# Recognition and Production of Ambiguous Idioms in English: Socializing learning vs. cognitive linguistic approach

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## **Abstract**

This study aimed at determining the effect of teaching idiom strategies, that is, socializing learning and cognitive linguistic approach, on Iranian EFL learners' recognition and production of ambiguous idioms. To this end, 78 upper-intermediate students of Islamic Azad University, Tabriz Branch, Iran, formed the total population of the study. Then, Proficiency English Test (PET) was administered to ensure the homogeneity of the needed sample. Based on the results of this test, 60 students were selected as the final participants. They were randomly assigned to two experimental groups: WhatsApp socializing group and etymological elaboration group. A pretest was used to ensure the unfamiliarity of the idioms. The criteria for choosing ambiguous idioms were that all ambiguous idioms required to have etymology and could be illustrated using a picture Also, posttests for the recognition and production of ambiguous idioms were used to compare the performance of the two groups. The statistical analysis of results indicated that the etymological elaboration group outperformed the socializing group in both idiom recognition and production. The findings of this research have pedagogical implications for teachers, syllabus designers, and materials developers in using appropriate instructional methods for teaching idioms.

Keywords: Ambiguous idioms, cognitive linguistic approach, socializing learning

# **Introduction**

Erişkon (1996, as cited in Güvena & Halat, 2015) has defined language as the most fundamental tool that enables people to communicate thoughts and emotions interactively and empowers people from different cultures to use it to think, perceive and then go into an action, express themselves and announce in virtue of language. Demirel (2007) points out that the use of language as a communication tool in society is indicative of its social function; it plays a part in building relations between the society to which the language is tied and the culture of that society. Language has different elements to be mastered by the learners. No doubt, idioms are an important part of language and culture around the world; yet, they may cause difficulties for English as foreign language learners (EFL) mainly due to their unpredictable meanings. Idioms are fixed expressions whose overall meaning cannot be understood from the meaning of their individual parts. For example, 'let the cat out of the bag' is composed of seven words (let/the/cat/out/of/the/bag) whose individual meanings do not make up its whole meaning (i.e. reveal a secret). Thus, one of the main obstacles that EFL learners face is the acquisition of

idioms. EFL learners constantly complain about the problems they encounter in understanding idiomatic expressions such as to 'fall in love', 'to be over the moon' or 'to be under the weather'. They cannot build any relations between these idioms and their meanings (the states of love, happiness and sadness respectively). Cameron and Low (1999) state that the clear mismatch between form and meaning, the shortage of teaching materials, and the loss of a clear methodology make idioms an obstacle for EFL students. Nonnative speakers, they add, can find themselves in "hot water" for example when encountered with idioms. To many ESL or EFL learners, idioms are an uncomfortable obstacle in their way to learn English. Obviously, this is because the meaning of the words that constitute an idiom might not match the intended meaning of the idiom. According to Irujo (1986), "idioms do not say what they mean' because they are not literal" (p. 326). Therefore, it is important for language learners to have some background knowledge of the culture of the language they are learning.

Idioms can be categorized into easy or simple and ambiguous ones (Cacciari and Glucksberg, 1991). The more familiar idioms (e.g. time is money) can be considered as simple or easy idioms, but the story is different for ambiguous ones, since the meaning of strings of words in these idioms is not clear, hence ambiguity can occur in the interpretation of the meaning. So, the main focus of the current study was on ambiguous idioms due to their difficulties in interpretation of meaning, and since the problem cannot be solved by just recognizing idioms via multiple-choice items, the participants were also required to produce the idioms in appropriate context. Thus, this study investigated both the production and recognition of ambiguous idioms.

As for teaching idioms, different ways have been suggested that can be applied to EFL classes to make students interested in using and learning idioms. Among them are etymological elaboration, and socializing learning. Etymological elaboration can be achieved through the scientific study of the origins and history of meaning and word form changes (Ross, 1969). Cognitive linguistics has focused on using etymological elaboration as a mnemonic approach to facilitate learners' L2 idiom retention for a longer time and to help them acquire idioms effectively. The other way of teaching idioms can be materialized through social networks by which people can achieve maximum efficiency in learning with the advantages of online technology. Butcher and Gibson (2010) indicate that an online social network could provide a communication interface that is easy to use. The effective use of technology may assist with learners' overall satisfaction and develop intellect among learners outside classrooms. Liu, Horton, Olmanson, and Toprac (2011) report that learners could better learn through online social networks. They believe that new media technology environment can motivate better learning which in turn creates a much more effective development than traditional learning. It allows a free-learning, interactive environment regardless of time and place. All in all, as it was indicated above, this study was an attempt to shed light on the best possible strategies for teaching idioms to Iranian EFL learners. Thus, the following research questions were formulated:

- RQ1. Do socializing learning and cognitive linguistic approaches through etymological elaboration have any significant impact on Iranian EFL learners' recognition of ambiguous idioms?
- RQ2. Do socializing learning and cognitive linguistic approaches through etymological elaboration have any significant impact on Iranian EFL learners' production of ambiguous idioms?

## **Literature Review**

As mentioned earlier, this study aimed to explore the effect of etymological elaboration, as one type of cognitive linguistic approach, and socializing learning on Iranian EFL learners'

recognition and production of ambiguous idioms. Hence, the theories supporting these strategies, that is, Cognitive Linguistic Theory and Dual Code System Theory) are reviewed below.

# **Cognitive Linguistic Theory**

According to Tyler (2012), Cognitive Linguistic (CL) approach is a modern school of linguistic thought which firstly emerged in 1970s by the earliest pioneers who were dissatisfied with existing approaches to language. It focuses on the social and physical world, human cognitive processes and language, and the connections among them. Evans (2007, p. 22) states that "CL places central importance on the role of meaning, conceptual processes and embodied experience in the study of language and the mind and the way they intersect". He adds that CL cannot be considered as a theory, but rather an approach or an enterprise. Furthermore, cognitive linguists strive to find systematicity in language and patterns of thought, which shows that studying language according to CL approach means to study patterns of conceptualization and the features of the human mind (Evans & Green, 2006). Moreover, according to Tyler (2012), CL agrees with the necessity to memorize some amount of vocabulary, but offers an approach which allows lexical items and multiple meanings to be seen as motivated, which means reflecting a pattern that can provide a set of principles acting as a schema for acquiring new vocabulary He stresses "the importance of systematic, motivated explanation in language teaching because it will make interpreting and remembering of the encountered lexical items easier for the language learners" (p.7). It is believed that the CL approach can help with learning figurative expressions and offer systematic pedagogical methods to the second language classroom (Charteris-Black, 2002). The relatedness of etymological elaboration to CL approach can be explained by Tyler (2012) who believed CL approach like etymological elaboration of figurative expressions focuses on the social and physical world, human cognitive processes and language and the connections between them.

# **Dual Code System Theory**

Comprehending and retaining idioms through etymological elaboration is not yet clearly confirmed. Boers (2000) states that one cannot be sure about what mental processes might occur regarding etymological elaboration. In response to such a doubt, a reasonable justification might be derived from Dual Coding System Theory (Clark and Paivio, 1991), which implies that the etymological concepts are likely to be elicited from the learners' memory. Also, the concerned concepts can be maintained in memory beside the verbal aspect, and can subsequently show a trace to be recalled (Boers et al., 2007). Paivio's (1986) dual coding theory basically outlines the significance of visuals in terms of the idea that the cognitive process of the human brain proceeds in relation to the processing of the information derived from the interplay of both verbal and visual elements. Accordingly, using both visual and verbal elements has additive effects on the learners' recalling procedure. Furthermore, etymology strategy falls within the area of mnemonic approach. The term mnemonic "can be defined as a strategy for organizing and/or encoding information through the creation and use of cognitive cuing structures" (Bellezza, 1981, p. 37). The main purpose of using mnemonics is to keep words in the long-term memory that has unlimited capacity compared to short term memory.

# Mobile-assisted Language Learning (MALL)

Another strategy or strategy focused in the current study is socializing learning through WhatsApp. The theoretical background for this strategy is Mobile-assisted Language Learning (MALL). Mobile phones are a significant part of our lives. Everybody has his/her own cell

phone. Since 1995, mobile phones have been developing very fast (Chowdhury, 2012). They are utilized for making calls and messaging, playing music, watching a movie; accessing Internet and a variety of applications. To give more functionality in mobile phones, many operating systems are developed such as Windows Mobile, IOS, Symbian and Android.

O'Malley, Vavoula, Glew, Taylor and Sharples (2005, p. 6) have deifned mobile learning as "taking place when the learner is not at a ifxed, predetermined location, or when the learner takes advantage of learning opportunities offered by mobile technologies". In a study, Kukulska-Hulme (2005, p.45) deifned mobile learning .s "being concerned with learner mobility in the sense that learners should be able to engage in educational activities without being tied to a tightly delimited physical location".

# **Previously-conducted Research**

Different studies have been conducted in connection with issues and methods of idiom learning. For instance, Coryell (2012) conducted a research on the effectiveness of etymological elaboration as a method of teaching idioms to adolescent English language learners by using this approach in an ESL classroom with 25 preadolescent and adolescent English language learners of different ages, proficiency levels, countries of origin, and native languages. He came up with the conclusion that etymological elaboration positively affects learning idioms. Moreover, Zarei and Rahimi (2012) explored the effects of etymological explications, lexical elaboration, and contextual clues on Iranian learners' idiom comprehension and production. They concluded that this method is the most effective way of comprehending idioms. Plana, Escofet, Figueras, Gimeno, Appel and Hopkins (2013) conducted a study in Spain and examined the use of WhatsApp in English language studies. The results showed an increase in motivation of students and a greater enthusiasm for reading in a foreign language.

It is worth noting here that in Iranian EFL context, the amount of time and effort a teacher should invest in teaching idioms is of great importance, because processing the material and creating the links between idioms can be effort- and time-consuming. Hence, due to the paucity of studies comparing the effect of using different cognitive and social approaches on teaching and learning idioms, the present study sought to investigate the impact of etymological elaboration and socializing learning on EFL learners' recognition and production of ambiguous idioms among upper intermediate EFL learners.

#### Method

# **Participants**

For the purpose of this study, first a total number of 78 female EFL learners from Islamic Azad University, Tabriz Branch, were selected through convenient sampling as the general population. Their age range was between 19 to 23 years. Then, a sample of the PET test was administrated to them. Based on the results of the test, 60 upper-intermediate EFL learners whose scores fell 1SD above and below the mean were chosen as the final participants of the study. They were assigned to two experimental groups, that is, WhatsApp socializing group and etymological elaboration group.

## **Instruments**

The instruments in the present study were Nelson English Language Test (Fowler and Coe, 1976), a pretest on idioms, and a posttest.

**Proficiency English Test (PET)**: In order to choose a homogeneous group of EFL learners in terms of general English language proficiency, a sample of the Proficiency English Test (PET) was administered to the total population. The test contained 50 Multiple-choice items. Based on the obtained results of the test, those students who scored one standard deviation above and below the mean were considered as the appropriate participants for the study.

**Pretest:** Another instrument used in the present study was a pretest on idiom recognition and production. The pretest was had 60 items on ambiguous idioms including both recognition and production questions It was a researcher-made test, and before the study, to validate it, its content was examined by three experts (English teachers with experience in teaching idioms). The experts were asked to make sure that the idioms in the test were ambiguous.

**Posttest:** There was a difference between pretest and posttest in terms of the number of items. The number of items in the pretest was more than posttest. The reason was the fact that the researcher needed to choose the items with which most or all of the participants were unfamiliar before the treatment. The posttest included 50 items, twenty-five in multiple-choice format to check the recognition of the idioms and the other 25 items in production or fill in blanks format. The reliability of the test was explored via a pilot study in an isolated session and reported to be .072, and its validity was expert-validated by three professors at Tabriz Azad University.

## **Procedures**

Initially, 60 upper-intermediate level EFL learners were selected from intact classes to participate in the study. The learners were selected based on availability and their scores on a general English proficiency test (Nelson Test). Also, to ensure that the participants have no prior knowledge of the target idioms, the idioms pretest (described earlier at instruments' section) was administered. Before the treatment, the pretest was piloted with 15 EFL students from the same institute in order to estimate its reliability. Then, the treatment started. In the etymological elaboration group, the instructor taught 5 idioms in each session through elaborating the etymological information of the idioms. The learning unit included a short paragraph of etymological information on the origin of each idiom, followed with an example sentence taken from dictionaries or corpora to provide a context in which the idiom was used. For instance, the origin of the idiom "On the back burner" was presented to the learners with the following explanation:

A stove top usually has four burners, two in front and two in back. The food you are currently working on is usually on a front burner, so you can reach it easily. The food that does not demand immediate attention is put on a back burner and receives low priority. After explanation, an example (With other important homework due next Monday, I had to put my statistics project on the back burner for a while.) will be given to make clear the idioms.

After explanation, an example (e.g. with other important homework due next Monday, I had to put my statistics project on the back burner for a while.) was provided to clarify the idioms.

In the socializing group, the learners were taught 50 idioms through WhatsAPP network as a social network in order to see whether or not they had priority over the other group as regards the participants' idiom recognition and production. They were required to install WhatsApp on their cell phones, tablets, laptops, or computers. All of them were asked to be online at a specific time they had agreed upon. The researcher, in fact, formed a WhatsApp channel through which she sent idioms to the participants and provided them with the definitions and uses of the idioms. Also, she sent some examples, conversations or texts to the participants in through the channel. Moreover, she posed some questions regarding the meaning of the idioms and the participants

were required to provide some more examples or share their own experiences related to the idioms. When the participants faced a problem, they were able to ask the researcher or other participants for assistance. Finally, at the end of the experimental period, the posttest with the aforementioned characteristics was administrated to all the participants to explore the impact of the two teaching methods on both groups in terms of idiom recognition and production. The collected data were then statistically analyzed.

#### Results

The results obtained from the pretest, at the onset of the course, showed no statistically significant difference between the two groups, confirming the fact that they were in a similar status in terms of knowledge of idioms. After the treatment, the idiom test including 40 items with total score of 40 (20 for recognition and 20 for production) was administrated to both groups under the study. The results of descriptive statistics in idiom recognition are presented in Table1 below.

**Table 1**Descriptive Statistics of Posttest in Idiom Recognition

	N	Minimum	Maximum	Mean	Std. Deviation
	Statist				
	ic	Statistic	Statistic	Statistic	Statistic
Posttest Etymology	30	15.00	19.00	17.74	1.62452
Posttest Socialization	30	11.00	15.00	13.07	1.65322

Table 1 shows that the mean score of the etymological elaboration group in the posttest of idiom recognition was 17.7 with SD of 1.62, whereas the mean of the socializing group was 13.07 with SD of 1.65. So, the means of the two groups were different. However, the differences between them needed to be tested statistically. Actually, the assumptions of the parametric test had to be tested. One of the assumptions was that the data has to be normally distributed. Thus, Kolmogrov-Smirov Test was run and the results approved normality of the posttest (Table 2 below).

 Table 2

 Kolmogrov-Smirov Tests of Normality of Idiom Posttest

	Kolmogo	irnov <sup>a</sup>	Shapiro-Wilk			
	Statistic	Df	Sig.	Statistic	df	Sig.
Posttest Etymology	.128	30	.200*	.987	30	.575
Posttest Socialization	.128	30	$.200^{*}$	.987	30	.521

<sup>\*.</sup> This is a lower bound of the true significance.

After the above-mentioned procedure, an independent Samples *t*-test was run to analyze the results of the posttest in idiom recognition between the two groups (Table 3 below).

a. Lilliefors Significance Correction

**Table 3** *Results of Independent t-test in Idiom Recognition* 

	Levene's for Equ Variance	ality of						
	F	Sig.	t	df	•	Mean Difference	Std. Error Difference	
Equal variances assumed	.056	.002	2.75	58	.000	1.2000	.43302	
Equal variances not assumed			2.75	57.99	.000	1.2000	.43302	

According to the above Table, the equality of variances is F=0.056 with a significant level of .002. The results also represent the *t*-test value of 2.75 to manifest the equality of means with a significant level of .000. As for the equal variances, the results show that the significant level of 0.002 is less than 0.05. Therefore, there is a significant difference between the two groups regarding their scores in idiom recognition.

The focus of the second research question was analyzing the results of posttest of idiom production between the two groups. Table 4 below shows the descriptive statistics of idiom production of the two groups.

**Table 4**Descriptive Statistics of Posttest in Idiom Production

	N	Minimum	Maximum	Mean	Std. Deviation	
	Statist					
	ic	Statistic	Statistic	Statistic	Statistic	
Posttest Etymology	30	12.00	16.00	14.31	1.73421	
Posttest Socialization	30	11.00	14.00	12.51	1.74533	

This Table 4 reveals that the mean score of the etymological elaboration group in the posttest was 14.3 with SD of 1.73; whereas, the mean of the socializing group is 12.51 with SD of 1.74. So, an independent Samples *t*-test was run to analyze the results of the posttest in idiom production between the two groups (Table 5).

**Table 5** *Results of Independent t-test in Idiom Production* 

Levene's for Equ Variance	ality of	t-test for Equality of Means				
F	Sig.		Sig. (2-	Mean	Std. Error Difference	

Equal variances assumed	.059	.003	2.94	58	.000	1.1000	.42091
Equal variances not assumed			2.94	54.33	.000	1.1000	.42091

Based on the above table, the equality of variances is F=0.059 with a significant level of .003. The results also represent the t-test value of 2.94 to manifest the equality of means with a significant level of .000. As for the equal variances, the results show that the significant level of 0.003 is less than 0.05. This indicates that there is a significant difference between the two groups regarding their scores in idiom production. In general, based on the mean comparisons of two groups as well as the results of t-tests, it was revealed that the mean of learners in the etymological elaboration group was higher than that of the socializing group in recognition as well as production of idioms.

## **Discussion**

The present study was an attempt to investigate whether the two different techniques of idiom instruction; namely, socializing via WhatsApp and cognitive linguistic approach via etymological elaboration, had significant effect on Iranian EFL learners' recognition and production of ambiguous *t*-tests were run to find answer to the research questions. As indicated by the results, both in idiom recognition and idiom production, etymological elaboration strategy had a higher significant effect on EFL learners' idiom learning. It was actually found that this strategy is the most effective strategy in enhancing learners' performance in both idiom recognition and production, though the mean score of etymological elaboration in idiom recognition (M=17.74, SD=1.62) was higher than its mean score in idiom production (M=14.31, SD=1.73).

Instructing idioms through WhatsApp demonstrated less effect on students' enhancement of idioms recognition and production. The reason might be the learners' less involvement in the virtual context of online learning. This finding is in line with some previous studies (Church and de Olivia, 2013; Salim, 2013). These studies have reported that social networks are assumed by many teachers and students as informal communication devices which are not suitable for formal communication needed in educational settings. The finding also support those of other studies which unveil the marked role of etymological elaboration in idiom comprehension (Bagheri & Fazel, 2010; Baleghizadeh & Mohammad Bagheri, 2012; Boers, 2000; Zarei & Rahimi, 2012).

# **Conclusions**

The findings of this study show that EFL learners in etymological elaboration group performed better in recognizing and producing ambiguous idiomatic expressions in comparison to the socializing group. In fact, based on the obtained results, etymological elaboration was indicated as the most efficacious strategy of idiom teaching. The possible explanation for this finding might be 1) the strategy can create a crucial interplay between contextualization and the perception of different types of idioms in the instructional context, 2) the strategy can lead to the learners' involvement which can be conducive to more participation and thus a stronger association while teaching the students not only language and vocabulary, but teaching world knowledge and cultural awareness, 3) the strategy can be regarded as a fundamental strategy for

sharing knowledge among learners as it allows them change with regard to time and place, and helps them to know how idioms are used for real-life concepts, and 4) by igniting the learners' imagination, this pedagogical tool strategy lets them take the driver's seat to talk and interact with others so as to complete the task; thus, it can build language community within a classroom through social interaction.

As for the implications of the study, it can be claimed that being aware of efficacious strategies, such as etymological elaboration, in teaching idioms, instructors may put them into practice to supply students with idioms in terms of both recognition and production. Actually, based on the findings, teaching idioms through etymological elaboration should take priority over providing socializing strategy. Furthermore, designing syllabus and books with such a strategy in mind can help providing teachers with new insights for the odyssey of teaching idioms in a more interactive fashion.

Finally, age and gender which have not been taken into account in this study are two integral variables when it comes to language learning context. Therefore, another study can be conducted to delve deeply into how age and gender can affect idiom recognition and production, especially with students at different levels of proficiency. Also, further study can be carried out to probe the effect of the strategies on the chunks and collocations as a group of words which are taken as single entities. Further research can also be done to study the effectiveness of the abovementioned strategies on idiom learning via online-protocols and interviewing the learners.

## References

- Bagheri, M. S., & Fazel, I. (2010). Effects of Etymological Elaboration on the EFL Learners' Comprehension and Retention of Idioms. *Journal of Pan-Pacific Association of Applied Linguistics*, 14(1), 45-55.
- Baleghizadeh, S. & Mohammad Bagheri, M. (2012). The effect of etymology elaboration on EFL learners' comprehension and retention of idioms. *The Southeast Asian Journal of English Language Studies*, 18(1), 23-32.
- Bellezza F. (1981). Mnemonic Devices Classification, Characteristics, and Criteria. *Review of Educational Research*, 5(1), 11-23.
- Boers, F. (2000). Remembering figurative idioms by hypothesizing about their origins. *Prospect*, *16*, 35-43.
- Boers, F., Eyckmans, J. and Stengers, H. (2007). Presenting figurative idioms with a touch of etymology: More than mere mnemonics? *Language teaching research*, 11 (1), 43-62.
- Butcher, M.F. and Gibson, P. (2010). Online social networks and their impact on student expectations of university-provided learning technology. *International Journal of Educational Leadership Preparation*, 5 (3).
- Cacciari, C., & Glucksberg, S. (1991). *Understanding idiomatic expressions: The contribution of word meanings.* In *Advances in psychology*. North-Holland.
- Cameron, L., and Low, G. (1999). *Researching and Applying Metaphor*. Cambridge: Cambridge University Press.
- Charteris Black, J. (2002). Second Language Figurative Proficiency: A Comparative Study of Malay and English. *Applied Linguistics*, 23(1), 104–133.
- Chowdhury, R. (2012). Evolution of mobile phones: 1995 –2012. Retrieved May 19, 2014, from http://www.hongkiat.com/blog/evolution-of-mobile-phones/
- Clark, J. M., and Paivio, A. (1991). Dual coding theory and education. *Educational Psychology Review*, *3*, 149-210.

- Coryell, L. J. (2012). The effectiveness of etymological elaboration as a method of teaching idioms. (Unpublished doctoral dissertation). Department of Educational Theory and Practice. School of Education. University of Albany, State University of New York.
- Demirel, Ö. (2007). Yabancı Dil Öğretimi. Ankara. Pagem Yayıncılık
- Evans, V. (2007). A glossary of cognitive linguistics. Utah: University of Utah Press.
- Evans, V., and Green, M. (2006). *Cognitive linguistics: An introduction*. Lawrence Erlbaum Associates Publishers.
- Fowler, W.S. & Coe, N. (1976). Nelson proficiency tests. London: Butler & Tanner Ltd.
- Glew, J., Taylor, J., Sharples, M. and Lefrere, P. (2005). Guidelines for learning/teaching/tutoring in a mobile environment. In *MOBIlearn/UoN*, *UoB*, *OU/wp4/d4.1/*.
- Güvena, A. Z., and Halat, S. (2015). Idioms and Proverbs In Teaching Turkish As A Foreign Language; "Istanbul, Turkish Teaching Books For Foreigners" Sample. *Procedia Social and Behavioral Sciences 191*, 1240 -1246.\
- Irujo, S. (1986). A piece of cake: Learning and teaching idioms. *English Language Teaching*, 40(3), 236-242.
- Kukulska-Hulme, A. (2005). Current uses of wireless and mobile learning Landscape study on the use of mobile and wireless technologies for teaching and learning in the Post-16 sector. JISC-funded project. Retrieved February 14, 2007 from: <a href="http://www.jisc.ac.Uk/uploaded\_documents/Current%20Uses%20FINAL%202005.doc">http://www.jisc.ac.Uk/uploaded\_documents/Current%20Uses%20FINAL%202005.doc</a>
- Liu, M., Horton, L. Olmanson, J., and Toprac, P. (2011). A study of learning and motivation in a new media enriched environment for middle school science. *Educational Technology Research & Development*, 59(2), 249-265.
- Paivio, A. (1986). Mental Representations. New York: Oxford University Press.
- Plana, M. G. C., Escofet, M. I. G., Figueras, I. T., Gimeno A., Appel C., & Hopkins, J. (2013). Improving learners' reading skills through instant short messages: A sample study using WhatsApp4th World-CALL Conference, Glasgow, 10-13.
- Ross, A. (1969). Etymology. London: Andre Deutsch.
- Tyler, A. (2012). Cognitive linguistics and second language learning. New York; London: Routledge.
- Zarei, A. & Rahimi, N. (2012). *Idioms Etymology, Contextual Pragmatic Clues, and Lexical Knowledge in Focus.* Lambert Academic Publishing.

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