The Role of L1 in EFL Learners' Meaning Construal of Polysemous Nouns

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Master's thesis / Diplomski rad

2024

Degree Grantor / Ustanova koja je dodijelila akademski / stručni stupanj: **University of Zagreb, Faculty of Humanities and Social Sciences / Sveučilište u Zagrebu, Filozofski fakultet**

Permanent link / Trajna poveznica: https://urn.nsk.hr/urn:nbn:hr:131:798820

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Download date / Datum preuzimanja: **2025-03-26**

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POLYSEMOUS NOUNS

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Zagreb, February 2024

Contents

Abstract

This thesis delves into the intricate process of acquiring polysemous nouns in English as a Foreign Language (EFL) and explores the pivotal role of learners' native language (L1) in shaping their meaning construal of these lexical items. Polysemous nouns, characterized by having multiple related meanings, pose a unique challenge for EFL learners, as they require a nuanced understanding of contextual usage and semantic nuances.

Drawing on the assertion that most natural languages are characterized by their plasticity, this study examines the intricate process EFL learners undergo in discerning and internalizing the diverse meanings associated with polysemous nouns. The research investigates the potential transfer of meanings from Croatian to English and explores the distinctions between metonymical and metaphorical extensions of meaning, aiming to unravel their varying effects on the acquisition process.

Through a comprehensive examination of the data, this research seeks to contribute to the understanding of the role of L1, Croatian, in shaping the meaning construal of polysemous nouns among EFL learners. The outcomes may inform language educators about potential challenges and effective instructional strategies for enhancing vocabulary acquisition in an EFL context, ultimately contributing to the optimization of language learning methodologies.

Keywords: polysemy, polysemous nouns, acceptability judgement, core sense, extended sense, metonymy, metaphor

1 Introduction

A learner of any foreign language has the arduous task of mastering the vocabulary of that particular language, especially if the person wants to reach a near-native-like level of proficiency. It is one of the most dreaded parts of learning a foreign language, with English being no exception. What makes this task even more complicated for learners is the fact that many words have multiple meanings, for "most natural languages are characterized by their plasticity" (Vanhove, 2008, p. 55). To a native speaker of English, using a word in its different senses does not pose an issue because most meanings of a given word are practically innate to the speaker as they have been both passively and actively learning English from the moment they were born. However, an EFL learner must identify each word as polysemous and separately study its different meanings while making semantic connections to better understand and remember them for later usage. Some learners may even use polysemous words reluctantly because "there is always a danger of being misunderstood or of falling into semantic traps" (Nerlich, Clarke, 2003, p. 3). What complicates the matter further is the influence of the learner's mother tongue, or L1, which sometimes may interfere with the acquisition of new meanings of a word.

In this paper, the author will examine the role of Croatian as the learners' L1, and its influence on the understanding of different meanings of polysemous nouns. The study described in this thesis was conducted to test the hypothesis that learners will transfer some meanings from their L1 into English, and distinguish between metonymical and metaphorical extensions of meaning which could affect the acquisition differently. Given the fact that the study was based on another study dealing with a very similar topic, the nouns selected for the instrument were mostly taken from that study, which deals with polysemous nouns in English and Turkish. Some specific examples for Croatian were added to the study at hand for accuracy reasons. In the aforementioned study, the author Meral Ozturk (2018) tests each word twice: in its core sense and in its extended sense. This approach was adopted for the study at hand, along with the methodology for testing the data. The main criterion for selecting vocabulary for the instrument was that the words had to be familiar to the participants, as the aim was to test if they could discern core and extended meanings of the words which they should already be familiar with, and not to choose the ones the learners are unacquainted with.

The first part of the thesis deals with the theoretical background and explains the different aspects of polysemy as the main focus of the paper, as well as the difference between polysemy and homonymy. This lays the foundation for data processing in the discussion part of the thesis. The second part of the paper presents the study itself, its aims, and the means through which it was conducted. After that, there is a discussion about the results of the study and the main conclusions are drawn.

2 Theoretical background

Words that are polysemous can have various interpretations depending on the context in which they are used. These different meanings often develop gradually over time as a result of cultural and linguistic factors. The flexibility of polysemous words allows for richer and more nuanced communication, but it can also lead to potential misunderstandings if the intended meaning is not clear from the context. In communication among native speakers of English, polysemy is rarely a problem as they are so adept at using contextual cues that they select the appropriate senses of words effortlessly and unconsciously. Although rarely a problem in language use, polysemy poses a problem in semantic theory and in semantic applications, such as translation and lexicography (Ravin and Leacock, 2002, p. 1).

In the past, polysemy posed a big problem for linguists as they fought to maintain the theorem of 'one form, one meaning' and focused on invariant features to define meaning, leaving out issues of contextual and co-textual modulation (Nerlich, Clarke, 2003, p. 4). The advent of cognitive linguistics in the 1980s helped change the perspective towards polysemy and it began to be studied in many different fields. Polysemy is now accepted as an integral part of every language, and as Robert explains it: "There is no one-to-one correspondence between form and meaning in language: a form almost always has several meanings which vary according to context, and several forms can refer to a same term" (Robert, 2008, p. 56). But there are still many questions to be answered in this field of research, some of which, enumerated in Nerlich and Clerke's article, are the basis for the study at hand. The questions target children's knowledge and understanding of polysemy, but they can easily be translated into ESL learners' acquisition process of polysemous words. With that in mind, the questions are as follows: Do ESL learners readily understand polysemous words? What kind of polysemous words do they understand best? Could it be that ESL learners put together knowledge elements into networks that follow the same pathways as the accretion of polysemous meanings by a word form over time? Does it depend on the frequency/familiarity

or salience? Does it depend on the type of figurative mapping underlying the multiple meanings of a word? Are metonymical extensions more readily understood than metaphorical ones or vice versa? This paper will attempt to address some of these questions and give answers based on the conducted study.

2.1 Traditional vs. Cognitive Approaches to Polysemy

As has already been mentioned, sense selection in the process of understanding language is typically not an issue for the majority of language users in their day-to-day communication for native speakers of a language are generally not even aware of the ambiguity generated by polysemy. From this, it can be concluded that polysemy presents itself as a problematic concept only when the language data do not fit the idealized models. In his introduction to Cognitive models of polysemy, Taylor (2003, p. 31) gives the example of the idealized cognitive model of bachelorhood. He invites the reader to consider the word *bachelor*, and the fact that it would be odd to speak of the Pope as a bachelor, even though the Pope clearly instantiates each of the four defining features of bachelorhood, namely, 'human', 'male', 'adult', and 'unmarried'. This model is "idealized" in the sense that it offers a simplified view of society and overlooks the many individuals and groups who do not meet its background assumptions. Taylor (2003, p. 42) concludes that polysemy can be straightforwardly and unproblematically defined in terms of a deviation from idealization.

As stated by Kovács in her article on polysemy in traditional vs. cognitive linguistics, the major problem of the traditional approaches is

> that they fail to address several fundamental issues: the reasons why these lexical items have several senses attached to them, how their meanings are structured, whether there is any motivation for the lexical item to convey specific meanings and whether besides lexis, other areas of language exhibit polysemy as well (2023, p. 13).

In fact, these neglected issues are what cognitive linguists are most interested in – they emphasize the significance of meaning, conceptual processes, and embodied experience when exploring the intersection of language and the human mind. The main difference between traditional and cognitive approaches to linguistics lies in the fact that cognitive linguists distinguish between polysemy and homonymy by the systematic relationship of meanings that take place in polysemy. Kovács (2023, p. 14) further explains that cognitive linguists look at

polysemy through radial categories where one or more senses are more prototypical (central) while others are less prototypical (peripheral). Another important point to make is that cognitive analyses go beyond words, and polysemy is regarded as a cognitive organising principle shared by other areas of language, such as morphology, phonology and syntax.

2.2 Categorization

Radden and Dirven (2007, p. 3) provide a definition of a category as the conceptual representation of a set of similar experiences that hold significance and relevance within a community. Essentially, categories emerge for elements that are deemed meaningful in a given context. These categories collectively contribute to an overarching system of categorization. Language is sometimes seen as an ecological system in which linguistic categories occupy an "ecological niche" like living beings in nature. The process of establishing categories within an ecological system is known as categorisation, which means drawing "conceptual boundaries" and giving structure to an unstructured world around us. A typical category often features a prototype, a central exemplar, as well as less prototypical members constituting the periphery of the category. Furthermore, categories are integrated into broader groupings. In particular, categories:

a) are included in a hierarchy, or *taxonomy*, of categories (e.g. 'car' is a member of the category 'means of transport');

b) may be a part of another category, i.e. may be included in a *partonomy* (e.g. 'wheels' are parts of the category 'car'); and

c) form part of a coherent area of conceptualization, especially *frames* and *domains* (e.g. the 'car' frame and the domain of 'combustion').

Our human ability to evoke frames and domains allows us to extend our inventory of conceptual and linguistic categories substantially (Radden and Dirven, 2007, p. 12). Extensions of linguistic categories are made possible, amongst other things, through the conceptual shifts of metonymy and metaphor. These shifts involve projecting one set of conceptual entities onto another set, technically termed as mappings. In metonymy, a conceptual entity is mapped onto another within the same frame or domain; for instance, 'crown' representing 'monarch' within the frame of 'monarchy'. In this context, 'crown' acts as a prominent reference point for mentally accessing the concept of 'monarch'. In metaphor, the

structure of one domain is mapped onto another; for example, in the expression 'I am crazy about her,' the domain of 'madness' is metaphorically applied to the domain of 'love'. Here, 'madness' serves as the metaphorical source domain, while 'love' is the metaphorical target domain. Many metaphors derive their source domains from image-schematic concepts, which are fundamental schematic structures directly conveying meaning, such as UP and DOWN, or FRONT and BACK.

2.3 Polysemy vs. homonymy

Polysemy and homonymy are two distinct phenomena related to the multiple meanings of words. While they both involve multiple senses associated with a single lexical form, there are important differences in their underlying mechanisms and characteristics. Traditionally, polysemy refers to the phenomenon where a single word has multiple related meanings that are conceptually connected. As Kovács (2023, p. 4) explains, polysemes are etymologically and therefore semantically related, and typically originate from metaphoric/metonymic usage. For example, the word 'bank' can refer to a financial institution, the side of a river, or even a slope or incline. The various senses of *bank* are related through the underlying concept of containment or boundary, which is central to all of its meanings. On the other hand, homonymy involves the existence of multiple word forms that are phonetically or orthographically identical but have unrelated meanings. Homonyms can create ambiguity in communication as the same word form can have distinct meanings in different contexts. For instance, the word 'bat' can refer to a flying mammal or a wooden implement used in sports. These two meanings of *bat* are considered homonyms because they are unrelated in terms of their conceptual connections. As Ravin and Leacock state:

> The distinction between polysemy and homonymy is important because it separates the principled from the accidental and poses the following questions: If different senses of polysemous words are systematically related, how do they derive from each other, and how should they be organized to reflect this regularity? (2002, p. 1).

The distinction between polysemy and homonymy is, however, not always straightforward, especially since words that are etymologically related can, over time, drift so far apart that the original semantic relation is no longer recognizable, which Kovács (2023, p. 4) gives the following example for: *pupil* (in a school) and *pupil* (of the eye). Namely,

polysemy is of interest to this particular paper for being more ambiguous to the learner and for the possibility of misinterpreting a text on the basis of familiarity. Cognitive models are directly embodied in terms of their content, and they have a crucial role in structuring opinions and forming categories. Categorization at the basic level implies the organization of categories in which cognitively prominent or primary categories are those that are in the middle of a hierarchical arrangement in which generalization leads to the top and specialization to the bottom (Geld, 2006, p. 194). Kovács (2023, p. 14) explains that, with the rise of cognitive linguistics, the word itself with its network of polysemous senses came to be regarded as a category in which the senses of the word are related to each other by means of general cognitive principles such as metaphor, metonymy, generalization, specification and image schema transformation. Thus, within the cognitive framework, the key distinction between polysemy and homonymy lies in the systematic interconnection of meanings inherent in polysemy. Unlike traditional research into polysemy inside historical and lexical semantics, cognitive analyses extend beyond individual words, and polysemy is regarded as a cognitive organising principle shared by other areas of language, such as morphology, phonology and syntax.

Klepousniotou et al. (2012) mention an ongoing debate, based on behavioural studies, on the representation of polysemy. Since the senses of polysemous words, unlike the meanings of homonymous words, are stored together in the mental lexicon, they are expected to be accessed faster, and many studies suggest that homonymous and polysemous words are processed differently. For example, in their study, Frazier and Rayner (1990) observed distinct eye movement patterns among participants when encountering polysemous and homonymous words. They discovered that fixation times were shorter for polysemous words compared to homonymous words. The researchers argued that this difference arises from the fact that the meanings of homonymous words are mutually exclusive, requiring the selection of the correct meaning to occur before further processing. In contrast, polysemous words have multiple senses that are not mutually exclusive and may share a common representation. Consequently, all potential meanings of polysemous words remain activated, resulting in a delayed process of selection and disambiguation, if necessary. Contrary to the belief that homonymy and polysemy are represented and processed differently, several experiments provide evidence for the opposing perspective. These studies, conducted by Klein and Murphy (2001, 2002), support the notion that polysemy functions in a similar way to homonymy. According to their findings, both polysemous words with multiple senses and homonymous words with multiple

meanings have separate representations. This supports the view that the various senses of polysemous words, like the multiple meanings of homonymous words, are represented separately.

2.4 Metaphor and metonymy

Apart from the distinction between homonymy and polysemy, according to theoretical linguistics, there is a further distinction within polysemy into two types, which are motivated by two distinct figures of speech, namely metaphor and metonymy. Lakoff (1992, p. 39) defines metaphor as the main mechanism through which we comprehend abstract concepts and perform abstract reasoning. From the cognitive linguistics' point of view, metaphor is fundamentally conceptual, not linguistic, in nature. Metaphor allows us to understand a relatively abstract or inherently unstructured subject matter in terms of a more concrete, or at least a more highly structured subject matter (Lakoff, 1992, p. 39). Lakoff (1987, p. 77) also recognises metonymy as one of the basic characteristics of cognition. He explains that it is extremely common for people to take one well-understood or easy-to-perceive aspect of something and use it to stand either for the thing as a whole or for some other aspect or part of it.

Robert (2008, p. 61), through the lens of cognitive linguistics, explores the concept of how meaning can change and adapt over time, known as *meaning's malleability*. This phenomenon can be observed through two specific processes: polysemy and meaning shifts. Meaning shifts occur when the meaning of a word undergoes a significant transformation over time. This can happen due to various factors, such as cultural changes, technological advancements, or shifts in social norms. As a result, words that once had a specific meaning may acquire new connotations or evolve to represent entirely different concepts. Meaning shifts highlight the dynamic nature of language and its ability to adapt to societal changes. Robert presents two major mechanisms which pilot these meaning shifts: metonymy and metaphor.

Metaphor is a linguistic device that involves the use of one concept or domain to understand or describe another concept or domain (Robert, 2008, p. 62). It allows us to comprehend abstract or complex ideas by drawing on familiar or concrete ones. Through metaphorical extension, a word may acquire new connotations or associations that go beyond its original meaning. For instance, the word 'light' can be used metaphorically to refer not

only to physical illumination but also to knowledge or understanding. This metaphorical extension expands the word's semantic range. Furthermore, metaphors can contribute to meaning shifts over time. As a metaphor becomes widely used and entrenched in a particular context, it can gradually lose its metaphorical quality and be perceived as a literal meaning. This process, known as *conceptual metaphorization*, can lead to significant shifts in word meanings. For instance, the word 'mouse' was originally used to refer to a small rodent but has metaphorically shifted to also represent a computer input device.

Lakoff and Johnson (1980, p. 3) describe the way metaphor is pervasive in everyday life, and why it is not just a device of the poetic imagination and the rhetorical flourish. They state that human thought processes are largely metaphorical, that is the human conceptual system is metaphorically structured and defined. The authors look at metaphors from many different angles, such as highlighting and hiding, orientational metaphors, cultural coherence, ontological metaphors, one of which being personification. In personification, we see something non-human as human, but in doing so, no actual human beings are referred to. For example, we can say: Inflation robbed me of my savings. In this example, inflation is personified into an adversary, which gives us a coherent account of why we are suffering these losses. This should be distinguished from metonymy, where a certain expression is being used to refer to an actual person. An example of this follows: The ham sandwich is waiting for his check. In this example, the ham sandwich refers to the person who ordered this. Lakoff and Johnson (1980, p. 35) explain that such cases are not instances of personification metaphors, since we do not understand "the ham sandwich" by imputing human qualities to it. Instead, we are using one entity to refer to another that is related to it.

The role of metonymy in shaping word meanings is the second important aspect of meaning's malleability discussed by Robert (2008, p. 67). As mentioned, metonymy is a figure of speech in which a word or phrase is used to represent or stand in for another concept or object that is closely associated with it. Unlike metaphor, which involves mapping one concept onto another, metonymy involves using a related concept to refer to the original concept. Metonymy operates through the association or contiguity between two concepts. When we use a metonymic expression, we are relying on the understanding of the relationship between the two concepts to convey meaning. Robert (2008, p. 66) explains that, when we say "*The White House issued a statement*," we are using the term *White House* metonymically to refer to the U.S. government or the presidential administration. Metonymy can play a significant role in expanding or shifting word meanings. Through metonymic processes,

words can acquire new associations and connotations. For instance, the word 'crown' can be used metonymically to represent not only the physical headgear worn by monarchs but also the institution or power associated with the monarchy. Through metonymy, words can acquire new layers of meaning, expand their semantic boundaries, and undergo shifts in their primary referents. Robert (2008, p. 69) also adds that metaphor and metonymy can sometimes combine in the polysemous network. For example, *a fox* can refer to the wild animal, but also to its fur (metonymy), a coat made of its fur (second metonymy) as well as to an attractive woman (metaphor). As explained by Brdar (2019, p. 55), in cognitive linguistics, metonymies are most often determined in contrast according to three key characteristics: according to the type of mapping, according to the number of domains involved, and according to the direction and number of mapping.

2.5 Transfer

Zhou (2018, p. 7) defines transfer as a general term that describes the carry-over of previous performance or knowledge for subsequent learning. Language transfer is known as the key factor to promote the formation of language learners' inter-language. Transfer also refers not just to the effect from the mother tongue, but also any languages that the learner has acquired to the target language. Zhao (2019, p. 942) differentiates between two types of transfer: positive and negative. Zhou focuses on positive transfer, which occurs when the prior knowledge benefits the learning task, that is, when a previous item is correctly applied to present subject matter. On the contrary, negative transfer refers to the interference of mother tongue in language acquisition. It occurs when the learner uses the same expression and way of understanding as in their mother tongue to replace the way it is supposed to be in the target foreign language.

2.5.1 Theories of language transfer

Zhao (2019, p. 942) describes two important theories in language transfer. Contrastive Analysis Theory (CAT) refers to comparing the native and target languages. Some of the main viewpoints of this theory are that 1) the similar learning content of two languages leads to positive transfer, 2) the different learning content of two languages leads to negative transfer, and 3) a certain language feature in the target language can be absent, which causes difficulties for second language learners. The CAT aims to compare the learner's target language and mother tongue in pronunciation, vocabulary and grammar in order to find

similarities to make positive transfer more successful, and to find differences to reduce the interference. This theory was criticized mainly because of the inability to predict errors. Although imperfect, CAT is still an important way of studying a language because it teaches the content, structure and conditions of transfer.

Inter-language theory is based on cognitive psychology and it reflects two relative but different concepts. Firstly, it refers to the system of language structure which is constructed in different stages of language development. Secondly, it refers to a series of progressive systems of language learners in the process of foreign language acquisition, namely inter-language continuum. This continuum is constantly changing with the learner's increasing language input. This system is dynamic, among other features, such as gradually evolving into the desired level of knowledge. The study of inter-language has overcome the shortcomings of CAT and EAT, made the content of Second Language Acquisition (SLA) richer and it promotes the development of foreign language teaching.

2.5.2   The influence of negative language transfer

Contrastive Analysis studies are concerned with the study of a pair of languages with the aim of discovering their structural similarities and differences. The basis of these studies, as presented in Thyab's research (2020) on the influence of negative transfer on students' ability to use good English, is the claim that features of a target language that are similar to the learners' first language will be easy to learn, while features of a target language that are different than the learners' first language will be difficult for the learner to acquire or learn. Another helpful theory mentioned by Thyab is the Error Analysis Theory (EAT), which studies learners' errors in the target language with the aim of recognizing the reasons behind such errors and their causes. The source of many repeatable mistakes and common errors is based on the degree of difference between the structural systems of the two languages – a learner's L1 and L2. Some parts of speech, for example prepositions or determiners, function differently in different languages, which puts focus on the influence of negative transfer. EFL teachers must be aware of its effects on language learning, and should consider the influence of mother-tongue interference. Making these changes in the approach to language learning leads to better language proficiency, better success and achievement for both teachers and students.

A learner's L1 can only influence the acquisition of a polysemous word in the L2 if the learner sets up an equivalence between the L2 word and an L1 word (Ozturk, 2018, p. 87). The L1 equivalent of a polysemous L2 word will be the one with the same core meaning,

independent of any possible extended senses. For example, the Croatian equivalent for the word *eye* is *oko*, as they correspond to the same body part. These words are seen as equivalent, no matter the fact that they are both highly polysemous in their respective languages with shared and unshared meanings. Any further learning complications of the extended senses depend on whether the equivalent L1 word has similar extensions. The term 'positive evidence' in this context refers to learning a polysemous word by simply noting the existence of all the similar extended senses in the L2. If there are no similar extensions, new learning will be necessary. On the other hand, the learner must refrain from carrying over meanings from their L1 that do not align with the corresponding term in their target language. This necessitates the learner to receive 'negative evidence' within the context of the L2, indicating that the transferred meanings from their L1 are incorrect. When there is a lack of positive evidence in the L2, the choice of whether to transfer or avoid transferring relies on the learner's guesswork regarding which meanings of the L1 word overlap with the equivalent term in the L2. For example, in his 1978 study with Dutch learners of English involving the various senses of the work *break*, Kellerman shows how learners were more likely to transfer the senses of the equivalent Dutch work, *breken*, because they are closer to the core sense, even though all the senses tested were shared by the English word. For the study at hand, metonymically extended senses are expected to be transferred more because they share a closer semantic relationship with the core sense.

3 Previous research

Utilizing polysemous nouns increases English proficiency and the ability to communicate in the English language with the fluency of a native speaker. Learners of English as a Second Language (ESL) and English as a Foreign Language (EFL) frequently lack an understanding of polysemy and the ability to use it appropriately in communication. This is the reason polysemy has been the subject of many research papers, the authors of which tried to answer different questions regarding the acquisition of polysemous words, the influence of a learner's L1 in this process and many more.

EFL and ESL learners can often be compared to young native speakers of a language, which is why it is important to mention a study by Mason et al. (1979), in which it is proven that children in the middle elementary grades often incorrectly recall the context when a secondary meaning of the word is referenced in a sentence and either do not know less common meanings of words or fail to attend to the necessary contextual clues. From this, it is

apparent that word polysemy in reading tasks is a potential source of comprehension difficulty. EFL and ESL learners often struggle with polysemous words in the same way, only there is another obstacle that they have to overcome, which is the incorrect transfer of meanings from their L1.

While the majority of research on the development of vocabulary focuses on adolescents and adult learners, Piquer Piriz's 2008 paper looks at the way children understand the motivation for a transfer from the literal to the figurative senses of a term. The results suggest that a capacity to think figuratively about L2 forms is available to children from a very early age and that it develops during childhood along with linguistic and conceptual knowledge, and social skills. This study also highlights the importance of the first stages of learning a language and how fundamental it is to establish the prototypical meanings of core lexical items, which serve as a necessary foundation for learning figurative extensions.

Elston-Güttler and Williams (2008) studied the influence of first language (L1) lexicalization patterns on the processing of L2 words in sentential contexts by advanced German learners of English. The results of this study regarding nouns suggest that the learners activate L1 conceptual information, perhaps directly from L2 words. The learners have the ability to differentiate between the uses of L2 words that have the same translations in their L1 by relying on their consciously acquired declarative knowledge. However, when it comes to the underlying meanings of these words that are not explicitly stored but rather implicitly represented, they might continue to draw from the semantic attributes inherited from their L1. From this perspective, the difficulties encountered by learners arise when their explicit knowledge takes precedence over the positive cues provided by their implicit knowledge.

In her 2013 study on quantitative and qualitative aspects of advanced learners' L1 and L2 mastery of polysemous words, Karlsson examined the learners' ability to recognize decontextualized polysemous words in English (L2) and Swedish (L1) respectively, and they had to answer which, of a set of six meanings, adhered to the item in question (two to five of the meanings were correct). The results indicate that the majority of students have limited knowledge of words with multiple meanings in both languages, with a particular deficiency observed in their L2 proficiency. Moreover, while the frequencies of the test items have no impact on the students' achievements, the relative frequencies of the meanings of the test items and the number of meanings of each test item stand in direct relation to whether the item is known or not in both languages.

Levenston (1979) poses a hypothesis that learners will avoid unreasonable polysemy. It refers not to the acquisition of words but to the acquisition of particular meanings. Which meaning is preferred and which is rejected presumably depends on the sequence and intensity of acquisition. In controlled, formal language situations the first meaning encountered is also likely to be the most frequent. The avoidance does not refer to the avoidance of learning, but rather the learners avoid using lexical items that they do not encounter frequently and whose meaning they find too difficult to acquire. In other words, such lexical items are not actively and productively learned.

As previously stated, the study presented in this paper was based on a study conducted by Meral Ozturk on the acquisition of noun polysemy in English as a foreign language. In his 2018 study, Ozturk argues 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*. The core sense of a polysemous word usually stands out as more important than its extended senses. This is because that meaning is usually the most frequent one, and the word is recognised as such out of context. Apart from the frequency effect, this meaning is also the semantic core from which other meanings derive. Ozturk's study, based on the answers of 87 advanced EFL learners majoring in ELT in a Turkish university, measured 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 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.

It can be concluded that polysemy poses an issue children and adults alike, which leads one to believe that this phenomenon is not properly dealt with in the early stages of language acquisition. The participants in all research tests, no matter if the test items were presented in a sentential context or if they were decontextualized, usually transfer meanings to some extent from their L1 into the L2.

4 The study

As polysemous words often have a large number of meanings, it cannot be expected that all of the meanings of all polysemous words can be taught in a formal setting, which leads to a conclusion that some have to be learned outside of the classroom. Some researchers argue that high-frequency words tend to be more polysemous. This is because frequently used words

often have a longer history of usage and interaction with various contexts, which can lead to the development of multiple meanings over time. These words become versatile and adapt to different situations, acquiring additional senses. On the other hand, some linguistic studies suggest that there might not be a strong correlation between word frequency and polysemy. While certain high-frequency words may indeed be polysemous, there are also examples of low-frequency words with multiple meanings. Because the point of this study was to investigate the understanding of multiple meanings of frequently used words, the present study used words whose core senses the participants should be familiar with to test their knowledge of those words' extended senses.

4.1 The aim

This study closely examines the mechanisms through which one's first language (L1) can either support or hinder the acquisition and development of polysemous L2 words. Modelled on Ozturk's 2018 paper, this study aims to answer the following questions:

1. Are core senses of polysemous nouns in English understood more easily 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 understood more easily 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?

As the research questions suggest, the questionnaire was drawn up with the aim of testing whether EFL learners transferred meanings from equivalent words in their L1 onto L2 polysemous nouns, which is the reason why there are more 'L1-Only' than 'L2-Only' example sentences in the questionnaire itself (cf. Table 1). In his research paper, Ozturk (2018) suggests that metonymically extended senses of polysemous nouns are more likely to be transferred from a learners' L1, so this is also something that this paper is looking into.

4.2 Methodology

4.2.1 Participants

The study was conducted among 252 high school students, in 3 separate high schools: technical school, the school of hotel and tourism management and hospitality, and grammar school, which also has a language track. The study was conducted among the students in their second and third grade of high school, which corresponds to approximately 16 and 17 years of age. The students who participated in the study were equally divided according to gender (51.6% male; 48.4% female) and the grade they attend (49.6% second grade; 50.4% third grade).

4.2.2 The instrument

The questionnaire consisted of 38 sentences with underlined test words. The task required from the participants to decide whether they thought the underlined word was used correctly or incorrectly. There was a target word in each sentence, which was underlined so that the participants knew what to focus on. The underlined words were, of course, polysemous in nature and were chosen from the more frequently used words in the respective languages. All of the nouns chosen for this study were morphologically simple in the sense that they do not contain any derivational affixes, and they were all fairly simple and common. For the aims of this study, it was important that the learners had some prior knowledge of the test words. This was essential because it would be illogical to inquire about the meanings of words that the learners had never encountered before. The chosen target words had clear translation equivalents in the learners' L1, meaning the words had identical core senses in both Croatian and English. Each word was tested in two senses – its core sense and an extended sense. The extended senses were either metonymical (N=10) or metaphorical (N=9) extensions of the core sense. As mentioned before, metonymical senses exhibit consistent connections to their core senses, such as using *container* for *contents*, *animal* for *meat*, *fruit* for *plant*, and *location* for *people*, among others. Metaphorical senses, on the other hand, are extensions on the basis of perceptual (*wings* for *casement windows*, *ear* for *the eye of the needle*) or functional similarity to the core (*river* for *large amount*, *envelope* for *container*), or involved a more abstract kind of similarity (*storm* for *uprising*).

Extended senses of both types also differed based on the nature of the relationship between the equivalent words in English and Croatian. According to Ozturk's study, which

served as the basis for the study at hand, this variability could be classified into four categories:

1. **Parallel senses** (N=22) are identical extensions from the equivalent L2 and L1 words. The word *button* and the corresponding Croatian word *dugme* both have the same metaphorical extension to the sense 'part that operates the machine', in the same way as *fingers* and *prsti* are used in their respective languages through metonymical extension to mean 'part of the glove that fits the fingers'.

2. **L2-Only Senses** (N=2) are extensions of the L2 word which are not shared by the L1 word such as 'a tool for making clothes smooth' sense of *iron* (metonymical) and 'an area of ground for growing flowers' sense of *bed* (metaphorical) for which the corresponding Croatian words *željezo* and *krevet* do not have similar extended meanings.

3. **L1-Only Senses** (N=7) are extensions of the L1 word which are not shared by the L2 word. The 'furniture' sense (metonymical) of the Croatian word *soba* meaning *bedroom* is not shared by the English word. The metaphorical extension of the word for *hand* (*ruka*) to refer to a 'coat of paint' lacks a counterpart in English as well.

4. **Nonce Senses** (N=7) do not exist in either language. These senses were made up for the purpose of this study in order to test whether the learners will think up extended meanings of certain polysemous nouns in the lack of L2 evidence, and they serve as a control group for the other senses. For example, the word *wool* 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. envelope in the sense of 'container'. The design of the test is provided in the table below.

Sense type	L1-L2 relation				Total
	Parallel	L2-Only	L1-Only	Nonce	
Core	19	-	-	-	19
Metonymical	1	1	3	5	10
Metaphorical	2	1	4	2	9
Total	22	2	7	7	38

Table 1. Design of the Polysemy Test

4.2.3 Polysemy Test

The test used for this research paper was an acceptability judgements test. As mentioned above, the test and the research itself were modelled on Ozturk's study (2018). The acceptability judgements test was used to describe non-native speakers' competence of polysemous target language nouns.

The test consisted of 38 sentences, one sentence for each sense (cf. *Appendix* for a list of the sentences in each category). All of the test sentences provided the participants with enough context for them to be able to understand the intended meaning of the target sense. On average, each sentence consisted of 9.2 words and generally had a straightforward structure. Additionally, there were 7 distractor sentences included, all of which were unacceptable and had polysemous words with incorrectly extended meanings. This was done to address the imbalance arising from the greater number of acceptable sentences related to the core meanings. The test items were divided into 4 randomly arranged categories, which only served the purpose of distracting the learners from the fact that each word is tested twice, and that at least one sense is correct in each pair. Each word appeared only once in a given category, either in its core or extended sense. To avoid any potential influences related to the order of test items, the items within each category were mixed up and systematically arranged. The learners participated in a classroom setting where they were tasked with evaluating the correctness of the target sentences in English, marking them as either *correct* or *incorrect*. The entire test session lasted 10-15 minutes.

5 Results and discussion

5.1 Test words analysis

In this part of the research paper, each sentence from the questionnaire is going to be analysed. The sentences will be analysed in the order they appear in the Appendix, which is not the order in which the participants encountered them. First, we are going to look at the group of sentences with metonymically extended senses, followed by the group of sentences with metaphorically extended senses. In each pair, the first sentence contains the polysemous noun in its core sense, and the second sentence is where the extended sense of a polysemous noun is used. As previously described, the participants' task was to look at the underlined word in the sentence and determine whether they think this word sounds correct or incorrect in the English language.

Her fingers were full of expensive rings. – In this sentence, the word 'finger' was used in its core sense to mean 'body part'. The majority (88.90%) of participants decided this word was used correctly, which is also the highest percentage in the group of sentences with the polysemous word used in its core sense.

The fingers of her gloves were wet. – This was the only example sentence of a polysemous word with a parallel metonymical sense, where 65.90% of participants answered correctly. In this example of metonymy, in both English and Croatian the name of the body part is used for a part of the garment. Learners themselves are aware of the fact that they can sometimes incorrectly transfer meanings from their L1 and can be anxious of this mistake when faced with making a decision, as they had to do in this test. This may be the reason for such a small percentage of correct answers when the extended sense actually exists in both languages, which is the reason why the expectations were a bit higher.

Spinach and beef are examples of foods that are rich in iron. – The core sense of the word 'iron' is 'a chemical element', which implies the small quantities of it that are found in blood and food. 71.40% of participants recognised this meaning of the word.

I need to press my shirt, but the iron doesn't work. – This was the only example of an L2-Only polysemous word with a metonymically extended sense. In Croatian, there is no connection between the core meaning of the word 'iron' and the tool with a flat metal base that can be heated and used to make clothes smooth, but, since the English word for that tool

is used frequently and the etymology behind the term is widely known, only 25.80% of learners had a problem with recognising its extended sense in the example sentence.

I have eaten the last <u>apple</u> in the fridge. – Apple is the most widely known and recognised fruit in many languages because of its many connections and uses in cultural and biblical references. The fruit is the main subject of various phrases, such as *Apple does not fall far from the tree*, *An apple a day keeps the doctor away*, *apple of somebody's eye*, while among the Christian community, the forbidden fruit is most often depicted as an apple. This is why it comes as no surprise that nearly all learners (88.50%) recognised the core meaning of this word.

The <u>apple</u> gave fruit for the first time this year. – In Croatian, and many other, especially Slavic, languages, the word *apple* is used to mean not only the fruit, but also the tree. Here, the students were tasked with recognising that this is not usually the case in English, where the whole syntagm *apple tree* is almost always used. The results were divided equally into correct and incorrect answers, which can either be attributed to L1 transfer, or to the fact that sometimes in English only the word 'apple' can be used to mean 'apple tree', but this is not conventional.

His father owns a <u>gold</u> mine. – In this example sentence, 'gold' was used in its core sense, meaning 'a yellow precious metal used for making coins, jewellery, beautiful objects, etc.'. Other than when referring to the metal itself, the word can also be used for gold medals, or the colour of gold. 86.50% of participants knew the core sense of this word.

I'm going to wear my <u>golds</u> to the party tonight. – For products made of gold, such as gold jewellery, a whole syntagm should be used in English. In Croatian, 'zlato' (gold) is used both for the metal and for jewellery, which must have confused 42.90% participants into thinking the same goes for English. It also must be noted that the grammatical formulation 'golds' in this example also might have helped the rest of the participants in stating that this sense is incorrect because it is unusual to use this noun in a plural form.

We don't have a spare <u>bedroom</u>. Our flat is too small. – The primary meaning of this word in both English and Croatian is 'a room for sleeping in'. This meaning was clear and familiar to most learners, which can be seen in the results of 83.70% correct answers.

We've bought a new <u>bedroom</u>. – The metonymically extended sense of the word 'bedroom' implied in this sentence is 'furniture'. When saying that you bought a new

bedroom in Croatian, you are actually saying that you bought new furniture for your bedroom. However, this structure does not work in English, and the majority of the participants did not recognise that. This extended sense had the most incorrect replies out of all metonymically extended senses (56.3%).

You will need a lot of <u>milk</u> to make this dessert. – In general, milk refers to a white liquid produced by cows, goats and some other animals as food for their young and used as a drink by humans. It also refers to the white liquid that is produced by women and female mammals for feeding their babies. The word *milk* can be used in compounds when referring to a white liquid produced by or made from plants (almond milk, coconut milk, oat milk, soya milk). As such, milk was one of the most highly recognised words in its core sense within the framework of this research (87.30%).

I drink a <u>milk</u> every night to sleep well. – Using metonymical analogy, a nonce sense was made up for the purpose of this research, where the core meaning of the word 'milk', which is 'drink', was extended to 'portion'. This works in other similar contexts, such as with the word 'coffee' – it can mean 'drink' (e.g. *I'm going to make some <u>coffee</u>.*) or it can mean 'portion' (e.g. *Can I have two <u>coffees</u>, please?*). However, the word milk cannot be used for portioning, which was recognised by 50.40% of participants in the current study. Grammar also plays an important role in this example, because learners are taught early on that *milk* is an uncountable noun, so this could have altered the result.

I saw <u>cows</u> in the fields from the train window. – The word 'cow' was used in this example sentence to mean 'animal', or more specifically 'a large animal kept on farms to produce milk or beef'. As can be seen from the definition, cows' meat is called beef in English, which is why this was a great example to be used in making up a nonce sense of the word to see if the participants in the study will follow a regular pattern often used in metonymy – *animal for meat*.

Have you cooked this <u>cow</u>? – The nonce sense made up for the purpose of this study was the meaning 'meat' for the word 'cow'. While the metonymical pattern *animal – meat* does exist, such as with the word chicken (e.g. *I hit and killed a <u>chicken</u> with my car today.* and *We have <u>chicken</u> and potatoes for dinner tonight.*), it cannot be applied when it comes to the word *cow*. A good percentage of learners participating in this study (69%) are aware of the fact that most meats in English are not named after the animal that they come from. This is because, following the Norman conquest of England, French had a profound impact on the vocabulary

of the English language. As French people used their own language and literal names of animals for their meat (*boeuf, porc, moutton*), the words started being used to describe the equivalent meats in English, and so they became beef, pork and mutton.

The sheep in this area have very good <u>wool</u>. – In its core sense, the word wool refers to the soft hair that covers the body of sheep and some other animals. Since it is not as common as some other words in this study, 76.60% of participants recognised its core meaning, which is still a high enough percentage to satisfy our expectations.

Take your <u>wools</u> with you. It might be cold there. – This nonce sense was modelled after the regular metonymical pattern *material for product*, which can be correctly depicted by the example sentences: *She opened a box made of <u>silver</u>.* and *They served the dinner in <u>silver</u>.* However, in its extended sense, wool can only be a product made from animals' wool and used for knitting, but it cannot refer to a whole clothing object.

He fell and hit his <u>head</u>. – This word was recognised in its core sense by a large percentage of participants (87.70%) due to its frequent use in everyday vocabulary and it being one of the most common words that EFL learners learn in the early beginnings of their education.

My new coat has a <u>head</u>. – As there already is an example of a regular metonymical pattern *body part for garment* with the word *finger*, this nonce example served as a test to see if the learners would transfer the familiar pattern to another word. This is what happened in only 33.30% of cases. Upon later analysis, it was concluded that the word *jacket* could have been used instead of the word *coat*, which probably would have made transfer easier for the learners due to the fact that some jackets have hoods, which can more easily be imagined as the "head" of this garment.

The <u>vase</u> is too small for the flowers. – The core sense of the word *vase*, recognised by 87.30% of participants, is a container made of glass, etc., used for holding cut flowers or as an attractive object. This word is used only in the sense of a 'container', and its meaning cannot be extended to 'contents'.

The <u>vase</u> smells wonderful. – As illustrated by Ozturk's example for the word *bottle*, *container for contents* is a common metonymical pattern. In this case, however, it cannot function, which 54% of participants knew.

I lost one of the <u>buttons</u> on my shirt. – In both English and Croatian, the core meaning of this word is 'a small round piece of metal, plastic, etc. that is sewn onto a piece of clothing and used for fastening two parts together', and 84.10% of participants were familiar with this sense.

Which <u>button</u> do I press to turn the radio on? – The word *button* was used to represent parallel metaphorically extended senses in English and Croatian. Therefore, in both languages the meaning is extended to 'a small part of a machine that you press to make it work'. It is interesting that, for this word in the study, there is a higher percentage of correct answers for the extended sense (89.30%) than for the core sense, which indicates that learners are more familiar with the extended sense of the word.

He swam in the <u>river</u> all morning. – A river is defined as a natural flow of water that continues in a long line across land to the sea. It is often differentiated from a lake by the fact that a river flows, while a lake is a still body of water. 85.30% of the learners participating in the study recognised the core sense of the word *river*.

There were <u>rivers</u> of cars along the roads. – The extended metaphorical sense of the word *river* in both English and Croatian can refer to large amounts of something "flowing" in the same direction. 53.60% of the participants recognized that, in this example, the amount of traffic on the roads can metaphorically be expressed as a river.

It's a small room with a <u>bed</u>, a chair and a table. – The core sense of the word *bed* is 'a piece of furniture for sleeping on', and it is used in a number of sayings and phrases, such as *you've made your bed and you must lie in/on it*, *go to bed with somebody*, *get out of bed on the wrong side*. In the present study, 85.70% of participants were familiar with the core meaning of this word.

The garden is divided into small <u>beds</u> of flowers. – The word *bed* was the only example used as an L2-Only (English) metaphorical sense, meaning 'an area of ground in a garden or park for growing flowers, vegetables, etc.'. Among all of the metaphorically extended senses, this word was almost at the top of the list when it comes to correct answers, with 63.90%.

This type of bird beats its <u>wings</u> five hundred miles per second. – The core sense of the word 'wing' is 'one of the parts of the body of a bird, insect or bat that it uses for flying', and 73.80% of learners participating in this study were able to recognise it as such.

He opened both <u>wings</u> of the window. – Because of the specific shape and function of a wing (used in its core sense), the word is often used in other contexts and its meaning is metaphorically extended to many other aspects of life. In English, there are several examples of metaphorical extensions, such as the wing of a plane, the wing of a building, the wing of a car, playing left or right wing in football or hockey, sitting in the wings of the theatre, etc. Although the meaning implied by the example sentence at hand is not used in English, one can easily interpret what the *wing* of a window could be, so it is understandable that many participants were confused by this. In Croatian, the word *krilo (wing)* can also be used for parts of casement windows that open on hinges like a door. 62.30% participants transferred this meaning from Croatian to English and answered incorrectly.

The spare <u>key</u> to the front door is under the mat. – In its core sense, a 'key' is a tool, a piece of metal with a special shape used for locking a door, starting a car, etc. A very large number of learners (88.10%) recognised this meaning of the word *key* and answered correctly.

You can use a French <u>key</u> to loosen the nut on a bolt. – Although English and Croatian have some parallel extended senses of the word 'key', such as answer key, or meaning 'the most important thing', it is only in Croatian that *key* can mean 'tool', such as a wrench. This must have confused the participants in this study, because 67.90% of them transferred the meaning from Croatian and answered incorrectly.

Put your <u>hand</u> up if you know the answer. – A hand, in its core sense, is the part of the body at the end of the arm, including the fingers and thumb. Often used in ESL classrooms, the word *hand* is quite familiar to the learners, which is shown by the 88.10% of correct answers.

I know the colour of the wall is not yet vibrant, but this is only the first <u>hand</u>. – When painting the walls, Croatians often use the word *ruka (hand)* in its extended sense to mean 'paint coat'. Although it is quite common to use this extension in Croatian, just over half (51.60%) the participants transferred this meaning to English, which is less than expected.

She's had her <u>ears</u> pierced. – In its core sense, the word 'ear' refers to either of the organs on the sides of the head that you hear with. Earlobes, the soft part at the bottom of the ear, are often pierced, but these parts are still referred to as the ear. Either way, as much as 84.90% of participants recognised the core sense of this word.

I can't put the thread through this needle. The <u>ear</u> is too small. – Different languages sometimes use different associations to name certain things, which is the case with the small opening at the top of a needle. In English, this opening is called the eye of the needle, while in Croatian, it is called the ear of the needle. More than half (51.20%) of the learners participating in this study did not know about this difference between the two terms in their respective languages, so they gave an incorrect answer.

It is dangerous to go out in this <u>storm</u>. – In its core sense, this word is connected to very bad weather with strong winds and rain, often accompanied by thunder and lightning. The word can also be used in compounds to mean bad weather of a certain type (sandstorm, thunderstorm, electrical storm, dust storm, etc.). 84.10% of the participants in this study were familiar with the core meaning of the word *storm*.

There has been a <u>storm</u> of changes in the country since last year. – While the word storm can metaphorically be associated with a certain situation where a lot of people suddenly express very strong feelings about something (e.g., *His comments created a <u>storm</u> of protest in the media.),* or a sudden loud noise that is caused by emotion or excitement (e.g., *a <u>storm</u> of applause*), this word is rarely used as shown by the context of the example sentence in English and Croatian. This nonce sense was made up for the purpose of this study to see if learners will make their own metaphorical extensions where one does not exist. This word was the one with the most incorrect answers (70.20%) in the whole category of metaphorically extended senses. This is because the syntagm *a storm of changes* is interpretable. It is an innovative metaphor, which is not conventional, but can be understood to a certain degree.

He quickly opened the <u>envelope</u> and took the letter out. – An envelope is defined as a flat paper container used for sending letters in, with a part that you stick down to close it. Even though it is one of the less frequently used words in the questionnaire, 80.60% of participants recognised it in its core sense, which is more than for some words which were expected to have a higher percentage of correct answers, such as *iron* or *wing*.

She replaced the <u>envelopes</u> of the pillows with clean ones. – Following the pattern of metaphorically extending words based on their function, the extended sense of the word *envelope* was based on its function as a container. For example, the word *bank* is defined as a place where money is kept, and its meaning can be extended to a 'hospital blood bank', where donated blood is kept. These are both buildings, or rather places where one can keep

something, only the contents are different. However, an envelope is a paper container by definition, no matter of its contents. This is why this extended sense is non-existent, and 59.50% of the participants recognised the difference.

5.2 Overall results

The overall results of the polysemy test (cf. *Table 2*) show that learners were able to answer just over two thirds of the items on the test correctly (69.82%), which is slightly below what was anticipated, considering the learners' proficiency level and the frequent usage of the target words. The participants in this research knew more word meanings than in that of Ozturk's, where the total percentage of correctly determined meanings was only 52.18%. As we can also see from Table 2, learners excelled in understanding core senses, and they displayed greater accuracy in comprehending metonymical senses compared to metaphorical ones.

Sense type	Percentage
Core	83.98%
Metonymical	59.75%
Metaphorical	50.66%
Total	69.82%

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

Since some of the extended senses do not have equivalents in the learners' L1, it may not seem fair to say that the participants knew and recognised core senses better than extended ones. For that reason, another comparison was made between the results for core senses and the results for parallel extended senses, where we come to the same conclusion: while core senses were answered correctly in 86.50% of the cases, parallel extended senses were only answered correctly in 77.60% of the cases. This outcome supports the fact that the core senses are of high significance in the acquisition process. When faced with multiple meanings of a polysemous word, L2 learners are more likely to be familiar with the core sense. While this doesn't definitively prove that the acquisition of a polysemous word always starts with the core sense, it does suggest that core senses tend to be more prominent or noticeable.

Sense type	Percentage	Total
Core/Metonymical	88.90%	86.50%
Core/Metaphorical	84.10%	
Metonymical	65.90%	77.60%
Metaphorical	89.30%	

Table 3. Results for sense type on the parallel senses

The study investigated the role of the learners' L1 in their knowledge of extended sense scores, as shown in Table 4. It considered two factors: the type of sense (metonymical or metaphorical) and the relationship between the learners' L1 and L2 (parallel, L2-Only, L1-Only, nonce). While learners generally performed better on metonymical senses compared to metaphorical senses, the results implied that the influence of L1-L2 relation varied between metonymical and metaphorical senses.

Extension type	L1-L2 Relation				Total
	Parallel	L2-Only	L1-Only	Nonce	
Metonymical	65.90%	74.20%	51.70%	62.06%	63.47%
Metaphorical	89.30%	63.90%	41.75%	45.23%	60.05%
Total	77.60%	69.05%	46.73%	53.65%	61.76%

Table 4. Results for L1-L2 Relation

In metonymical senses, there were notable distinctions among the various relationship types. Specifically, L2-Only scores were the highest, followed by parallel scores, then nonce scores, all of which were higher than L1-Only scores (L2-Only > parallel > nonce > L1-Only). These results differ slightly from those in Ozturk's research, where parallel senses scored the highest, which may be due to the fact that in the present research, there were much more examples of parallel senses than those of L2-Only. Either way, the findings imply that, overall, learners provided more accurate responses for L2 metonymical senses compared to non-L2 senses. In well over half of the words, learners managed to correctly identify senses within the L2 category. However, they also tended to extend the meanings of many words to senses outside of the L2 category. This led to an accuracy rate of just over 50% in the L1

category, while the nonce category yielded better results with more than 60% of words that were not overextended. This indicates that learners encounter more challenges when trying to restrict their vocabularies to encompass only the L2 senses, as opposed to expanding their vocabularies to encompass all of the L2 senses. This is plausible because broadening one's vocabulary relies on readily available positive evidence in the L2 input, which learners can pick up receptively. In contrast, narrowing the vocabulary necessitates explicit correction by a native speaker or teacher during productive use, or it requires learners to have a high level of metalinguistic awareness to notice the absence of L1 senses in the L2 input. Explicit correction for lexical errors in L2 classrooms is not a common practice, and it is unrealistic to anticipate foreign language learners to detect the absence in the input, especially when they already struggle to recognize the presence of new senses for familiar polysemous words. Consequently, it is not surprising that the process of narrowing down their vocabulary was slow and basic when it came to metonymical extensions.

In metonymical senses, it appears that L1 has a favourable impact on learners' scores by significantly enhancing their accuracy in responding to parallel senses when compared to L2-Only senses. Parallel senses were expected to have better accuracy of results than L2-Only senses, because they do not require new learning and direct transfer of L1 senses is possible. This was the case in Ozturk's research, however, in the present paper, learners performed well on both parallel and L2-Only extended senses. On the other hand, learners exhibited significantly lower accuracy with L1-Only senses in contrast to nonce senses. Surprisingly, they were able to reject L1-Only senses to a similar degree as they rejected nonce senses, despite lacking positive evidence in the L2 for either. This implies that when a sense is found in the learner's L1, it is considered as an indicator of cross-linguistic correspondence. In the absence of positive evidence in the L2, the learner tends to assume that an L1 sense is more likely to exist in the L2 than a completely new sense that has no counterpart in the L1. Consequently, it suggests that when learners create new extensions for L2 words, these extensions are more likely to be based on L1 metonymical senses rather than entirely invented by the learner.

In metaphorical senses, parallel sense scores were significantly different from the L2-Only scores (89.30% vs 63.90%), but L1-Only scores were not very different from nonce scores (41.75% vs 45.23%). Consequently, parallel scores were significantly higher than L1-Only scores (89.30% vs 41.75%) and L2-Only scores than the nonce scores (63.90% vs 45.23%). Similar to metonymical senses, learners achieved greater success with L2

metaphorical senses compared to non-L2 senses. However, the challenge of narrowing down the senses appears to be more pronounced with metaphorical senses. Specifically, learners were approximately 15% less successful in rejecting metaphorical senses that were not part of the L2 compared to their performance with metonymical senses. The greater overextension observed with metaphorical senses contradicted the initial prediction that these senses would be considered less acceptable due to their perceived dissimilarity to the core senses compared to metonymical ones. Despite the absence of concrete positive evidence in the L2, learners tended to accept these metaphorical senses as correct in English. These results are similar to those obtained in the research at hand, and the interpretation offered by Ozturk may be valid for our results. More specifically, Ozturk (2018, p. 96) explains that the reason may be the fact that metaphorical senses are more frequent in the language than metonymical senses. If this is so, then language learners naturally see figurative meanings as normal and acceptable in their L2. On the other hand, metonymical meanings might seem like mistakes, where the speaker doesn't accurately refer to the thing they're talking about.

This can be illustrated by an example sentence used in both studies: *The vase smells wonderful*. The given sentence was an example of a polysemous word with a nonce metonymical sense, and was marked as incorrect by 54% of the participants in the current study. More than half of the participants realised that something was wrong because the smell does not specifically refer to the flowers in the vase. The inherent lack of precision in metonymical senses, where one expresses something but implies something closely related, is expected to result in stronger opposition from learners.

In the present study, parallel metaphorical senses had significantly higher scores than L2-Only metaphorical senses. Strong performance in both categories suggests a resemblance between metaphorical and metonymical senses. Additionally, it appears that the learners' L1 positively impacts their scores by improving the accuracy of their responses for parallel senses when compared to L2-Only senses.

6 Conclusion

The present study investigated the role of the learners' L1 in their acquiring process of polysemous nouns. The nouns used as test words in this study are of high frequency use among the learners, and the participants were tasked with a decision-making process of correctly assessing different senses of polysemous words. Due to their age and level of proficiency, the learners were expected not to have many issues with the chosen words.

Learners appeared to encounter more challenges when attempting to narrow their understanding of senses compared to expanding it. Specifically, they were more proficient at recognizing senses that were part of the L2 context than at rejecting senses that were outside of the L2 context.

The two variables that were studied were sense type and L1 influence. As expected, core senses were recognised better than the corresponding extended senses, and metonymical senses better than metaphorical. The presence of parallel senses in the learners' L1 positively influenced their performance on the test for both metonymical and metaphorical senses. However, it is worth noting that there were more instances of overextension errors with metaphorical senses compared to metonymical senses. For metonymical senses, it appeared that the source of these errors could be attributed to the influence of the learners' L1. In contrast, metaphorical overextensions seemed to arise from a more widespread tendency to accept metaphorical extensions in general.

The learners' less-than-satisfactory performance on the polysemy test in this study underscores the need for increased focus on polysemy in English as a Foreign Language (EFL) instruction. Clearly, it is not feasible to teach all the senses of polysemous words, especially those in high-frequency usage, as these words exhibit significant polysemy with an average of around 4 meanings, resulting in over 10,000 meanings to master. Therefore, our approach to assisting learners must primarily involve activities aimed at raising their awareness. This may include demonstrating the various relationships between the core sense and the extended senses of words and helping learners identify contextual cues to distinguish between them in the language they encounter. Additionally, raising awareness about metonymical patterns in the L2 and highlighting differences between L1 and L2 patterns could also prove to be beneficial strategies for learners. Karlsson's research (2013, p. 103) indicates that when it comes to words with multiple meanings, frequency is a crucial factor to consider when selecting items for a teaching syllabus. Nevertheless, her study reveals that the frequency of the word's various meanings itself doesn't significantly impact whether learners are familiar with those meanings. Instead, what matters most is the relative frequencies of the different senses, with the most frequent sense being the one that learners are most likely to know. Thus, it may be beneficial to begin teaching the meanings of polysemous words to L2 learners by starting with the most common senses.

Furthermore, while the current study could not definitively confirm or refute this, previous research suggests that explaining the core sense of a polysemous word can aid

learners in comprehending and retaining its more peripheral meanings. It is worth noting that in many cases, the most common meanings align with the core senses of the words, potentially enhancing students' mastery of these primary meanings. This approach may, therefore, serve as a valuable strategy when approaching polysemous words in the context of second language learning.

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Appendix: Acceptability Judgements Test Sentences
Polysemous Words Metonymical senses

1. Polysemous Words with Parallel Metonymical Senses

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

2. Polysemous Words with L2 (English) Metonymical Senses

Spinach and beef are examples of foods that are rich in <u>iron</u>.
I need to press my shirt, but the <u>iron</u> doesn't work.

3. Polysemous Words with L1 (Croatian) Metonymical Senses

I have eaten the last <u>apple</u> in the fridge. (fruit)
The <u>apple</u> gave fruit for the first time this year. (tree)

His father owns a <u>gold</u> mine. (material)
I'm going to wear my <u>golds</u> to the party tonight. (product)

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

4. Polysemous Words with Nonce Metonymical Senses

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

I saw <u>cows</u> in the fields from the train window. (animal)
Have you cooked this <u>cow</u>? (meat)

The sheep in this area have very good <u>wool</u>. (material)
Take your <u>wools</u> with you. It might be cold there. (product)

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

The <u>vase</u> is too small for the flowers. (container)
The <u>vase</u> smells wonderful. (contents)

Polysemous Words Metaphorical Senses

1. Polysemous Words with Parallel Metaphorical Senses

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

He swam in the <u>river</u> all morning.
There were <u>rivers</u> of cars along the roads.

2. Polysemous Words with L2 (English) Metaphorical Senses

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

3. Polysemous Words with L1 (Croatian) Metaphorical Senses

This type of bird beats its <u>wings</u> five hundred miles per second.
He opened both <u>wings</u> of the window.

The spare <u>key</u> to the front door is under the mat.
You can use a French <u>key</u> to loosen the nut on a bolt.

Put your <u>hand</u> up if you know the answer.
I know the colour of the wall is not yet vibrant, but this is only the first <u>hand</u>.

She's had her <u>ears</u> pierced.
I can't put the thread through this needle. The <u>ear</u> is too small.

4. Polysemous Words with Nonce Metaphorical Senses

It is dangerous to go out in this <u>storm</u>.
There has been a <u>storm</u> of changes in the country since last year.

He quickly opened the <u>envelope</u> and took the letter out.
She replaced the <u>envelopes</u> of the pillows with clean ones.