

THE TIME COURSE OF MEANING ACTIVATION IN JOKES: BILINGUALS VS. MONOLINGUALS

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ÖZET

Mizahın evrenselliği, insan zihnindeki bilişsel süreçleri açıklamaya çalışan fazlaca çalışmanın çıkış noktası olmuştur. İkidilliler ve tekdillilerde dil edinim süreci, dolayısıyla da mizah tümcelerinin kavranması farklılık göstermektedir. Bu farklılık, dilbilimcilerin ve psikologların çalışma konusu olmuştur. Mevcut çalışma, ikidillilerde ve tekdillilerde tek tümcelik fıkraların işlenmesindeki farklılıkları ele almaktadır. Mizah işlemenin, metindeki dil öğelerini ansiklopedik bilgi ile birleştirmeyi şart koştuğu göz önünde bulundurulursa, iki dillilerin zihinlerinde kavramsal örgütlenmenin nasıl şekillendiğine dair bir fikri mizah tümcelerinden edinebiliriz. Bu doğrultuda, iki grubun tek cümlelik fıkraları ve mizah içermeyen benzerlerini okurken göz hareketlerinden alınan veri; hedef noktaya yapılan sabitleme sayısı ve toplam sabitleme süresi dikkate alınarak çözümlenmiştir. Sonuç olarak, ikidillilerin hedef noktaya daha uzun ve fazla sayıda sabitleme yaptığı tespit edilmiştir. Bu bulgular ışığında, ikidillilerin sözcük ve kavram belleği arasındaki bağlantının, tekdillilerinkinden farklı olabileceği yorumuna ulaşılmıştır.

Anahtar sözcükler: ikidillilik; mizah tümcelerinin kavranması; göz izleme; sözcük ve kavram belleği.

ABSTRACT

Universality of humor has led to many studies aiming to explain the cognitive processes in the human mind. The acquisition processes of bilinguals and monolinguals differ, therefore it is common to observe differences in their cognitive structure, in terms of joke comprehension. It has been a matter of interest for linguists and psychologists how these differences vary in humor comprehension, which has always been a complex phenomenon. The present study investigates the differences between bilinguals and monolinguals while they process one-liners. Jokes can provide insight into how conceptual organization is shaped in bilingual's mind, since joke processing involves combining linguistic elements in text with encyclopedic knowledge. To achieve this aim, eye movements of two different groups were analyzed while they were reading one-liner jokes and their non-joke counterparts. The analysis was carried out via fixation count and total fixation duration on punchlines. It has been observed, when the two groups are compared, that the bilinguals fixated longer on the punchlines and made more fixations than

monolinguals and that bilinguals needed more cognitive resources in order to comprehend the jokes, suggesting that a bilingual's lexical-conceptual store link may be different from that of a monolingual's.

Keywords: *bilingualism; joke comprehension; eye-tracking; lexical and conceptual store.*

1. INTRODUCTION

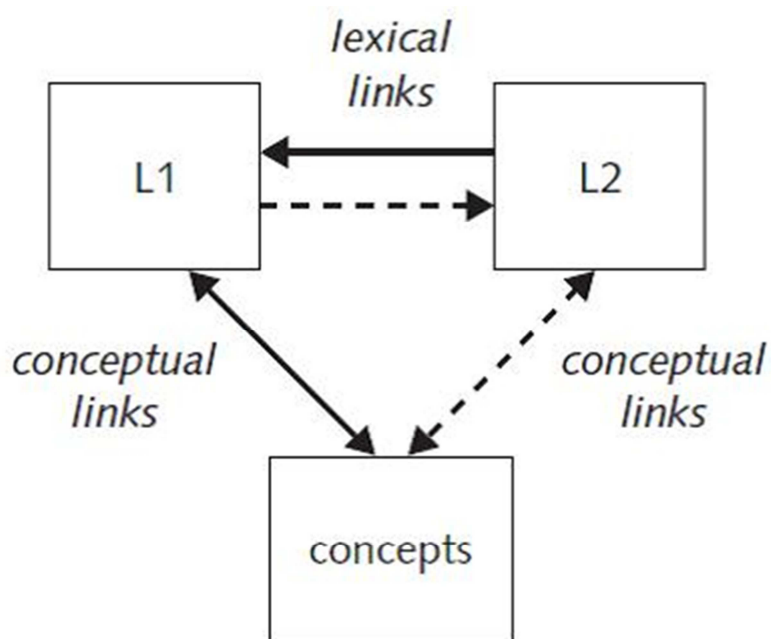
Most of the studies examine language processing with monolinguals. However, that number is low when it comes to language processing in bilinguals. In bilingualism, theoretical models in terms of bilingual competence, language development and processing are less well-developed, conceptual notions and definitions show a great deal of variability, specific methodological considerations have to be taken into account (Grosjean, 2004). These problems show that the field needs more empirical evidence in order to account for the cognitive processes in bilinguals. Since the number of studies about bilingualism is limited, there is not a consensus about some topics, such as word recognition, sentence parsing, semantic representations of words and bilingual memory in general. Furthermore, studies in bilingual research generally targeted the processing of single words (lexically ambiguous words, dimensions, such as frequency and concreteness, etc.). Little research has focused on pragmatically influenced concepts/how cultural knowledge (with the help of scripts/frames) shapes conceptual organization in bilingual memory (Vaid, 2000). At this point, humor can give insight into how conceptual organization is shaped in bilingual's mind since humor processing involves combining linguistic elements in the text with the encyclopedic knowledge. With these in mind, humor perception can offer a window into the bilingual cognitive processes. Since jokes require a disambiguation process with the help of lexemes and a relation between concepts, they can also be used to understand bilinguals' lexicon and conceptual links. As Navracics (2007) puts it, "when studying the semantic representation of bilinguals, the structure of the bilingual mental lexicon and the connections of language, thought and culture must also be taken into consideration" (p. 17). There are some models that have aimed to account for how bilinguals cope with the words and they proposed different points of views about word recognition.

1.1. Models of the bilingual lexicon

There have been three assumptions made by researchers and these assumptions focus on different aspects of lexical processing. *The Bilingual Interaction Activation model* (Dijkstra and Van Heuven, 1998) proposes that the orthography of the written languages could be shared, and bilingual readers/listeners can use orthographic clues that some words have in common while they process the words. The model makes the assumption that when a reader sees words in one language, he/she also activates lexical form relatives of these words in the target and non-target language. The second model is *the Distributed Feature Model* (Altarriba, 1990; Costa, Miozzo, and Caramazza, 1999) which considers the notion of shared semantics. Research suggests that words in each language access and use conceptual representations that are common to both languages. However, the first model does not say anything about the nature of semantics and the second model does not make any claims about the lexical representation of words. These models, therefore, do not provide any answer to the question: how do lexical form and meaning interact during

word recognition (Kroll and Dussias, 2004)? Only few bilinguals are balanced across languages, in majority of bilinguals, one language is always more dominant than the other. Using this fact, *the Revised Hierarchical Model* (Kroll and Steward, 1994), the third assumption, proposes a model that aims to account for the connections between words and concepts across languages.

Figure 1: The Revised Hierarchical Model (adapted from Kroll and Steward, 1994)



According to this model, there are two types of links: strong and weak. Strong links are the ones that directly and automatically reach its target, in the Figure 2, the links from L1 to concepts and from L2 to L1 are strong while the links from L1 to L2 and L2 to concepts are weak links. This model proposes that the conceptual store is connected to both L1 and L2 lexicons. However, a bilingual will have difficulty in transferring lexical forms in his/her second language to concepts since the connections between the L2 lexicon and the conceptual store are weak. Therefore, this bilingual's L1 is more strongly and directly connected to conceptual store than the subject's L2.

Since joke comprehension involves combining lexical forms with the meanings, the study also aims to gain insight into the conceptual organization in bilingual mind. Although there are some studies examining humor and figurative language understanding in L2, they are generally limited to pedagogical purposes (Johnson and Rosano, 1993; Tamaoka and Takahashi, 1994) or they investigate the cultural differences across languages (Reyna and Herrera-Sobek, 1998; Vaid, 2006). Surprisingly, there is little evidence when it comes to humor processing across languages (Vaid et al., 2004). Vaid also (2000, p. 29) proposes some questions to be addressed in order to understand bilingual humor and figurative language processing.

1.2. Overview of script/frame based linguistic and psychological humor theories

What most of the psychological humor theories lacked until the Semantic Script Theory of Humor (Hereafter, the SSTH) is a systematic and theoretical approach. In Ritchie's (2004) words, "the SSTH/GTVH is also one of the few attempts to approach verbally expressed humor in a systematic and theoretical fashion, and as such is to be welcomed" (p. 69). General aim of the SSTH is to form information-processing system which is able to account for the humorousness of a text. For the SSTH, the central aspect of verbal humor was semantic/pragmatic and it explains the funniness of a joke with scripts or frames defined as "an organized complex of information about some entity, in the broadest sense: an object (real or imaginary), an event, an action, a quality, etc." (Attardo, 2001, p. 2). In Raskin's (1985) own words, it is "a large chunk of semantic information surrounding the word or evoked by it" (p. 81).

According to the SSTH, a text can be characterized as a single-joke-carrying text if both of the following conditions are satisfied:

- a) The text is compatible, fully or in part, with two different scripts,
- b) The two scripts with which the text is compatible are opposite (...) (Raskin, 1985: 99).

Attardo and Raskin (1991) revised the SSTH and extended it into GTVH. GTVH has been further extended by Attardo (1997, 2001) to analyze not only jokes but also narratives, standup or longer humorous texts. Attardo (2001) claims that "whereas the SSTH was a semantic theory of humor, the GTVH is a linguistic theory at large-that is, it includes other areas of linguistics as well, including, most notably, textual linguistics, the theory of narrativity, and pragmatics broadly conceived" (p. 22). The extension has been made with six 'knowledge resources', shortly KR's which are the script opposition (SO) - known from the SSTH, the logical mechanism (LM), the target (TA), the narrative strategy (NS), the language (LA) and the situation (SI). Table below summarizes the KR's. For more detailed explanations and some logical mechanisms examples that can be seen in jokes, see Attardo (1997) and Attardo et al. (2002).

Lastly, Space Structuring Model proposed by Coulson (2001) involves frame shifting, i.e., linguistic and non-linguistic elements make the retrieval of frames from long-term memory and these retrieved frames are used, exploited and evaluated in order to construct the cognitive models in the message-level representation (Coulson, 2001). Coulson et al. (2006, p. 232) uses a joke to explain the cognitive processes and the frame shifting observed in the reader:

"When I asked the bartender for something cold and full of rum, he recommended his wife."

Upon reading the first part of the sentence, the reader expects to hear some kind of recommendation and as in the SSTH and GTVH, his/her expectations are shaped. However, after the reader processes the sentence, he/she needs to retrieve some other information from the long-term memory, and frame shifting occurs.

These theories explain humor comprehension with the help of scripts (chunk of information evoked by a word), so forming a relation between words and concepts plays a crucial role in understanding jokes. The present study aims to shed light on this aspect of humor comprehension and asks "How do bilinguals, in the case of jokes, transfer scripts that they form via words to their conceptual stores?".

2. THE PRESENT STUDY

The present study empirically tested whether knowing two languages had any effect on joke comprehension. Therefore, the aim of the present study is to gain insight into bilinguals' memory representation by comparing them with monolinguals'. To this end, the study monitored the eye movements of bilinguals and monolinguals to examine how jokes could give clues about bilinguals' comprehension and conceptual organization.

2.1. Methods

2.1.1. Participants

12 Turkish-German and Turkish-French early bilinguals (They reported that they learned both languages before 6.) and 12 Turkish speaking monolinguals. Turkish is the second language for bilinguals since they reported that their dominant languages were German and French.

2.1.2. Materials and design

Experimental materials were 10 one-liner jokes, 10 non-jokes and 10 filler sentences. All jokes had their punchline at the end and non-joke sentences were formed by replacing the core word causing the joke with a random word in an appropriate syntactical form fitting into the context. Two lists of stimuli were created in order to prevent the participants from reading both the joke and its non-joke counterpart.

Küçükken bana yaramaz diyorlardı, artık büyüdüüm ve yarabiliyorum (one-liner joke).

Küçükken bana yaramaz diyorlardı, artık büyüdüüm ve uslandım (non-joke control).

Yeni taşındığım semtteki insanlar gerçekten çok yardımseverler (filler sentence).

In this joke sentence which can be roughly translated as 'They told me I was naughty when I was little, now I'm grown and I can split' the joke is caused by the words *yaramaz* which is an adjective meaning *naughty* and *yarmak* a verb which means 'to split' or 'to slit'. In the first sentence, when the reader encounters the word *yaramaz*, he/she is most likely to activate the adjective meaning of the word. However, in the second part, this word is used as the verb *yar-mak* (to split/slit) causing an ambiguity and making the reader leave the first interpretation of the word, in this case, the adjective meaning of the word.

2.1.3. Apparatus

Tobii T120 Eye Tracker™ monitor and *Tobii Studio 2 Enterprise Recording Edition™* software program were used as the main data-collection instrument. *Tobii T120™* is a screen-based eye tracker which enables researchers to conduct on-screen eye tracking studies. It is integrated in a 17-inch monitor that is non-invasive infra-red, and it collects various quantitative gaze data during the test.

2.1.4. Procedure

Participants were tested individually. On entering the lab, the participants in each group were seated behind the table mounted eye-tracker. They followed the instruction on the screen for eye position and

calibration. There were no limitations about timing, so they were told that when they comprehended the sentences, they could push the *space* button. Each sentence was followed by a yes/no comprehension question in order to make sure that the participants understood the sentences. For the data analysis, *Studio 2 Enterprise Recording Edition™* software was used to determine the areas of interest and to measure total fixation duration and fixation count. An example of reading patterns on a joke sentence can be seen in Figure 2.

Figure 2: Measuring Total Fixation Duration And Fixation Count In An Area Of Interest



The box is the area of interest, and it includes the punchline of the joke. Total fixation duration is the sum of all fixations including regressions and re-fixations in the area of interest. Fixation count is the number of fixations that are made in the area of interest. In Figure 2, fixations numbered between 12 and 20 are inside the area of interest which means that there are 8 fixations, and total fixation duration is the sum of all these 8 fixations in milliseconds or seconds.

In short, the study had sentence type and group type as variables and the statistical analysis was carried out accordingly. In order to determine whether the findings were statistically significant, the study used 2x2 mixed factorial design with factors sentence type (jokes/non-jokes), and group type (monolingual/bilingual).

3. FINDINGS

The findings demonstrate a strong monolingual advantage over bilinguals and non-joke advantage over jokes (see Table 1). Bilinguals spent more time processing the punchlines than monolinguals, and the number of fixations they made was reliably more than the number of fixations monolinguals made. Similarly, participants needed more time to process jokes, and they made more fixations while reading one-liners.

Table 1: Findings of the Study

	Joke				Non-Joke			
	Total	Fixation	Fixation	Count	Total	Fixation	Fixation	Count

	Duration (sum)	(sum)	Duration (sum)	(sum)
Monolinguals	45.1 seconds	234	35.65 seconds	176
Bilinguals	74.6 seconds	346	49.16 seconds	245

These findings were then compared to determine whether there were significant differences across the subjects, and ANOVA results revealed a significant effect of group type both for total fixation duration [$F(1,22)= 8.169, p < 0.009$] and fixation count [$F(1,22)= 7.611, p < 0.011$]. When it comes to the differences between jokes and non-jokes, the results gave a significant difference for total fixation duration [$F(1,22)= 6.809, p < 0.01$], however, there was no significant effect of fixation count.

To summarize, the results demonstrated that bilinguals had more difficulty in processing jokes than monolinguals, and they made more backward movements and extra fixations in order to comprehend the one-liners. Secondly, for the sentence type, although there was no significant effect in terms of fixation count, results revealed a significant effect of total fixation duration. This meant that in order to resolve the jokes, participants, when they encountered the opposed script, needed to look longer at the switch-script trigger (SSTH), which is a textual element in many jokes functioning as a transition between one script and another, and making the second “more plausible and less non-actual, abnormal or impossible” (Raskin 1985, p. 115).

4. DISCUSSION AND CONCLUSION

There are cases where proficient bilinguals are able to code switch in a systematic way and understand and speak in each language nearly perfectly. This might suggest that these bilinguals have highly developed skills for negotiating cross-language competition (Costa, 2004). In word recognition, it appears that although lexical forms differ across languages, there are still cross-language interactions that suggest that even if there are some distinctive cues, there will still be activity in the non-target language (Kroll and Dussias, 2006). This cross-language interaction, in the case of word recognition, caused bilinguals to encounter a competition from their alternative lexical candidates.

Although the participants were early bilinguals, their dominant language was not Turkish, this explains why they spent longer time on the punchlines. Bilinguals’ longer fixation duration on the punchlines could be due to extra time they needed while transferring the words they recognized to their more dominant language (MDL) and from there, to their conceptual stores. Unlike monolinguals whose lexical stores are said to be directly linked to their conceptual stores, bilinguals required two stages: lexical information flow from less dominant language (LDL) to more dominant language and a matching process from MDL to conceptual store. The results are consistent with Kroll and Steward’s (1994) Revised Hierarchical Model and Heredia’s (1996) Second Revision (R-2) Hierarchical Model, which uses the terms more dominant language (MDL) and less dominant language (LDL) instead of L1 and L2. In many cases, L2 becomes more dominant than the earlier acquired L1. In this way, MDL has a stronger and more direct connection to the conceptual store regardless of whether it is L1 or L2. Since the participants’

MDL was not Turkish, their connection was weaker than the other language. One way to understand to what extent this model is right is to test these participants' processing time after a couple of years when Turkish become 'more' MDL. More fixation counts on the punchlines similarly explain the process. Until the bilinguals finished the transferring, they needed to fixate repeatedly. Most of the fixations observed were the results of literally re-visiting the earlier parts of the sentences and then fixating on the punch-line again as if the readers would want to look for clues for the joke meanings of the sentences in the previous parts. A reason for looking for clues via backward movements and additional fixations could help bilinguals form a relation between their LDL and conceptual stores.

Apart from these models, which only cover only some aspects of meaning construction in bilingual mind, one can argue that bilinguals' slower processing is due to the suppression skills. To put it in brief, suppression is a cognitive mechanism which attenuates the interference caused by activation of unnecessary or inappropriate information (Gernsbacher and Robertson, 1999). A reader or listener needs to activate a number of meanings and deal with these competing meanings when he/she tries to comprehend the words and phrases in a sentence. In a sentence, such as he went to the bank to draw some money or he went to the bank to catch some fish, the reader or listener activates both meanings of the word bank; however, having read the whole sentence, he/she suppresses the extra meaning with the support of context, which is, in the former sentence, draw some money and in the latter catch some fish. Suppression ability plays a crucial role in the understanding of metaphors, idioms, and proverbs. Therefore, bilinguals' longer fixation duration and higher number of fixation count could be related to the suppression skills. Bilinguals needed more time to process the sentences since they could not reach to the intended meanings of the joke sentences as quickly as monolinguals. Bilinguals were less skillful in rejecting the meaning formed via the first script after they encountered the incongruous script. Having activated the adjective meaning of the word yaramaz in the one-liner above, bilinguals had difficulty suppressing this meaning upon activation the second meaning (joke meaning) of the word causing more fixations and longer fixation duration on the punchline in order to successfully suppress the unnecessary adjective meaning. Less proficient second language users were less able to suppress the irrelevant meaning of jokes.

As for joke and non-joke processing, results showed that jokes caused more processing difficulty than their controls for both bilinguals and monolinguals. These results are consistent with Coulson et al. (2006) who also compared one-liners with their controls. The findings also showed that bilinguals processed non-joke controls faster than one-liners, and they were slower than monolinguals in non-joke comprehension. The first part discussed some possible reasons for slower joke processing for bilinguals. In both sentence types (jokes vs. non-jokes), bilinguals had to match the lexical forms with their conceptual stores. However, they reached their conceptual stores easier while they were reading non-joke controls since the meaning can be retrieved from the context without having to find a new opposed script from their long term memory.

Lastly, it is worth reminding that some of the one-liner jokes used as items have component words with the same lexical orthography, as in "İkinci bir emre kadar, birinci Emre de idare eder." which could be translated as 'Until the second order, the first Emre could be enough.' Obviously, the joke is caused by

the word 'emre', which is both a proper noun, actually the first name of Emre Belözoğlu, a famous footballer playing for Turkish National Football Team and it also means '(until) order'. Having the same lexical orthography, the word emre may be claimed to have caused the longer fixation time by the bilingual participants. In the same vein, Segui (1991) indicates that a word may play the role of a stimulator not only due to its location in memory, but also because of its closeness to neighbour words in the context of orthographic interlanguage. To measure this factor, a further study having the words with the same lexical orthographies needs to be carried out.

In summary, the study aimed to account for the cognitive process in bilinguals by examining their eye-movements while they were reading one-liners and their controls, and then compared them with monolinguals in order to gain insight into bilinguals' conceptual structures with the help of scripts. The results indicated that the relation between lexical forms and conceptual store in bilingual mind is consistent with the RHM (Kroll and Steward, 1994).

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APPENDIX

One-liners

Sigaranın zararları hakkında o kadar çok şey okudu ki en sonunda okumayı bıraktı.

Barmenden soğuk bir şey istediğimde bana karısını önerdi.

2 aydır kanal tedavisi gören Sanem Gülçen (28), tüm müdahalelere rağmen yine Flash TV'yi açtı.

Küçükken bana yaramaz diyorlardı, artık büyüdüm ve yarabiliyorum.

Bu aşk yalanmış, yalanmamış bir aşk istiyorum.

Sen hep kolayı seçersin zaten, asıl önemli olan fantayı seçmek.

İki şey yıkar insanı; biri sabun, biri su.

22 yıldır babasını görmeyen Selda Şar, katarakt ameliyatı oldu.

İkinci bir emre kadar, birinci Emre de idare eder.

Bir insan yedisinde neyse yetmişinde de neydir.

Controls

Sigaranın zararları hakkında o kadar çok şey okudu ki en sonunda sigarayı bıraktı.

Barmenden soğuk bir şey istediğimde bana bir bira önerdi.

2 aydır kanal tedavisi gören Sanem Gülçen (28), tüm müdahalelere rağmen yine diş sorunu yaşadı.

Küçükken bana yaramaz diyorlardı, artık büyüdüm ve uslandım.

Bu aşk yalanmış, gerçek bir aşk istiyorum.

Sen hep kolayı seçersin zaten, asıl önemli olan zoru seçmek.

İki şey yıkar insanı; biri gurur, biri kibir.

22 yıldır babasını görmeyen Selda Şar, sonunda babasına kavuştu.

İkinci bir emre kadar, birinci emir uygulanacaktır.

Bir insan yedisinde neyse yetmişinde de odur.

Fillers

Bu dizinin en kötü yanı sezon finalinden sonra yaşattığı aylar süren boşluk.

Ev işi yaparken genelde müzik dinlemeyi tercih ederdi.

NASA, Güneş Sistemi'nin dışında Dünya'ya benzeyen yaşanabilir yeni bir gezegen keşfetti.

Ucuz milliyetçiliğin kurbanı olan birçok sanatçı tanıyorum.

İnsanlar sahip olduklarıyla asla yetinmezler.

Yeni taşındığım semtteki insanlar gerçekten çok yardımseverler.

Uzun yola çıkmaktan nefret ediyorum.

Zimbabve'de sıcak havalar yüzünden 77 filin telef olduğu bildirildi.

Müzik dinlemeden geçirdiğim günler çok azdır.

Bilgisayar kullanmayı kendi başıma öğrendim.

GENİŞ ÖZET

Psikolojik ve dilbilimsel sayılabilecek birçok çalışma, mizahın evrenselliğinden yola çıkarak insan zihnindeki bilişsel süreçleri açıklamaya çalışmıştır. Alandaki araştırmaların çoğu, tekdillilerde dil işleme üzerine iken, ikidillilerdeki bu süreci ele alan çalışmalara gelince bu sayını oldukça azaldığını görmekteyiz. İnsan zihninin karmaşıklığı göz önüne alındığında, gelecekte yapılacak araştırmalardan gelecek görgül verilere olan ihtiyaç öne çıkmaktadır.

Kavramların ve tanımlarının büyük çeşitlilik göstermesi ve hali hazırda modellerin ise aralarında fazlaca çelişkinin bulunması, ikidillilerle ilgili alanyazında öne çıkan bir sorunsal olarak durmaktadır. Konuyla ilgili olarak Grosjean (2004), yöntemsel olarak dikkat edilmesi gereken belli başlı noktalara dikkat çekmektedir. Ayrıca çalışmaların çoğu tek sözcük bazında yapılmış olup, kültürel bilginin ikidilli zihinde kavramsal örgütlenmeyi şemalar aracılığıyla nasıl şekillendirdiğini ele alan çalışmalar oldukça az yer kaplamaktadır (Vaid, 2000). İşte bu noktada mizah, kavramsal örgütlenmenin nasıl şekillendiği hakkında araştırmalarda iyi bir araç olabilir çünkü mizah işleme, metindeki dil öğelerini ansiklopedik bilgi ile birleştirme sürecini kapsamaktadır.

İkidillilerin zihinsel sözlüğünü ele alan modellerden, İkidilli Etkileşimsel Aktivasyon Modeli'ne (Dijkstra and Van Heuven, 1998) göre, bir okuyucu bir dildeki bir sözcüğü gördüğünde, hem o dilde hem de ikinci dilde olan ilgili sözcüksel biçimler etkin hale gelmektedir. İkinci bir model olan Dağılımlı Özellik Modeli (Altarriba, 1990; Costa, Miozzo, and Caramazza, 1999) ise paylaşımlı anlambilim düşüncesine dayalı olup, her iki dildeki sözcüklerin ortak kavramsal temsillere ulaşım, onları kullandığını öne sürmektedir. Bu modellerin ikisi de, sözcük tanıma esnasında anlamın ve sözcüksel biçimin nasıl etkileşime girdiğini açıklamakta yetersiz kalmaktadır (Kroll and Dussias, 2004).

Üçüncü olarak, Değişimli Sıradüzenli Model (Kroll and Steward, 1994) ise, diller arasında sözcük-kavram bağlantısını açıklamayı amaçlamaktadır. Bu modelin çıkış noktası ise, ikidillilerin çoğunun dillerinden birisinin baskın geldiği gerçeğidir. Mizah işlemenin, sözcüksel biçimlerin anlamlarla kaynaşmasını içerdiği için, çalışmamızın ikidilli zihinde kavramsal örgütlenmeye dair bir fikir verebileceği söylenebilir. Alanda önemli yer tutan ve diğer bir kuramın temelini oluşturan şema, "bir varlık hakkındaki bilgilerin örgütlenmiş tümleşimi, yani bir nesne (gerçek ya da imgesel), bir olgu, bir eylem, bir nitelik" (Attardo, 2001, s. 2) olarak tanımlanabilir. Raskin (1985) ise, aynı kavramı "söz konusu sözcüğü çevreleyen ve hatta o sözcük tarafından çağrıştırılan anlamsal bilgiler birleşimi" olarak açıklamaktadır. (s. 81). Şemalara dayandırılan mizah kuramlarından Anlamsal Şemalar Mizah Kuramı'na göre, bir metnin mizah tümcesi içeriyor sayılması için, iki şartı sağlaması gerekmektedir: İlk olarak, metnin iki farklı şemayla da tamamen ya da kısmen uyumlu olması; ikinci olarak ise, metnin uyumlu olduğu iki şemanın da zıt olması. Bu bağlamda araştırmamız, ikidillilerin oluşturduğu sözcüklerin, kavram depolarına nasıl aktarıldıklarını mizah tümceleri bazında sorgulamakta ve bu yönde bulgular sunmayı hedeflemiştir.

Araştırmada, ikidilli olmanın, mizah tümcelerinin işleme üzerinde bir etkisi olup olmayacağı ölçülmüştür. Çalışmanın amacı, ikidillilerin bellek temsilleri hakkında, tekdillilerinki ile karşılaştırmalı olarak, veri sağlamaktır. Bu doğrultuda, ikidillilerin (12 katılımcı) ve tekdillilerin (12 katılımcı) göz hareketleri

izlenerek, mizah tmcelerinin ikidillilerin kavrama becerileri ve kavramsal rgtlenmeleri hakkında ne tr bir bilgi verebileceęi incelenmiřtir. Sonu olarak, ikidillilerin hedef noktaya daha uzun ve fazla sayıda sabitleme yaptığı tespit edilmiřtir. Deęişimli Sıradzenli Model'i doęrular nitelikte olan bu bulgular ıřığında, ikidillilerin szck ve kavram belleęi arasındaki baęlantının, tekdillilerinkinden farklı olabileceęi yorumuna ulařılmıřtır. alıřmanın sınırlılıęı olarak ise, kullanılan mizah tmcelerinde szcksel ortografileri yakın bileřenlerden oluřtuęu gsterilebilir. İkidillilerin hedef noktaya daha fazla sabitleme yapmalarında, bu deęiřkenin etkisinin olabileceęi gz nnde bulundurulup, mevcut konunun bařka bir arařtırmada ele alınabileceęi belirtilmiřtir.