Adding More Fuel to the Fire: A Study of Attrition in Formulaic Sequences by Adult Learners

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Abstract

Because lexis constitutes the basis of pedagogic materials, foreign language (FL) learners are faced with the challenging task of acquiring a large vocabulary. One yardstick of fluent, accurate and idiomatic control of the language which has gained considerable popularity as a subject of research into second language (L2) is formulaic sequences, i.e. multiword items. Interestingly, there has been no research exploring the long-term attrition of formulaic language by L2 learners. This study has sought to begin addressing this gap. It aimed to find out whether adult non-native learners of English forget formulaic sequences knowledge that they have learned during their course of study. The participants were 81 male EFL learners. All participants were tested before and after the summer recess on their formulaic sequence knowledge using multiple-choice and close test formats. Quantitative findings show that different types of formulaic sequences are affected to different degrees by attrition. The results revealed greater attrition in recall (mean -22.90) than in recognition (mean -16.67) of formulaic sequences. More frequent or transparent formulaic sequences were retained more easily than infrequently used or less transparent ones. The pedagogical implications of these findings and suggestions for further research are discussed.

Keywords: Attrition, EFL, formulaic sequence, recall knowledge, recognition knowledge

Introduction

Second language (L2) vocabulary learning has been frequently researched topic in the last three decades (Alharthi, 2014a; Bogaards & Laufer, 2004; Coady & Huckin, 1997; Laufer & Rozovaski-Roitblat, 2014; Meara, 1980; Milton, 2009; Nation, 1990, 2001; Nation & Webb, 2011; Peters, 2013; Schmitt, 2008, 2010; Tian & Macaro, 2012; Webb & Chang, 2015). It has been received wisdom that fully knowing a word entails a variety of aspects of vocabulary knowledge including collocations, associations, grammatical functions and others (see listing in Nation, 2001). Likewise, the importance of knowledge of formulaic language, i.e. multi-word items, is now widely recognized by researchers, teachers, and material writers as a subject of investigation in research on L2 learning (Bardovi-Harlig, 2002; Biber *et al.*, 2004; Durrant & Schmitt, 2010; Laufer & Waldman, 2011; Lewis, 2001; Nattinger & DeCarrico, 1992; Peters, 2015; Schmitt, 2004, 2010; Tsai, 2014; Webb & Kagimoto, 2009; Webb *et al.*, 2013; Wood, 2010; Wray, 2000). As Schmitt (2010, p. 146) succinctly notes, "Formulaic language is an important element of language overall, perhaps *the* essential element". Being such a big part of language, it is not surprising that recent years have seen much interest by language teachers and researchers in the role played by formulaic language in providing a platform for greater control of the language. The enduring popularity of formulaic language for a whole range of uses is due to its different expressive purposes such as referential, textual and communicative functions (Schmitt, 2010).

As formulaic language is used very frequently, there is a widespread belief that L2 learners must be finding this aspect of language learning challenging (Wray, 2000). One of the reasons for giving formulaic language a prominent place in lexical research is that having suitable formulaic language stored as wholes contributes to learners' levels of accuracy and fluency (Boers & Lindstromberg, 2012; Pawley & Syder, 1983). Arguments about the acquisition of L2 formulaic language are often related to the question whether highly advanced learners acquire the knowledge of formulaic language that imitate near native-like aspects of the language in terms of word selection and fluency (Forsberg, 2010; Nekrasova, 2009). It is argued that without the knowledge of formulaic language, a learner would not be able to have the near native-like performance that is often seen as a strong predictor of a high level of proficiency.

The fact that language is largely formulaic can in some way be considered particularly problematic for adult L2 learners and for many non-native L2 teachers alike (Durrant & Schmitt, 2010; Laufer & Waldman, 2011; J. Li & Schmitt, 2010; Qi & Ding, 2011). Given the dynamic and incremental nature of acquiring vocabulary knowledge on the way to a mastery of words occurs via repeated exposure, there is no doubt that the acquisition of formulaic language resembles the same incremental process that typically mandates multiple encounters with the same items (Li & Schmitt, 2010; Schmitt, 2010; Webb & Chang, 2015). What this means is that formulaic language takes a long time to acquire and much partial knowledge of formulaic language will drift out of memory and become susceptible to attrition. It appears that not only does individual lexical knowledge seem to be prone to attrition, but it is also the case that various types of vocabulary knowledge, such as formulaic language, are subject to attrition, albeit it to different degrees. With the exposure of language input, Wray (2002) argues that successful adult L2 learners are likely to retain more individual items than stretches of formulaic language. A similar line of thought was developed by Nation and Webb (2011, p. 315) who point out that longer words (in this case multi-word units) are more challenging since there is "more to remember in long words than in short words". These remarks may possibly reflect that the strong

tendency of formulaic language to occur in multi-word units is perceived to be a cause of the likely deterioration in learners' vocabulary knowledge.

Vocabulary is made up of individual lexical items and multi-word units that convey unitary meaning or function. Moreover, the literature has suggested diverse categories of formulaic language as there are many types of sequences including but not limited to collocations, idioms, phrasal verbs, lexical bundles, lexical phrases and sayings, which in turn makes it very challenging to come up with a conclusive definition. Since a consensus definition of formulaic language has yet to be subject to critical scrutiny and a detailed discussion of the ambiguities are beyond the scope of the present study, for the purpose of this study Wray's (2000, p. 465) working definition of a formulaic sequence is adopted: "a sequence, continuous or discontinuous, of words or other elements, which is, or appears to be, prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar". This definition has been widely accepted by researchers of formulaic language by L2 learners (Conklin & Schmitt, 2008; Schmitt, 2010; Wray, 2000).

Despite widespread published research on formulaic language in L2 and their critical role in fluency improvement (Conklin & Schmitt, 2008; Ellis, 2006a; Kuiper *et al.*, 2009; Li & Schmitt, 2010; Underwood *et al.*, 2004), one question that remains to be explored is how can L2 learners forget or retain what formulaic language they still know. Research on the nature and rate of attrition of formulaic language is evidently lacking. Emphasizing the lack of empirical research on the attrition of formulaic language, Schmitt (2010, p. 259) noted "to my knowledge, there has yet been no research on the long-term attrition and retention of formulaic language". Studies that have contributed to the literature on FL vocabulary attrition have tended to focus on individual words (Alharthi, 2012, 2014b, 2014c, in press; Bahrick, 1984; Cohen, 1989; de Bot & Weltens, 1995; Weltens, 1989). To some degree this may be due to it being easier to work with single words than multi-word units. The literature on single word attrition suggests that productive vocabulary knowledge declined much more quickly than receptive vocabulary knowledge (Alharthi, 2012, 2014b; Bahrick, 1984). However, it is not clear whether this is also the case for formulaic language attrition. The study reported here therefore took a first step to address this gap, aiming to find out whether adult learners of English forget the meaning of formulaic language that they have learned during their course of study.

The experimental work reported in Schmitt (2004) tended to focus on the acquisition, processing and use of formulaic language. However, issues such as the rate of attrition of formulaic language and to what extent it can be retained or forgotten seemed to attract very little attention.

One study will be described in more detail, as it is somewhat related to the investigation presented in the current paper. In a study that pinpoints the ways in which instructional input may affect the acquisition of L2 formulaic language, Schmitt *et al.* (2004) examined the development of receptive and productive formulaic sequences during a two-month EAP pre-university course. The learners were pretested and posttested on their knowledge of the meaning of formulaic sequences in their L2 by means of 20-item supply-definition and multiple-choice measurements. The participants had some practice in doing this since they had been exposed to each formulaic item in their course materials and had been told the meaning of each formulaic item by their teachers. The results revealed that the learners had impressive pre-knowledge of formulaic sequences and that they maintained this knowledge during their course of study. However, their study raised an important issue related to the present paper since there were

apparent traces of the attrition of formulaic sequences, both receptively and productively. This was not really surprising; as Schmitt *et al.* (2004, p. 68) acknowledged, "it would be surprising if no cases of attrition occurred in a study focusing on formulaic sequences". It is worth mentioning that the non-native speakers in Schmitt *et al.*'s (2004) study were advanced learners in an immersion context where they were constantly exposed to the target language, either orally or in written forms. The context of the current study is a normal FL learning environment where the most frequent contact with the language is at school, with peers and teachers. Again, this limited contact with English, with virtually none during the summer recess, is an environment where the fact that language learners may have invested less time in learning and using the language may lead to the attrition of formulaic sequences.

As became clear in my literature survey, previous studies merely focused on the development of learners' formulaic language repertoire over the course of their L2 language program. Aside from a handful of studies that tackled the issue of attrition of single word knowledge, there is no research to my best of knowledge that has directly addressed the issue of attrition beyond individual words in the FL classroom. The study takes a first step in filling a gap in research into L2 formulaic language by exploring attrition in receptive and productive formulaic language longitudinally in a group of non-native EFL learners over their summer vacation. The following research questions were addressed in the present study:

Is there any sign of attrition in the EFL learners' knowledge of formulaic sequences after their English instruction ceases?

- To what extent does any attrition influence receptive and productive knowledge of formulaic sequences?

Materials and Methods
Participants
The participants were 81 third and fourth-year university EFL students, recruited from three parallel BA English classes. The reason for enlisting these participants is that it is assumed that they had the opportunity to acquire formulaic sequences in several years of studying English. Further, the participants were selected on account of their performance in a vocabulary proficiency test, called a Vocabulary Size Test (VST) (Nation & Beglar, 2007), in which they had demonstrated a receptive vocabulary of 3,000 word families, indicating that they were coping with English studies in a university language program. Prior to their three to four years of formal English language instruction at university, they had been studying English in intermediate and secondary school for six years. Their instruction was basically focused on vocabulary and grammar. In total, they had been studying English for nine to ten years, comprising intermediate and secondary level high school and university. The study followed them longitudinally over the three months of the summer recess. Although they followed the same syllabus, they may have been exposed to slightly different course materials and teaching styles. Participation in this study was voluntary and the selection of participants was based on the following two main criteria:

- They showed up for the follow-up test battery.
- They had not been exposed to English language input during the inactive period.

Hence, while 85 participants took part in the baseline study, data from only 81 participants, i.e. from those who made themselves available in all stages of data collection, were used in the analysis.

Instruments

The first task in designing the present study was to decide which formulaic sequences to be selected. As there is no principled approach to identifying formulaic sequences and standardized measurement instruments (Schmitt, 2010), I decided to base the present study on the formulaic sequence selection criteria similar to those used by Schmitt *et al.* (2004). To make the compilation of the initial formulaic sequences list manageable, the first step was to make sure that the items were arranged by how commonly they occur in the input. The lists used in the acquisition study by Schmitt *et al.* (2004) were consulted and 45 candidate formulaic sequences were identified in academic English. In order to get clear instances of any formulaic sequences occurring in academic English types, a random sample of English vocabulary practice of *Focus on Vocabulary* 1: *Bridging Vocabulary* (Schmitt *et al.,* 2011) was inspected and an additional 20 collocations identified. The author of the study or the researcher included items that either occurred in bold or linked to examples that illustrated their meanings. The next step was to decide on a corpus that could provide a representative repertoire of the study data. The 65 candidate formulaic sequences were then analyzed, drawing on the British National Corpus (BNC) to determine their lexical frequency in general English. By doing so, He was able to eliminate the candidates with relatively low frequencies from the initial list of formulaic sequences.

Having identified and compiled the formulaic sequences that were likely to be known, it was considered crucial for to check their "ecological validity" in the instructional materials. I selected two EFL textbooks which are taught to the study participants in their BA course, namely *Great Writing 3: From Great Paragraphs to Great Essays* (Folse *et al.,* 2014) and *Great Writing 4: Great Essays* (Folse *et al.,* 2014). These textbooks are geared towards upper-intermediate EFL learners who have reached the Common European Framework (CEF) B2 level. I particularly examined the formulaic sequences presented in units 4 and 5, vocabulary activities and exercises, in each textbook. It was considered to be extremely useful and more ecologically valid if the formats used in the elicitation instruments for recall and recognition knowledge of meaning of the target formulaic sequences at least to some extent reflected classroom reality. The review of the instructional materials confirmed that the study participants were likely to be familiar with the formats of the formulaic sequence activities. Additionally, the two instructors who had been teaching English at the time of the present study confirmed that the formulaic sequences selected had been previously taught. On the basis of the analysis of the course books, 66 formulaic sequences were identified and verified by checking them against the list of formulaic sequences found in the literature, the lists derived from consulting the BNC and a list resulting from consultation with the instructors. The final list of 40 candidate formulaic sequences was arrived at by selecting high-frequency items from the above lists.

The recall test comprised 20 target formulaic sequences which were embedded in short contexts. The test presented the test-takers with a sentence where the target formulaic sequence had been replaced with blanks. A short definition of each formulaic sequence was provided between brackets as its denotative meaning. To limit the answer to the target formulaic sequence, the first letters of each missing item were provided. The missing letters in each blank space were represented by dots, and the size of the incomplete target formulaic sequence was such so as not to give a clue to the correct answer. The test-taker needed to pay attention to the initial letters of the gapped formulaic sequence highlighted in bold, as in the example below:

Dinner was always chicken and **ma**…………..**po**…………..with soup to start and sweet to finish. (Special dish that is boiled, cooked with milk and butter.)

[Answer: mashed potatoes]

The recognition test consisted of 20 target formulaic sequences and had a contextualized multiple-choice format. Each target formulaic sequence was replaced with dots and the test-taker needed to choose from four options. The four options included three plausible distracters and an "I don't know" option to minimize the chances of successful guessing. All of the distracters were taken from items found in the instructional materials. An example of the recognition test is given below:

You have……………...about something which means you are unwilling to change it.
  a. heavy opinions
  b. pessimistic opinions
  c. strong opinions
  d. light opinions
  e. I DON'T KNOW

[Answer: c]

It should be noted that all sentence contexts in which the target formulaic sequences were encountered in the recall and recognition tasks were at the 1,000 and 2,000 word levels and based on range and frequency figures from the written discourse of the BNC. This was to ensure that running words are likely to be known by all the participants. To reduce the effect of deliberate and intentional learning during the retention interval, the order in which the formulaic sequences were examined varied in each test session.

Procedure

Pretests in paper-and-pencil format measuring the attrition of recall and recognition knowledge of meaning were used to examine the participants' knowledge of target formulaic sequences. The recall test was administered two weeks prior to course completion, and within 50 minutes during participants' regular English classes. Following the recall pretest, participants were given the VST (Nation & Beglar, 2007), which allowed for a brief time gap between the recall and recognition pretests. Having finished the VST, the participants were assigned to the recognition pretest which was conducted within 30 minutes. The same measures (with the target items presented in a different order) served as posttests, which were administered three months later. The procedure was identical with regard to the administration of the pretests and posttests.

Scoring and analyses

The maximum score for recall and recognition of the knowledge of formulaic sequences was 20 points. Since the aim of the recall test was to assess knowledge of the meaning of formulaic sequences rather than knowledge of form, responses were marked as correct if they demonstrated partial knowledge of form, i.e. were misspelled for example but recognizable. In the example above, for the target formulaic sequence *mashed potatoes*, responses of wrong affixes such as *mashd potatos* and *mash potato* were scored correct. Missing or wrong responses were scored zero. In the recognition test, which measured knowledge of the meaning of formulaic sequences, no partial score was allowed since it had a multiple-choice format. Instead, the test was marked dichotomously, i.e., each item chosen correctly scored one point, and incorrect, missing or "I don't know" answers scored zero. All participants' scores on pretests were expressed as a percentage and analyzed using SPSS (version 21). Participants' attrition scores on posttests were calculated using the following formula: [(correct posttest score – pretest score)/ (total items tested)] * 100. One Sample Kolmogorov-Smirnov Tests were conducted to decide on the type of

statistical analysis to be used. The non-significant result of the Kolmogolov-Smirnov statistic indicates that the data was normally distributed; hence parametric tests were used for the analysis of pre-post scores. To answer the first research question, paired-samples *t*-tests were carried out to compare the relative attrition between pre- and posttests over the interval of three months. Repeated-measures analysis of variance (ANOVA) was performed with time and task types as independent variables to examine their effects on the attrition pre-post scores. This analysis elicits results that answer the second research question. For all statistical analyses, the alpha level was set at .05.

Results

The descriptive statistics (means, standard deviations, minimum and maximum scores, and number of participants) of formulaic sequence knowledge on recall pretest, recognition pretest, recall posttest and recognition posttest are reported in Table 1. In Term 1, participants performed better in the recognition test (*M*=71.10) than in the recall test (*M*=48.14). Figure 1 illustrates the differences between the recognition and recall pre-post scores. This indicates that participants did not possess full knowledge of the meaning of as many formulaic sequences productively as they did receptively. Paired-samples *t*-tests revealed that the acquisition scores for the recall and recognition levels in Term 1 were relatively significant (*df*=80, *t*=-21.523, *p*<.001). Mean scores on the 3-month posttests were *M*=54.32 and *M*=25.24 for recognition and recall tests respectively. The standard deviations were large, particularly between Term 1 and Term 2, in relation to the average pre-post recall scores (*SD*=16.47), (*SD*=14.35), indicating that the participants did not remember any or only a very few formulaic sequences. In effect, the profile displayed in Figure 2 shows that the slopes decreased more steeply for recall than for recognition knowledge of formulaic sequences.

Table 1. *Descriptive statistics of knowledge of formulaic sequences*

Task type	Participant (n)	Minimum	Maximum	Mean	Std. Deviation
Recall -Term1	81	10.00	80.00	48.1481	16.47810
Recog -Term1	81	35.00	100.00	71.1077	15.31788
Recall -Term2	81	.00	60.00	25.2469	14.35926
Recog -Term2	81	20.00	85.00	54.3210	14.13668

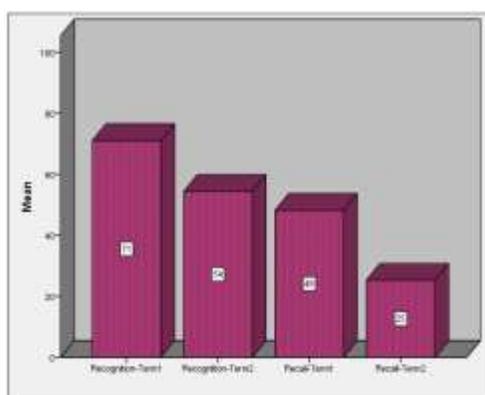*Note: Term = Length of Attrition Time Recreco = Recall & Recognition. *= p<.001*

Figure 1. **Recognition and recall pre-post scores**

More specifically, a paired sample *t*-test revealed that the attrition scores for both recall (*df*=80, *t*=21.29, *p*<.001) and recognition (*df*=80, *t*=18.34, *p*<.001) tasks were significant. These results could be taken to suggest that the gap between recall and recognition knowledge, all other factors being equal, might also have different effects on the pattern of attrition. This means that the formulaic sequences learned in Term 1 were mostly forgotten three months after the instructional treatment ended and this difference was larger in the recall test. However, one could only make such a prediction on the basis of one's intuition about how the pattern of attrition would look like if the participants were measured again several months later.
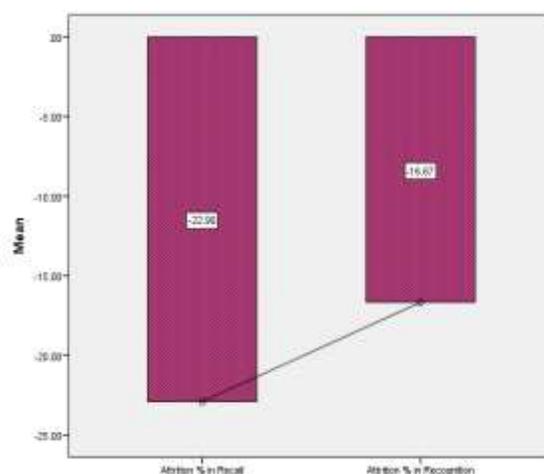

Figure 2. **Relative attrition of recall and recognition between Terms 1 and Term 2**

A repeated measures ANOVA, as can be seen in Table 2, indicated that the length of attrition time was indeed a significant predictor of the pre-post attrition scores (*F*=639.678). The effect was revealed by a significant interaction between the length of attrition time and the pre-post attrition scores (*p*<.001). Also, the results of the repeated measures ANOVA showed that the degree of formulaic sequence knowledge (recall and recognition) was effective for pre-post attrition scores (*F*=640.204, *p*<.001).

Table 2. *ANOVA Tests of Within-Subjects Effects*

Measure: MEASURE_1

Source	Term	Recreco	Type III Sum of Squares	df	Mean Square	F	Sig.
Term	Linear		31703.781	1	31703.781	639.678	.000
Error(Term)	Linear		3964.969	80	49.562		
Recreco		Linear	54574.151	1	54574.151	640.204	.000
Error(Recreco)		Linear	6819.599	80	85.245		
Term * Recreco	Linear	Linear	787.114	1	787.114	25.632	.000
Error(Term*Recreco)	Linear	Linear	2456.636	80	30.708		

The results reflect the fact that participants demonstrated different degrees of attrition in formulaic sequence knowledge, which was further qualified by a significant interaction between the length of attrition time and the degree of formulaic sequence knowledge (F=25.632, p<.001). Taken together with the findings presented above, the analyses provide a complete picture of the rate of attrition found in the present study.

Discussion
In Term 1, the results of the pre-post scores showed that the size and the amount of both recall and recognition knowledge of formulaic sequences dropped over time and that at any one time, recognition knowledge is greater than recall knowledge. The lower pre- scores on the recall tests in comparison to the recognition tests demonstrate the greater difficulty of learning recall knowledge of formulaic sequences. The results support the previous findings of studies of single word items (Alharthi, 2014b; Bahrick, 1984; Webb, 2005, 2008) as well as the common perception among researchers (Aitchison, 1994; Crow, 1986; Schmitt, 2014), which has repeatedly shown that recall knowledge of meaning is susceptible to attrition more than recognition knowledge of meaning. The findings of the present study indicate that there was a great difference between the effects of recall and recognition tasks on knowledge of the meaning of formulaic sequences. The attrition scores of the two tasks were quite different, with significant differences found between the tasks. The results give support to Webb's (2008, p. 89) observation that "The gap between receptive and productive knowledge might have been higher if other aspects of word knowledge, such as collocation or syntax, had also been measured". It might be expected that the increased learning burden of the recall task (fill in blank) may have in turn increased the amount of time the participants had to focus on the meaning of each formulaic sequence in comparison with the one in the recognition task (multiple-choice). The variance rate of the meaning of the formulaic sequence was 35% between pre- and posttest for recognition, while three months after the end of Term 1 the variance rate of 65% for the meaning of formulaic sequences were not retained by the participants for recall. These outcomes are not in line with Schmitt *et al.*'s (2004) study who found a small amount of attrition in the knowledge of the meaning of formulaic sequences. The discrepancy in results between the present study and Schmitt *et al.*'s (2004) might be due to the latter's main focus being on explicit learning, while the current study's focus on explicit learning was purely incidental, hence a larger number of formulaic sequences was expected to be forgotten in this study since the learners were not

advised to pay attention to these items. In other words, explicit instruction might lead to deeper knowledge of meaning and retention of formulaic sequences than might typically occur with incidental learning. Moreover, Schmitt *et al.*'s (2004) participants were advanced postgraduate students studying at a British university, while the participants in the current study were undergraduate students, enrolled in a BA course at a university, with a mean vocabulary size at or below 3,000 word families.

The results may offer a reasonably pleasant surprise for language teachers beginning a new term since the participants retained transparent and frequently used formulaic sequences, such as *handle this situation*, *happy to be here, with regard to* and *it is clear that*, despite a lack of FL input or use over time. In contrast, less transparent and infrequently used formulaic sequences, such as *unforeseen effects, a pivotal role, on the whole* and *I see what you mean*, presented a real challenge and were susceptible to attrition. These formulaic sequences might not be salient enough for the learners to establish a cognitive hold and consequently to remember their meanings. This is an interesting finding that unfortunately cannot be compared with other studies due to the lack of research in the area of formulaic sequence attrition.

Conclusion
The ultimate goal of learning vocabulary is to be able to understand and use the target language. Formulaic sequences are an integral component of lexical knowledge and particularly important in the productive use of words, therefore knowing a number of typical formulaic sequences is as important as knowing single word lexical items. As long as there is attrition of single words learnt, it is reasonable to expect that a greater decline or forgetting of formulaic sequences learnt will occur. The paper sought to investigate the extent to which knowledge of meaning of formulaic sequences may be forgotten at recall and recognition. The results showed that knowledge of many formulaic sequences declined quite soon after instruction had ended and that recall knowledge was much more prone to attrition than recognition knowledge. The data highlighted and confirmed similar patterns of forgetting for formulaic sequences as for individual words.

Given the limited time available in university courses for explicitly teaching vocabulary, the unstated assumption is likely to be that incidental lexical learning should be integrated into any L2 vocabulary learning program. Although this assumption is related to individual word learning, one might argue that it is also important for the learning of formulaic sequences. The pedagogical implications of the current study are clear. For the FL classroom, explicit teaching of the vast number of formulaic sequences would be both unwieldy and too time consuming. Teachers should provide a rich environment to make exposure to and use of the L2 possible in classrooms to minimize subsequent attrition. It is my belief that if classroom activities offer learners the use of memory strategies for consolidating the meaning of any formulaic sequences when they are encountered, their level of retention will rise. That is, it is of paramount importance to train learners in the use of retention strategies, particularly strategies related to note taking, repetition and mental associations in the short and in the long term. As the learning situation in the present study was purely an EFL one, there may not be sufficient FL input to facilitate the incidental learning of formulaic sequences and consequently the retaining of such knowledge. Hence, it is hoped that raising learners' awareness of formulaic language would strengthen independent learning via continued L2 input outside the classroom during the summer vacation. Learners' attention could be drawn to formulaic sequences through extensive reading. Due to its vulnerability to loss, productive mastery of formulaic sequences is likely to be

enhanced by asking students to become part of a peer group, which can result in increased language input. It is hoped that the findings of this study inspire future research in instruction of L2 formulaic sequences and help material writers with item presentation and selection in course materials. Therefore, teachers and curriculum designers should increase the saliency of target formulaic sequences by making them appear in different forms such as bold, underlined and italics. This involves having formulaic sequences with high-frequency component items as well as with low-frequency component items. Such a design feature in course materials is likely to influence the rate of comprehension and retention of formulaic sequences.

It is important to note that the current study measured attrition over a short retention interval (three months) and that future research should investigate the rate of attrition over longer retention intervals. Moreover, future investigations could be designed to measure learners' rate of attrition in a series of posttests in the hope of understanding more completely the phenomenon of attrition of the knowledge of formulaic sequences. In brief, the inevitable challenge for the FL teaching profession today is not only to understand how best students could adequately acquire the target language, but also how best they could retain it.

Bout the Author:

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