

Non-Literal Meaning Comprehension: A Small-Scale Analysis on Turkish Speakers

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Abstract

Language processing is a hotly-debated topic in all its aspects. Figurative or non-literal language processing on the other hand, is an intriguing phenomenon that needs more investigation from cognitive, psychological and neurological perspectives with data from different languages. This study aims to contribute to reveal the non-literal meaning comprehension with data from Turkish. From the cognitive perspective, language processing (both literal and non-literal) makes use of categories and schema. Non-literal meaning or specifically metaphors are based on the analogical reasoning of the categories and their correspondences. In this kind of processing, the primary aim is to find out the overall interpretation using the contextual information and implicatures. The comprehension of non-literal meaning is said to be influenced by other cognitive capacities involving the IQ level, the memory capacity, the ability of abstract thinking, and the ability to create mental images. There are individual differences in terms of all such cognitive abilities as well as there are some tendencies related to the age and gender variables. Based on this assumption, current study first, reviews the related literature elaborately and brings in the studies in other languages focusing on the conceptual base, the context, and the relationship with humor. Then the third section introduces the data collection tool of the study; a test aiming to investigate the comprehension of an organized set of figurative expressions (including the metaphoric, metonymic, and humorous ones) by the native speakers of Turkish. The written test includes an equal number of different types of figurative expressions to be interpreted by the speakers. The interpretations were evaluated with the designed six-point measuring scale and the numerical findings were presented in a comparative sort. The findings of the study have shown that among other variables that affect the comprehension of non-literal meaning, age is an indeed operative one.

Key Words: Language processing, non-literal (figurative) meaning, non-literal (figurative) meaning comprehension.

1. Introduction

Parallel to the progressive studies about human cognition in various disciplines, the role of the cognitive foundation in language processing has also gained importance in linguistics. Cognitive research on language processing mainly focus on the literal level of meaning.

However, constructing the intended non-literal meaning is a substantial part of the language comprehension process and is closely related to cognitive phenomena both individually and universally at the same time. Non-literal meaning comprehension has seldom been investigated in cognitive linguistics and psycholinguistics literature compared to the literal meaning comprehension although it is as systematic and basic to our thinking as literal meaning as indicated mainly by Lakoff and Johnson (1980); Croft (1993); Gibbs (1994); Kövecses (2002); Gibbs (2012) and many others. Current research, (starting off that non-literal meaning comprehension needs more investigation from cognitive, psychological, and neurological perspectives with data from different languages) aims to contribute to reveal the non-literal meaning comprehension with evidence from Turkish. The study first, reviews the related literature comprehensively, then the second section introduces the designed data collection and measuring tools aiming to find out the comprehension level of speakers for a set of figurative expressions (including the metaphoric, metonymic and humorous ones) by Turkish native speakers of different gender and age groups. Lastly, the third section tabulates and discusses the findings.

2. Background

2.1. The Cognitive Basis

The dynamics of non-literal meaning comprehension as a met semantic ability has been of linguistic interest for about thirty years. Non-literal expressions are not just linguistic devices but they are part of the conceptual phenomena and require the analysis of the cognitive processes during their comprehension. The configuration of the human perceptual system, together with the sensory and the motor processes enable us to figure out the process. Zhou (2009) remarks that there are a number of cognitive theories addressing the issue such as the Working Memory Theory (Baddeley and Hitch, 1974), Salience Imbalance Theory (Ortony, 1979), Conceptual Metaphor Theory (Lakoff and Johnson, 1980), Structure Mapping Theory (Gentner, 1983), Attributive Categorization Theory (Glucksberg and Keysar, 1990), Conceptual Blending Theory (Fauconnier and Turner, 1994), Mental Spaces Theory (Fauconnier, 1994), Relevance Theory (Sperber and Wilson (1995) and the Domain Interaction Theory (Sternberg, 1995). In respect to this, cowan (2005) comments that some of these theories are applicable for some metaphor types but not capable of explaining the processing of others.

Cognitive linguistic perspective focuses on the interaction between non-literal meaning comprehension and other cognitive faculties like memory, reasoning, attention, and categorization. Canziani (2010:743) argues that speakers follow two cognitive steps during the process:

1. Recognition of non-literal case: that *this will not be read literally*
2. Transformation of the expression to a simile (X is like Y): suppressing some qualities and choosing the appropriate ones.

In Gentner's (1983) view, analogical reasoning (X is Y) has three sub-processes:

1. Analogical retrieval
2. Analogical mapping
3. Evaluation of the analogical map or related inferences

He means that we understand a novel non-literal concept via comparing it to a known concept which is affected by the pre-knowledge, experience and the culture where the speaker lives in.

Slack (1980:23) defines non-literal meaning comprehension as the process of mapping the expression onto related conceptual representation and claims that this process is not specific to non-literal meaning but just a set of strategies are used specific to the task. Therefore, speakers understand metaphors in the same way they understand all other types of expressions. Kintsch and Bowles (2010:3) also claim that the process is neither more challenging than the literal meaning processing nor it requires a complex reasoning or extra computation for the language user.

In a model proposed by Harris (1976), the comprehension process has two stages: first, to understand the literal meaning, second, using this information to construct the intended non-literal meaning. Harris (1976:313) lists the subjects' own interpretations of their comprehension processes into five steps:

1. To redefine some words in the sentence
2. To tie it up to one's own experience
3. To make sense of the sentence as a whole
4. To understand the symbolism or hidden meaning

5. To construct a text or imagine an appropriate scene putting the new definitions to form a whole an idea

In a research by Kelly and Keil (1987) it is claimed that the comprehension of metaphors is affected by the similarity relations non-existent in the metaphor. Therefore, the semantic domains, their relations, and interrelations are quite important in the process.

The theories in the related literature center upon the cognitive organization underlying the non-literal meaning comprehension as operating in two ways; figurative expressions are processed either by *comparison* or by *categorization* of related items. Comparison-based theories are based on the idea that we look for an overlap between the target and the source items. Categorization-based theories on the other hand create a neutral category that encompasses the two items. Gökçesu (2008:567) suggest that in the processing of a metaphor like *Jealousy is a tumor*, comparison-based approach assesses the existence of an overlap between the *jealousy* and the *tumor*. However, categorization-based approach looks for an ad hoc category (tumor+ jealousy= anything that uncontrollably grows). Once conventionalization occurs, all such expressions are easily processed from then on. Bowdle and Gentner (1999:90) remark that figurative uses are processed more rapidly in the simile form (X is like Y) than they are in the metaphor form (X is Y) to mention that the grammatical form of the statements in question is indicative too. They also say that there is a shift from comparison to categorization as the expressions are conventionalized. Additionally, they mention that novel metaphoric mappings create totally new meanings (i.e. polysemy). Utsumi and Sakamoto (2007) highlight the importance of the type of the expressions in question. They say that there are seldom studies on the processing of predicative metaphors (The rumors flew through the office) as opposed to nominal metaphors (My job is a jail) although they and their comprehension process may differ (2007:1034).

The neurological basis of metaphor comprehension is explored within the cognitive neuroscience. Coulson (2002) suggests that the investigations on the issue should be on the differences between the comprehension processes of different kinds of non-literal expressions rather than on the contrast of literal and non-literal meaning. Psycholinguistic studies mainly focus on the reaction time (or activation time) and online processing of such data. Neuro-pragmatic research also shed light on the issue of the underlying neural basis of non-literal meaning comprehension via experimental and clinical studies with imaging techniques like PET and fMRI looking into the involvement of the right or the left hemispheres. Figurative language deficits also give valuable insights into the *normal* processing as opposed to the *not normal*.

2.2. The Context and Other Issues

The context is also an important factor in the comprehension of such expressions. Lemaire and Bianco (2003:1) state that the semantic neighbors of the expression are important. Here, there are two variables: the nature of the meaning (literal or not) and the nature of the context (inductive or not). Vosniadou (2007:2) points out that even the children in the pre-school age are able to understand metaphors if they are exposed to them in proper contexts. He defines two types of contexts; “extrinsic” (means situational) and “intrinsic” (means linguistic) contexts. Turning to the question of *which overcome the other?* they say that the former loses its affect as the children grow up. Inhoff et al. (1984:558) indicate that target expressions are understood easily when the context is long compared to when it is short. Additionally, the targets are understood easily when they are followed by a metaphorical context compared to a target followed by literal contexts. Even the same person may differently interpret the same metaphor differently in different contexts as Zhou (2009:38) reminds. Kara (2015) focuses on the gap between the ages 7 and 9-11 in terms of the idiom comprehension and states that the *age* and the *contextual background* are the outstanding variables that have contribution to the process with different degrees. The results of the study have important pedagogical implications as another issue.

In addition to the contextual information, intentional or non-intentional body movements accompanying the expression (either realized or imagined) make the comprehension easier compared to the no-movement or a mismatching bodily movement as Wilson and Gibbs (2007:721) state. It is also a fact that bodily movements facilitate the understanding of all kinds of other expressions not only the figurative ones. Wilson and Gibbs call the processes with the aid of bodily activities as “what must it be like processes” (2007, 729).

Non-literal meaning comprehension was also discussed in relation with the native language of the speakers. Difficulties encountered by native speakers and difficulties faced by non-natives are compared and contrasted (Ferreira, 2008). In an experiment by non-native speakers of English, 40% of the interpretation difficulties that students have (during the university lectures) involved metaphors.

This is relatively a big proportion that may potentially cause many pedagogical problems. Another study conducted with 9-14 years old foreign students has shown that gender and similar social backgrounds are decisive variables (Pinto et al. 2011: 57).

As indicated above, both non-literal meaning production and the comprehension is affected by a variety of factors; cognitive, linguistic and extra-linguistic ones. The process is not static but dynamic influenced by individual variables such as the *pre-existing knowledge, the memory, the IQ level, the gender of the speaker, the conventionality of the metaphor* and the *communicative and linguistic context accompanying the expression*. Memory capacity, for example, affects the evaluation of all linguistic and extra-linguistic phenomena during communication. Ability of *abstract thinking, ability of reading between the lines, reasoning abilities, inferencing and bridging the gap abilities, problem solving ability, multitasking skills and information processing skills* of an individual on a broader scale are other variables worth to take in consideration. IQ level is also an important factor for the comprehension and interpretation quality (which is also affected by vocabulary knowledge). *Fluid intelligence* (quick thinking, problem-solving) and *crystallized intelligence* (analyzing, synthesizing, reaching correct solutions), their increase and decrease with the age and even our *beliefs and emotional states* track the process. On a different side, *humor* and non-literal use are also connected to each other. Humor mostly includes either metaphor or metonymies. Deficits in humor comprehension for example are important for the understanding of non-literal meaning comprehension as it is valid for the understanding of “normal” processing through related disorders.

3. The Method and the Tools

There are some presumable methodological problems over the measurement of the comprehension of literal or non-literal language since results are influenced by the nature of the tasks themselves. Lemaire and Bianco's (2003) experiment to evaluate the effect of the context on the comprehension process has the following format (Table 1):

Table 1: Lemaire and Bianco's (2003) metaphor comprehension test

-a sentence in which there is the <i>source</i> word -four <i>context</i> sentences -a sentence in which there is the <i>reference</i> word -another sentence
<i>Aged 10, Pierre is a surprising child.</i> <i>Pierre loves books.</i> <i>He has an answer for everything.</i> <i>During a gymnastic training, someone said:</i> <i>“Who invented the Olympics?”</i> <i>The scientist exclaimed: “It's the Greeks!”</i> <i>The instructor turned round.</i>

Iskandar (2014) measures the performance differences between different age groups and the cognitive processes involved in metaphor interpretation. According to the scale, the scoring is on four levels (Iskandar, 2014:118-127) as quoted below (Table 2):

Table 2: Iskandar's (2014) measuring tool

Love is a flower
1. AC (Abstract Complete): Full explanation, use of a super ordinate category for vehicle and topic. Ex: Love takes time to grow and bloom. Love starts small and grows. Love needs nurturance and care for it to grow.
2. AP (Abstract Partial): Abstract and incomplete explanation, use of a less pertinent super ordinate category. Ex: Love is beautiful. Love is the emotion that is beautiful. Love is delicate.
3. CT (Concrete): An explanation indicative of concrete thinking, literal explanation. Ex: You give flowers to someone you love. It is nice and smells good. It is beautiful.
4. OT (Other): Wrong explanation not due to concreteness. It is picked to find right one.

The analysis of the metaphor comprehension literature led us to decide that the following criteria (Table 3) are important to be taken into consideration in designing a non-literal meaning comprehension test:

Table: 3.7 criteria for the test

<ol style="list-style-type: none"> 1. The language of the instruction (simple or complex) 2. The grammar of the expressions (simple or complex) 3. Novelty of the expressions (novel or not) 4. Type of the expressions (metaphoric, metonymic, idiomatic...) 5. The amount of the contextual information (much or less) 6. Type of the test (online, offline, spoken, written...) 6. Subject variables (native language, age, gender, educational background ...) 7. evaluation of the results (distinction of the <i>understood</i> and <i>not understood</i>)
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These seven conditions above were fulfilled in the research in the following way (Table 4):

Table: 4.7 criteria for the test: Introduction

The language of the instruction	Simple
The grammar of the expressions	Simple
Novelty of the expressions	Both novel and conventional
Type of the expressions	5 Metaphoric expressions 5 Metonymic expressions 5 Humorous expressions
The amount of the contextual information	1 <i>before-sentence</i> 1 <i>after-sentence</i>
Type of the test	Written test
Evaluation	Offline evaluation
Subject variables	Native language: Turkish Age: o A group of 23 and over Gender: o 15 females 15 males Educational background: 30 academicians (from different departments and different titles)
Evaluation of the results	A designed six-point scale (Table 8)

The subjects are the native speakers of Turkish, 30 male and female academicians whose educational backgrounds are assumed to be roughly similar (Table 5):

Table 5: The subjects

	Academicians
Distribution	Ankara University Mersin University Different Departments (Linguistics, Sociology and Psychology)
Age	23 and over
Gender	15 females 15 males

A paper-and-pen test was designed in order to measure the comprehension of non-literal meaning. The written test has fifteen sentences which include an equal number of metaphorical, metonymic and humorous expressions in themselves. Each of the sentences has *a before* and *an after* sentence (intended to clarify the non-literal meaning) as the Table 6 and Table 7 exemplify.

Table 6: Non-literal meaning comprehension test: The format

Instruction: Explain the second sentence.
The <i>before-sentence</i> . (The introductory sentence) The sentence with the metaphoric/ metonymic/ humorous expression. The <i>after-sentence</i> . (The concluding sentence)
Explanation:

Table 7: Non-literal meaning comprehension test: An example in Turkish

İkinci tümceyi açıklayınız. (<i>Explain the second sentence</i>)
Ayşe dün bizdeydi. Kızın dili dört şeritli otoban. Onu dinlerken benim boğazım kurudu. (<i>Ayşe was at our house yesterday.</i> Her tongue is a four lane motorway. <i>My throat dried while listening to her.</i>)
Açıklama: (<i>Explanation</i>)

The reason of the preference for making the subjects explain the related expressions is the assumption that the options or response alternatives in such tests limit the interpreter i.e they force to answer them in a guided route. Additionally, this may cause to catch semantic nuances unexpressed by the alternatives. As exemplified in the previous section, studies in psycholinguistics, the reaction or response time of the subjects is measured as an indicator of the exact comprehension time in oral experiments. In this study, a time limitation was not constrained upon the subjects, therefore, the response time is not a criterion to evaluate the success of the output since the written test requires an offline evaluation of the speakers. The *metaphorical* expressions in test are:

1	Ofisi bir <i>çiçek bahçesi</i> . His office is a <i>flower garden</i> .
2	Gönlü <i>hızlı bir şelale</i> . His heart is a <i>fast running waterfall</i> .
3	Yanaklarında <i>mor menekşeler açmış</i> . <i>Purple violets blossomed</i> in her cheeks.
4	Sigara <i>ölümün yaveri</i> . Cigarettes are the <i>sidekick of death</i> .
5	Onların aşkı <i>otobanın hız şeridi</i> . Their love is the <i>fast lane of the motorway</i> .

The *metonymic* expressions in test are:

6	<i>Mercedes</i> 'le evlendiğinden beri sesini duymadık. We haven't heard about her since she married the <i>Mercedes</i> .
7	<i>Bayan organik</i> de gelecek haliyle. <i>Miss Organic</i> will be coming as well of course.
8	<i>Türkiye'nin Harvard</i> 'ında okuyacak. She will attend <i>Turkey's Harvard</i> .
9	Bizim orta bahçe <i>Taksim Meydanı</i> . Our inner garden is <i>Taksim square</i> .
10	Bir <i>Ankara</i> daha olmasın. Another <i>Ankara</i> shall not happen.

The *humorous* expressions in test are:

11	Kızın dili <i>dört şeritli otoban</i> . Her tongue is a <i>four lane motorway</i> .
12	Yanında bir tane <i>Helga</i> ! He was with a <i>Helga</i> .
13	Karşımda <i>kakasını yapamayan bir çocuk</i> . A <i>child who can't poop</i> sitting across me.
14	Bizim <i>kasap</i> da oradaydı. Our <i>butcher</i> was also there.
15	Bahçede <i>tırmıkla ayırık otu temizlesem</i> daha iyi! It is better if I <i>cleaned couch grass with a harrow</i> in the garden.

All of the figurative expressions are simple sentences including both novel and conventional ones each of which is supported by an introductory sentence and a concluding sentence. These two sentences which give contextual cues do not directly imply the intended figurative meaning but they help to limit the scope for the speaker to reach the correct interpretation:

(1) Herkes korku içinde.

Bir **Ankara** daha olmasın.

Ülke genelinde önlemler artırıldı.

Everybody is in fear.

Another **Ankara** shall not happen.

Precautions are increased all over the country.

(2) Düşünde Aliyle karşılaştık.
Yanında bir tane **Helga!**
Anlaşılan orada sadece çalışmamış
We came across Ali at the wedding.
He was with a **Helga.**
It is clear he didn't only work there.

(3) Ahmet öğrencilerini çok sever.
Ofisi bir **çiçek bahçesi.**
Ders dışında da herşeylerini anlatırlar ona.

Ahmet loves his students.

His office is **a flower garden.**
They share everything with him outside the courses as well.

The explanations of the subjects were evaluated using the designed six-point scale explained below:

1. Correct interpretation

Provides a full explanation of the metaphor/metonymy. Full access to the source/vehicle and target concepts.

2. Partially correct interpretation

Provides an explanation of the metaphor/metonymy that is incomplete. The explanation does not provide full access to the source/vehicle and target concepts or uses less related concepts.

3. Correct interpretation with a different metaphor

Provides a full explanation of the metaphor/metonymy. Explanation is provided with a different metaphor.

4. Incorrect interpretation with a different metaphor

Provides an incorrect explanation of the metaphor/metonymy. Explanation is provided with a different metaphor.

5. Literal interpretation

Provides an explanation depending on the similarity motivating the metaphor **OR** literal interpretation that can not explain the similarity

6. Incorrect interpretation

Provides a completely incorrect and irrelevant explanation of the metaphor/metonymy.

The evaluation scale with initials of each category and the codes used for them is given in Table 8 and Table 9:

Table 8: Evaluation scale

Score	C 1	PC 2	CDM 3	IDM 4	L 5	I 6
	✓	✓	✓	✓	✓	✓

Table 9: The codes for evaluation

⊕	C	Correct
	PC	Partially Correct
	CDM	Correct with a Different Metaphor
⊖	IDM	Incorrect with a Different Metaphor
	L	Literal
	I	Incorrect

3. Findings

A pilot study (so as to see the problems related to the instructions, expressions, and the format of the test) was conducted with twenty-five volunteered native speakers. After the evaluation of the pilot study, a revision of some of the figurative expressions and a stylistic change on the format (related to the bold and italic parts of the expressions) was done to improve the readability. Then, the test was presented to thirty native speakers of Turkish. The results were evaluated using the six-point scale above using Office Excel and tabulated simply with respect to their frequencies and percentages to the whole. For example, an answer coded as Correct (C) or 1 is an answer like this:

Türkiye'nin Harvardı – Türkiye'deki en iyi okul
Turkey's Harvard – The best school in Turkey.

Yanında bir tane Helga – Yanında bir Alman kadın.
He was with a Helga – He was with a German woman.

Dili dört şeritli otoban – Çok konuşuyor
Her tongue is a four lane motorway – She speaks too much.

An answer coded as Partially Correct (PC) or 2 is an answer like this:
Yanında bir tane Helga – Sarışın bir kadın
He was with a Helga – A blond woman

Otobanın hız şeridi – Hızlı ve olması gerektiğinden sabırsız
The fast lane of the motorway – They are fast and more impatient than they should be

Bayan organik – Hormon düşmanı
Miss Organic – Enemy of hormones

An answer coded as Correct with a Different Metaphor (CDM) or 3 is an answer like this:
Gönlü hızlı bir şelale – Şıpsevdi biridir.
His heart is a running waterfall –No English equivalent: Lit: plop loved: a phrase used for a person who falls in love easily.

Kakasını yapamayan bir çocuk – Ağzındaki baklayı çıkaramayan birisi
A child who can't poop – Being unable to spill the beans.

Kızın dili dört şeritli otoban – Hiç durmadan konuşan, laf ebesi
Her tongue is a four lane motorway – A person who talks continually, yapper.

An answer coded as Incorrect with a Different Metaphor (IDM) or 4 is an answer like this:
Bayan organik – Sınameki gibi
Miss Organic – Sluggish

Otobanın hızlı şeridi – Yoğun hisler besleyen ve kör edercesine seven
The fast lane of the motorway – Intense senses and to love blindingly

Kızın dili dört şeritli otoban – Ayşe hazır cevap, patavatsız
Her tongue is a four lane motorway – Ayşe is witty/quick on the trigger and a big mouth.

An answer coded as Literal (L) or 5 is an answer like this:
Ofisi çiçek bahçesi – Etrafında bir sürü çiçek var
His office is a flower garden – There are numerous flowers around him.

Taksim meydanı – Taksim gibi
Taksim square – Like Taksim

Mercedesle evlendi – Hiç inmiyor Mercedes'ten.
Married Mercedes –She does not get off the Mercedes.

An answer coded as Incorrect (I) or 6 is an answer like this:
Bayan organik – Başkalarının beslenme alışkanlıklarının dışına çıkanlar eleştiriye maruz kalırlar.
Miss Organic – The ones who do not follow others nutrition habits are exposed to criticism.

Bayan organik – Sebze, meyvenin iyisini seçtiğini sanan
Miss Organic –The one who supposes that she picks the best of fruits and vegetables

Otobanın hızlı şeridi – Birlikte gitmedikleri yer kalmadı.
The fast lane of the motorway– They went everywhere together.

When the findings are evaluated in general, it is seen that more than half of the expressions are correct. Answers coded with Correct (C), Partially Correct (PC) and Correct with a Different Metaphor(CDM) constitutes 78.4 % of the whole. Table 10 shows the frequencies of the *overall* answers:

Table 10: Overall answers

		Numbers		Percentages	
⊕	C	234		52.0	78.4 %
	PC	77		17.1	
	CDM	42		9.3	
⊖	IDM	12		2.7	20.6 %
	L	32		7.1	
	I	53		11.8	
TOTAL		450		100	

According to the findings the participants gave Correct (C) definitions while interpreting non-literal expressions with 52%. 9.3% of the correct definitions are explained through using another metaphor. As shown in Table 10, Partially Correct answers where the participants have access to only the Source or the Target concepts or to a related concept has a total of 17.1%. The proportions of incorrect explanations are rather low with 11.8%. These findings show that the contextual clues are helpful for the participants in their interpretation.

When the findings are analyzed taking into account the *gender* variable, no meaningful difference between male and female participants are observed. Table 11 shows the frequencies of the answers according to the *gender*:

Table 11: Gender variable

		Numbers		Percentages	
		Male	Female	Male	Female
⊕	C	123	111	54.7	49.3
	PC	32	45	14.2	20.0
	CDM	26	16	11.6	7.1
⊖	IDM	6	6	2.7	2.7
	L	17	15	7.6	6.7
	I	21	32	9.3	14.2
TOTAL		225	225	100	100

Although there is no meaningful difference in terms of gender, it can be seen that male participants are more successful in interpreting no literal language with 54.7%, compared to 49.3%. Females have a tendency to give partially correct definitions (20%) when compared to males (14.2%) where male participants have a tendency to give the correct answer with a different metaphor (11.6%) as shown in Table 11. Incorrect definition with another metaphor (IDM) and literal definition (L) scores are almost equal. Thus, gender does have a slight role in non literal language interpretation in our study group. This brings the question that whether the same situation is valid for all types of non literal expressions. When the findings are analyzed in terms of the *age* variable, age group 30-39, which can be named as “older adults” makes a difference. Table 12 shows the frequencies of the answers according to the *age*:

Table 12: Age variable

		Numbers			Percentages		
		20 - 29	30 - 39	40+	20 - 29	30 - 39	40+
⊕	C	66	122	46	44.0	58.1	51.1
	PC	39	30	8	26.0	14.3	8.9
	CDM	10	23	9	6.7	11.0	10.0
⊖	IDM	4	6	2	2.7	2.8	2.2
	L	9	12	11	6.0	5.7	12.2
	I	22	17	14	14.6	8.1	15.6
TOTAL		150	210	90	100	100	100

As shown in the Table 12, the proportion of correct (C) answers of age group 30-39 with 58.1% is notable. Moreover, this age group has a tendency to give the correct answer with a different metaphor (11.00%) when compared to other groups. There is no significant difference between age groups in incorrect answers such as IDM, L and I.

When the answers are grouped with respect to the type of the no literal expressions, the following results are found regarding *gender* and *age* variables. Table 13 shows the frequencies according to the types of non-literal expressions in terms of gender:

Table 13: The types of no literal expressions and gender

			Numbers		Percentages	
			Male	Female	Male	Female
Metaphor	⊕	C	34	27	15.1	12.0
		PC	9	15	4.0	6.7
		CDM	12	8	5.3	3.6
	⊖	IDM	0	5	0.0	2.2
		L	9	4	4.0	1.8
		I	11	16	4.9	7.1
Metonymy	⊕	C	50	41	22.2	18.2
		PC	5	13	2.2	5.8
		CDM	8	3	3.6	1.3
	⊖	IDM	2	1	0.9	0.4
		L	5	7	2.2	3.1
		I	5	10	2.2	4.4
Humour	⊕	C	39	43	17.3	19.1
		PC	18	17	8.0	7.6
		CDM	6	5	2.7	2.2
	⊖	IDM	4	0	1.8	0.0
		L	3	4	1.3	1.8
		I	5	6	2.2	2.7
TOTAL			225	225	100	100

Metaphor as known well, is conceptualizing one domain (Target domain) in terms of another conceptual domain (Source domain). Thus in interpretation of a metaphor, the comprehension of Target and Source concepts is important. One important finding of the study is that both male (15.1%) and female (12.0%) participants are less successful in Correct (C) interpretation of metaphorical expressions when compared to other no literal expressions in the test such as metonymy and humor. The proportion of incorrect definition (I) is also the highest in both male (4.9) and female (7.1) participants. As for gender, male participants seem to be more successful than female participants in interpreting metaphorical expressions are. One important difference between different genders is the tendency of male participants in giving the literal definition of metaphoric expressions is higher than females. This shows that contextual clues are used less efficiently by males in the interpretation of metaphoric expressions.

When the findings of metonymy related questions (which require a conceptual mapping within one domain) are considered, both male (22.2%) and female (18.2%) participants are more successful compared to metaphorical ones. Male participants not only seem to be more successful than female participants in the interpretation of metonymic expressions are they also have a tendency to give correct answers through using a metaphor. As for humor, both groups seem to have similar scores. Female participants seem to be a little more successful in the interpretation of humor. Table 14 shows the frequencies of the answers according to the types of non-literal expressions, grouped in terms of the age:

Table 14: Type of non literal expressions and age

			Numbers			Percentages		
			20 - 29	30 - 39	40+	20 - 29	30 - 39	40+
Metaphor	⊕	C	14	32	15	9.3	15.2	16.7
		PC	11	11	2	7.3	5.2	2.2
		CDM	5	13	2	3.3	6.2	2.2
	⊖	IDM	3	1	1	2.0	0.5	1.1
		L	4	5	4	2.7	2.4	4.4
		I	13	8	6	8.7	3.8	6.7
Metonymy	⊕	C	29	47	15	19.3	22.4	16.7
		PC	12	3	3	8.0	1.4	3.3
		CDM	1	6	4	0.7	2.9	4.4
	⊖	IDM	1	2	0	0.7	1.0	0.0
		L	3	6	3	2.0	2.9	3.3
		I	4	6	5	2.7	2.9	5.6
Humour	⊕	C	23	43	16	15.3	20.5	17.8
		PC	16	16	3	10.7	7.6	3.3
		CDM	4	4	3	2.7	1.9	3.3
	⊖	IDM	0	3	1	0.0	1.4	1.1
		L	2	1	4	1.3	0.5	4.4
		I	5	3	3	3.3	1.4	3.3
TOTAL			150	210	90	100	100	100

When the results are analyzed in general we can observe that age group 40+ is more successful in interpreting the metaphor (16.7%) while the age group 30-39 (22.4%) is more successful in interpreting metonymy. However, since number of the participants is very low in age group 40+ this group will not be taken as a variable in the interpretation of non literal expressions in terms of age. So, when groups 20-29 and 30-39 are compared it is observed that age group 30-39 is more successful in giving correct definitions (C) in all types of non literal expressions. This clearly shows that even though the test is applied only to adults, an *age effect* in non literal language comprehension does exist. Older adults seem to have better access to target and source concepts in non literal expressions than younger adults. This initial study was conducted with 30 academicians (15 males, 15 females) in nearly different age groups (23 and over). Since the background and age groups of the participants are close, similar results from different groups will not be surprising. However, different results and different ways of interpretation in terms of gender, age groups, and the type of non literal expressions show us that the study must be extended with changes on each variable.

Conclusion

This study aimed to contribute to reveal the non-literal meaning comprehension literature with evidence from Turkish native speakers of different genders and age groups with a designed simple non-literal meaning comprehension test and a six-point measuring scale. With this purpose in mind, the first section is devoted to a comprehensive and overall review of the related literature, the second section introduces the data collection and data analysis procedures of the study, and the third section presents the findings. The overall results of the study show that the participants are successful in the interpretation of non literal expressions. This also brings out the question of a possible difference between age groups and gender. The results show slight differences between the groups when gender and age variables are considered. This indicates that the participants used *before* and *after* sentences in the test as functional contextual clues in the interpretation of non literal expressions. When the results are compared in terms of the type of the non literal expressions, differences in the strategies used to define are observed between genders. Moreover, the participants did not have any difficulty in the interpretation of metonymic expressions when compared to metaphorical expressions. The reason for this can be the nature of the metaphorical and metonymic expressions themselves. Metonymic expressions in which conceptual mapping is operated within one domain seem to be easier to access for the interpreter. Apart from this, the participants were also successful in interpreting humorous expressions which are motivated by metonymies.

Therefore, similar to the other studies (Zhou, 2009; Lemaire and Bianco, 2013; Kara, 2015), the current study once more emphasizes that contextual clues have been helpful in the interpretation of the non-literal meaning. To test this, further studies maybe conducted with subjects given different kinds of contextual clues or with others given none. Lastly, the difference between the ages groups (20-29) and (30-39) has brought our attention to the *age* as an important variable which improves the non-literal meaning interpretation parallel to it. Further studies may be conducted with changes on different variables, the measuring scale, and linguistic features of the test items.

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