Acquisition of Noun Polysemy in English as a Foreign Language

Meral Ozturk (mozturk@uludag.edu.tr)
ELT Department, Faculty of Education, Uludag University, Turkey
ORCID: 0000-0002-5184-9851

Abstract: This study investigates, in an ex-post facto design, the acquisition of noun polysemy in English by EFL learners. Differences among three types of senses (core vs metonymical vs metaphorical) as well as the influence of the senses of the corresponding L1 words in four categories (parallel, L2-only, L1-only, nonce) have been studied. 87 advanced EFL learners majoring in ELT in a Turkish university answered a polysemy test measuring 162 senses for 81 polysemous nouns in English. Each word was tested twice: once in a core sense and once in an extended sense. The extended sense was a metonymical sense in about half of the words and a metaphorical sense for the other half. The results of the study indicated a significant effect for sense type in that core senses were known better than the corresponding extended senses and metonymical senses better than metaphorical senses. L1 effect was different for metonymical and metaphorical senses.

Keywords: vocabulary learning in EFL, noun polysemy, sense type, L1 influence

Introduction

For the EFL learner aiming to gain native-like or near native-like proficiency in English, acquiring English vocabulary is a gigantic task as there are many thousands of words to learn. Studies of educated native speakers point to vocabulary sizes of around 17,000 word families (Goulden, Nation, & Read, 1990; D'Anna, Zechmeister & Hall, 1991; Zechmeister et.al.,1995). This task is further magnified several times by the fact that many of these words have multiple meanings. In Britton (1978), nearly half (44%) of the words drawn from an unabridged dictionary had more than one meaning. Multiple meanings are even more widespread among high frequency vocabulary which is generally seen as more important to learn in a foreign language. Ozturk (2016) has shown that 95% of the words from the most frequent 3,000 words

of English had more than one meaning and it went up to 100% among the most frequent 1,000 words. Multiple meanings might also become a major challenge in reading authentic text. Ozturk (2017) indicated that around 35% of content words in a popular English novel were used in a secondary meaning, which meant that the reader has to resolve an issue with multiple meanings by every three content words.

A distinction is often made between two types of multiple meanings: polysemy vs homonymy. In polysemy, meanings are related in varying degrees while in homonymy they are distinct. For example, the meaning of the word *leg* in the sense of 'a part of human body' and 'a part of a table' are polysemous since the two meanings are related by the fact that both refer to vertical structures similar in their function of supporting the entities they are a part of. On the other hand, *post* in the sense of 'correspondence' and *post* in the sense 'duty' are not semantically related and thus homonymous. Of the two, polysemy presents a tougher challenge to EFL learners in receptive use for two reasons. First, polysemy is more common in the lexicon than homonymy and learners will have to deal with related meanings more often than unrelated meanings. Second, contextual clues will signal a different meaning from the one known to the learner more strongly in the case of homonymous meanings and facilitate both their correct interpretation in and learning from context (Kang, 1993, p.37). On the other hand, ambiguity resulting from a previously unfamiliar polysemous meaning is likely to pass unresolved as the similarity of the new meaning to the known meaning will make the word look 'treacherously familiar' (Bensoussan and Laufer, 1984). Several studies with EFL readers have shown that this might lead to serious misinterpretation of the text (Kang, 1993; Bensoussan and Laufer, 1984). Therefore, the present study will be concerned with polysemy.

Polysemous words often have a large number of meanings (4 to 5 meanings on average in the high frequency vocabulary (Ozturk, 2016)), and language courses cannot be reasonably expected to teach each and every one of these. Learners must learn them on their own incidentally. A question of interest concerning the nature of

this acquisition process is whether the development of knowledge of polysemous meanings is idiosyncratic (i.e. varies from learner to learner and from word to word) or whether there is a developmental pattern that we can generalise across learners and across words? It is argued here that the development process of a given polysemous L2 word begins with the acquisition of the core sense and continues with the learning of extended senses as two simultaneous processes: one of *broadening* and *narrowing*. For native-like competence, the interlanguage (IL) lexical item, i.e. the learner's version of the L2 word, has to broaden to include all the senses of the L2 word that are shared and un-shared by the L1 equivalent. It will also have to narrow down to include only the senses that the L2 word has and exclude any senses of the L1 equivalent which are not shared by the L2 word or any other interlanguage senses the learner might invent for themselves. Until the IL item becomes fully native-like, it will be prone to *underextensions* where a target sense is missing from the IL word or *overextensions* where the IL word includes non-L2 meanings. The present study in an ex-post facto design will look at two variables that might affect the development of L2 polysemous words to a native-like standard: sense type and learners' native language.

Background

Sense Type

Of all the senses a polysemous word might have, one sense usually stands out as more important. That meaning is often the most frequent meaning of the word as well as being the default meaning out of context. Several studies in first language acquisition (Mason et.al., 1979; Durkin et.al., 1985; Durkin et.al., 1986) and second language acquisition (Tanaka & Abe, 1984; Myers & Elliott, 1996) indicate the greater salience of one of the senses. In a norm-gathering study, Durkin and Manning (1989) asked a group of English native speakers to write 'the first meaning that comes to mind' to a large number of English polysemous words. For most of the words, one of the meanings was written with greater frequency than other meanings. For instance, the 'response' sense of the word answer was written by 81 subjects while the 'solution' sense was written by only 18. It should be noted, however, that this is not

simply a frequency effect. This meaning is also the semantic core from which other meanings derive. The 'body part' meaning of the word *head*, for example, is the main meaning sense which has been extended to the senses 'mind', 'pain', 'top', 'end of an object', 'the person in charge of a school', etc. The relation between the core sense and an extended sense is unidirectional: the core sense is implicated in the non-core sense, but the non-core sense is not implicated in the core sense. This has been shown in a study by Durkin & Manning (1989) who asked a group of native English speakers to rate the salience of polysemous meanings to the interpretation of sentences biased toward either the primary meaning (i.e. core sense) or a subordinate meaning. The results indicated that the dominant sense was perceived as more salient for sentences biased toward a subordinate meaning than subordinate meanings for sentences biased toward the dominant sense.

Several L2 studies have suggested the core meaning to be important to the guessing of the word's other meanings in context (Verspoor and Lowie, 2003; Wei and Lou, 2015; Liaou and Chang, 2012). In a study with Dutch learners of English, Verspoor and Lowie (2003) have shown that providing learners with cues involving core senses resulted in better guessing and learning of non-core meanings than providing no cues or non-core cues.

Previous research has largely established the centrality of the core sense within polysemous words and for the acquisition process, but has not yet addressed the issue of the development of extended senses. Are there predictable patterns for the acquisition of non-core senses? In the present study, a distinction is drawn between metonymical and metaphorical senses in polysemous nouns, which may affect their acquisition differently.

Metonymical senses extend the core sense to an entity which is contiguous to the entity denoted by the core sense. In the first of the examples below, the word *bottle* refers to the 'container', which is its core sense, and in the second sentence it is extended to the 'liquid' in the bottle. The container and its contents are physically related as they

are found together in the real world. As a result, the extended sense remains in the same semantic domain as the core sense. Metonymical meanings follow regular patterns like *container for contents*, *container for quantity*, *animal for meat*, *material for product*, etc. and are generalizable across words and across languages (Norrick, 1981).

There were empty bottles everywhere after the party. (container)

She poured the bottle down the sink. (contents)

Metaphorical senses extend the core sense to a different domain which it is not normally related to on the basis of similarity. In the following examples, the 'human body' sense is the core sense of the word *skin* and this sense is extended to 'potatoes' on the basis of a 'perceived' similarity between the covering function of body skins and potato skins.

Sunlight can be very harmful to your skin.

Cook the potatoes with their skins on.

These theoretical differences between the two types of extended senses suggest that metaphorical senses are less core than metonymical senses as they extend the sense to a domain which is semantically more distant. Consequently, they should be more difficult to learn for L2 learners. Regularities in metonymical senses will also render them easier as generalization to other words as well as generalization from the L1 is possible.

L1 Influence

Learners' native language will have an effect on the acquisition of a polysemous word in the L2 only if the learner sets up an equivalence between the L2 word and an L1 word. Cross-linguistic equivalences are set through the core sense. The L1 equivalent of a polysemous L2 word will be the one which has the same core meaning whether or not it also has the same extended meanings. The Turkish equivalent of the word *eye* is *göz* which has the same body part sense as *eye*. Although each word is highly polysemous in their respective languages with shared and unshared meanings it is through this sense that they are seen as equivalent.

With the extended senses of the L2 word, the ease of learning will depend on whether the equivalent L1 word has similar extensions. If it does, the learning of L2 senses will be no more than noting their existence (i.e. *positive evidence*) in the L2. If it doesn't, new learning will be necessary. For a native-like knowledge of a polysemous word, the learner also needs to supress transferring the meanings of the L1 word which are not shared by the equivalent L2 word, for which the learner needs '*negative evidence*' in the L2 (i.e. evidence that transferred meanings are wrong). The decision to transfer or not to transfer when positive L2 evidence is lacking involves guessing on the part of the learner of which meanings of the L1 word are shared by the equivalent L2 word. Research shows that, apart from the perceived distance between the L1 and the L2 and learner's level of proficiency in the L2, the coreness of the senses also plays a role in determining which senses will be transferred. In a study with Dutch learners of English involving the various senses of the word *break*, Kellerman (1978) has shown that learners found more transferrable the senses of the equivalent Dutch word, *breken*, which are closer to the core sense, although all the senses tested were shared by the English word. In the present study, metonymically extended senses are expected to be transferred more as they are closer in meaning to the core sense.

Previous research into the influence of L1 on the acquisition of polysemous words tended to focus on transfer and transferability (Kellerman, 1978; 1986) and ignored the other more subtle ways L1 can influence polysemy acquisition discussed above (i.e. positive evidence and its lack thereof). The present study looks more closely into ways how L1 might facilitate or negatively affect the development of polysemous L2 words. More specifically, the following research questions are addressed:

1. Are core senses of polysemous nouns in English better known by EFL learners than extended senses and metonymically extended senses than metaphorically extended senses?

2. Are extended senses of polysemous L2 nouns with parallel L1 senses known better by EFL learners than those without? Is there a difference between metonymical and metaphorical extensions?
3. In the absence of L2 evidence, do EFL learners transfer meanings of polysemous words from their L1? Is there a difference between metonymical and metaphorical extensions?

Method

Participants

Eighty-seven undergraduate students aged between 17 and 25 in the English Language Department of a teacher training college in Turkey participated in the study. They were drawn from various levels of the four-year university education system. All were highly advanced in English as they passed a very competitive English proficiency test to be admitted to the department.

Material

Target words

Learners' knowledge of 81 polysemous nouns in English was investigated. All words were morphologically simple in the sense that they did not contain any derivational affixes. It was desirable for the purposes of this study that the learners had some familiarity with the test words as it would make no sense to ask which senses were known for words learners had no previous familiarity. For this reason, the test words were selected from 'easy vocabulary' for Turkish EFL learners and all except 9 were GSL (General Service List) words (exceptions being jar, tomato, purse, olive, grape, vase, fridge, sunflower, racket). The target words had direct translation equivalents in the learners' L1 in that both the L2 word and its translation equivalent in Turkish had identical core senses.

Target senses

Two senses were tested for each target word with the total number of senses tested being 162. One of the senses was the word's core sense and the other was an

extended sense. The extended senses were either metonymical (N=42) or metaphorical extensions (N=39) of the core sense. *Metonymical senses* displayed regular relations to their respective core senses like *container for contents*, *animal for meat*, *fruit for plant*, *location for people*, etc. *Metaphorical senses* were extensions on the basis of perceptual (waves of hair, teeth of a comb, fork in a road) or functional similarity to the core (key to answers, roots of hair, a coat of paint) or involved a more abstract kind of similarity (picture drawn by a novelist, a body of support, a supermarket chain).

Extended senses of either type also varied by the type of relation between equivalent words in English and Turkish. There were four categories of this variable:

Parallel senses (N=21) are identical extensions from the equivalent L2 and L1 words. The word *waist* and the corresponding Turkish word *bel* both have the metonymical extension to the sense 'part of a garment that fits waist' in the same way as *button* and *düğme* has the metaphorical sense 'part that operates a machine'.

L2-Only Senses (N=20) are extensions of the L2 word which are not shared by the L1 word such as the 'part of garment' sense of *leg* (metonymical) and 'fruit cover' sense of *skin* (metaphorical) for which the corresponding Turkish words *bacak* and *deri* do not have similar extended meanings.

L1-Only Senses (N=19) are extensions of the L1 word which are not shared by the L2 word. The 'disease' sense (metonymical) of the Turkish word *kalp* meaning *heart* is not shared by the English word. The metaphorical extension of the word for *water* (su) to refer to the 'sauce of a dish' does not have parallels in English, either.

Nonce Senses (N=21) do not exist in either language. They were invented for this study as controls for the other categories. Metonymical nonce senses were created following regular patterns of metonymy. The word *wool*, for example, was extended to the 'garment' sense on the basis of the *material for product* pattern in the sentence

'Take your wools with you; it might be cold there.' Metaphorical senses were created on the basis of similarity to the core sense, e.g. *ball* in the sense of 'a heavy rain drop'. The design of the test is provided in the table below.

Table 1. Design of the Polysemy Test

Sense type	L1-L2 Relation				Total
	Parallel	L2-Only	L1-Only	Nonce	
Core	81	-	-	-	81
Metonymical	11	11	9	11	42
Metaphorical	10	9	10	10	39
Total	102	20	19	21	162

Polysemy Test

The Polysemy Test was an acceptability judgements test. Acceptability Judgements have been widely used in syntax to investigate native speakers' competence of various syntactic structures (Myers, 2009). In the present study, they were used to describe non-native speakers' competence of polysemous target language nouns.

The test consisted of 162 sentences, one sentence for each sense (Cf. Appendix for a list of the sentences in each category). The sentences were illustrative and provided sufficient context to disambiguate the target sense. The average length was 8.6 words per sentence and the sentence structure was generally simple. In some cases, two sentences had to be used to make the sense more clear. The test also included 78 distractor sentences which were all unacceptable so that the imbalance resulting from the greater number of acceptable sentences involving the core senses could be corrected. About one third of the distractors were semantic (28) and two thirds were grammatical (50).

The test was piloted with 10 native speaker informants to improve the sentences in accuracy and clarity. It was further pilot tested with advanced Turkish EFL learners to identify problems that may lead to rejections due to reasons other than the target sense.

In order to prevent fatigue that might result from a long test, the test items were divided into two shorter tests with 121 and 119 items in each and administered in two separate sessions to the same learners. Each word appeared only once in each test: the word was either tested in its core sense or in its extended sense in a given test. The items in each test were randomized and counterbalanced to prevent order effects. Learners were tested in a classroom. They were asked to judge the acceptability of the target sentences as either correct or incorrect in English. They could also indicate if they are undecided. Each test session lasted 40-50 minutes.

The learners were given 1 point for a correct answer which required them to accept the sentence in the case of core senses, parallel senses and L2 senses, but reject the sentence involving L1 and nonce senses. Unsure answers were not given any points. The K21 formula applied to learners' total scores on the test was 0.998 indicating the test to be highly reliable for the learners tested.

Results and Discussion

The overall results of the polysemy test (cf. Table 2) indicated that learners were able to answer only about half of the items on the test correctly (52%), which is rather low given the proficiency level of the learners and the high frequency of the target words. This result is consistent with the findings of Schmitt (1998) who tracked longitudinally the development of the knowledge of 11 polysemous words of varying frequencies by 3 advanced learners of English. Over the three testing sessions, in only 5 cases (all for the same participant) out of all 99 cases (11 words x 3 testing sessions x 3 learners) did the learner had some knowledge of the word's all senses. The average proportion of meaning knowledge was less than .50 in most cases. Schmitt concludes that 'advanced NNSs may have mastery over only a rather limited number of the possible meaning senses of a word, even if they are proficient enough to study in British universities' (p.295). On the whole, mastery of polysemous words is indicative of the 'semantic depth' of the learners' vocabulary knowledge which is itself a component of the a wider 'depth' construct covering various aspects of vocabulary knowledge such as collocation, derivatives, grammatical aspects,

register restrictions or frequency among others. The low figure in the present study indicates a rather non-target like semantic depth of the GSL vocabulary for these learners.

Table 2. Overall results on the polysemy test for sense type

Sense type	Mean	SD
Core	75.46	10.93
Metonymical	53.51	9.99
Metaphorical	45.03	10.49
Total	52.18	8.15

N.B. Means are in percentages

There was also a clear difference among sense types, which was revealed statistically significant at the .05 level by a one-way repeated measures ANOVA ($F^{.05}$ (2,172):288.5, p<.000). Post hoc comparisons using LSD indicated all means to be significantly different from each other. Thus, learners were most successful with core senses, and they were more accurate on metonymical than metaphorical senses. This result might be somewhat biased towards the core senses as some of the extended senses in the test required the learners to reject a sentence for a correct answer whereas no sentences for core senses did so as all core senses had corresponding senses in the learners' L1 while some of the extended senses were not shared by the L1 words. For this reason, this analysis was repeated using only the parallel sense scores for the extended senses and the scores for the corresponding core senses from which they extend (cf. Table 3). The results of this analysis ($F^{.05}$ (3,252):49.60, p<.00005) again revealed significantly higher scores on core senses than the corresponding metonymical (83% vs 70%) as well as metaphorical senses (75% vs 61%) whereas the difference between metonymical and metaphorical sense scores (70% vs 61%) were not statistically significant even though metonymical senses were answered more correctly. This result provides further evidence as to the primacy of the core sense in acquisition. Given several meanings of a polysemous word, the core sense is more likely to be known by L2 learners. This cannot be taken as evidence for the claim that acquisition of a polysemous word begins with the core sense, but it does indicate that the core senses are somewhat more salient. On the other hand, the

lack of significant difference between the two types of extended senses which is solely based on parallel sense items calls for further scrutiny of the L1 influence under various conditions of the L1-L2 relation.

Table 3. Results for sense type on the parallel senses

Sense type	Mean	SD
Core/Metonymical	83.18	12.82
Metonymical	70.84	15.81
Core/Metaphorical	75.75	15.89
Metaphorical	61.37	17.92
Total	66.11	14.59

The influence of L1 was examined using a 2x4 repeated measures ANOVA on the extended sense scores (cf. Table 4) with sense type (metonymical vs metaphorical) and L1-L2 relation (parallel, L2-only, L1-only, nonce) as within-subjects measures. The main effects for sense type and L1-L2 relation were both significant (**Sense:** $F^{.05}$ (1,86): 50.877, p<.000/Partial Eta squared: .372; **Relation:** $F^{.05}$ (3,258): 60.402, p<.000/Partial Eta squared: .413). The interaction effect was also significant (**Sense by Relation:** $F^{.05}$ (3,258): 16.220, p<.000/Partial Eta squared: .159). While learners were significantly more successful with metonymical than metaphorical senses overall, the significant interaction suggested that L1-L2 relation worked differently in metonymical and metaphorical senses.

Table 4. Results for L1-L2 Relation

Extension type	L1-L2 Relation				Total
	Parallel	L2-Only	L1-Only	Nonce	
Metonymical	70.84 (15.81)	56.21 (20.30)	40.48 (22.98)	46.49 (20.34)	53.51 (9.99)
Metaphorical	61.37 (17.92)	60.15 (22.19)	28.62 (21.35)	30 (24.59)	45.03 (10.49)
Total	66.11 (14.59)	58.18 (18.01)	34.55 (19.60)	38.24 (19.64)	52.18 (8.15)

N.B. Standard deviations are in parenthesis.

In *metonymical senses*, all relation types were significantly different from one another (**Relation in Metonymical senses**: $F^{.05}$ (3,258): 38.01, p<.000/Partial Eta squared:

.307): parallel scores were the highest followed by L2-only scores and nonce scores which, in turn, were higher than L1-only scores (parallel > L2-only > nonce > L1-only).

These results suggest that, on the whole, learners' answers were more accurate on L2 metonymical senses than on non-L2 senses. In more than half of the words, learners successfully identified senses that belonged to the L2 (70.84% of parallel senses and 56.21% of L2-only senses), but they overextended more than half of the words to senses that do not belong to the L2 resulting in less than 50% accuracy in L1-only and nonce categories. This suggests that learners experience greater problems in narrowing their lexicons to include only the L2 senses than they do with broadening their lexicons to include all of the L2 senses. This is reasonable as broadening requires positive evidence which is readily available in the L2 input receptively whereas negative evidence, which is necessary for narrowing, requires explicit correction by a native speaker or a teacher in productive use or a high level of metalinguistic awareness on the part of the learner to notice the absence of L1 senses in the L2 input. Explicit correction is provided rather infrequently for lexical errors in L2 classrooms (Gitsaki & Althobaiti, 2010), and it would be unreasonable to expect foreign language learners to notice absence in the input when it is already a challenge for them to notice the presence of new senses for known polysemous words as shown by Kang (1993) and Bensoussan & Laufer (1984). Unsurprisingly, narrowing was gradual and rudimentary in metonymical extensions.

In metonymical senses, L1 seems to have a positive influence on the learners' scores significantly facilitating accuracy of answers to parallel senses in comparison to L2-only senses. While learners answered only about half of the L2-only senses correctly (56.21%), they did so for over two thirds of the parallel senses (70.84%). The better performance on parallel senses supports our earlier contention that unlike L2-only senses parallel senses do not require new learning and direct transfer of L1 senses are possible. On the other hand, learners significantly were less accurate with L1-only senses in comparison to nonce senses as they were not able to reject them to the

extent they reject nonce senses even though they did not have positive evidence in the L2 for either. This suggests that the presence of a sense in the L1 is taken as an indicator of cross-linguistic correspondence. In the lack of positive evidence in the L2, the learner assumes an L1 sense to be more likely to be present in the L2 than a completely novel sense which does not exist in the L1. This suggests that learners' novel extensions of L2 words are more likely to involve L1 metonymical senses rather than those invented by the learner.

In *metaphorical senses*, in spite of a significant overall difference among relation types (**Relation in Metaphorical senses**: $F^{.05}$ (3,258): 60.13, p<.000/Partial Eta squared: .412), parallel sense scores were not significantly different from the L2-only scores (61.37% vs 60.15%); neither were L1-only scores different from nonce scores (28.62% vs 30%). On the other hand, parallel scores were significantly higher than L1-only scores (61.37% vs 28.62%) and L2-only scores than the nonce scores (60.15% vs 30%).

As in metonymical senses, learners were more successful with L2 metaphorical senses than non-L2 senses. Narrowing, though, seems to be a greater problem with metaphorical senses: learners were able to reject the metaphorical senses that do not belong to the L2 for only about one third of the words tested (28.62% of the L1-only and 30% of the nonce senses). The greater overextension of metaphorical senses contradicted our prediction that they would be regarded as less acceptable because they were less similar to the core than metonymical senses. In spite of a lack of positive L2 evidence, learners tended to accept these senses as correct in English. We offer here an explanation for this result in terms of the relative frequency of the two types of senses. Although no objective counts have been previously conducted, it is our contention that metaphorical senses are more frequent in the language than metonymical senses. If this is the case, i.e. words are readily extended to metaphorical senses in languages, learners will expect them as more normal and acceptable in the L2. Metonymical senses, on the other hand, will look more like errors in referring where the speaker falls short of precisely referring to the entity. The sentence 'The vase smells wonderful.' would seem incorrect because it fails to

specifically refer to the flowers in the vase. This imprecision of reference, saying something meaning something else close to it, is inherent in metonymical senses and is likely to lead to resistance by the learners to a greater extent.

In metaphorical senses, L1 does not seem to have a significant effect: there was no statistically significant difference between parallel and L2-only senses (61.37% vs 60.15%), nor between L1-only and nonce senses (28.62% vs 30%). If our earlier assumption about the frequency of metaphorical senses is tenable, it is not at all surprising that learners should readily accept them without seeking evidence from L1 when L2 evidence is lacking.

Conclusion

The present study investigated the development of knowledge of polysemous words in L2 English in an ex-post facto design and indicated rather non-target-like knowledge of high frequency polysemous words even in advanced levels of English language proficiency. Learners seemed to have greater problems of narrowing than broadening in that they performed better recognizing senses that belonged to the L2 than rejecting senses that did not belong to the L2.

The effect of two variables on polysemy knowledge was studied: sense type and L1 influence. Both of these variables were found to be effective. Of the three sense types core senses were known better than the corresponding extended senses and metonymical senses better than metaphorical senses. The existence of parallel senses in the L1 facilitated performance on the test in the case of metonymical senses but not in metaphorical senses and there were more overextension errors of metaphorical than metonymical senses. While the source of these errors seemed to be the learners' L1 in the case of metonymical senses, metaphorical overextensions seemed to result from a general tendency to accept metaphorical extensions.

The present study used an acceptability judgements test to measure learners' knowledge of polysemous L2 words. Although it has been used extensively to

investigate syntactic competence in native speakers, it is yet to be shown to be a viable research tool to investigate lexico-semantic competence of second language learners.

The conclusions drawn here are made ex-post facto and provide only indirect evidence into the acquisition process. Experimental research that directly manipulates the process of acquisition is, therefore, needed. Furthermore, the present study was restricted to polysemy in nouns which were shown to have fewer senses in English than verbs and adjectives (Ozturk, 2017). Further research needs to investigate these other categories.

The less than satisfactory performance of the learners on the polysemy test in the present study calls for more attention to be paid to polysemy in EFL. Obviously, it is not practical to teach all senses of polysemous words even in the high frequency bands as these words are highly polysemous with about 4 meanings on average (Ozturk, 2017) and there will be over 10,000 meanings to learn. Therefore, what we can do to help our learners is reduced to awareness raising activities which might involve showing the types of relations between the core sense and the extended senses and identification of contextual clues to disambiguate them in the input. Raising awareness as to the metonymical regularities in the L2 and highlighting L1 patterns that are different from the L2 might also be useful.

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Appendix : Acceptability Judgements Test Sentences

Polysemous Words Metonymical Senses

1. Polysemous Words with Parallel Metonymical Senses

I hit and killed a chicken with my car today. (animal)

We have chicken and potatoes for dinner tonight. (meat)

She opened a box made of silver. (material)
They served the dinner in silver. (product)

He put a lot of weight around his waist. (body part)
We took the waist of the dress a few centimetres in . (part of garment)

Her fingers were full of expensive rings. (body part)
The fingers of her gloves were wet. (garment)

Somali is a poor country in Africa. (locality)
The President's sudden death shocked the country . (people)

My house is close to the university. (locality)
I have written to the university about the scholarship. (institution)

There were empty bottles everywhere after the party. (container)
She poured the bottle down the sink. (contents)

I made some strawberry jam and put it into jars. (container)
My children love marmalade. They finish a jar every week. (quantity)

The kitchen was full of dirty cups. (container)
You need four cups of flour to make this cake. (quantity)

They grow tomatoes in their back garden. (plant)
Will you put the tomatoes on the shopping list? (fruit)

I'm going to make some coffee. (drink)
Can I have two coffees, please? (portion)

2. Polysemous Words with L2 (English) Metonymical Senses

The cat has a red ribbon around its neck. (body part)

Her new dress has a V-shaped neck. (part of garment)

He has very long and thin legs. (body part)

The legs of trousers were very wide in the seventies. (part of garment)

My dog has beautiful bright fur. (material)

She was wearing an expensive white fur. (product)

The heavy iron gates closed behind her. (material)

I need to press my shirt but the iron doesn't work. (product)

It's a big house. There are four rooms on each floor.. (container)

Is there enough room for me in the car? (quantity)

She took out some money from her purse. (container)

I can't buy that necklace. My purse is not big enough. (quantity)

Will you close the door, please? I'm cold. (part)

Our other shop is just a few doors down the road. (whole)

Plastic surgery is the most popular branch of medicine. (whole)

I have taken this medicine. I feel better now. (part)

He wrote the address on a piece of paper. (material)

I always read the sports page first in the paper. (product)

You will need a lot of cloth to make this dress. (mass)

I cleaned the floor with a cloth. (portion)

Her hands are too big for a woman. (part)

The hands in the factory are having lunch. (whole)

3. Polysemous Words with L1 (Turkish) Metonymical Senses

I love olives for breakfast. (fruit)

We had a picnic under the olive in the garden. (tree)

I have eaten the last apple in the fridge. (fruit)

The apple gave fruit for the first time this year. (tree)

We bought a new house in town. (locality)

I must call the house and tell them I'll be late. (people)

His father owns a gold mine. (material)

I'm going to wear my golds to the party tonight. (product)

There are also a few pigs on the farm. (animal)

They've had roast pig for lunch. (meat)

There is too much sugar in this coffee. (food)

I drink tea with one sugar. (portion)

Snakes don't have hearts. (body organ)

His father died from heart last year. (disease)

They collect the rubbish once a week. (contents)

I put my old shoes into the rubbish. (container)

Jeremy bakes his own bread. (food)

Will you buy a bread for me? (portion / one loaf)

We don't have a spare bedroom. Our flat is too small. (room)
We've bought a new bedroom. (furniture)

She cut her hand on some broken glass. (part)
I have cleaned the glass of the sitting room. (whole / window)

Modern buildings are made of steel, because it's very strong. (material)
I prefer to cook meat without oil in a steel. (product / container)

4. Polysemous Words with Nonce Metonymical Senses

I park my car on the road during the night. (locality)
The police asked each car several questions. (people=driver)

I saw cows in the fields from the train window. (animal)
Have you cooked this cow? It's very nice. (meat)

I like Spanish grapes best. (fruit)
The grapes need rain to grow well. (plant)

He fell and hit his head. (body part)
My new coat has a head. (part of garment)

The sheep in this area have very long wool. (material)
Take your wools with you. It might be cold there. (product)

The vase is too small for the flowers. (container)
The vase smells wonderful. (contents)

You will need a lot of milk to make this dessert. (drink)
I drink a milk every night to sleep well. (portion)

Keep the milk and butter in the fridge. (container)
We have eaten a whole fridge of food in a couple of days. (quantity)

There wasn't a sheep in sight in the village. (animal)
My shoes are made of sheep. (skin)

There were sunflower fields along the road. (plant)
We fried the potatoes in sunflower. (oil)

I bought her a new tennis racket. (part)
He is the greatest racket of our time. (whole / tennis player)

Polysemous Words Metaphorical Senses

1. Polysemous Words with Parallel Metaphorical Senses

It's a lovely day. There isn't a cloud in the sky.
Flies are coming in clouds from a nearby farm.

Leaves have already started to fall from the trees.
He quickly turned the leaves of the phone book.

I lost one of the buttons on my shirt.
Which button do I press to turn the radio on?

These trees have large deep roots.
They pulled each other's hair out by the roots.

Have you got any money in the bank?
Hospital blood banks have saved many lives.

We would all sit around the fire in the evenings.
The police opened fire on terrorists.

The whole world would be affected by a nuclear war.
Elvis Presley is the greatest name of the music world.

The waves were as high as a two-storey building.
Her hair has beautiful natural waves.

Remember to put the chain on the door every night.
Her family owns a chain of supermarkets around the country.

Have you seen my car keys? I cannot find them.
The key to the exercises is at the end of the book.

I had one of my teeth pulled out yesterday.
I need a new comb. This one has several broken teeth .

2. Polysemous Words with L2 (English) Metaphorical Senses

I have put clean sheets on the bed for our guest.
Write each answer on a separate sheet.

Sunlight can be very harmful to your skin.
Cook the potatoes with their skins on.

It's a small room with a bed, a chair and a table.
The garden is divided into small beds of flowers.

It's cold outside. You'll need to put your coat on.
The walls need a second coat of paint.

My body felt cold like ice.
There's a large body of support for the government's plans.

I have returned the books to the library.
Can I have a book of tickets, please?

We are planning to go by train.
My life has been a train of failures.

He threw a stone at the dog.
To make cherry jam, remove the stones of the cherries first.

My little son hasn't learnt to eat with a fork, yet.
We came to the fork in the road and turned left.

The little girl drew a picture of her house.
The book gives a good picture of life in England 200 years ago.

The doctor visits patients in their homes.
India is the home of elephants and tigers.

3. Polysemous Words with L1 (Turkish) Metaphorical Senses

Will you go and wash your face, please? (part)
Use only one face of the paper to write your answers.

I am thirsty. Could you give me some water, please?
I spilt the water of the dish on my best dress.

I lifted the lid of the box with difficulty.
There is a picture of the author at the back lid of the book.

Close your eyes. I have a surprise for you.
The book is in the eye of the desk.

I will not be able to write for a few weeks. My arm is broken.

This door doesn't have an arm. How do you open it?

There are holes in my shoes. When it rains my feet get wet.

I can't put the thread through this needle. The hole is too small.

The car is covered in dust. I must wash it.

I put milk dust in my coffee instead of natural milk.

Use a piece of wire to hang the picture.

It is normal to loose about thirty wires of hair every day.

I felt a sudden pain in my left foot.

One foot of the table is shorter than the others.

This type of bird beats its wings five hundred times per second.

He opened both wings of the window.

He had a cigarette in his mouth.

Will you drop me at the mouth of the road?

4. Polysemous Words with Nonce Metaphorical Senses

He quickly opened the envelope and took the letter out.

She replaced the envelopes of the pillows with clean ones.

You shouldn't play ball inside the house. You might break something.

The rain was coming down in balls.

He climbed a number of mountains around the world.

The city is a mountain of buildings.

He said something into his mother's ear.

The ear of the spoon is metal, but the handle is plastic.

We swam in the river all morning.

There were rivers of cars along the roads.

The sea is now too cold to swim in.

I have a sea of new ideas in my mind.

My grandmother keeps all her money in a box.

The music opened the box of memories inside her mind again.

It is dangerous to go out in this storm.

There has been a storm of changes in the country since last year.

I sat in a chair in the garden.

The chair of soul in the human body is not known.

My sister had a baby last night.

The deep-sea research is still a baby.