

## Do collocational frameworks have local grammars?

### Introduction

A number of researchers in the fields of Corpus Linguistics, Computational Linguistics and Natural Language Processing have argued that a general grammar is unable to account for certain sets of meanings and that local grammars better describe the language in such situations (see, for example, Gross, 1993; Ahmad et al., 2006; Barnbrook, 2002; Mason, 2004; Hunston, 2002; Hunston and Sinclair, 2000; Sinclair 2007a). The term ‘local grammar’ was first used by Gross (1993: 26 and 29) to describe similar features shared across instances of collocations and ‘frozen sentences’ that could not be related by means of the formal rules of phrase structure or transformational grammar. The main argument put forward in favour of local grammars is that they describe “the resources for only one set of meanings in a language, rather than for the language as a whole” (Hunston, 2002: 90). Hunston (2002: 91) states that the study of local grammars “is still in its infancy”, and this still remains the case. Up until now, the usefulness of a local grammar has tended to be seen in terms of dealing with what Barnbrook (2002: 94) terms “a subset of normal language, the sublanguage” such as a local grammar for dictionary definitions (Barnbrook and Sinclair, 2001), time expressions (Gross, 1993), evaluative language use (Hunston and Sinclair, 2000), and cause and effect (Allen, 1999).

Hunston and Sinclair (2000: 93-97) describe a local grammar of evaluation made up of the following elements: evaluative category, evaluated entity and affected entity; for example, “he (evaluator) is (hinge) adamant (evaluating response) that he does not want to enter politics (thing evaluated)” and “they (evaluation carrier) were

(hinge) lucky (evaluative category) that we scored when we did (thing evaluated)” (ibid: 89). Such an approach is clearly replicable for other functions and, in a similar vein, Hunston (2002: 90-91) describes how it is possible to build up a detailed description of the resources used for specific sets of meanings by using examples of the ways in which it is possible to talk about sameness and difference. First, she identifies the words that indicate these meanings (e.g. ‘equate’, ‘match’, ‘contrast’, ‘differentiate’) and the patterns in which these words are used (e.g. ‘verb + plural noun group as in ‘equate two things’; verb + *between* + plural noun group as in ‘differentiate between two things’). Next, she identifies elements in the local grammar such as ‘comparer’, ‘comparison’ of ‘item 1’ and ‘item 2’ and these elements are then mapped onto the pattern (ibid: 90).

Hunston and Sinclair (2000: 101) argue that by adopting such an approach, corpora can be analysed using local grammars and such analyses would be more simple, precise, and useful than using a general grammar.

It would be simple in that each local grammar would use a limited number of terms, although the number of local grammars would be fairly extensive. It would be precise in that each local grammar could be stated in its own terms, without the need to fit in with more general statements. It would be useful because the terminology used would be reasonably transparent and would immediately relate the grammar and lexis of each part of the text to its discourse function.

(Hunston and Sinclair, 2000: 101)

Hunston (2002: 157) again makes the case for local grammars when she refers back to the description of the local grammar of evaluation (Hunston and Sinclair, 2000) to argue that it is more useful to know “that a clause is an ‘Evaluated Entity’ than that it is an object etc.”.

Sinclair (2007a) goes further than the above studies and makes the case that local grammars can also better account for multi-word lexical items which exhibit variation which is often the case. Sinclair’s (2007a) rationale is that when one studies phraseological variation in a multi-word lexical item, it is possible to identify a specific configuration which constitutes both the canonical form and canonical meaning. This configuration can then be used as the benchmark against which it is possible to describe the phraseological variation that is present in the multi-word lexical item. The end result is the identification of a multi-word lexical item consisting of a paraphrasable family with a canonical form. This family is made up of variations of the canonical form, but these variations still adhere to the canonical meaning. Sinclair (2007a: 38-46) examines a multi-word lexical item with ‘sever’ as its invariable core. He shows that once a multi-word lexical item such as this is found which exhibits variation, it is then possible to describe its local grammar. The importance of identifying the local grammar in cases of phraseological variation, in addition to the benefits of local grammars mentioned earlier, relates back to the notion of a canonical form and its sense. Sinclair claims that “text strings which conform to the local grammar are very likely to have this sense” (i.e. the sense of the canonical form) and “text strings which vary substantially from the local grammar are unlikely to have this sense” (Sinclair, 2007a: 44). In other words, conformity to the local grammar is an important criterion which could help in the computer-mediated determination of whether or not configurations of co-occurring words adhere to a

particular meaning, and therefore belong to the paraphrasable family of a multi-word lexical item.

This study aims to extend still further the theory and application of local grammars by making the case that local grammars can also be employed to better and more fully describe the patterns of co-selection found in collocational frameworks. The term 'collocational framework' was coined by Renouf and Sinclair (1991) to describe the co-selection of two grammatical words which frame an intervening lexical word (e.g. *a ... of*). In their study, collocational frameworks consist of "a discontinuous sequence of two words, positioned at one word remove from each other; they are therefore not grammatically self-standing; their well-formedness is dependent on what intervenes" (Renouf and Sinclair, 1991: 128). In the present study it will be seen that a broader definition is adopted which does not limit the number of intervening words. A collocational framework in this study consists of grammatical words co-selected to frame meaning shift units<sup>1</sup> (Author, 2009).

While there have been a small number of studies related to collocational frameworks (e.g. Hunston and Francis, 2000; Luzon-Marco, 2000), there has been no attempt so far to see whether it is possible to describe their local grammars. To illustrate the feasibility of identifying the local grammars of collocational frameworks, four collocational frameworks are studied here: *any ... may*, *may ... any*, *any ... shall*, and *shall ... any*.

Why were these particular collocational frameworks chosen? The study reported here is part of a larger project which seeks to identify the phraseologies specific to two specialised corpora: the Hong Kong Engineering Corpus (HKEC, 9.2m words) and the Hong Kong Financial Services Corpus (HKFSC, 7.3m words).

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<sup>1</sup> The term meaning shift unit is in line with Sinclair's (2007b) preference for this term rather than 'lexical item' in his later work.

In the course of the larger project both corpora were conprogrammed (Author, 2006 and Author, 2009; Greaves, 2009) to fully automatically identify all of the co-occurrences of two words irrespective of any intervening words or the sequencing of the co-occurring words. In the resulting list of congrams, it was observed that *any/may*<sup>2</sup> and *any/shall* were more frequent in the two specialised corpora than in a general English reference corpus (i.e. the BNC). The concordances of these congrams were then examined in order to determine whether the co-occurring words were meaningfully associated or simply co-occurring by chance. It was found that when they were meaningfully associated, they were in fact four collocational frameworks - *any + may*, *may + any*, *any + shall* and *shall + any*. When the concordances of these four collocational frameworks were studied further, it was found that they were predominantly in the legal texts contained in the HKEC and HKFSC (see Figure 1 for examples).

Figure 1: Sample concordance lines from the HKEC and the HKFSC

INSERT FIGURE 1 HERE

To determine whether these collocational frameworks were register-specific to engineering English and financial services English or more prevalent in particular engineering and financial services genres, the various sub-corpora, each representing a particular genre, within the HKEC and the HKFSC were searched. One of these genres, which is found in both the HKEC and the HKFSC, consists of ordinances (laws) pertaining to the engineering and financial services sectors. In both of these sub-corpora (the Hong Kong Engineering Ordinances Corpus, HKEOC, 139,176 words, and the Hong Kong Financial Services Ordinances Corpus, HKFSOC, 384,950

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<sup>2</sup> Congrams which exhibit variation are written alphabetically with a forward slash.

words) the frequencies of the four collocational frameworks were much higher than in the rest of the sub-corpora making up the two specialised corpora (see Table 1).

In Table 1, the frequencies of the four collocational frameworks in seven corpora are presented. Four of these corpora have been introduced earlier (i.e. the HKEC, HKEOC, HKFSC and HKFSOC), but the other three need to be briefly described here. The Hong Kong Ordinances Corpus (HKOC) is a compilation of both the HKEOC and the HKFSOC. The BNC is simply the entire BNC, as might be expected, and the BNC (minus regulative texts) corpus is, as its name suggests, what remains of the BNC after removing all the texts of a regulative nature (e.g. legal texts, recommendations, guidelines, instructions and regulations).

**Table 1** Frequencies of the four collocational frameworks across the corpora

INSERT TABLE 1 HERE

Table 1 shows that all four collocational frameworks have higher relative frequencies in the HKEC and HKFSC than in the BNC, suggesting that these collocational frameworks are more commonly used in texts specific to the engineering and financial services sectors than in general English; in other words, they may be register-specific. However, as mentioned above, when studying the concordance lines of these collocational frameworks, it was found that many of the instances are from the legal texts contained in the two specialised corpora. As a result, the collocational frameworks were searched for again in the two ordinances sub-corpora of the HKEC and HKFSC and the frequencies compared to those found in the BNC.

All four collocational frameworks have higher relative frequencies in the two ordinances corpora than in the HKEC, HKFSC and BNC. They are therefore more

accurately described as genre-specific to ordinances rather than register-specific to engineering and financial services. Interestingly, when the instances of the four collocational frameworks in the BNC were examined, it was found that a substantial proportion of them were in either legal texts or other regulative texts, such as recommendations, guidelines, instructions and regulations. If these regulative texts are excluded from the BNC (see final column of Table 1), then the case that these four collocational frameworks are regulative-text-specific becomes even stronger. More than half (925 instances, 54.4%) of the BNC instances of *any + may* come from regulative texts. If the instances found in the BNC's regulative texts are set aside, the relative frequency of *any + may* is about 32 times higher in the HKOC than in the BNC. As for *may + any*, most (950 instances, 61.3%) of the instances in the BNC are in regulative texts, thus this collocational framework is about 100 times more frequent in the HKOC than in general English. The same applies to the other two collocational frameworks. Almost all of the BNC instances of *any + shall* are in regulative texts (230 instances, 89.5%), thus the frequency of *any + shall* in the HKOC is 1,234 times higher than the non-regulative BNC instances. The findings for *shall + any* are similar with 535 BNC instances (89.6%) from regulative texts, therefore, this collocational framework is 1,084 times more frequent in the ordinances than in the BNC minus its regulative texts.

### ***Any, May and Shall***

While no studies have examined any of the collocational frameworks examined here, there are a substantial number of studies which have examined the three words which make up these frameworks. These are briefly reviewed here to help to identify the

functions of the three words and their relative frequencies in different spoken and written text types.

### ***any***

In Sinclair, *et al.*'s (1990: 52) grammar, *any* is described as belonging to the category "general determiner" and this type of determiner is used "about people or things in a general or indefinite way". Similarly, Halliday and Matthiessen (2004: 315) include *any* in their list of "non-specific deictics" which are "total or partial determiners". Such deictics "convey the meaning of all, or none, or some unspecified sub-set" (Halliday and Matthiessen, 2004: 315). *Any* refers to "an arbitrary member of a group or amount of a mass" according to Biber et al. (1999: 276). Biber, *et al.* (1999) examine the frequency of *any* across four corpora (conversation, fiction, newspapers and academic writing) and find that it is quite evenly distributed with frequencies of between 800 to 1,000 per million words (1999: 278). A reference work describing English usage (Sinclair, *et al.*, 1992: 57) states that *any* is used "to say something is true about each thing or person of a particular type, about each member of a group, or about each part of something". Most contemporary linguistics studies (e.g., Jacobsson, 2002) seem to concur with Kadmon and Landman (1993) who argue that *any* has one meaning which is to convey the sense of "widening" and "strengthening".

### ***may and shall***

In their study of modal verbs, Biber et al. (1999: 489) find that across the four corpora they examined, the distribution of *may* is uneven with conversation at 200 per million, fiction 400, newspapers 600, and academic writing 1,400. They also look at the two meanings of *may*, possibility (epistemic) and permission (deontic), and their relative



distributions in two corpora (conversation and academic writing), and find that in both corpora *may* is used more to signal possibility than permission: three times more likely in conversation and 23 times more likely in academic writing (1999: 491).

Biber et al. (1999: 489) also look at the frequency of *shall* in their corpora and find it has the same frequency in conversation and fiction at 400 instances per million, 200 in academic writing, and less than 100 in newspapers. In terms of marking prediction or volition, Biber et al. (1999: 496) note that in both conversation and academic writing, *shall* is used approximately four times more often for volition, but that it is "generally rare in both functions" (ibid: 495). In addition to these two main meanings, Sinclair et al. (1990: 230) state that *shall* is sometimes used in very formal contexts "in a declarative sentence to give an instruction or an order", as in "After ten o'clock at night there shall be quietness on the upper corridor". Carter and McCarthy (2006: 650) also note that *shall* can be employed "to issue directives", and they also point out that "this use is very formal and very rare". Interestingly, in terms of the study reported here, the two examples of *shall* used as a directive provided by Carter and McCarthy are regulatory in nature, one of which is a written notice in a plane: "This curtain shall be left open during takeoff and landing." (2006: 650).

An important point to note regarding all of the above studies is that the examples of *any*, *may* and *shall* provided by the researchers almost always come from general English and not from legal texts, where *any*, *may* and *shall* are more commonly used. In a natural language processing-based study (Curtotti and McCreath, 2011), a corpus of legal texts comprised of contracts was compared with a two million word reference corpus (2011: 4). Key words were identified in the contracts (2011: 4), among which were *any*, *may* and *shall*, but the researchers did not closely examine their functions, or co-selections, beyond stating that these words

along with other key words, such as *that*, *or*, *must*, and *will*, typically mark "the occurrence of rules" (2011: 204). In another study of legal texts, Bhatia and Bhatia (2011) also note the relatively frequent use of *any* with the meaning of "all-inclusiveness" (2011: 491). The studies by Curtotti and McCreath, and Bhatia and Bhatia, confirm that the high frequency of *any*, *may* and *shall* found in the HKOC is not an aberration given that the texts in these studies were legal in nature.

### **Local grammars of the collocational frameworks**

The instances of the four collocational frameworks (*any* + *may*, *may* + *any*, *any* + *shall*, and *shall* + *any*) were categorised into different patterns in terms of their structure and communicative function to arrive at a description of their local grammars. These were then compared to the instances in the BNC to see if they shared the same patterns.

#### ***any* + *may***

Tables 2-4 show the top 3 patterns of the collocational framework *any* + *may*. These instances of the top three patterns constitute the majority (77 times, 59.2%) of the total instances of this collocational framework in the HKOC and they are described and discussed in detail below. The other less frequent patterns are shown in the Appendix. In combination, it is argued, all of these patterns constitute the local grammar of this collocational framework.

**Table 2** Pattern 1: ANY + noun phrase + MAY + main verb (N=31)

INSERT TABLE 2 HERE

The noun phrase following the determiner *any* is the thing or person regulating something, such as ‘regulations made under this section’ in line 3 and the ‘person authorized by him in writing’ in line 4, or the thing or person regulated, for example, ‘company’ in line 1 is the entity regulated. The main verb following *may* represents the regulating or regulated action. The modal verb *may* has different meanings. Of the 31 instances of this pattern, in 21 (67.7%), *may* expresses possibility, for example, ‘...any stay of execution may be subject to...’ and ‘...any direction has been or may be given under...’. In the remaining instances, *may* expresses permission, for example, ‘any by-law so made may provide...’ and ‘any regulations made under subsection (2)(b) may repeal...’. This difference in the meaning of *may* is determined by the noun phrase which follows *any*. When the noun phrase is the entity or person regulating, *may* denotes permission as the entity or person has the authorised power, in that they are permitted, to perform certain regulating actions. When the noun phrase is the entity or person being regulated, *may* expresses possibility in the sense that the entity or person has the option to exercise a right or take a certain course of action.

**Table 3** Pattern 2: ANY + noun phrase + relativiser + MAY + main verb (N=27)

INSERT TABLE 3 HERE

In this pattern, the relativiser, i.e. ‘which’ or ‘that’, links the two elements. These two elements, the noun phrase following the determiner *any* and the main verb following the modal verb *may*, differ across the two ordinances sub-corpora. In the HKEOC, the noun phrase is a problem or potential problem, for example, ‘dangers’ in line 1 and ‘occurrence’ in line 2. While, in the HKFSOC, exemplified in lines 3 and 4

in Table 3, the noun phrase is the thing which is subject to regulation. The main verb following *may* in the HKEOC represents the cause or result of the problem or the potential problem mentioned earlier in the text. Whereas the main verb in lines 3 and 4, which are taken from the HKFSOC, is the action authorised with regard to the entity. While there are differences in the functions of the elements in this pattern between the two ordinances sub-corpora, *may* consistently expresses possibility.

**Table 4** Pattern 3: ANY + noun phrase + (relativiser) + noun phrase + MAY + main verb (N=19)  
**INSERT TABLE 4 HERE**

The modal verb *may* in pattern 3 differs in its meaning. It denotes possibility in 12 out of 19 instances and examples of this meaning are lines 1 and 2. In the remaining instances, *may* expresses permission as in line 3 where ‘the licensing authority’ has the authorised power to take ‘other steps’. The first noun phrase following *any* is the thing regulated, for example, ‘other remedy’ in line 1 and ‘liabilities’ in line 3. The relativiser connects elements in the pattern, but it is optional. For example, in lines 1 and 3, ‘which’ is the relativiser connecting the preceding phrase with the clause which follows it, but the meaning does not change if the relativiser is omitted (see lines 2 and 4). The noun phrase preceding the modal verb *may* is the entity with the authorised power. This can be a person, such as ‘he’ (line 1), or an institution or authority, for example, ‘the licensing authority’ (line 3). The main verb following the modal verb denotes the regulating or regulated action.

The modal verb *may* denotes epistemic modality in 101 out of the 130 instances (77.7%) of the three most frequent patterns of the local grammar of *any* +

*may*. Thus, when *any* + *may* are co-selected as a collocational framework, *may* typically expresses possibility.

These three patterns are the most frequent in the HKOC, but there are variations to the ranking of the patterns when the HKEOC and the HKFSOC are examined separately. The top 3 patterns in the HKFSOC are in the same rank order as the HKOC. However, in the HKEOC, the top three patterns are ranked as follows:

*any* + *noun phrase* + *relativiser* + *may* + *main verb*;

*any* + *noun phrase* + *may* + *main verb*; and

*any* + *noun phrase* + *relativiser* + *noun phrase* + *may* + *main verb*.

The difference in the rank ordering suggests that the relative frequencies of the patterns vary across register-specific ordinance corpora. It should also be noted that the HKEOC is about one third the size of the HKFSOC and this might have impacted the overall ranking of these patterns.

### ***may* + *any***

Tables 5 to 7 show the three most frequent patterns of the local grammar of the collocational framework *may* + *any* in the HKEOC. It can be seen that when *may* precedes *any* in the collocational framework, *may* generally denotes permission (253 instances, 80.3%), whereas when *may* is preceded by *any* it typically expresses possibility.

**Table 5** Pattern 1: noun phrase + MAY + main verb + ANY + noun phrase  
(N=119)

INSERT TABLE 5 HERE

The noun phrase preceding the modal verb is an authorised person such as ‘the arbitrator’ in line 3, or authorised entity, such as ‘The Water Authority’ in line 2. The modal verb *may* expresses permission and the main verb is the permitted regulating action. The noun phrase following *any* is the thing or person regulated. This pattern is used to express the meaning that a person or an entity has been authorised to perform an action to regulate an entity or person. Only two instances of this pattern do not contain all of these elements, they are ‘such regulations may include any savings, transitional, incidental...’ and ‘criminal proceedings may be instituted against any person under subsection 219(2)...’. Here the noun phrase preceding *may* is a specific aspect of the ordinance itself or the result of non-compliance with the ordinance.

**Table 6** Pattern 2: noun phrase + MAY + main verb + (noun phrase) + prepositional phrase with ANY (N=78)

INSERT TABLE 6 HERE

In the majority of instances of pattern 2 (59, 75.6%), the first noun phrase represents the authorised entity and *may* expresses permission. The main verb is the regulating action, and the optional noun phrase is the thing regulated. The prepositional phrase with the determiner *any* expresses the extent of the regulating action. For example, in line 1, ‘The Water Authority’ not only has the authorised power to ‘change a meter’, the decision of when to change the meter is also made by ‘the Water Authority’. In line 2, the arbitrator is permitted to ‘seek advice’ and the full extent of this action is elaborated in the prepositional phrase ‘from any

representative'. While the majority of instances of this pattern contain these functions, 19 (24.4%) are different. The first noun phrase in these instances is the thing regulated and the main verb is the action regulated while *may* denotes possibility. For example, in line 3 'An additional copy' is the thing regulated and 'be issued' is the regulated action in its passive form. The meaning is that there is the possibility for an additional copy to be produced and distributed. The prepositional phrase with *any* has the same function of describing the extent of the action.

**Table 7** Pattern 3: noun phrase + MAY + prepositional phrase with ANY + main verb (N=56)

INSERT TABLE 7 HERE

While there is a difference in syntactic pattern, the elements found and their respective functions are very similar to those of pattern 2. In this pattern, the prepositional phrase with *any* precedes the main verb. Except for this positional difference, the functions of the elements, namely the noun phrase, the modal verb *may*, the prepositional phrase with *any* and the main verb, are the same as those of the equivalent elements in pattern 2. Only one of the instances of this pattern has a different function, 'A deposit paid under this section- may, without prejudice to the exercise of any other powder under this ordinance, be applied to...'. Here, the noun phrase 'A deposit paid under this section' is the thing to be regulated, and the modal verb *may* denotes possibility rather than permission.

In the case of this collocational framework, the three most frequent patterns in the HKOC have the same rank order in the two register-specific sub-corpora. In 267 out of 315 instances (84.8%), *may* + *any*, *may* denotes deontic modality, i.e. permission. Thus the findings show that when *any* and *may* are co-selected, the

function of the modal verb tends to be affected by their sequencing. If all the instances of these two collocational frameworks are combined, *may* is used twice as often to signal permission (296 instances, 66.5%) than possibility (149 instances, 33.5%) in the HKOC. This distribution of the two meanings of *may* is different from that found by Biber et al. (1999) in their four corpora of non-regulative texts in which *may* was much more likely to carry epistemic rather than deontic meaning.

### ***any + shall***

Below, the three most frequent patterns for the collocational frameworks *any + shall* are described and discussed.

**Table 8** Pattern 1: Noun phrase + modifier with ANY + SHALL + main verb (N=66)

INSERT TABLE 8 HERE

The most frequent pattern of *any + shall* is formed by *noun phrase + modifier with any + shall + main verb* (66, 44%) (Table 8). The determiner *any* is embedded in the modifier of the noun phrase which usually represents the thing or person to be regulated (53, 80.3%), for example, ‘The reading’ and ‘the amount’ in lines 1 and 2. The modifier which is typically in the form of a prepositional phrase with *any*, further specifies or delimits what is regulated; for example, in line 1, the item regulated is not just ‘the procedure’, but is limited to that ‘of any hearing’. The modal verb *shall* in this pattern signals that it is a directive and the main verb is the regulating action. For the remaining instances (13, 19.7%), the noun phrase is a legal process, such as ‘the provision’ in line 4, or non-compliance with the ordinance or a specific aspect of the ordinance, such as ‘a contravention’ in line 3. In these cases, the modifier with the



determiner *any* also serves to provide specification of the legal process or non-compliance which is to be regulated.

**Table 9** Pattern 2: ANY + noun phrase + SHALL + main verb (N=62)

INSERT TABLE 9 HERE

Pattern 2 of is both syntactically and functionally similar to the most frequent pattern of the collocational framework *any* + *may*. As seen in the examples in Table 9, the noun phrase is the thing or person to be regulated by the ordinance. The main verb is the regulated action or the consequence of non-compliance and *shall* has a directive function.

**Table 10** Pattern 3: Clause with ANY + noun phrase + SHALL + main verb (N=44)

INSERT TABLE 10 HERE

As with the top two patterns, the noun phrase is the thing or person regulated, and the verb is the action regulated. Again, *shall* has a directive function and the clause with *any* provides the condition under which the person or thing is to be regulated. For example, in line 1, ‘he’, which refers to ‘a member of the appeal board’, is only required by the ordinance to disclose certain information upon the occurrence of the circumstance described in the clause with *any*, i.e. ‘where a member of the appeal board is in any way directly or indirectly interested in any appeal’.

When examining the HKEOC and the HKFSOC separately, there are variations in the ranking of the patterns. While the top 3 patterns of the HKFSOC follow the ranking in the HKOC, the top 3 of the HKEOC are ranked as follows:

*any + noun phrase + shall + main verb;*

*noun phrase + modifier with any + shall + main verb; and*

*clause with any + noun phrase + shall + main verb.*

As in the case of the collocational framework *any + may*, the different sizes of the two register-specific corpora may have influenced the relative rankings.

### ***shall + any***

Tables 11-13 illustrate the three most frequent patterns of the collocational framework *shall + any*. Table 11 shows the most frequent pattern which is *noun phrase + shall + main verb + any + noun phrase*.

**Table 11** Pattern 1: noun phrase + SHALL + main verb + ANY + noun phrase (N=154)

INSERT TABLE 11 HERE

The first noun phrase is the thing or person regulated, and the main verb is the action that is regulated. The other noun phrase is the thing or action regulated. The modal verb *shall* signals that these are directives. The majority of the instances (120 instances, 77.9%) of this pattern contain a negative structure. This is predominantly realised in two forms: ‘not’ (80 times, 66.7%) immediately following the modal verb *shall*, which is the case in line 3, and ‘no’ (39 times, 32.5%) preceding the noun phrase, such as ‘no person’ and ‘no authorised officer’ in lines 1 and 2.

**Table 12** Pattern 2: noun phrase + SHALL + main verb + prepositional phrase with ANY (N=106)

INSERT TABLE 12 HERE

In pattern 2, the noun phrase is the thing or person regulated (line 1) or the source of the regulating authority (lines 2 and 3), and *shall*, again, signals a directive. The main verb is the regulated or required action, and the prepositional phrase embedded with *any* represents the extent of the action. A negative structure is also present in just over half (54 instances, 50.9%) of the instances of this pattern, such as ‘no person’ in line 1.

**Table 13** Pattern 3: noun phrase + SHALL + phrase with ANY + main verb (N=34)

INSERT TABLE 13 HERE

In some instances, for example, lines 1 and 2 (Table 13), the functions of the noun phrase, the modal verb *shall*, and the main verb are the same as those in Pattern 2, with the phrase containing *any* setting the parameters for the regulating action. In other instances, the noun phrase is the authorised entity or person, such as ‘The Secretary for Justice’ in line 4, and the main verb in these cases is the regulating action, such as ‘permit’ or ‘appoint’ in lines 3 and 4. In this pattern, 32.4% of the instances contain a negative structure such as that found in line 2.

The rank order of the three most frequent patterns in the HKOC are the same as those in the HKEOC and HKFSOC. In addition to the top three patterns, a majority of the instances (198, 58.1%) of *shall* + *any* have a negative structure

realised by ‘not’ (118, 59.6%), ‘no’ (76, 38.4%), ‘nothing’ (2, 1.0%), ‘neither...nor...’ (1, 0.5%), and ‘none’ (1, 0.5%).

The presence of a negative structure is much less common in *any + shall* (21 instances, 14%). In the collocational framework *may + any*, there are negative structures in only 11 instances (3.5%) and none are found in *any + may*. This tendency suggests that the use of *may* in the ordinances is to regulate the behaviour of people in terms of what they have the right to do or what they are permitted to do, while *shall*, which always expresses a directive meaning in the collocational frameworks examined here, is as likely to be used when instructing people as to what they cannot do as well as what they can do.

The 198 instances of *shall + any* with a negative structure were further examined to determine what items the negative structure relates to. Most of them (137, 69.2%) were used with the thing or person regulated, such as in the cases of ‘no person shall...’, ‘no payment shall...’, or ‘A licensed corporation shall not...’. Some of the negative structures (39, 19.7%) relate to the entity with the authority or authorised person with the legal power, for example, ‘no authorized officer shall...’ and ‘the Commission shall not...’. There are also instances (22, 11.1%) that relate to a specific aspect, or section of, the ordinance, for example, ‘the provision of this Part shall not...’ and ‘this Ordinance shall not...’. Hence, this colligational pattern is typically outlining what action the entity or person being regulated is not allowed to perform.

The instances of all four of these collocational frameworks were then examined in the BNC to see if similar patterns of use are present. It was found that in both the regulative texts and the non-regulative texts in the BNC, the four collocational frameworks exhibited the same patterns and with a similar ranking.

However, those in the non-regulative texts were found to exhibit additional different patterns, but all of these have very low frequencies. Also, these non-regulative texts in which the collocational frameworks were found are almost all formal written texts.

## Conclusions

This study has provided evidence that collocational frameworks can be genre-specific. The four collocational frameworks examined are also strongly associated with regulative texts and further examination of the elements comprising their local grammars helps to explain why they are much more likely to be found in such texts. The elements contained in the local grammars consist of the regulating source, thing or person regulated, and the regulating action. The use of the general determiner *any* in all four collocational frameworks is thanks to its meaning of all-encompassing which is a meaning associated with regulative texts which typically seek to avoid exceptions. It has been shown that in the collocational framework *any* + *may*, *may* tends to have epistemic meaning while in the more frequent *may* + *any* collocational framework (i.e. 315 versus 130) it is typically deontic due to the different sequencing of the elements in their local grammars. Overall, *may* in these regulative texts is deontic (296 instances, 66.5%) rather than epistemic (149 instances, 33.5%) which is the opposite of the findings of Biber et al. (1999: 489) in their study of corpora which were not regulative in nature. The two collocational frameworks *any* + *shall* and *shall* + *any* were found to be different with the latter frequently containing a negative structure to the left or right of *shall* when the actions of the thing or person being regulated are restricted in some form. Interestingly, the use of *shall* in these collocational frameworks is different from other studies of this modal verb in that it is used relatively frequently in regulative texts unlike the findings of Biber et al.

(1999: 495). Also, in these regulative texts *shall* invariably functions as a directive, which is a function identified by both Sinclair (1990: 230) and Carter and McCarthy (2006: 650), but they also state that this particular usage is very rare. However, while the directive function of *shall* is rare in general English, it is the norm when co-selected with *any* in these two collocational frameworks.

This study has shown that by studying the patterns of co-selections specific to these four collocational frameworks, it is possible to describe their local grammars and the elements which they frame which illustrate that the theory of local grammars can be extended beyond language functions and lexically-rich words and phrases to encompass other forms of phraseology. Future studies might examine other collocational frameworks to see how generalisable these findings are.

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## Appendix

### Other patterns of *any* + *may*

Noun phrase + modifier with ANY + MAY + main verb (N=17)

<i>Thing/person regulated</i>	<i>Specification of thing/person regulated</i>	<i>Possibility</i>	<i>Regulating/regulated</i>
Noun phrase	Modifier with Any	Modal verb (May)	Main verb
1 An additional copy	of any report issued under subsection (1)	may	be issued
2 an offence	under any of the relevant provisions	may	have

Clause with ANY + as the case may be (N=4)

<i>Situations with alternatives</i>	<i>Possibility</i>
Clause with any	as the case may be
1 no person shall install an incoming installation pipe to any of those floors or areas,	as the case may be
2 the information was previously disclosed to him or any other person	(as the case may be)

ANY + noun phrase + conjunction + MAY + main verb (N=2)

<i>All encompassing</i>	<i>Thing regulated</i>		<i>Possibility</i>	<i>Regulated action</i>
Determiner (Any)	Noun phrase	Conjunction	Modal verb (May)	Main verb
1 any	other occurrence	as	may	reasonably be required

2 any	other issuer	as	may	be approved
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ANY + noun phrase + as may be applicable (N=12)

<i>All encompassing</i>	<i>Alternatives</i>	<i>Possibility</i>
Determiner (Any)	Noun phrase	as may be applicable
1 any	one of them	as may be applicable
2 any	one or more of them	as may be applicable

Prepositional phrase with ANY + noun phrase + MAY + (adverbial) + main verb (N=5)

<i>Extent of regulating action</i>	<i>Authorised entity</i>	<i>Permission</i>	<i>(Condition)</i>	<i>Regulating action</i>
Prepositional phrase with any	Noun phrase	Modal verb (May)	(Adverbial)	Main verb
1 On any appeal under subsection (1),	the Commission	may		dismiss
2 On an application by any person to the Commission,	the Commission	may	where it considers appropriate	approve

Noun phrase + if ANY + as + (noun phrase) + MAY + main verb (N=5)

<i>Possible alternatives</i>	<i>Condition of occurrence</i>		<i>Authorised entity</i>	<i>Permission</i>	<i>Regulating action</i>
Noun phrase	if any	Conjunction	Noun phrase	Modal verb (May)	Main verb
1 such conditions	(if any)	as	it	may	determine
2 such extent	(if any)	as	the Financial Secretary	may	direct

Main verb + ANY + noun phrase + conjunction + main verb + noun phrase + as may be reasonable in the circumstances (N=7)

<i>Regulating action</i>	<i>All encompassing</i>	<i>Thing regulated</i>	<i>Alternative</i>	<i>Regulating action</i>	<i>Thing regulated</i>	<i>Possibility</i>
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Main verb	Determiner (Any)	Noun phrase	Conjunction	Main verb	Noun phrase	as may be reasonable in the circumstances
1 amend or revoke	any	such condition	or	impose	new conditions	as may be reasonable in the circumstances
2 amend or revoke	any	such condition	or	impose	new conditions	as may be reasonable in the circumstances

### Other patterns of *may* + *any*

#### Noun phrase + MAY + main verb + to-infinitive + ANY + noun phrase (N=11)

<i>Authorised entity</i>	<i>Permission</i>	<i>Regulating action</i>	<i>Specification of regulating action</i>	<i>All encompassing</i>	<i>Thing regulated</i>
Noun phrase	Modal verb (May)	Main verb	To-infinitive	Determiner (Any)	Noun phrase
1 the Water Authority	may	specify	(i) to pay	any	charge due
2 the Commission	may	refuse	to authorise	any	collective investment scheme

#### Noun phrase + MAY + phrase with ANY + main verb (N=12)

<i>Authorised entity</i>	<i>Permission</i>	<i>Extent of regulating action</i>	<i>Regulating action</i>
Noun phrase	Modal verb (May)	Phrase with Any	Main verb
1 The Water Authority	may	either generally or in any particular case	delegate
2 the Commission	may	in respect of any period of insurance,	approve

#### Noun phrase + MAY + main verb + conjunction + noun phrase with ANY + main verb (N=7)

<i>Authorised entity</i>	<i>Permission</i>	<i>Regulating action</i>	<i>Hinge</i>	<i>Thing regulated</i>
Noun phrase	Modal verb (May)	Main verb	Conjunction	Noun phrase with Any
1 this section	may	provide	that	a contravention of any specified provisions
2 the Insurance Authority	may	direct	that	any matters recorded in respect of that insurer in

Noun phrase + MAY + main verb + noun phrase + modifier with ANY (N=8)

<i>Authorised Entity</i>	<i>Permission</i>	<i>Regulating action</i>	<i>Thing regulated</i>	<i>Specification of thing regulated</i>
Noun phrase	Modal verb (May)	Main verb	Noun phrase	Modifier with Any
1 The Commission	May	recover	the amount	of any fees payable
2 The arbitrator	may	require	the retirement	of any witness

Noun phrase/verb phrase + as the case may be + prepositional phrase with ANY (N=7)

<i>Alternatives</i>	<i>Possibility</i>	<i>Extent of the occurrence of the alternatives</i>
Noun phrase / verb phrase	as the case may be	Prepositional phrase with Any
1 a builder's lift or tower working platform	as the case may be	in any of the following circumstances
2 come to have or ceased to have a short position in those shares	(as the case may be)	at any material time

Noun phrase/verb phrase + as the case may be + conjunction + ANY + noun phrase (N=6)

<i>Alternatives</i>	<i>Possibility</i>	<i>Extension of alternatives</i>	<i>All encompassing</i>	<i>Thing or person regulated</i>
Noun phrase / verb phrase	as the case may be	Conjunction	Determiner (Any)	Noun phrase
1 the rules of amendment of the rules	as the case may be	or	any	part thereof

2 a director or a partner as the case may be or any other person authorised by it

Noun phrase + as the case may be + to infinitive + ANY + noun phrase (N=3)

<i>Alternatives</i>	<i>Possibility</i>	<i>Regulating action</i>	<i>All encompassing</i>	<i>Thing regulated</i>
Noun phrase	as the case may be	to infinitive	Determiner (Any)	Noun phrase
1 a regulatory body or criminal investigatory body	(as the case may be)	to produce	any	accounts or records
2 a related corporation of the intermediary or the associated entity	(as the case may be)	to disclose	any	information

Noun phrase + as the case may be + verb + prepositional phrase with ANY (N=4)

<i>Alternatives</i>	<i>Possibility</i>	<i>Regulated action</i>	<i>Extend of regulated action</i>
Noun phrase	as the case may be	verb	prepositional phrase with Any
1 a builder's lift or tower working platform	as the case may be	does not comply	with any of the relevant requirements
2 the imposition, substitution or variation	(as the case may be)	takes effect	at any time

### Other patterns of any + shall

Noun phrase + phrase with ANY + SHALL + main verb (N=3)

<i>Person regulated</i>	<i>Extent of regulated action</i>	<i>Directive</i>	<i>Regulated action</i>
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Noun phrase	Phrase with Any	Modal verb (Shall)	Main verb
1 the authorised person	when exercising any power under this section	shall	produce
2 the authorised person	before exercising any power under this section	shall	produce

Prepositional phrase with ANY + conjunction + noun phrase + SHALL (N=2)

<i>Condition</i>	<i>Hinge</i>	<i>Person regulated</i>	<i>Directive</i>
Prepositional phrase with Any	Conjunction	Noun phrase	Modal verb (Shall)
1 under any provision of this Part	that	a person	shall not

  

<i>Condition</i>	<i>Hinge</i>	<i>Authorised entity</i>	<i>Directive</i>
Prepositional phrase with Any	Conjunction	Noun phrase	Modal verb (Shall)
2 under any other provision of this or any other Ordinance	that	the Commission	shall

**Other patterns of shall + any**

Noun phrase + SHALL + main verb + noun phrase + modifier with ANY (N=11)

<i>Person regulated</i>	<i>Directive</i>	<i>Regulated action</i>	<i>Thing regulated</i>	<i>Specification of thing regulated</i>
Noun phrase	Modal verb (Shall)	Main verb	Noun phrase	Modifier with Any
1 The owner of a tank	shall	keep	a written record	of the results of any test

  

<i>Authorised entity</i>	<i>Directive</i>	<i>Regulating action</i>	<i>Thing regulated</i>	<i>Specification of thing regulated</i>
Noun phrase	Modal verb (Shall)	Main verb	Noun phrase	Modifier with Any
2 The Commission	shall not	approve	the conduct	of any activities

Noun phrase + SHALL + main verb + to-infinitive + ANY + noun phrase (N=17)

<i>Thing/person regulated</i>	<i>Directive</i>	<i>Regulated action</i>	<i>Specification of regulated action</i>	<i>All encompassing</i>	<i>Thing regulated</i>
Noun phrase	Modal verb (Shall)	Main verb	To-infinitive	Determiner (Any)	Noun phrase
1 no person	shall	be required	to alter or renew	any	such pipe
2 a licensed corporation	shall	cease	to treat	any	cash

Noun phrase + SHALL + adverbial + main verb + noun phrase + adjective + prepositional phrase with ANY (N=2)

<i>Problem</i>	<i>Directive</i>	<i>Cause</i>	<i>Person regulated</i>	<i>Responsibility</i>	<i>Extent of responsibility</i>
Noun phrase	Modal verb (Shall)	Adverbial	Main verb	Noun phrase	Adjective Prepositional phrase with Any
1 A failure on the part of any person to observe any provision of an approved code of practice	shall not	of itself	render	him	liable to any civil or criminal proceedings
2 A failure on the part of any person to comply with the provisions set out in any code or guideline published under this section that apply to him	shall not	by itself	render	him	liable to any judicial or other proceedings

Noun phrase + SHALL + main verb + noun phrase + if ANY (N=2)

<i>Authorised entity</i>	<i>Directive</i>	<i>Regulating action</i>		<i>Thing regulated</i>	<i>Condition of occurrence</i>
Noun phrase	Modal verb (Shall)	Main verb	(Prepositional phrase)	Noun phrase	if Any
The tribunal	shall	determine		the amount of compensation	if any
<i>Person regulated</i>	<i>Directive</i>	<i>Regulated action</i>	<i>Extent of regulated action</i>	<i>Thing regulated</i>	<i>Condition of occurrence</i>

Noun phrase	Modal verb (Shall)	Main verb	(Prepositional phrase)	Noun phrase	if Any
A person to which subsection (1) applies	shall	provide	to his agent	such information	(if any)

Noun phrase + SHALL + main verb + conjunction + Noun phrase with ANY (N=5)

<i>Thing/person regulated</i>	<i>Directive</i>	<i>Regulated action</i>	<i>Hinge</i>	<i>Thing regulated</i>
Noun phrase	Modal verb (Shall)	Main verb	Conjunction	Noun phrase with Any
1 An audible alarm	shall	be triggered	whenever	any one or combination of the alarms
2 The contractor	shall	ensure	that	cameras, plus any accessories and the distribution system

Noun phrase + SHALL + main verb + conjunction + adverb + link verb + ANY + noun phrase (N=2)

<i>Person/entity regulated</i>	<i>Directive</i>	<i>Regulated action</i>			<i>Occurrence</i>	<i>All encompassing</i>	
Noun phrase	Modal verb (Shall)	Main verb	Conjunction	Adverb	Link verb	Determiner (Any)	Noun phrase
1 The Contractor	shall	state	whether	there	is	any	storage life
2 The Contractor	shall	state	whether	there	is	any	storage life

Noun phrase + SHALL + link verb + adjective + prepositional phrase + if ANY (N=6)

<i>Thing regulated</i>	<i>Directive</i>	<i>Hinge</i>	<i>Responsibility / liability</i>	<i>Extent of responsibility</i>	<i>Condition of occurrence</i>
Noun phrase	Modal verb (Shall)	Link verb	Adjective	Prepositional phrase	if Any
1 the listed corporation or the other corporation	shall	be	liable	to such extent	(if any)



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2 the applicants for the investigation shall be liable to the extent if any

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