeton University, 2010) was also used to assist decision making because it used semantics to provide synonyms. However, a great challenge was that not all the PVs had a complete synonym counterpart, especially for some highly formulaic PVs, such as *take on, catch up*. Thus, to maintain the reliability of the results, only the single-word synonyms whose meanings can completely substitute their PV counterparts were used for comparisons.

RQ2: The accuracy of PVs

To analyze the accuracy of the PV use, the researchers referred to the Oxford Learner's

Dictionary and Merriam-Webster Dictionary for the semantic meanings of each PV and judged if the

participants used these PVs in a semantically correct way in contexts. To enhance reliability, both

researchers were involved in the judging process, and examined the creativity and unnaturalness of

the PV usage in relation to non-existent PVs in the dictionaries. A British native speaker English

teacher was consulted when judging unnatural PVs and we reached an inter-rater reliability of 92%.

RQ3: Comparing PV use between students

Because the number of students with different L1s was uneven, the researchers categorized

students into two groups, being Chinese L1 speakers (including Cantonese and Mandarin) and

international students. Comparisons will be made between the two groups to find out which group

used more PVs.

Findings and Discussion

RQ1: The frequency of PV use

After automatic searches and manual checks, the results for RQ1 show that students

produced a total of 142 tokens and 55 types of PVs in the BPC (see Appendix 1). The percentage of

PVs in the total tokens is 0.4%. In other words, one PV would appear in about every 250 tokens in

the participants' English utterances, which is lower than the PV frequency in naturalistic L1 English

use (one in every 192 words, as extrapolated by Gardner and Davies, 2007). This finding suggested

that the students use fewer PVs than L1 speakers of English, in line with existing literature (Ryoo,

2013).

As for RQ1a, the top nine PVs (i.e., *move on, set up, add on, go on, carry out, reach out, pass*

on, give out, find out) occupy 51.4% of the tokens, with the frequency of each PV ranging from 18 to

4. In contrast, 31 PVs only occur once in the learner corpus, which account for over 56.3% of the PV

types. In light of the type and token ratio, on average the students use each PV 2.5 times

(token/type=142/55) and it could be argued that the participants used a variety of PVs without much

repetition in spoken English. The top two PVs, namely, *move on* and *set up*, appeared with high frequencies (18 and 17 times respectively). It is possible that *move on* is often used in presentations for signposting and transition purposes (e.g., *Now moving on to our last recommendation…*) while *set up* is particularly useful in proposing recommendations in business case studies (e.g., *We will set up a code of conduct for all employees to follow*).

When comparing the PVs in the BPC and the high-frequency PVs used by native speakers, results show that out of the 55 different PVs the students used, 38 (69%) of them appeared in the PV list in Liu (2011) and 17 of them did not appear in the list. It can be inferred that students can recall around 70% of the high-frequency PVs used by native speakers and they have knowledge of some lower-frequency PVs which were not often used by native speakers of English.

When taking a closer look at the frequency of appearance, only a few PVs share similar frequency rankings in both lists. For example, *set up* ranked 2nd and *go on* ranked 4th in the BPC, while in the BNC they were ranked 2nd and 1st respectively (Liu, 2011). Interestingly, in academic writing by researchers, *set up* and *go on* were also ranked high (3rd and 1st respectively) (Alangari et al., 2020). It can be inferred that these two PVs are widely used in different contexts by both English L1 and L2 speakers and the participants have automatised these PVs in spoken communication.

Besides, we compared the moving average rankings of PVs with similar or same frequencies in the BPC against their moving average rankings in the BNC but did not find a parallel dropping trend (Appendix 1). Presumably, two reasons account for the inconsistent rankings. One is the small sample size of the current data which may negatively influence the validity of the comparison. Because many PVs only appeared once in the BPC, therefore they were of the same rank. The BNC has about 100 million words, which yielded more diverse PVs and a wider range of rank orders. The other reason is that the spoken register and the specific business context of the learner corpus may largely constrain certain PV use, while the ranking in Liu (2011) accounts for different registers and contexts.

Regarding the lexical verb lemmas, there are a total of 44 types of lexical verb in the learner corpus, and the lemma MOVE is used most frequently (Appendix 2). With frequencies ranging from 19 to 8 times, the top six lexical verb lemmas (i.e., MOVE, SET, GO, ADD, PASS, CARRY) produced 50% of the PV tokens. It can be inferred that the lemmas used by the participants follow the Zipfian distribution of natural language, which describes how the highest-frequency words account for the most linguistic tokens (Ellis et al., 2015). Or, from another perspective, these popular lexical verbs are of prominent productivity when constructing PVs.

We further compared the top ten most frequent lexical verbs of PVs between the learner corpus and the BNC corpus (Table 1). It can be found that only four lexical verb lemmas GO, TAKE, SET, CARRY overlap, and the lemma TURN on the list of BNC did not appear in the learner corpus. The small sample size of our study cannot represent a full picture of PV use in different contexts, resulting in the distinct pattern of the most frequent lexical verbs. However, the four overlapping lemmas suggest that the students are likely to first master the most frequently used lexical verbs in the native corpus in their early stage of English learning. Similarly, only four of our lexical verbs overlapped with the Top 10 lexical verbs in a Turkish learner corpus (Badem & Şimşek, 2021) and only three lexical verbs overlapped with the Top 10 lexical verbs in a German learner corpus (Waibel, 2007). Presumably, the PV use is highly contextual and significantly varies from registers (Liu, 2011).

Table 1

Comparison of Top Ten Most Frequent Lexical Verbs Between the BPC and the BNC

Rank	Lexical Verbs in BPC	Frequency	Lexical Verbs in BNC	Frequency
1	MOVE	19	**GO**	48016
2	**SET**	17	COME	36878
3	**GO**	10	**TAKE**	22970
4	ADD	9	GET	20223
5	PASS	8	**SET**	18569
6	**CARRY**	8	**CARRY**	15617
7	REACH	5	TURN	13040

8	GIVE	4	BRING	12514
9	FIND	4	LOOK	12226
10	**TAKE**	4	PUT	11970

Note. The frequencies of lexical verbs in BNC corpus are modified from Ryoo (2013). Bold verbs are overlapping ones.

As for the most frequent adverbial particles, Table 2 shows that there are 12 types of adverbial particles used in the learner corpus, among which *up* and *on* occur with the highest frequency (42) and make up over half (59%) of the total PV tokens. Similar patterns can be found by comparing the rank order of adverbial particles between the learner corpus and the BNC corpus. First, the top five adverbial particles which present prominent frequencies on both lists are the same set (i.e., *up, on, out, back, down*), and the particle *up* consistently takes the first place. Second, the students did not use some less common adverbial particles which are rarely used even by the native speakers (e.g., by, under, across).

Table 2

Comparison of All the Used Adverbial Particles Between the BPC and the BNC

Rank	Adverbial particles in BPC	Frequency	Adverbial particles in BNC	Frequency
1	**up**	42	**up**	158064
2	**on**	42	**out**	145706
3	**out**	27	**back**	75233
4	**back**	7	**down**	72709
5	**down**	7	**on**	54956
6	over	5	off	37751
7	off	4	in	34411
8	along	3	over	32526
9	through	2	about	12587
10	in	1	round	10895
11	around	1	around	10384
12	about	1	through	5797
13		Token:142	along	4925

14	by	371
15	under	313
16	across	13
		Token: 656641

Note. The data of adverbial particles in BNC corpus is derived from Gardner & Davies (2007). The bold ones show that the top five particles are the same.

When it comes to RQ1b, the researchers compared the frequencies of occurrence between some of the PVs and their single-word synonyms to investigate potential avoidance of PV use by the participants (Appendix 1). Each of the tested PVs is selected based on the following two requirements: 1) has a frequency of more than 1; and 2) has a single-word synonym that can semantically and syntactically substitute its PV counterpart. Finally, among the 14 PVs selected for analysis, no PV was overused in the learner corpus and three (21%) PVs (i.e., *build up, carry on, wrap up*) were underused compared with their single-word synonym (i.e., *increase, continue, conclude*). It seems that the participants avoided only a few PVs in business presentations and this phenomenon is not as prominent as in some other studies targeting PV avoidance exclusively (Liao & Fukuya, 2004).

It is possible that the syntactic and semantic complexity hampers the participants to employ the proper PVs in a certain context. For instance, *build up* denotes "develop gradually by increments" and was used three times by the participants. On the contrary, its single-word counterpart "increase" or "strengthen" occurred much more frequently (e.g., *increase* appeared more than 40 times). Thus, *build up* is underused compared with its single-word counterpart "increase" which has more collocational combinations. *Carry on* is another example of underuse. The students preferred to use "continue", because using a single word might be easier for conjugation and the collocation is more flexible (e.g., *We hope the company can **continue** to encourage employees to keep their personal relations*). Studies have found that lower-proficiency L2 learners tend to underuse PVs (Wei, 2021). The students in the current study who at least had intermediate proficiency and received English-medium-instruction still displayed a certain level of avoidance.

From the perspective of pedagogy, the insufficient input and inadequate instructions of PV use in spoken English may also account for the avoidance phenomenon (Dagut & Laufer, 1985). Some teachers oversimplify PVs as fixed chunks without explaining the multiple meanings and the corresponding contexts to use PVs (Wei, 2021), which might not be conducive to PV acquisition.

RQ2: The accuracy of PV use

The participants were generally able to use PVs accurately in spoken English. The accuracy rate of PV use of the participants is over 90%, with only 14 out of 142 instances rated as problematic. This finding suggested that learners tended to use PVs that they had fully automatised and they were confident about. Among the 14 instances, one case was rated as incorrect due to a syntactic error, because the participant said "*reach out their managers*", ignoring that *reach out* is an intransitive verb and a preposition "*to*" is required. The remaining instances were all categorized as unnatural uses of PVs.

These unnatural issues are embedded in nine different PVs (see Table 3) with the misuse of adverbial particles being the main issue. For example, the unnaturalness of the use of *pair out* can be explained by the wrong selection of adverbial particles. In the instance "*the HR Team composed of 4 expatriates and 4 local staffs will **pair out** the buddy groups*", the PV *pair out* is not an item in the chosen dictionaries, and *pair up* should be the right PV to express "come together" in this scenario. The remaining 11 unnatural instances are all caused by using self-constructed meanings of PVs. To correct these errors, we can just simply cross off the adverbial particles attached. When compared with the unnaturalness phenomenon in Waibel (2007), only *set up* shared the same issue: wrong collocation of PVs. A participant said "*we are suggesting your company to **set up** an upper limit on the expense*". In this context, *set up* is inappropriate since it is usually followed by something more complicated, such as company and committee, and *set* is more suitable in this context. Overall, the unnaturalness observed in this corpus is somewhat different from the unnaturalness phenomenon in Waibel (2007), potentially suggesting different L1 influences, which will be discussed below.

Table 3

Unnatural Use of PVs

PV	Frequency	Example	Issue
meet up	3	meet up the quality standard	Redundant AVP
list out	2	list out the penalties for violations	Redundant AVP
voice out	2	voice out their concerns	Redundant AVP
balance out	1	So, it will balance out the distribution of the salary.	Acceptable but unnecessary AVP
lower down	1	lower down the expense	Redundant AVP
pair out	1	The HR Team composed of 4 expatriates and 4 local staffs will pair out the buddy groups.	Incorrect AVP
redeem off	1	Before, they wouldn't have taken a note of those transactions and then just redeem them off as company expenses.	Redundant AVP
extract out	1	extract the name out	Redundant AVP
set up	1	We are suggesting your company to set up an upper limit on the expense.	Redundant AVP, wrong collocation

An interesting finding is that 4 out of 7 of these superfluous adverbial particles are OUT, such as *voice out, list out, extract out, balance out*. A reasonable explanation may not only be overgeneralization due to the frequent use of **out** in constructing PVs, but also be the negative transfer of L1. As mentioned above, most of the participants have Cantonese or Chinese as their native language, and Cantonese can be regarded as a variation of Chinese due to the same orthography. In Chinese, resultative verbs such as "出 'out'" "下 'down'" "进 'in'" are quite common to follow a head verb to form disyllabic compound words (Packard, 2000). For instance, "走出 'walk-out'" "搬出 'move-out'" "坐下 'sit-down'" "跑进 'run-in'". Since the translated forms are quite similar to the structure of PVs, it is understandable that learners may associate this verb-resultative structure in Chinese with PVs in English, and thus tend to attach an adverbial particle or preposition

to any verb to indicate the result of the action. Interestingly, literature also documented that Malaysian learners produced unnatural PVs such as *"voice out"* and *"say out"*. The main reason of such errors is learners' negligence of restrictions to the verbs combined with OUT (Zarifi & Mukundan, 2014) which are only known by native speakers of English. Without such knowledge it is easy for English L2 learners to make this error.

Two PVs which do not exist in current dictionaries were deemed creative. One is *see around*, as in the sentence "*We're lucky though, as common sense to be quite common with the individual I see around in this room*". This word might be created by imitating the existing PV *look around*, as the verbs "see" and "look" share the same literal meaning. Malaysian learners also used a few creative PVs based on the literal meaning of AROUND which means "moving in a circle" (Zarifi & Mukundan, 2014). Another creative PV in the BPC is *work around* with the example "*the Unity of Command is a management system that many professionals use which tends to work around a philosophy of having only one supervisor for one employee*". The adverbial particle *around* in the context refers to the meaning "so as to have a center or base in", which makes sense in this PV combination. Coincidently, these two PVs were produced by an American student and an Indian student respectively. This meaning sense of AROUND was not seen in the creative PV use in German and Italian speakers of English (Waibel, 2007). It should be noted that some students from countries in the Outer Circle of English (e.g., Malaysia and India) (Kachru, 1982) who have received English-medium-instruction since childhood tend to have high English proficiency close to that of English L1 speakers. These students will be referred to as "near-native speakers" hereafter. In light of these findings, it can be argued that native or near-native English speakers have the ability to develop new PVs based on the meanings of adverbial particles. If there were more English L1 speakers or advanced learners in the sample, there might be more cases of creative PV use.

RQ3: Comparing PV use between students

Given the mixed L1 of the students, the researchers also examined the quantity and quality of PV use by Chinese L1 students and international students. It was found that all the errors/

unnaturalness took place among English L2 learners and L1 English speakers did not use any

unnatural PV. On the contrary, all the instances of creative PV use were produced by native or near-

native English speakers, and it is uncertain whether English L2 learners with intermediate proficiency

have such competence. Third, international students seem to use PVs more frequently in spoken

context with an average of 4.22 PVs per person while students from Hong Kong and the mainland on

average used 3.85 PVs per person. Further, based on the type/token ratio, the international students

seemed to demonstrate higher PV diversity with each PV used 1.9 times, while the students from

Hong Kong and the mainland used each PV 2.97 times. Overall, the Chinese L1 students might have

some disadvantages in PV use compared with native speakers of English. However, it can be argued

that such deficiency can be attributed to their lower English proficiency, rather than their

nationality. Wei (2021) found that high-proficiency Chinese learners of English did not underuse PVs.

Therefore, it could be inferred that the gap in PV competence between the native and non-native

speaker could be narrowed with increased general English proficiency of the non-native speakers.

Conclusions

The current study makes unique contribution to the teaching and learning of English by

conducting a comprehensive evaluation of university students' PV production in business

presentations and a meaningful comparison with the BNC. The business cases were based on real-

life scenarios and the format of face-to-face presentation simulates authentic business

communication. Results show that the students used a wide range of PVs in business presentations,

though they used PVs less frequently than English L1 speakers. The two most common PVs that the

students used were also widely used by English L1 speakers, which either have important signposting

functions in presentations or are highly relevant to introducing solutions to business cases. The most

common lexical verbs were quite different from those in the native speaker corpus, while the most

common adverbial particles were the same as those in the native speaker corpus. The students

produced PVs with high accuracy, with occasional cases of unnaturalness primarily due to misuse of

adverbial particles influenced by L1 negative transfer. The creative PV use was rare and was only

observed in English L1 speakers. Lastly, international students seemed to have some advantages in terms of the number and diversity of PV production compared with Chinese L1 speakers.

A few implications could be provided to language practitioners regarding formulaic language instruction in business English courses. First, teachers could incorporate some cross-linguistic comparison between students' L1 and English in class to raise students' awareness about the possible negative transfer from Chinese to English in PV use. Second, the instruction of PVs should be accompanied by ample authentic L2 input. According to usage-based theory, the weak formulaic language repertoire of English L2 learners mainly stems from a limited amount of exposure (Durrant & Schmitt, 2010). Therefore, showing students business case competition videos on YouTube or business interviews can increase the contextual L2 input for learners. Finally, the instruction of PVs should minimize the mechanical memorization in rote learning. Instead, teachers can include common collocations, actual contexts, and multiple meanings of high-frequency PVs to help students achieve better idiomaticity in PV use, rather than simple declarative knowledge.

The main limitations of the current study are its small sample size and constrained contexts for oral data. Therefore, the findings from the current study should be treated with caution in terms of generalizability or in comparison with learners from other L1 backgrounds. This study could offer a snapshot of intermediate-level university students' oral production of PVs in business communication and reveal the contingent choices and habitual patterns in their PV use. Another limitation of the sample is the uneven nationality distribution and English proficiency. For example, some Korean students attended international schools and some Indian students had native-like English proficiency. Such complicated backgrounds limit the claims that can be made from the findings. Future studies will benefit from a larger corpus and a more homogenous L1 background of participants.

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Appendix 1

Summary of PV types

Phrasal Verb	Frequency	Rank order	Moving average ranking	Rank order in BNC	Moving average ranking	Single-word synonym
move on	18	1	**1.5**	72	**37.00**	*
set up	17	2		2		establish
add on	8	3	**4.7**	*	**58.67**	*
go on	6	4		1		happen
carry out	6	4		24		perform
reach out	5	5		104		*
pass on	5	5		80		*
give out	4	6		135		send
find out	4	6		8		discover
build up	3	7	**7**	28	**50.20**	increase
stand out	3	7		95		*
take on	3	7		22		*
get along	3	7		*		*
open up	3	7		49		open
pass down	3	7		*		convey
start off	3	7		*		*
hand over	3	7		57		hand
carry on	2	8	**8**	27	**48.60**	continue
catch up	2	8		63		*
climb up	2	8		*		*
follow up	2	8		96		add
go back	2	8		4		return
grow up	2	8		53		grow
wrap up	2	8		*		conclude
add up	1	9	**9**	*	**65.85**	
break down	1	9		45		
break through	1	9		*		
bring about	1	9		48		

check in	1	9	*
clear up	1	9	*
come back	1	9	5
come down	1	9	33
double down	1	9	*
draw up	1	9	*
figure out	1	9	147
go over	1	9	101
go through	1	9	103
keep up	1	9	78
lay off	1	9	*
level up	1	9	*
look around	1	9	68
look back	1	9	42
match up	1	9	*
move back	1	9	131
point out	1	9	7
pull out	1	9	73
send out	1	9	76
speak up	1	9	*
sum up	1	9	84
take over	1	9	11
think back	1	9	*
work out	1	9	16
write down	1	9	66
put back	1	9	77
back up	1	9	106
Type: 55	**Token: 142**		

Appendix 2

The adverbial particle diversity of each lexical verb

Lexical Verbs	Frequency	Adverbial Particles	Adverbial Particle Diversity

MOVE	19	on (18), back (1)	2
SET	17	up (17)	1
GO	10	on (6), back (2), over (1), through (1)	4
ADD	9	on (8), up(1)	2
PASS	8	on (5), down(3)	2
CARRY	8	out (6), on(2)	2
REACH	5	out (5)	1
GIVE	4	out (4)	1
FIND	4	out (4)	1
TAKE	4	on (3), over(1)	2
BUILD	3	up (3)	1
STAND	3	out (3)	1
GET	3	along (3)	1
OPEN	3	up (3)	1
START	3	off (3)	1
HAND	3	over (3)	1
COME	2	back (1), down (1)	2
CATCH	2	up (2)	1
CLIMB	2	up (2)	1
FOLLOW	2	up (2)	1
GROW	2	up (2)	1
WRAP	2	up (2)	1
BREAK	2	down (1), through (1)	2
LOOK	2	around (1), back (1)	2
PUT	1	back (1)	1
WORK	1	out (1)	1
BRING	1	about (1)	1
CHECK	1	in (1)	1
CLEAR	1	up (1)	1
DOUBLE	1	down (1)	1
DRAW	1	up (1)	1
FIGURE	1	out (1)	1
KEEP	1	up (1)	1
LAY	1	off (1)	1

LEVEL	1	up (1)	1
MATCH	1	up (1)	1
POINT	1	out (1)	1
PULL	1	out (1)	1
SEND	1	out (1)	1
SPEAK	1	up (1)	1
SUM	1	up (1)	1
THINK	1	back (1)	1
WRITE	1	down (1)	1
BACK	1	up (1)	1
Type: 44	**Token: 142**		

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is responsible for formal analysis and investigation. Siyang Zhou and Hongzhu Wang are responsible

for data curation, original draft and review & editing.