



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas
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Menu

Introduction

Literature Review

Research Methodology

Data analysis and discussion

Conclusion

References



MJAL10:1 Winter 2018

ISSN 0974-8741

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2. Sunama Patro

Abstract

In Second Language Acquisition (SLA) research, the construct of ‘incidental vocabulary acquisition’ has been defined as a process of subconscious acquisition of aspects of word knowledge from the input. However, incidental acquisition of the aspects and effective retention and recall of the same can vary for each aspect of lexical knowledge owing to the multi-dimensional nature of a ‘word’. Research in examining which aspects are more sensitive to attrition over a period of time is yet to close the chapter. The present study, in the context of reading, investigated the above issue focussing on the following aspects: receptive and productive knowledge of orthography; receptive and productive grammatical knowledge; receptive knowledge of meaning (L2-L1); and receptive knowledge of association. The study was conducted with thirty ESL Odia speakers from class XI (sixteen-year olds) who read a specified number of reading texts to encounter the selected target words (TWs). Later, they were administered an immediate post-test on the above aspects and a delayed post- test (after two weeks). The results were analyzed using a paired samples t-test and the findings indicated that receptive grammatical knowledge and meanings of the TWs were more sensitive to attrition when compared to other aspects of word knowledge.

Keywords: attrition, lexical knowledge, incidental vocabulary acquisition



MJAL10:1 Winter 2018

ISSN 0974-8741

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2. Sunama Patro

Introduction

Lexical knowledge is believed to be pivotal in language acquisition (first or second/foreign). This knowledge is multi-dimensional and multifaceted as it includes all the aspects of word knowledge and is closely related to the general language proficiency of the learners. Accuracy and fluency, the two most highlighted components of any language performance, largely rely on the learner's proficiency level in vocabulary use that enables one to use the language more effectively and proficiently. However, this ability to 'use' can be the result of two more of such components — 'form' and 'meaning' (Nation, 2001). The three dimensions of lexical knowledge (form, meaning, and use) can be approached at various linguistic levels: phonological, morphological, syntactic, semantic, and pragmatic. In addition, each of the dimensions can be realized at two different levels i.e. receptive and productive in view of the cognitive manipulation required, and the task demands. Further, the receptive and productive division in lexical knowledge can be extended to the linguistic realization of a word at different levels.

The multi-dimensional nature of a 'word', a further necessitates a division can based on the breadth of vocabulary knowledge and depth of vocabulary knowledge. In the literature of the field, these two types of knowledge have been defined as the number of words a learner knows, and the amount of knowledge they have of each word respectively (Kersten, 2010). The former refers to the learners' familiarity with a word and the latter its meaning(s). The two terms 'breadth' and 'depth' could reveal that these two types of knowledge can vary for each known word and would be in constant variation from time to time, thus, highlighting the possibility of consolidation of the newly acquired word knowledge to the existing overall knowledge of a word as well as loss of the same from the existing. In SLA research, however, the term 'acquisition' is more comprehensive and convenient for researchers over the term 'addition' as 'acquisition' refers to a process unlike 'addition' which suggests more of a product. Likewise, the term 'loss' is not as accurate as 'attrition' as it refers to a process in which the already stored knowledge becomes inaccessible for varied reasons (Weltens & Grendel, 1993). Thus, in order to explain



MJAL10:1 Winter 2018

ISSN 0974-8741

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2. Sunama Patro

this, an understanding of the processes involved in the growth and development of lexical knowledge is essential.

In the teaching-learning of L2 vocabulary, intentional or explicit learning and incidental vocabulary acquisition have remained two of the most widely followed processes responsible for lexical knowledge development in terms of receptive or productive vocabularies, and depth of vocabulary or breadth of vocabulary. With regard to the number of words available in a language and the number of aspects one needs to know about each of them (grammatical, semantic, orthographic, phonemic, and the like), explicit or intentional study of the aspects would seem impractical. Hence, the need for incidental vocabulary acquisition arises in which the learner can encounter the words in context and could eventually acquire its properties. However, both the approaches could be promoted to maximize L2 vocabulary learning as learning is deemed to be more of a selection rather than a choice. Incidental acquisition of vocabulary could be lifelong and allows more pace for autonomous development of L2 vocabulary knowledge as the learner is not informed and aware of the words he might acquire. The learner is provided with an opportunity to visualize and experience the word in a meaningful context; and in the process, can acquire its properties and put the same into the mental lexicon to be retrieved and accessed later.

Literature Review

Incidental vocabulary acquisition and lexical development in reading

Reading is believed to be crucial for development of lexical knowledge in second or foreign language teaching-learning contexts as exposure to real life language often remains limited (Chen & Truscott, 2010; Heidari-Shahreza & Tavakoli, 2012). Learners experience the target words in print which provides them an opportunity to work on the words (if intentional); and when tasked with making meaning of the text, learners acquire the target word properties in the overall context of meaning (if incidental). The latter seems to be a framework in which the learner exerts no control over learning of the individual items (target words) in comparison with the former. However, to term 'lack of control' in learning individual target words while



MJAL10:1 Winter 2018

ISSN 0974-8741

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2. Sunama Patro

performing meaning-oriented tasks (reading comprehension, extensive reading) as completely incidental would be wrong as there is every possibility of a word being noticed and consequently being worked upon for the required knowledge (Bruton, Lopez & Mesa, 2011). Hence, the use of the term ‘intention’ would be preferred to define incidental vocabulary acquisition in reading. However, ‘lack of intention’ may not be a distinguishing characteristic to operationalize the above construct as it cannot be devoid of consciousness in learning. Hence, in the context of the present study ‘incidental vocabulary acquisition’ has been defined as ‘subconscious acquisition of the target word properties from the input when the focus is on the message of the text’ (Schmitt, 2000; Chen & Truscott, 2010; Heidari-Shahreza & Tavakoli, 2012). However, the effectiveness of such learning as opposed to intentional learning is yet to find a conclusive view as successful acquisition would mean the ability to recall and retrieve the target word features at will and put the same into use. Moreover, with the regard to the multi-dimensional nature of a word, it is still not clear which aspects of a word are more sensitive to attrition and long-term retention as opposed to other aspects when acquired under incidental learning conditions (Bagherabadi, 2005 as cited in Asgari, 2013; Russel, 1999).

Lexical attrition in incidental vocabulary acquisition

Research in language attrition suggests that the lexical domain is more susceptible to attrition when compared to other kinds of linguistic attrition (Al-Hazemi, 2000; Weltens & Grendel, 1993). This happens simply because a single ‘word’ entails numerous aspects of lexical knowledge and has been rightly pointed out, “just as there is a lot to earn in learning words, there is much that can be forgotten in the forgetting process” (Cohen, 1986, p.146). However, researchers have variously defined this lexical knowledge in the context of their research. Moreover, it would not also be possible to include all the aspects to investigate the issue of lexical attrition in a time bound framework, unless longitudinal, with focus on long-term retention. Hence, the findings reported vary because of the differences in measuring instruments used to investigate lexical knowledge attrition and the fundamental problem of defining what constitutes ‘knowing a word’.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas
2. Sunama Patro

Lexical knowledge attrition as an area of inquiry emerged in the 1980s when newer perspectives towards language loss were developed, from pathological as well as non-pathological studies. Researchers began to look for linguistic systems that were more vulnerable to attrition than any other and found word loss as most susceptible of all. Thenceforth, a number of research studies concentrated on lexical knowledge attrition with considerable amount of research in second or foreign language attrition (Messelink & Verkuylen, 1984; Schumans et al., 1985; Verkaik & Van der Wijst, 1986). These studies incorporated a small sample and followed an experimental design with one measuring instrument (one test only) in contrast to studies such as Bahrck (1984) and Weltens (1989) who used elaborate test batteries and large sample groups. However, for a number of studies the methodological data has not been reported. These studies focused on long-term retention of the L2 lexical knowledge with duration ranging from one month to fifty years. Hence, the results reported by the studies varied significantly because of several reasons such as language distance, language environment, attitude and motivation, language proficiency; and in most cases significant attrition in lexical knowledge was reported. However, the previous studies failed to investigate lexical knowledge attrition in the context of any approach to acquisition; moreover, they also failed to compare the effectiveness of lexical retention and recall by administering immediate and delayed post-tests. Additionally, these studies did not involve multiple measures to test recall of different aspects of lexical knowledge involved in the target words until recently. Chen and Truscott (2010) and Heidari-Shahreza and Tavakoli (2012) who adopted the incidental vocabulary acquisition paradigm in EFL contexts worked with seventy-two Mandarin-speaking and ninety Iranian university freshmen respectively exposed the participants to ten target words (TWs) each at different levels of frequency through reading. The results obtained from the comparison of their performance in an immediate post-test and a delayed post-test (after two weeks) on multiple aspects of word knowledge indicated that the orthographic and semantic aspects of lexical knowledge were more vulnerable to attrition compared to other aspects. The present study adopts a similar framework in terms of the measures employed to check recall of the selected aspects of lexical knowledge.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas

2. Sunama Patro

In the context of the present study, reading, as a modality, has been used to enable learners acquire the TWs incidentally when their focus would primarily be comprehension of the text(s). No theoretical distinction has been made between the two terms ‘acquisition’ and ‘learning’ and they have been used synonymously in this study for second language lexical processing is a continuous parallel activity (L2↔L1) in which some of the aspects of word knowledge are acquired unconsciously while a conscious effort is made to learn a few other aspects (Jarema & Libben, 2007; Tokowicz, 2015). The study aims to investigate the above issue with the following research question in mind:

1. To what extent can the selected target word-features, acquired incidentally through reading, be effectively retained over a period of time?

Research methodology

The study, experimental in design, followed a quantitative approach. It aimed to study the relationship between the independent variable i.e. incidental vocabulary acquisition, and the dependent variable i.e. retention of selected lexical knowledge. It sought to answer the research question by quantifying the data using a standardized statistical measure (paired samples t-test) in order to offer an objective generalization of the findings.

Participants

The sample comprised thirty Odia speakers (from the eastern state of Odisha, India) of English of class XI, aged 16, with a minimum of seven years of exposure to English as a second language. They were selected out of eighty-nine students based on their performance on the 3000 word level Vocabulary Levels Test (Schmitt, 2000). Only those students whose score remained 27.5 or more out of 30 were selected for the main study. A demographic survey was conducted to ensure homogeneity in terms of their shared knowledge and background.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas
2. Sunama Patro

Instruments

Vocabulary Levels Test

The 3000-word level Vocabulary Levels Test (Schmitt, 2000) was administered to ensure that the sample was homogenous in terms of their proficiency level in vocabulary use. Researchers suggest that proficiency in vocabulary use highly correlates with one's language proficiency (Roche & Harrington, 2013; Milton, 2013). This test allows the researcher to make predictions about the word level at which the sample operates.

The Academic Vocabulary List (AVL)

With regard to the ecological validity of the academic words, it was decided that the target words would be academic in nature. Hence, reference was made to The Academic Vocabulary List (Gardner & Davies, 2013) which contained the most 3000 core academic words. Twenty words believed to be unknown to the learners were selected from the first 1100 words whose meanings were to be tested using a word diagnostic test.

Table 1 Words selected for diagnosis

Verb		Noun		Adjective
attribute	advocate	constraint	fragment	strategic
endeavor	constitute	prejudice	instance	substantial
manipulate	implement	dichotomy	dilemma	apparent
abandon	comprise	precision	perspective	subsequent

Word diagnostic test

The word diagnostic test was administered to ensure that the target words (TWs) were not beyond learners' comprehension level and vocabulary use. In order to do so, the TWs were contextualized at sentential levels and the learners were asked to comprehend the TWs by



MJAL10:1 Winter 2018

ISSN 0974-8741

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matching their corresponding meanings on a match-the-following-item-type. This was done to select TWs for the preparation of reading texts. The word diagnostic test was administered as a part of the pilot study. Eight words were selected as TWs on which seventy percent of the learners had scored correctly on the word diagnostic test.

Table 2 Target words

implement (v)	manipulate (v)
constitute (v)	endeavor (v)
perspective (n)	dilemma (n)
substantial (adj)	strategic (adj)

Reading texts

Based on the selection of the target words three expository reading texts were produced. The texts contained all the eight target words to ensure that learners encounter the TWs three times in different contexts. The texts were around 200 words each with 90% of the words from the first 3000 words in English that would help learners for unassisted reading comprehension. The texts were analyzed using www.lextutor.ca to find out the percentage of the first 2000 words in English, the percentage of academic words, and off-list words.

Immediate and delayed post-tests

This study included multiple aspects of lexical knowledge to check lexical attrition after a gap of two weeks from the participants' performance in the delayed post-test as compared to the immediate post-test. The study adopted a modified version of the Heidari-Shahreza and Tavakoli's (2012) list of vocabulary knowledge and the item-types used to test each aspect of the lexical aspects. Table 3 displays the vocabulary knowledge involved in each target word and the item-type used to measure them. With regard to the nature of data-paired samples, t-test was included as the statistical tool to analyze whether the difference between the two scores obtained in the two tests, administered in two different time conditions, was significant.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas
2. Sunama Patro

Table 3 Types of lexical knowledge measured

Order	Knowledge measured	Item type (Sub-tests)
1	Productive knowledge of orthography (PO)	Dictation
2	Receptive knowledge of orthography (RO)	Multiple choice
3	Receptive grammatical knowledge (RG)	Multiple choice
4	Receptive knowledge of meaning (RM) (L2-L1)	Matching
5	Receptive knowledge of association (RA)	Multiple choice
6	Productive grammatical knowledge (PG)	Sentence construction

Pilot study

A pilot study was conducted to check the validity of the tools prepared. First, the word diagnostic test was administered to them so as to select the target words which should be unknown to the participants of the main study. Based on the selection of the target words three reading texts were created and immediate and delayed post-tests were designed. Participants of the pilot group were asked to read the passages and were administered the immediate and delayed post-tests. An opinion questionnaire was prepared and administered to the sample to garner their opinion regarding a) length of the texts, b) difficulty level of the texts, c) complexity of the texts, d) participants' familiarity with the texts, and e) item types used in the tests and their suitability. Later the participants were interviewed to garner information about the texts, tests, and item types. This ensured triangulation of data.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas

2. Sunama Patro

Procedure

The main study was conducted in three phases— reading of the texts, administration of the immediate post-test, and the delayed recall test (after two weeks). The texts were stapled together with each appearing on a single page. The participants were instructed not to go back to the text once they had finished reading it. In order to make the participants focus on the meaning of the texts and discourage them from paying any extra attention to the target words they were told that there would be reading comprehension test. Soon after the learners finished reading the texts the immediate post-test consisting of all the six sub-tests was administered. There was no time limit set for the learners to respond to the test. The delayed post-test was administered again after two weeks and in each instance the participants were not allowed to go back to the item-type once they finished doing it.

Data analysis and discussion

Paired samples t-test was used in order to find out the difference in the participants' performance in the immediate post-test and delayed post-test on the six sub-tests. The mean scores calculated in the immediate post-test on the six independent measures were compared with the mean scores obtained in the delayed post-test. Table 4 displays the mean scores and the standard deviations scored on each sub-test in the immediate and delayed post-tests along with the t-statistic with the significance ($p < .05$) between the two mean scores set at the level of 5% significance.

Table 4 Comparison of the mean scores (*M*) and standard deviations (*SD*) on the immediate and delayed post-tests

	immediate post-test		delayed post-test		t	Sig. (two-tailed)
Sub-tests	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
PO	4.8000	2.51067	5.6667	1.70867	-2.35	.025 [†]
RO	6.4333	1.71572	6.9333	1.11211	-2.05	.049 [†]



MJAL10:1 Winter 2018

ISSN 0974-8741

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RG	5.0000	1.78113	4.3000	2.33637	2.02	.053*
RM	3.8667	2.76347	1.5667	.97143	4.28	.000*
RA	4.4000	1.75381	4.6000	1.79271	-.665	.512
PG	5.7333	1.79911	5.6000	1.69380	.453	.654

Note: * $p < .05$ and † $p < .05$ (when the mean scored compared is higher)

The analysis revealed that the t-statistic was significant at the 0.05 critical alpha level on PO, RO, RG, and RM with no significant difference between the mean scores on RA and PG. However, the mean scores in the delayed post-test remained higher than the mean scores obtained in the immediate post-test on PO and RO. The difference between the mean scores obtained in the immediate and delayed post-tests on PO and RO remained—.86667 and —.50000 respectively. This indicates that both receptive and productive knowledge of the orthographic forms of the target words were recalled effectively after two weeks.

In the case of RG and RM, the mean scores declined in the delayed post-test and the difference between the mean scores was statistically significant at 0.05 critical alpha levels. The mean scores obtained in the immediate post-test and delayed post-test on RG remained 5.0000 and 4.3000 respectively with a difference of 0.70000 at 0.053* level of significance; and 3.8667 and 1.5667 on RM with a difference of 2.3000 at .000* level.

However, the difference between the mean scores calculated on RA and PG remained —.20000 and .13333 at .512 and .654 level of significance respectively. This suggests that learners were able to recall the orthographical (receptive and productive), associations (synonyms), grammatical knowledge (productive) involved in the target words after a period of two weeks compared to the grammatical knowledge (receptive) and the meanings (L2-L1).



MJAL10:1 Winter 2018

ISSN 0974-8741

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Conclusion

The present study investigated the extent to which the selected aspects of lexical knowledge could be recalled effectively after a gap of two weeks. The findings indicated significant development in lexical knowledge of learners in terms of the selected aspects as evident from the results obtained in both the tests. However, it is also observed that some of the lexical features of the target words are more susceptible to attrition (after a gap of two weeks) compared to other aspects. As is evident, the knowledge of orthography, association, and productive grammatical knowledge seem to grow stronger than receptive grammatical knowledge and meanings of the target words. It can also be said that even after three exposures to target words the knowledge of semantic aspects and the ability to recognize the grammatical category of target words declined. The findings and observations establish several pedagogic and research implications. In teaching-learning contexts, teachers can adopt some of the best practices available, related to vocabulary instruction, to revisit the aspects that are more sensible to attrition. This would help the learners transfer the lexical knowledge to the long-term memory and retrieve them for productive use when required. For further research, more number of aspects (antonyms, collocations, multiple meanings, and the like) can be included to study the issue of second language lexical attrition in a long-term retention framework. Even three encounters with the target words could not help the learners recall the above mentioned aspects. A similar study can be conducted to see whether more than three encounters with target words could enable the learners recall the above aspects better.

References

- Al-Hazemi, H. (2000). Lexical attrition of some Arabic speakers of English as a foreign language: A study of wordloss. *The Internet TESL Journal*, 5, 12.
- Asgari, A. (2013). *Language attrition on L2 writing skills*. Retrieved from <https://books.google.co.in/books?id=UgkMBgAAQBAJ&pg=PA20&dq=attrition+in+vo>



MJAL10:1 Winter 2018

ISSN 0974-8741

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cabulary+language&hl=en&sa=X&ved=0ahUKEwjLy-

v0_5LZAhUFvI8KHx4xB3UQ6AEIPDAE#v=onepage&q=attrition%20in%20vocabulary%20language&f=false

Bahrack, H.P. (1984). Fifty years of language attrition: Implications for programmatic research.

Modern Language Journal, 68, 105-118.

Bruton, A., Lopez, M.G., & Mesa, R.E. (2011). Incidental L2 vocabulary learning: An impracticable term? *TESOL Quarterly*, 45(4), 759-768.

Chen, C., & Truscott, J. (2010). The effects of repetition and L1 lexicalization on incidental vocabulary acquisition. *Applied linguistics*, 31(5), 693-713.

Cohen, A.D. (1986). Forgetting Foreign-Language Vocabulary. In Weltens, De Bot and Van Els (Eds), *Language Attrition in Progress*, (pp.143-158). Dordrecht/ Providence: Foris.

Gardner, D., & Davies, M. (2013). A New Academic Vocabulary List. *Applied Linguistics*, 35 (3), 305-327. doi:10.1093/applin/amt015

Heidari-Shahreza, M.A., & Tavakoli, M. (2012). The effects of repetition and L1 lexicalization on incidental vocabulary acquisition by Iranian EFL learners. *The Language Learning Journal*, 40, 1-16.

Jarema, G., & Libben, G. (2007). Introduction: Matters of definition and core perspectives. In G. Jarema & G. Libben (Eds.), *The mental lexicon: Core perspectives*, (pp.1-15). Oxford: Elsevier Press.

Kersten, S. (2010). *The mental lexicon and vocabulary learning*. Dischingerweg: narr verlag.

Messelink, J., & Verkuylen, H. (1984). Het Verlies van Woordenkennis van het Frans. Unpublished Master's thesis, University of Nijmegen. [The Attrition of Word Knowledge in French]

Milton, J. (2013). Measuring the contribution of vocabulary knowledge to proficiency in the four skills. In C. Bardel, C. Lindquist, & B. Laufer (Eds.), *L2 Vocabulary acquisition, knowledge and use*, (pp.57-78). Clochester: EuroSLA.

Nation, P. (2001). *Learning vocabulary in another language*. New York: Cambridge University Press.



MJAL10:1 Winter 2018

ISSN 0974-8741

Lexical Knowledge Attrition in Incidental Vocabulary Acquisition by 1. Revathi Srinivas

2. Sunama Patro

Roche, T., & Harrington, M. (2013). Recognition vocabulary knowledge as a predictor of academic performance in an English as a foreign language setting. *Language Testing in Asia*, 3 (1), 1-13.

Russel, R. (1999). Lexical maintenance and attrition in Japanese as a second language. In L. Hansen (Ed.), *Second language attrition in Japanese contexts*, (pp.114-141). New York: OUP.

Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.

Schumans, J., van Os, C., & Weltens, B. (1985). Vocabulairekennis in de Vreemde Taal na Beëindiging van het Onderwijs. *Toegepaste Taalwetenschap in Artikelen*, 23, 1- 89. [Foreign Language Vocabulary Knowledge after Course Completion]

Verkaik, P., & P. van der Wijst. (1986). "Taalverlies en Woordherkenning in het Frans als Vreemde Taal." Unpublished Master's thesis, University of Nijmegen. [Language Attrition and Word Recognition in French as a Foreign Language.]

Weltens, B. (1989). *The Attrition of French as a Foreign Language*. Dordrecht/Providence: Foris.

Weltens, B., & Grendel, M. (1993). Attrition of vocabulary knowledge. In R. Schreuder and B. Weltens (Eds.), *The bilingual lexicon*, (pp. 135-156). Amsterdam: Benjamins.