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Knowledge and acquisition of formulaic sequences

A longitudinal study

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Introduction

Formulaic language has become one of the major issues in applied linguistics in the new millennium. Although relatively new to many scholars, it has been an important topic for decades in Russian and German academic circles (see Burger, 2003; Cowie, 1998; Howarth, 1996), and has been steadily developing for over 20 years in Anglophone research literature. Pawley and Syder (1983) were among the first English-based researchers to recognize the importance of conventionalized language, and Sinclair followed up in 1991 with his 'idiom principle'. Nattinger and DeCarrico (1992) expanded on this and explored the relationship between lexical phrases and functional language. Now there is a growing awareness that much of the systematicity of language is lexically-driven, with the resultant concept of 'lexico-grammar' (e.g. Biber *et al.*, 1999; DeCarrico and Larsen-Freeman, 2002). This work has been instrumental in establishing the ubiquity of formulaic language and its importance in the usage of language in general. However, much of this research has been descriptive in nature, often utilizing corpus analysis. There has been less research into the acquisition of formulaic sequences, mainly focusing on the L1 acquisition of young children. Research into L2 acquisition is relatively scarce (see Wray, 2002 for an overview) and given the importance of formulaic sequences in language use, it seems an opportune time to give this area further attention. (See Schmitt and Carter, this volume, for a more detailed overview of formulaic sequences and their acquisition.)

This study is one step in that direction. It will attempt to describe the acquisition of a set of target formulaic sequences under semi-controlled conditions. In addition, because individual difference factors have been shown to have

an important influence on language learning in general (Dornyei and Skehan, 2003; Sawyer and Ranta, 2001), it is logical to suspect that they also influence the acquisition of formulaic sequences. Thus we will measure several of these factors (i.e. their age, gender, language aptitude, and motivation) in order to determine their effect on formulaic sequence acquisition.

Methodology

Selecting the target formulaic sequences

The target formulaic sequences for this longitudinal study were chosen with three main criteria in mind. First, we needed to make sure that target formulaic sequences occurred with some degree of frequency in language use. Second, the target sequences would be incorporated into an EAP teaching environment, and so they needed to be connected with academic discourse. Third, in order to secure the cooperation of the language instructors at the Centre for English Language Education (CELE) at the University of Nottingham, the sequences also needed to be seen as useful to students and worthwhile to teach. Based on these criteria, the following procedure was carried out to identify and select appropriate formulaic sequences for the study.

Our initial step was to consult reference materials which listed and discussed formulaic sequences of various kinds. We extracted 97 candidate formulaic sequences of an academic nature from the Biber *et al.* (1999) analysis of lexical bundles, and 59 candidate formulaic sequences from Nattinger and DeCarico's (1992) functional analysis of lexical phrases. We then took words from Hyland's (2000) list which are used to express doubt and certainty (e.g. *dearly* and *approximately*) and which are used as discourse markers (e.g. *therefore* and *finally*) and submitted them to a corpus analysis to see if they formed the core of a formulaic sequence (*clearly the best*). If so, they were added to our candidate list. Once the list of candidate formulaic sequences was compiled, we determined how frequently they occurred in each of three corpora. Frequency figures from the British National Corpus (BNC) gave an indication of how often the sequences occurred in general English, figures from the CANCODE corpus indicated how frequent they were in spoken discourse, and figures from the MICASE corpus showed their frequency in academic spoken discourse. Based on these frequency figures, we were able to identify the formulaic sequence candidates with the highest frequencies in written, spoken, and academic contexts.

The next step was to identify formulaic sequences which occurred in the CELE textbooks. We examined seven textbooks which would be used in the CELE summer preessional program:

- Upper Intermediate Matters* (Bell and Gower, 1992)
- Lexis: Academic Vocabulary Study* (Burgmeier, Eldred, and Boyd Zimmerman, 1991)
- Functions of English* (Jones, 1981)
- Academic Writing Course* (Jordan, 1992)
- Writing Academic English* (Oshima and Hogue, 1999)
- A Way with Words Book 3* (Redman, 1991)
- Traveling the World through Idioms* (Kadden, 1998).

In addition, we looked through the CELE teaching materials for possible sequences. This search of textbooks and materials yielded 74 potential target formulaic sequences. After comparing the CELE list with the candidate list from our literature review, we compiled a short list of 45 candidate formulaic sequences which occurred in the CELE materials and which also had relatively high frequency figures in one or more of the corpora consulted. We fixed these sequences to a questionnaire and surveyed the CELE language instructors for their opinions about the relative usefulness of the formulaic sequences on the list. Based on this survey and on further discussions with the instructors, the final list of 20 formulaic sequences was agreed upon. Thus, the selection of the final target formulaic sequences was based on a combination of criteria including appearance in the literature, appearance in CELE materials, frequency, and instructors' intuitions of usefulness.

Developing the measurement battery

Once the final target formulaic sequences were decided upon, the next task was to develop elicitation instruments for productive and receptive measures of the target sequences, as well as language aptitude and motivation. Starting with the formulaic sequence instruments, we wished to incorporate the sequences in as natural a context as possible. Therefore instead of using separate short contexts for each of the formulaic sequences, we wrote two extended contexts into which we were able to embed all of the target sequences. We controlled the vocabulary load of the context stories by analyzing them with the vocabulary frequency profile tool available on Tom Cobb's website (<http://132.208.224.131/>) and eliminating most of the lower-frequency lexis.

For the productive measurement instrument, we adopted a test format which blended elements of cloze and C-test techniques. In it, the context was left intact, but most or all of the content words in each formulaic sequence were deleted and a blank inserted. To constrain the choice of words possible in each blank, the initial letter(s) of each word were given. Learners were instructed to complete the words on the blanks. The instrument was designed to measure whether the participants could produce the formulaic sequence appropriate for the surrounding context, and not whether they could discern the appropriate meaning for that context. Therefore, the meaning realized by the target formulaic sequence was given to the participants in the right margin as part of the item, and it was their task to produce the proper target form given that meaning and context. To highlight the fact that the blanks were part of a larger formulaic sequence, the whole sequence was put in bold font. An example of the resulting format is:

Learning English as a second language is a difficult challenge, but we do know several ways to make learning more efficient.

Fi_____ of a_____, almost every research study shows (the initial one) that you need to use English as much as possible.

[Answer: First of all]

For the receptive version of this test, the same contextualization stories were used. A single line was inserted in place of the target formulaic sequences, and participants were to choose from four options in a multiple-choice test format. The distractors were written to be semantically similar to the correct option, and as similar in form and length as possible. Since all options were grammatically possible, the BNC was checked to ensure that each correct option was by far the most frequent and natural option for the particular context. A fifth option (I DON'T KNOW) was included in order to offer an option that did not force a participant to guess if they did not know the answer. Because the options for each item all had a similar meaning and form, it should be relatively difficult to guess correctly unless a participant has some intuition about the correct form of the formulaic sequence targeted. An example of the receptive format is as follows:

International debt

Speaker A: I've been watching the news report and they say that (11) ___ the international debts of poorer countries might be cancelled.

11. a. there's a good chance that
b. it seems to be happening that
c. the evidence is increasing that
d. people are thinking that
e. I DON'T KNOW

[Answer: a]

As part of the study, we wished to compare the knowledge and acquisition of formulaic sequences with a measure of the learners' vocabulary in general. In order to do this, the learners were also given a vocabulary size measure. The measure chosen was the Vocabulary Levels Test (Schmitt, Schmitt, and Clapham, 2001). After consultation with CELE colleagues on the anticipated proficiency level of the participants, sections of the Vocabulary Levels Test focusing on the 3,000 and 5,000 frequency levels were selected as being the most appropriate. The 2,000 level was deemed too basic for the relatively advanced EAP students, while the 10,000 level was still considered quite difficult.

We also wished to get some indication of how a learner's language aptitude and attitudinal/motivational profile affects the acquisition of formulaic sequences, so our test battery included measurements of these attributes. A 14-item aptitude test was adapted from a recently developed aptitude battery that contains a number of tasks based on an artificial language (Otto, 2002). The attitude/motivation survey could have potentially covered many aspects, but because it was to be part of the pre- and post-test packages, its overall length had to be limited; therefore, rather than aiming for comprehensiveness, the content of the questionnaire was designed to cover a few selected attitudinal/motivational variables that were particularly relevant to the project and which **have** been found to play a central role in determining L2 learning behaviours and effort (cf. Dörnyei, 2001; Dörnyei and Kormos, 2000). In line with the principles of questionnaire theory (Dörnyei, 2003), all the variables were made up of multiple items; the only exception was a self-report behavioural measure, *Intended effort*, which was defined by a single item. Table 1 presents the final variables, a short description, and the number of items they contained.

Draft items for the productive and receptive formulaic sequence measures were first piloted on four native speakers, who all completed both instruments 100% correctly. This indicated that the measurements would not pose problems for proficient English speakers. The complete test battery was then piloted on 21 international students attending a summer preessional course at Notting-

Table 1. List and description of the attitudinal/motivational variables used in the study

Attitudinal/motivational variable	Description	No. of items
Attitudes toward L2 learning	Subjective appraisal of the enjoyment of learning L2s and English in particular	3
Integrativeness	A broad positive disposition towards the L2 speaker community, including an interest in their life and culture	6
Instrumentality	Perceived job- and career-related benefits of proficiency in English	3
Language use anxiety	Anxiety experienced while using the L2	3
Commitment to learn English	The importance attached to mastering a high level of English	2
Intended effort	The amount of effort the student is willing to put into learning English	1

ham Trent University. They were similar in kind to the eventual participants in the main study, although slightly weaker overall. The instruments were shown to be informative and have acceptable test characteristics, except for the aptitude test and the receptive formulaic sequence measure, which item analyses using ITEMAN (1989) showed to be slightly too easy. The receptive sequence measure was revised to increase the plausibility of the distractors. A native speaker respondent confirmed that the revised items were still clear in terms of the key being correct and the distractors being inappropriate. The language aptitude measure was revised by deleting a number of the easier items and replacing them with more challenging items. Unfortunately there was no suitable group of international students to carry out a second pilot study to confirm the test battery changes.

The order of the test battery was:

1. productive formulaic sequences
2. aptitude
3. attitude/motivation
4. Vocabulary Levels Test 3000
5. Vocabulary Levels Test 5000
6. receptive formulaic sequences.

This order was adopted so that the participants would have to produce the formulaic sequences first without any chance of contamination from the other test

Table 2. Reliability estimates for the test battery component measures (Cronbach alpha)

	T1 ^a	T2 ^b
Productive formulaic sequences	.65	.72
Receptive formulaic sequences	.65	.67
Language aptitude	.78	— ^c
Attitudes/motivation		
Attitudes toward L2 learning	.78	.76
Integrativeness	.63	.73
Instrumentality	.52	.64
Language use anxiety	.65	.73
Commitment to learn English	.55	.56
Intended effort	— ^d	— ^d

^aN=94 ^bN=70 ^cnot given as part of T2 battery ^dno reliability figures possible

components, and then have to work through those other components before they came to the receptive formulaic sequence measure. By this time, any direct memory of the productive measure and any clues from that measure should have been minimized. The aptitude measure was considered relatively challenging, so it was placed second in the battery. The motivation survey was relatively easy to complete, and so seemed a good 'break' before the last three test components.

The piloting indicated that the test battery would have a satisfactory level of reliability, and this was confirmed by reliability estimates produced in the main study (Table 2). Given that the attitude/motivation scales were particularly short, the reliability coefficients are acceptable, particularly for the post-test. The Vocabulary Levels Test sections were analyzed previously for reliability in a validation study which found reliability figures of about .93 for the 3,000 and 5,000 levels (Schmitt, Schmitt, and Clapham, 2001).

Participants

The participants in this study consisted of students attending preessional courses at the University of Nottingham's EAP program, based at the Centre for English Language Education (CELE). The students intended to enter the University of Nottingham in the autumn semester, and most were of a proficiency level above or near the minimum university entrance requirement of CBT TOEFL 213 (Paper TOEFL 550) or IELTS 6.0. Of the 94 total participants, 20 submitted CBT TOEFL Scores (M=216.90, Range=173-297), 20 submitted

paper TOEFL scores ($M=576.90$, range=500-637), and 64 submitted IELTS scores ($M=5.55$, range 3.5-6.5). Several students submitted scores from more than one test. The participants were mainly 22-26 years old ($m=25.58$, range 18-43), and intended to study a broad range of disciplines. 67 participants were female and 27 male. The majority (63) of the participants spoke Chinese as their L1, 10 spoke Japanese, while the remaining 21 participants spoke 12 different mother tongues. Involvement in the study was voluntary, with 94 out of a possible 400 students participating in the first test battery, and 70 of these students continuing on to take the follow-up test battery.

Procedure

The participants were enrolled in either a two-month ($N=62$) or three-month ($N=32$) preessional course EAP course. (Ten of the 3-month students were continuing on as part of a 6-month course). The complete battery of measures was given as a pre-test (T1) within the first week of their studies, and the same measures were given again (with the exception of the language aptitude instrument) as a post-test near the end of the course. The treatment consisted of exposure to the target formulaic sequences as part of the normal EAP instruction. It would have been ideal to control both the amount and type of exposure which the participants received, but since they were enrolled in a live EAP preessional course and spread across a number of class groups, this was not thought feasible. However, we ensured that each participant received a minimum amount of exposure through the following means:

- The target formulaic sequences were present at least once in the materials each student used during the course.
- The teachers drew the attention of their groups to each of the formulaic sequences at some point in the course, but without giving away that they were the target of the research.

The teachers were free to introduce the sequences in any way and in any order they thought suitable.

The variability of presentation and length of course means that the study will not be informative about the type of instruction or number of exposures necessary to acquire formulaic sequences.

The analysis consisted of determining the amount of change in lexical knowledge between T1 and T2, and then investigating statistically whether any of the explored variables was able to account for this change.

Results and discussion

Pre-existing knowledge of formulaic sequences

The first issue to be addressed is the number of formulaic sequences the learners knew at the beginning of the CELE course. Several scholars have suggested that proficient language users know a large number of formulaic sequences (e.g. Fillmore, Kay, and O'Connor, 1988; Wray, 2002), with Pawley and Syder (1983) suggesting that speakers know several hundred thousand of these sequences. Although these scholars' arguments are persuasive, the claim of a large phrasal vocabulary has seldom been put to empirical test. The design of this study allows us to address this claim to a limited extent. Although it is impossible to fully generalize from the small numbers of participants and items in this study, the participants were typical of the type of international student seeking to do post-graduate studies in the UK, coming from a variety of countries and different education systems. Likewise the target formulaic sequences should reflect the useful sequences occurring in academic texts, as they were chosen on the basis of previous research (e.g. Biber *et al.*, 1999) judgments of academic value, and relatively high frequency. With this in mind, the participants' knowledge of the target formulaic sequences in the T1 administration should give a useful indication of this type of advanced learners' knowledge of this type of formulaic sequence.

The mean scores of the measures of both productive and receptive mastery of the target formulaic sequences indicate that the participants had considerable knowledge of these sequences before they started the CELE course (Table 3). In terms of receptive mastery, the participants correctly recognized an average of nearly 17 out of the 20 sequences tested. Even if a limited degree of successful guessing occurred on the receptive measure, the productive mean score was nearly 13 correct out of 20, with this score being derived from a cloze-like measurement where it would be relatively difficult to guess correctly. These scores are relatively high, so it appears that international students can achieve a considerable knowledge of formulaic sequences by the time they reach this level of proficiency.

We can compare this with the participants' vocabulary size. On average, they knew 87% (26.13/30) of the words in the 3000 frequency band and 56% (16.84/30) of the words in the 5000 frequency band. They almost certainly knew even higher percentages of words in the 2000 frequency band. This suggests that once students reach this order of vocabulary size, they are likely to also know a large range of formulaic sequences in addition to individual words. However,

Table 3. Mean scores on lexical measurements

	T1	T2	Gain	% Gain
Productive formulaic sequences ^a	12.83	16.03 ^c	3.20	24.9%
Receptive formulaic sequences ^a	16.84	18.87 ^c	2.03	12.0%
Vocabulary Levels Test 3000 ^b	26.13	26.93 ^c	.80	3.1%
Vocabulary Levels Test 5000 ^b	19.77	22.12 ^c	2.35	11.9%

^aMax score=20 ^bMax score=30 ^c $p < .001$ Matched pairs t-test

this conclusion must be tempered by the fact that correlations between the vocabulary size measures (T1 and T2) and the formulaic sequence measures (T1 and T2) were of only modest strength (3000 level and productive formulaic sequences = .42–.54, 5000 level and productive formulaic sequences = .31–.36, 3000 level and T2 receptive formulaic sequences = .26–.37, 5000 level and T2 receptive formulaic sequences = .28–.29 [all receptive formulaic sequence T1 correlations nonsignificant]). Furthermore, the formulaic sequence gain scores (both productive and receptive) showed no significant correlation with any of the vocabulary size scores (3000 T1 and T2, 5000 T1 and T2, 3000 gain score, 5000 gain score). Thus, although there seems to be a moderate connection between vocabulary size and formulaic sequence knowledge, this study showed no connection between the ability to learn formulaic sequences and the vocabulary size of individual words, at least in the 3000 and 5000 frequency bands. It seems that the relationship between size of the ‘individual word lexicon’ and the ‘formulaic sequence lexicon’ is not straightforward.

It is possible that some of students may have been explicitly taught some of the more transparent formulaic sequences (such as *first of all* or *on the contrary*) before coming to CELE, but it is probable that most of the less transparent formulaic sequences were acquired through exposure, because sequences like *in spite of* are unlikely to be given much explicit attention by teachers or textbooks. It is therefore likely that the relatively substantial formulaic sequence scores in the T1 largely reflect incidental learning, and concomitantly, the extended period of study it took most of the students to achieve their relatively advanced levels of proficiency.

Improvement in knowledge of formulaic sequences over the course

Two or three months is a relatively short period of time in SLA terms, and many language studies have found it difficult to show gains in such a time scale. How-

ever, the CELE course is an intensive program averaging 5 hours per day and 3–4 hours of homework, and it is filled with highly motivated students. Moreover, vocabulary is one aspect of language where tangible gains can be demonstrated in a short time period (e.g. the Keyword studies, see Hulstijn, 1997 for an overview). The Vocabulary Levels Test figures in Table 3 shows that the participants did indeed increase their receptive vocabulary size at both levels, even in such a short course. The gain at the 3,000 frequency level does not seem particularly impressive, even though it is statistically reliable, with the 3.1% increase translating into something like 27 new words learned. However, this limited increase can mostly be explained by a ceiling effect, since the participants already knew over 26 out of the 30 target words on average at the time of the T1 administration. This is not surprising, as students wishing to enter an English-medium university can be expected to know the majority of words at the 3,000 level. It is at the 5,000 level where the real improvement occurred, with an 11.9% increase indicating that something like 157 new words were learned. Again, this may not seem like a large number of new vocabulary, but it must be remembered that CELE concentrates on academic vocabulary, such as that on the Academic Word List (Coxhead, 2000), and also helps students to improve their mastery over the vocabulary they already know. Thus the increase in general vocabulary represents meaningful learning.

The next question is whether the gains in knowledge of formulaic sequences mirrored the increase in vocabulary size. Table 3 shows that the participants did indeed increase their knowledge of the target formulaic sequences, both receptively and productively. This increase was statistically-reliable at the $p \leq .001$ level (matched pair t-test). (Many of the distributions were not normal, so non-parametric Wilcoxon Signed-Ranks tests were also run, with all results significant at $p < .001$.) In terms of receptive knowledge of the target formulaic sequences, the participants moved from a score of almost 17 out of 20 on the T1 to nearly 19/20 on the T2. Thus, even though the T1 scores were quite high, the participants were able to show an improvement, to the point of being able to recognize nearly all of the target formulaic sequences by the end of the course. In fact, nearly half of the participants (34/70) received full marks in the T2 administration.

The productive scores showed the greatest improvement in terms of percentage gain of all of the lexical measures. The advantage of productive gain over receptive gain may be partially due to the absence of a ceiling effect with the productive scores, but in addition, a number of the formulaic sequences known to a receptive degree in the T1 had been mastered productively in the T2 (see discussion below).

Difference in gains between learners studying for 2 and 3 months

The participants had exposure for either two or three months at CELE. It is worth checking whether the additional month of exposure enjoyed by some participants translated into bigger lexical gains by those participants. Independent sample t-tests were performed and no statistically-reliable difference in gains were found for productive formulaic sequence knowledge, receptive formulaic sequence knowledge, 3,000 level vocabulary, or 5,000 level vocabulary (all $p > .05$), although the 5,000 level vocabulary approached significance ($p = .055$). It seems that for this level of student and this type of course, the additional month was not sufficient to lead to increased lexical knowledge, at least as demonstrated on these instruments.

Change in degree of mastery of the formulaic sequences over time

The results so far indicate that the learners had considerable knowledge of the target formulaic sequences before they entered the CELE course, and they advanced this knowledge during their course of study. The mean scores in Table 3 illustrate this improvement, but such scores often hide a great deal of variation. To explore the acquisition of the target formulaic sequences in more detail, each participants responses from T1 to T2 were checked and placed into one of nine possible categories. Each category was then tallied (see Table 4). The total number of cases was 1400 (70 participants who took both T1 and T2 measures x 20 formulaic sequences).

Table 4. Change in degree of mastery of formulaic sequences over the CELE course

T1 knowledge state	T2 knowledge state	Description	Number of cases (1400 total)
Unknown	→ Unknown	No learning	22
Unknown	→ Receptive	Learning to receptive state	53
Unknown	→ Productive	Learning to productive state	59
Receptive	→ Unknown	Attrition	11
Receptive	→ Receptive	Stable receptive knowledge	129
Receptive	→ Productive	Enhancement of knowledge	233
Productive	→ Unknown	Attrition	5
Productive	→ Receptive	Attrition	55
Productive	→ Productive	Durable productive knowledge	833

The category with the greatest number of cases (nearly 60%) was Productive→Productive, reflecting the learners' relatively strong performance on the formulaic sequences measure. Although the ability to complete a cloze item successfully does not demonstrate the ability to use the formulaic sequence at will in discourse, it does give persuasive evidence of at least some degree of productive knowledge, especially since the items were completed successfully twice in a two to three month period. This result gives additional support to the finding that the learners knew a large number of the target formulaic sequences, and it also shows that the productive mastery was maintained over the two or three months of study.

In about 9% of the cases, existing receptive knowledge was maintained (Receptive→Receptive). From this, we see that the learners were more likely to know the sequences to a productive, rather than receptive, level of mastery.

The cases where the formulaic sequences were unknown in the T1 are interesting because an analysis can illustrate if acquisition took place during the CELE course, and to what degree. In only about 16% of the cases did unfamiliar formulaic sequences remain unknown at the T2 (Unknown→Unknown). In around 40% of the cases the learners gained receptive mastery of the sequences (Unknown→Receptive), and in around 44% of the cases the learners gained productive mastery (Unknown→Productive). This is encouraging, as the cases of learning in this study outnumbered the cases of non-learning by a 5-1 ratio. It seems that the elements were in place in the CELE program for the learning of unknown formulaic sequences to take place. In particular, the students were exposed to each formulaic sequence at least once in their pedagogic materials, and their teachers also explicitly drew their attention to each sequence at least once during the course. These results show that this level of exposure was sufficient for meaningful learning of formulaic sequences to occur. Of course, many students undoubtedly received more than the minimum exposure, and the exposure certainly came in different forms from the different teachers. The point remains, however, that the instruction and enhanced exposure involved in this study did seem to facilitate the acquisition of formulaic sequences. Unfortunately, it is impossible to determine whether this facilitation derived mainly from the explicit presentation of the formulaic sequences, or whether the vastly increased language exposure inherent in an intensive language program is sufficient by itself. Future studies should include a control group if possible to parcel out the relative effects of these two variables.

If we disregard the cases where the level of mastery remained the same (Unknown→Unknown, Receptive→Receptive, Productive→Productive), we

find that in 83% of the remaining cases the knowledge state advanced, and in 17% the state of knowledge deteriorated. Thus, gains outnumbered the losses in a ratio approaching 5–1. This is largely due to the cases where the state of knowledge was enhanced from a partial receptive mastery to a more complete productive mastery. This shows that with formulaic sequences, as with individual words, the value of study is as much for the consolidation and enhancement of partially known vocabulary as it is for learning new vocabulary.

Readers might be surprised at the 71 cases of attrition, especially in such an intensive EAP environment. However, lexical studies involving single words typically reveal some attrition (e.g. Weltens and Grendel, 1993; Schmitt, 1998), and it would be surprising if no cases of attrition occurred in a study focusing on formulaic sequences. The processes of lexical acquisition, maintenance, and attrition are not yet well understood, but Meara (e.g. 1999) is probably right to view the mental lexicon as a dynamic network, with words constantly becoming more and less available depending on factors such as recency of last use and the existence of associations in the context. It seems that mastery of formulaic sequences is also subject to this same ebb and flow.

A word of caution needs to be inserted here about the receptive vs. productive comparisons. They rely on valid measures of receptive and productive mastery, but it is actually not that easy to get unambiguous indications of either. Waring (1999: Chapter 2) found that results can depend as much on the relative difficulty of receptive and productive measurement instruments as on the true underlying mastery of learners. Although the common assumption is that receptive mastery typically precedes productive mastery, he often obtained higher productive scores than receptive scores from learners if the receptive instruments were relatively difficult and the productive ones relatively easy. We feel that the cloze and multiple-choice tests are reasonable measures of productive and receptive mastery of the target formulaic sequences, and so the scores reflect this mastery rather than being artefacts of the difficulty of the tests themselves. Thus, overall we feel the results obtained are valid, but any interpretations must be made with the above caveat in mind.

Relationship of knowledge of formulaic sequences and other variables

Since the focus of the study was the acquisition of formulaic language, we computed gain scores by simply subtracting the T1 scores from the T2 scores. We then correlated these gain scores with the individual difference measures.

We obtained a very noteworthy result pattern: none of the correlations reached statistical significance. Thus neither the aptitude measure nor the attitude/motivation items (both T1 and T2 were included in the analysis) correlated with the gain scores. In other words, the individual difference variables that we have included in our research paradigm did not directly affect the acquisition of formulaic phrases. This result is rather surprising, given that such variables have been shown to affect other aspects of language (Dornyei 2002; Dornyei & Csizér, 2002). It suggests that the relationship between the acquisition of formulaic sequences and learner attributes is not direct/linear; in other words, although learner characteristics might well affect formulaic language development, their impact may be modified by other factors related to the learning context. Such a relationship could be identified by a longer, more focused study of individual difference and contextual variables/processes, and for this reason we carried out a parallel longitudinal qualitative study of various situated determinants of the language development of selected participants which did indeed reveal a complex interrelationship between situated learning and formulaic language gains (see Dornyei, Durow and Zahran, this volume).

Conclusion

Formulaic language is becoming an increasingly important topic in applied linguistics, but one which raises many questions concerning the acquisition of such language. The present study was designed to explore some of the issues revolving around the learning of academically-based formulaic sequences. It found that relatively proficient EAP learners knew a considerable number of these formulaic sequences, and that they enhanced this knowledge over the course of the 2-3 month EAP program. This enhancement took the form of both learning new formulaic sequences, and of improving mastery of receptively-known sequences to a productive level, although the aptitude/attitude/motivation factors explored did not account for this enhancement. Future studies could usefully build on these results by controlling for input to discover whether such enhancement stems from explicit instruction, or whether exposure to a rich ESL environment is sufficient in itself. They could also explore whether other individual difference factors might have an effect on the learning of formulaic sequences.

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Appendix 1

Vocabulary phrase completion

NAME _____

In the two following passages, there are a number of vocabulary phrases in bold. Some words in these phrases have their second half cut off. Look at the context and fill in the blanks with the missing half of the words. Sometimes only one letter is missing and sometimes several letters are missing. For example:

The economy is sure to improve in the long run. *(over a long period of time)*

Learning English

Learning English as a second language is a difficult challenge, but we do know several ways to make learning more efficient. **Fi**_____ of **a**_____, almost every research study shows that you need to use English as much as possible. **I**_____ is **cl**_____ that the more you use English, the better you will learn it. There is no disagreement about this. *(to begin with)*

Second, learning English from textbooks seems to help in most cases. Most evidence shows that studying grammar rules with textbooks can help you memorise those rules. Therefore, **i**_____ seems **lik**_____ that studying with textbooks can help you learn something about grammar. **However**, if you only use a book but do not practice speaking, you will probably not be able to use the grammar rules when you speak. If we look at language learning research, there **i**_____ no **evid**_____ that just learning from textbooks can make you a good speaker. Of course, studying grammar will help your speaking **t**_____ a certain ext but it is not the only thing you need to know. You must also know how to do things like ask questions and give directions. With **reg**_____ to giving directions, you must know phrases like *Turn right at the corner*. *(this is obvious)*

Third, beginning learners and advanced learners need to study differently. For example, beginners have little

language proficiency to build upon. At this **st**_____, it is probably best to focus on building vocabulary and learning grammar. In **te**_____ of vocabulary, beginning learners should try to learn the most common 2,000 words of English. Then, as intermediate students, they should try to build a vocabulary size of 5,000 words. It may take some time to learn this many words, but as a **res**_____, learners should be able to read natural English texts, like newspapers and magazines. Advanced learners should learn even more vocabulary. If a learner continues to study over many years, in **t**_____ long **te**_____ they can reach a vocabulary size of 10,000 words or more. *(at this point of development)*
(concerning this certain thing)
(something happening because of another thing)
(over a long period of time)

International debt

Speaker A: I've been watching the news report and they say that there's a **go**_____ **cha**_____ that the international debts of poorer countries might be cancelled. *(this will probably happen)*

Speaker B: Really? I don't think so. As **f**_____ as **lkn**_____, the international banks do not want to cancel the debt because it would cost them too much money. *(I think this is true)*

A: On the **cont**_____, the banks would have more money because they would get some money from the government instead. They may not get the loans back from the poorer countries for a long time anyway. *(the opposite is true)*

B: **That's** a good **po**_____. I guess it's better for the banks to get some money now and just forget the loans, particularly when they take into **acc**_____ the fact that some countries may never be able to pay the loans back. *(the idea in your argument is a good one)*
(consider this issue)

A: The problem is that many people do not want the government to pay the banks. They feel that the banks caused their own problems by lending money too easily.

B: **I s**_____ what you **me**_____. Many specialists told the banks that some countries had very weak economies and could not repay the loans. In **sp**_____ of this, the banks loaned the money anyway. *(I understand your argument)*
(doing something even though there is a good reason not to)

A: Yes, some loans were too dangerous. On the other **ha**_____, some countries used the money wisely to improve their economies and their people's living conditions. *(looking at the opposite argument)*

B: That's true. But **the po**_____ is that many countries cannot pay back their loans and it is damaging their economies. There are many arguments for and against cancelling the loans, but **o**_____ the wh_____ I think it would be best to cancel them.

(the main issue in the argument)

(considering the complete situation)



Appendix 4 Levels test

Name _____

This is a vocabulary test. You must choose the right word to go with each meaning. Write the number of that word next to its meaning. Here is an example.

- 1 business
- 2 clock _____ part of a house
- 3 horse _____ animal with four legs
- 4 pencil _____ something used for writing
- 5 shoe
- 6 wall

You answer it in the following way.

- 1 business
- 2 clock 6 part of a house
- 3 horse 3 animal with four legs
- 4 pencil 4 something used for writing
- 5 shoe
- 6 wall

Some words are in the test to make it more difficult. You do not have to find a meaning for these words. In the example above, these words are *business*, *dock*, and *shoe*. If you have no idea about the meaning of a word, do not guess. But if you think you might know the meaning, then you should try to find the answer.

Version 2 the 3,000 word level

- 1 bull
- 2 champion _____ formal and serious manner
- 3 dignity _____ winner of a sporting event
- 4 hell _____ building where valuable objects are shown
- 5 museum
- 6 solution

- 1 blanket
- 2 contest _____ holiday
- 3 generation _____ good quality
- 4 merit _____ wool covering used on beds
- 5 plot
- 6 vacation

- 1 comment
- 2 gown _____ long formal dress
- 3 import _____ goods from a foreign country
- 4 nerve _____ part of the body which carries feeling
- 5 pasture
- 6 tradition

- 1 administration
- 2 angel _____ group of animals
- 3 frost _____ spirit who serves God
- 4 herd _____ managing business and affairs
- 5 fort
- 6 pond

- 1 atmosphere
- 2 counsel _____ advice
- 3 factor _____ a place covered with grass
- 4 hen _____ female chicken
- 5 lawn
- 6 muscle

- 1 abandon
- 2 dwell _____ live in a place
- 3 oblige _____ follow in order to catch
- 4 pursue _____ leave something permanently
- 5 quote
- 6 resolve

- 1 assemble
- 2 attach _____ look closely
- 3 peer _____ stop doing something
- 4 quit _____ cry out loudly in fear
- 5 scream
- 6 toss

- 1 drift
- 2 endure _____ suffer patiently
- 3 grasp _____ join wool threads together
- 4 knit _____ hold firmly with your hands
- 5 register
- 6 tumble

- 1 brilliant
- 2 distinct _____ thin
- 3 magic _____ steady
- 4 naked _____ without clothes
- 5 slender
- 6 stable

- 1 aware
- 2 blank _____ usual
- 3 desperate _____ best or most important
- 4 normal _____ knowing what is happening
- 5 striking
- 6 supreme

Version 2 the 5,000 word level

- 1 analysis
- 2 curb _____ eagerness
- 3 gravel _____ loan to buy a house
- 4 mortgage _____ small stones mixed with sand
- 5 scar
- 6 zeal

- 1 cavalry
- 2 eve _____ small hill
- 3 ham _____ day or night before a holiday
- 4 mound _____ soldiers who fight from horses
- 5 steak
- 6 switch

- 1 circus
- 2 jungle _____ musical instrument
- 3 nomination _____ seat without a back or arms
- 4 sermon _____ speech given by a priest in a church
- 5 stool
- 6 trumpet

- 1 artillery
- 2 creed _____ a kind of tree
- 3 hydrogen _____ system of belief
- 4 maple _____ large gun on wheels
- 5 pork
- 6 streak

- 1 chart
- 2 forge _____ map
- 3 mansion _____ large beautiful house
- 4 outfit _____ place where metals are made and shaped
- 5 sample
- 6 volunteer

- 1 contemplate
- 2 extract _____ think about deeply
- 3 gamble _____ bring back to health
- 4 launch _____ make someone angry
- 5 provoke
- 6 revive

- 1 demonstrate
- 2 embarrass _____ have a rest
- 3 heave _____ break suddenly into small pieces
- 4 obscure _____ make someone feel shy or nervous
- 5 relax
- 6 shatter

- 1 correspond
- 2 embroider _____ exchange letters
- 3 lurk _____ hide and wait for someone
- 4 penetrate _____ feel angry about something
- 5 prescribe
- 6 resent

- 1 decent
- 2 frail _____ weak
- 3 harsh _____ concerning a city
- 4 incredible _____ difficult to believe
- 5 municipal
- 6 specific
- 1 adequate
- 2 internal _____ enough
- 3 mature _____ fully grown
- 4 profound _____ alone away from other things
- 5 solitary
- 6 tragic

Appendix 5

Vocabulary phrase multiple-choice

In the two following passages, there are a number of blanks where vocabulary phrases should be. Look at the context and decide which phrase is most natural in the blank. Circle the letter of that answer. If you don't know the answer and can only guess, circle "I DON'T KNOW".

For example:

- The economy is sure to improve (1) _____
1. a. in the long period
 - b. over a long time
 - c. in the long run
 - d. over a long space
 - e. I DON'T KNOW

Learning English

Learning English as a second language is a difficult challenge, but we do know several ways to make learning more efficient. (1) _____, almost every research study shows that you need to use English as much as possible. (2) _____ the more you use English, the better you will learn it. There is no disagreement about this.

Second, learning English from textbooks seems to help in most cases. Most evidence shows that studying grammar rules with textbooks can help you memorise those rules. Therefore, (3) _____ studying with textbooks can help you learn something about grammar. However, if you only use a book but do not practice speaking, you will probably not be able to use the grammar rules when you speak. If we look at language learning research, (4) _____ just learning from textbooks can make you a good speaker. Of course, studying grammar

1. a. The first one
- b. First of all
- c. The first thing
- d. First in line
- e. I DON'T KNOW
2. a. It is clear to all that
- b. It is a clear case that
- c. It is clear that
- d. It is clear to know that
- e. I DON'T KNOW
3. a. it seems likely that
- b. it looks likely that
- c. the likely thing is that
- d. the likely case is that
- e. I DON'T KNOW
4. a. the evidence is nonexistent that
- b. the evidence does not exist that
- c. no evidence is available that
- d. there is no evidence that
- e. I DON'T KNOW

will help your speaking (5) _____, but it is not the only thing you need to know. You must also know how to do things like ask questions and give directions. (6) _____ giving directions, you must know phrases like "Turn right at the corner".

Third, beginning learners and advanced learners need to study differently. For example, beginners have little language proficiency to build upon. (7) _____, it is probably best to focus on building vocabulary and learning grammar. (8) _____ vocabulary, beginning learners should try to learn the most common 2,000 words of English.

Then, as intermediate students, they should try to build a vocabulary size of 5,000 words. Learning this many words can be hard, but (9) _____, learners should be able to read natural English texts, like newspapers and magazines. Advanced learners should learn even more vocabulary. If a learner continues to study over many years, (10) _____ they can reach a vocabulary size of 10,000 words or more.

International debt

Speaker A: I've been watching the news report and they say that (11) _____ the international debts of poorer countries might be cancelled.

5. a. to a minor degree
b. to a certain extent
c. to an incomplete degree
d. to a partial extent
e. I DON'T KNOW
6. a. Concerning the issue of
b. With regard to
c. On the idea of
d. Discussing the issue of
e. I DON'T KNOW
7. a. at this phase
b. at this period in time
c. at this stage
d. at this time period
e. I DON'T KNOW
8. a. In terms of
b. Concerning the issue of
c. As concerns
d. Focusing on the issue of
e. I DON'T KNOW
9. a. as a purpose
b. as an outcome
c. as a reward
d. as a result
e. I DON'T KNOW
10. a. over a long period
b. over a long time
c. in the long while
d. in the long term
e. I DON'T KNOW
11. a. there's a good chance that
b. there's a great chance that
c. there's a good likelihood that
d. there's a great likelihood that
e. I DON'T KNOW

Speaker B: Really? I don't think so. (12) _____, the international banks do not want to cancel the debt because it would cost them too much money.

A: (13) _____, the banks would have more money because they would get some money from the government instead. They may not get the loans back from the poorer Countries for a long time anyway.

B: (14) _____. I guess it's better for the banks to get some money now and just forget the loans, particularly when they (15) _____ the fact that some countries may never be able to pay the loans back.

A: The problem is that many people do not want the government to pay the banks. They feel that the banks caused their own problems by lending money too easily.

B: (16) _____. Many specialists told the banks that some countries had very weak economies and could not repay the loans. (17) _____ this, the banks loaned the money anyway.

A: Yes, some loans were too dangerous. (18) _____, some countries used the money wisely to improve their economies and their people's living conditions.

B: That's true. But (19) _____ that many countries cannot pay back their loans and it is damaging their economies. There are many arguments for and against cancelling

12. a. As far as I know
b. As far as my information
c. By my knowledge
d. By my information
e. I DON'T KNOW
13. a. On the contrary
b. In a contradiction
c. By a contrast
d. For a contrast
e. I DON'T KNOW
14. a. That's a solid point
b. That's a good point
c. That's a convincing point
d. That's a strong point
e. I DON'T KNOW
15. a. take into account
b. factor into account
c. allow into account
d. put into account
e. I DON'T KNOW
16. a. I follow what you mean
b. I understand what you mean
c. I see what you mean
d. I catch what you mean
e. I DON'T KNOW
17. a. On spite of
b. By spite of
c. With spite of
d. In spite of
e. I DON'T KNOW
18. a. On the other view
b. On the other part
c. On the other standpoint
d. On the other hand
e. I DON'T KNOW
19. a. the point is
b. the key is
c. the idea is
d. the statement is
e. I DON'T KNOW

the loans, but (20)____, I think it would be best to cancel them.

20. a. with the whole
b. considering the whole
c. taking the whole into account
d. on the whole
e. I DON'T KNOW