T.C.
Mersin Üniversitesi
Sosyal Bilimler Enstitüsü
İngiliz Dili ve Edebiyatı Ana Bilim Dalı

A DESCRIPTION OF THE VERB *GEL-* WITH SPECIAL REFERENCE TO PATTERN GRAMMAR

Umut Ufuk DEMİRHAN

YÜKSEK LİSANS TEZİ

Mersin, 2013

T.C.
Mersin Üniversitesi
Sosyal Bilimler Enstitüsü
İngiliz Dili ve Edebiyatı Ana Bilim Dalı

A DESCRIPTION OF THE VERB *GEL*- WITH SPECIAL REFERENCE TO PATTERN GRAMMAR

Umut Ufuk DEMİRHAN

Danışman
Prof. Dr. Yeşim AKSAN

YÜKSEK LİSANS TEZİ

Mersin, 2013

Tez Onay Sayfası

Mersin Üniversitesi, Sosyal Bilimler Enstitüsü Müdürlüğüne,

Umut Ufuk DEMİRHAN tarafından hazırlanan A Description of the Verb Gel- with Special Reference to Pattern Grammar başlıklı bu çalışma, jürimiz tarafından İngiliz Dili ve Edebiyatı Ana Bilim Dalında YÜKSEK LİSANS TEZİ olarak kabul edilmiştir.

Başarılı	Başarısız	
☒	☐	Üye Prof. Dr. Yeşim AKSAN (Danışman)
☒	☐	Üye Prof. Dr. Mustafa AKSAN
☒	☐	Üye Yrd.Doç. Dr. Elçin ESMER

Yukarıdaki imzaların, adı geçen öğretim elemanlarına ait olduklarını onaylarım.

Onay

25/06/2013

Prof. Dr. Nalan YETİM
Enstitü Müdürü

ACKNOWLEDGEMENTS

Apart from the efforts of me, the success of this thesis is largely based on the encouragement and guidelines of many others. I take this opportunity to express my gratitude to the people who have been helpful in successful completion of this project.

First of all, I wish to express my sincere gratitude to my supervisor Prof. Dr. Yeşim AKSAN who was abundantly helpful, and offered invaluable assistance, support and guidance and Prof. Dr. Mustafa AKSAN for providing me an opportunity to do my research on "A Description of the Verb *-gel* with Special Reference to Pattern Grammar".

The thesis also bears on imprint of many people. I sincerely thank to my colleague Ümit MERSİNLİ for his guidance and encouragement in carrying out this comprehensive work.

I also wish to express my gratitude to Gülsüm ATASOY who rendered her help during the period of my project work.

For their kind co-operation to the completion of my project work, last but not least, I wish to avail myself of this opportunity, express a sense of gratitude to Ass. Prof. Dr. Aygül UÇAR, Ass. Prof. Dr. Pınar İBE AKCAN, Ass. Prof. Dr. Demet GÜL, Ass. Prof. Dr. Filiz ÇETİNTAŞ YILDIRIM, Dr. Yılmaz YALDIR, Ins. Özlem Kurtoğlu, and Res. Ass. İpek YILDIZ.

This study is supported by Mersin University BAP (Grant No: BAP SOBE İDEB (UUD) 2012-1 YL).

ÖZET

Gel- Eyleminin Örüntü Dilbilgisi Bağlamında Betimlenmesi

Bu çalışmada, Türkçe'de sözvarlığı-dilbilgisi etkileşimi; derlem-temelli ve derlem-çıkışlı bir yöntemle, örüntü dilbilgisi yaklaşımı kullanılarak gösterilmiştir. Çalışmanın amacı, çokanlamlı *gel-* eyleminin birlikte kullanıldığı üye öbek yapılarını inceleyerek örüntülerini dökümlemek ve anlam-yapı düzenliliklerini ortaya koymaktır.

Giriş bölümünde, bilişimsel dilbilim alanında yapılan çalışmalar, bu çalışmaların içerisinde önemli bir yer tutan derlem dilbilim yaklaşımları özetlenmekte, evrensel anlamda ve Türkiye'de yaygın olarak kullanılan derlemler listelenmekte ve Türkçe için yapılmış derlem-temelli çalışmalar anlatılmaktadır.

Alanyazın bölümünde, genel anlamda örüntü dilbilgisi yaklaşımları tartışılmakta, ayrıca İngilizce için yapılan sözvarlığına dayalı dilbilim incelemeleri özetlenmektedir.

Yöntem bölümünde, bu çalışma için hazırlanan derlemin oluşturulma süreci sunulmaktadır. Türkçe Ulusal Derlemi (TUD) veritabanı metinleri ve dağılım ölçütleri korunarak, temsil gücü yüksek, dengeli dağılıma sahip, 10 milyon sözcükten oluşan, tümce sonu belirginleştirmesi yapılmış bir derlem elde edilmiştir.

Bulgular ve tartışma bölümünde ise, araştırmanın bulguları yer almaktadır. Sondan eklemeli bir dil olan Türkçe için örüntü dilbilgisi bağlamında betimlenmeye çalışılan *gel-* eyleminin sıklıkla eşdizimlilik oluşturduğu sözcüklerle ilgili genel bir inceleme yapılmıştır. Bu bağlamda, sıklık değeri en yüksek birleşik eylemler olan haline, hale, meydana, anlamına, gündeme *gel-* ikili birimleri, en sık çekimleriyle incelenmiştir.

Örneğin, haline gel- ikili biriminin derlemde karşılaşılan en sık çekimli biçimleri olan *haline gelmiştir, haline geldi, haline gelmektedir* incelenmiştir. Bu çalışmada, en sık kullanılan, gel- ile oluşmuş birleşik eylemlerin yapısal örüntüleri, olası bütün biçimsel görünümleriyle kapsamlı bir biçimde betimlenmiştir. Ayrıca yapı ve anlam arasında sıkı bir ilişki olduğu, anlam farklılıklarının yapıya duyarlı olduğu ve çeşitli anlam grupları açısından düzenlilik içerdiği ortaya konmuştur.

Sonuç bölümünde ise, genel bir özet ve değerlendirme yapılarak sonraki çalışmalar için öneriler sunulmuştur.

Anahtar Sözcükler: Örüntü dilbilgisi, birleşik eylem, eşdizimlilik, çok sözcüklü birimler, derlem dilbilim, Türkçe Ulusal Derlemi (TUD)

ABSTRACT

A Description of the Verb *Gel-* with Special Reference to Pattern Grammar

In this study, the interaction between lexis and grammar in Turkish is examined by using both corpus-based and corpus-driven pattern grammar methods. The aims of the study are twofold. The first one is to examine and present the phrasal realization of argument structures of the polysemous verb *gel-*, and the second is to show the regularities of meaning-structure interaction.

In the introduction, computational linguistics studies, especially the corpus linguistics studies, which have an important role in computational linguistics research are summarized and available corpora and studies conducted by using corpus-based methods in Turkish are presented.

The literature review section discusses pattern grammar approaches. Lexicon-based studies in English are also summarized in this part.

The methodology section covers the corpus building process of the study. By using Turkish National Corpus (TNC) texts and following balance criteria of it, a representative, balanced, and sentence-splitted 10-million-word corpus is created.

In findings and discussions section, the findings of the study are presented. Words that are frequently associated with the verb *gel-* (to come) are examined within the scope of Pattern Grammar. In this sense, the frequently used compound verbs *hale, haline, meydana, anlamına, gündeme gel-* are focus of investigation. For example, the most frequently used inflected forms *haline gelmiştir, haline geldi, haline gelmektedir* of the compound verb haline gel- are studied. In this study, the pattern structures of the

compound verbs formed with *gel-* are comprehensively described with their potential morphological structures. In addition, the strong association between structure and meaning are presented, and for various meaning groups, the structures seem to be regularly associated with each other.

The conclusion section gives a general overview of the study, and presents suggestions for further studies.

Keywords: Pattern grammar, compound verb, collocation, multiword units, corpus linguistics, Turkish National Corpus (TNC)

CONTENTS

ABBREVIATIONS

TAG	Part-of-Speech
N	Noun
A	Adjective
PN	Pronoun
NP	Proper Name
AB	Abbreviation
AV	Adverb
PP	Postposition
DET	Determiner
NU	Number
ON	Onomatopoeia
CL	Clitics
V	Verb
CJ	Conjunction
IJ	Interjection
Q	Question
FR	Foreign Words
ER	Spelling Error

pl	number/person	lAr
bfi	buffer phoneme	I
bfn	buffer phoneme	n
bfy	buffer phoneme	(y)
bfs	buffer phoneme	(s)
bfsh	buffer phoneme	(ş)
nom	case	NOMINATIVE
acc	case	I
gen	case	In[GEN]
dat	case	A[DAT]
loc	case	DA[LOC]
abl	case	DAn[ABL]
ins	case	ile
c1s	person_copula	Im[1Psn]
c1p	person_copula	Iz[1Ppl]
c2s	person_copula	sIn[2Psn]
c2p	person_copula	sInIz[2Ppl]
c3s	person_copula	
c3p	person_copula	lAr[3Ppl]
p1s	possessive	m[Poss]
p1p	possessive	mIz[Poss]

p2s	possessive	n
p2p	possessive	nIz[Poss]
p3s	possessive	I
p3p	possessive	lArI
Vi	verb	i
cop	copula	DIr
past	copula	DI[Past]
perf	copula	mIş[Perf]
1s	person	m[1Psn]
2s	person	n[2Psn]
1p	person	k[1Ppl]
2p	person	nIz[2Ppl]
3s	person	[3Psn]
3p	person	lAr[3Ppl]
2p	person	sInIz[2Ppl]
2s	person	sIn[2Psn]
1p	person	Iz[1Ppl]
1s	person	Im[1Psn]
nz1	nominal	mAk_NN
pc1	nominal	AcAk_NN
nz2	nominal	mA_NN
pc2	nominal	DIk_NN
pc3	adjectival	An_AJ
kiA	adjectival	ki_AJ
kiP	pronominal	ki_PN
AV13	adverbial	cA_AV
AV12	adverbial	cAsInA_AV
AV10	adverbial	ken_AV
AV11	adverbial	sA_AV
bfy	buffer phoneme	(y)
bfi	buffer phoneme	(I)
bfa	buffer phoneme	A
iprf	imperfective	yor
Va1	auxiliary verb	bil
Va2	auxiliary verb	ver
Va3	auxiliary verb	dur
Va4	auxiliary verb	gel
Va5	auxiliary verb	gör
Va6	auxiliary verb	yaz
Va7	auxiliary verb	kal
Va8	auxiliary verb	koy
imp1	imperative	AyIm[IMP]

imp2	imperative	sIn[IMP]
imp3	imperative	AlIm[IMP]
imp4	imperative	In(Iz)[IMP]
imp5	imperative	sInlAr[IMP]
neg	negative	mA
1p	person	ik[1Ppl]
1p	person	k[1Ppl]
1p	person	(I)z[1Ppl]
1s	person	(I)m[1Psn]
2p	person	nIz[2Ppl]
2p	person	sInIz[2Ppl]
2s	person	sIn[2Psn]
2s	person	n[2Psn]
3p	person	lAr[3Ppl]
aor	aorist	r[Aor]
aor	aorist	z[Aor]
cont	imperfective	mAktA[Cont]
futr	future	AcAk[Futr]
necc	necessity	mAlI[Necc]
pl	number/person	lAr
bfi	buffer phoneme	I
bfn	buffer phoneme	n
bfy	buffer phoneme	(y)
bfs	buffer phoneme	(s)
bfsh	buffer phoneme	(ş)
nom	case	NOMINATIVE
acc	case	I
gen	case	In[GEN]
dat	case	A[DAT]
loc	case	DA[LOC]
abl	case	DAn[ABL]
ins	case	ile
c1s	person_copula	Im[1Psn]
c1p	person_copula	Iz[1Ppl]
c2s	person_copula	sIn[2Psn]
c2p	person_copula	sInIz[2Ppl]
c3s	person_copula	
c3p	person_copula	lAr[3Ppl]
p1s	possessive	m[Poss]
p1p	possessive	mIz[Poss]
p2s	possessive	n
p2p	possessive	nIz[Poss]

p3s	possessive	I
p3p	possessive	lArI
Vi	verb	i
cop	copula	DIr
past	copula	DI[Past]
perf	copula	mIş[Perf]
1s	person	m[1Psn]
2s	person	n[2Psn]
1p	person	k[1Ppl]
2p	person	nIz[2Ppl]
3s	person	[3Psn]
3p	person	lAr[3Ppl]
2p	person	sInIz[2Ppl]
2s	person	sIn[2Psn]
1p	person	Iz[1Ppl]
1s	person	Im[1Psn]
nz1	nominal	mAk_NN
pc1	nominal	AcAk_NN
nz2	nominal	mA_NN
pc2	nominal	DIk_NN
pc3	adjectival	An_AJ
kiA	adjectival	ki_AJ
kiP	pronominal	ki_PN
AV13	adverbial	cA_AV
AV12	adverbial	cAsInA_AV
AV10	adverbial	ken_AV
AV11	adverbial	sA_AV
bfy	buffer phoneme	(y)
bfi	buffer phoneme	(I)
bfa	buffer phoneme	A
iprf	imperfective	yor
Va1	auxiliary verb	bil
Va2	auxiliary verb	ver
Va3	auxiliary verb	dur
Va4	auxiliary verb	gel
Va5	auxiliary verb	gör
Va6	auxiliary verb	yaz
Va7	auxiliary verb	kal
Va8	auxiliary verb	koy
imp1	imperative	AyIm[IMP]
imp2	imperative	sIn[IMP]
imp3	imperative	AlIm[IMP]

imp4	imperative	In(Iz)[IMP]
imp5	imperative	sInlAr[IMP]
neg	negative	mA
1p	person	ik[1Ppl]
1p	person	k[1Ppl]
1p	person	(I)z[1Ppl]
1s	person	(I)m[1Psn]
2p	person	nIz[2Ppl]
2p	person	sInIz[2Ppl]
2s	person	sIn[2Psn]
2s	person	n[2Psn]
3p	person	lAr[3Ppl]
aor	aorist	r[Aor]
aor	aorist	z[Aor]
cont	imperfective	mAktA[Cont]
futr	future	AcAk[Futr]
necc	necessity	mAlI[Necc]
past	past / perfective	DI[Pas]
perf	referential/perfective	mIş[Per]
Vi	verb	i
cop	copula	DIr(P)
AV01	adverbial	AlI_AV
AV02	adverbial	ArAk_AV
AV03	adverbial	ArAktAn_AV
AV04	adverbial	AsIyA_AV
AV05	adverbial	DIkçA_AV
AV06	adverbial	IncA_AV
AV07	adverbial	Ip_AV
AV08	adverbial	mAdAn_AV
AV09	adverbial	mAksIzIn_AV
AV10	adverbial	ken_AV
AV11	adverbial	sA_AV
AV12	adverbial	cAsInA_AV
past	past / perfective	DI[Pas]
perf	referential/perfective	mIş[Per]
Vi	verb	i
cop	copula	DIr(P)
AV01	adverbial	AlI_AV
AV02	adverbial	ArAk_AV
AV03	adverbial	ArAktAn_AV

AV04	adverbial	AsIyA_AV
AV05	adverbial	DIkçA_AV
AV06	adverbial	IncA_AV
AV07	adverbial	Ip_AV
AV08	adverbial	mAdAn_AV
AV09	adverbial	mAksIzIn_AV
AV10	adverbial	ken_AV
AV11	adverbial	sA_AV
AV12	adverbial	cAsInA_AV

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The history of Computational Linguistics goes back to the 1950s. The researches done in those years were mostly about machine translation (Grishman, 1986). Although the studies started in 1950s, within almost 20-30 years, we are not able to see a variety among studies in the field. We may claim that the rapid development of computer technology started to influence Computational Linguistics in the 1970s and 1980s. Grishman (1986: 1) also states that a 1983 survey by the Association for Computational Linguistics listed 85 universities granting degrees in computational linguistics. Clark, Fox, and Lappin (2010: 1) state in their book named 'The Handbook of Computational Linguistics and Natural Language Processing' that the field of computational linguistics (CL), together with its engineering domain of natural language processing (NLP) has exploded in recent years. If we focus more on the studies done via computers, it is obvious that the specialists deal more than small prototypes. Instead, they try to adopt theoretical, consistent, and trainable systems.

Free Online Encyclopedia Wikipedia (2012) lists most commonly researched tasks of Natural Language Processing (NLP) under 22 sub branches. They are listed as "Automatic Summarization, Co-reference Resolution, Discourse Analysis, Machine Translation, Morphological Segmentation, Named Entity Recognition, Natural Language Generation, Natural Language Understanding, Optical Character Recognition, Part-of-Speech Tagging, Parsing, Question Answering, Relationship Extraction, Sentence Breaking, Speech Recognition, Speech Segmentation, Topic Segmentation, Word Segmentation, Word Sense Disambiguation, Information Retrieval, Information Extraction, Speech Processing".

Apart from these research tasks that Wikipedia lists, *Corpus Linguistics* is a rising field in Computational Linguistics. The word *corpus* (plural corpora) has Latin origin for 'body'. In linguistics, a corpus is a collection of texts (a 'body' of language) stored in an electronic database used for both quantitative and qualitative analyses (Baker, Hardie, and McEnery, 2006: 48, 49). Sinclair (1991: 171) defines corpus as a collection of naturally-occurring language text, chosen to characterize a state or variety of a language. Crystal (1992: 85) defines corpus as a collection of linguistic data, either compiled as written texts or as a transcription of recorded speech.

Since concordancing is one of the most important processes in corpus linguistics, Stubbs (2009: 16) states that in the late 1700s, Cruden (1737) made a brief summary of earlier concordances of the Bible in several languages from the 1200s. Stubbs (2009: 16) also states that Samuel Ayscough (1782) released an index about the words of Shakespeare, and it allows the researchers to list the node word and its three or four words co-text. On the other hand, one of the most important developments in corpus studies can be named as KWIC (Keyword in Context) format for concordances, and it is generated by Hans Peter Luhn in the late 1950s. Stubbs (2009: 18) notes that the main aim of this format was indexing books and articles, and generating stop list of unnecessary words located on titles.

However, the history of modern corpus linguistics begins with the Brown Corpus in 1960s (Francis and Kucera, 1964). Meyer (2002: 1) states that even though the creators of the Brown Corpus, Francis and Henry Kucera, are now regarded as the avant-gardes and visionaries in the corpus linguistics community, in the 1960s, their efforts to create a machine-readable corpus of English were not widely accepted by most of the researchers in the linguistics community.

With the help of rapid development in technology, corpus studies have started to advance after 1970s and 1980s. Instead of being a collection of texts, corpora are widely used for linguistic analyses and studies. Nowadays, British National Corpus (BNC) (Burnard, 2000), The Corpus of Contemporary American English (COCA) (Davies, 2008), and Turkish National Corpus (TNC) (Aksan et al., 2012) are commonly used general corpora which have many features like concordancing, sorting, scanning collocations, scanning keywords, generating frequency lists, and building your own corpus etc. Without any doubt, there are other corpora constructed by non-linguists like computer engineers; however, at this point we should explain two important and core steps while designing and constructing a corpus.

Before the construction step, we have to consider two important concepts while planning to design a new corpus. The first one is *representativeness*, and the second one is *balance.* Although we have the chance of putting many kinds of textual or spoken material into a corpus, we should carefully choose the materials that will be included in. The texts or spoken materials must contain language varieties from different domains and genres. According to Baker, Hardie, and McEnery, (2006: 18) *balanced* corpus is the one that contains texts from a wide range of different language genres and text domains; thus, for example, it may include both spoken and written, and public and private texts. Moreover, balanced corpora are sometimes referred to as reference, general or core corpora. They also make a brief definition of *representativeness* by saying that *representativeness* is one of the important features which samples particular language variety (Baker, Hardie, and McEnery 2006: 18-139).

Upon defining these important and basic terms about corpus linguistics, we can proceed to another subject: Design and construction of a corpus. Meyer (2002: 82-97)

determines four general steps of design and construction of a corpus. They are:

i. collecting data, such as recording speech, gathering written texts from the sources,

ii. obtaining permission from speakers and writers to use their texts;

iii. computerizing data, like the levels of transcription of speech records and scanning or typing of written texts;

iv. annotating data which is a labeling process; and developing an interface.

Although the studies on corpus linguistics and constructing corpora are very common among (non) Indo-European languages, both studies based on corpus and corpora building and publishing for Turkish are relatively small in number. METU Turkish Corpus (Say et al., 2002) can be named as the first written corpus of Turkish with a size of 2 million words. It consists of 10 different genres, and each sample covers 2.000 words as in Brown corpus. Say et al. (2002) state that the texts in the METU Turkish Corpus are annotated by using globally accepted XCES format for corpus annotation with respect to TEI (Text Encoding Initiative) format.

The rapid development of computer technology has also begun to influence corpus linguistics tools and the way of handling the database. Aksan et al. (2012) define other major work, Turkish National Corpus (TNC), on Turkish Corpus Linguistics studies. With a size of 50-million-word, TNC is a balanced and a representative corpus of contemporary Turkish. As mentioned above, TNC consists of samples of textual data across a wide variety of genres covering a period of 20 years (1990-2009) in order to maintain balance and representativeness. Written component of TNC consists of texts produced in different domains on various topics. The spoken part of TNC covers spoken data that constitute 2% of TNC's database, which involves spontaneous, every day conversations and speeches collected in particular communicative settings.

On the other hand, The BOUN Corpus (Sak et al., 2008) which covers four subcorpora is constructed by using three major news portals and Turkish web pages. It has nearly 491-million-word, but we cannot talk about the balance and representativeness of the corpus since it is totally gathered from the webpages. In addition to BOUN Corpus, more than 44-million-word corpus, TurCo, (Dalkılıç and Çebi, 2002) is the other resource for Turkish which consists of 10 different web sites having Turkish content. TurkishWaC (Ambati et al., 2012) is the other web as a corpus (WaC) resource for Turkish covering nearly 42-million-word. The corpus was constructed by using seed words of the language from its Wikipedia. All the WaC resources only serve their texts to the researchers; however, they do not have any web interfaces developed for query purposes. TNC, on the other hand, has a web interface for a researcher allowing him/her to make comprehensive analyses online.

It is also important to note that nowadays, not only the written and the spoken corpora are popular, but also there is a growing interest on multimodal corpora. Cambridge and Nottingham Corpus of Discourse (CANCODE) is a spoken corpus of English including audio recordings of people talking in British Isles. The records are made up with dinner talks of families, business meetings, university seminars and radio shows. It currently contains 5-million-word. In addition to CANCODE, Michigan Corpus of Academic Spoken English (MICASE) contains academic speeches recorded at University of Michigan. There are totally 152 different transcripts which is nearly 2-million-word. Although there are many examples of multimodal corpora for other languages, the Spoken Turkish Corpus (STC) seems to be the first for Turkish. Ruhi et al. (2010) and Karadaş and Ruhi (2009) state that STC aims to construct internet accessible, computer-based, and naturally occurring samples of Turkish spoken data with a size of 1-million-word. The

main annotation procedure consists of certain aspects of discursive features of Turkish spoken discourse. Their main aims are to gather and to annotate audio and video recordings of daily speech, focused conversations as in meetings, transcribe and annotate linguistic and discursive features of spoken Turkish, to make metalanguage and gesture annotation, and to prepare a user manual for the transcription and annotation system for the future studies. They argue that in order to achieve those, a tool package named EXMARaLDa (Schmidt, 2004) is used.

The current study aims at discovering particular patterns that occur with the lexical item "gel-". In doing so, the study identifies the grammatical patterns by using corpus linguistics techniques and methods. A quick review of the literature shows that the current study is the first in the field for Turkish since it shows how lexis and grammar interact on naturally occurring big size corpus data.

Research Questions

This study attempts to address the questions below:

1. What are the structural manifestations of phrases which are regularly associated with complementation patterns used in different types of the verb "gel-"?

2. What are the meaning groups of predominant complementation patterns observed in different types of the verb "gel-"?

Purpose and Importance of the Study

A Description of the Verb gel- with Special Reference to Pattern Grammar follows corpus linguistics methods with respect to pattern grammar. As the study is based on a naturally occurring corpus data, it is going to form a basis for the prospective Natural Language Processing studies. The study deals with the assumptions that were postulated by

Hornby (1976), Sinclair (1991, 1999), Hunston and Francis (1999), and Hoey (2009) for Turkish as being an agglutinative language.

From this point of view, the findings of the study will shed some light on the following:

1. It is going to develop a point of view for the interaction of lexis and grammar in Turkish.

2. It is going to be used as a resource for writing corpus-based grammar books of Turkish.

3. It is going to be used as a resource for writing corpus-based dictionaries of Turkish.

4. It is going to be used as a resource for annotating the multi-word units of Turkish.

5. It is going to provide data for syntactic annotation of Turkish texts/corpora.

6. It is going to form a base for creating word-net of Turkish verb "gel-".

7. It is going to serve as a sample pattern for language teaching.

Limitations

In this study, the subcorpus extracted from Turkish National Corpus (TNC) is used. The database of the balanced and a representative subcorpus of contemporary written and spoken Turkish contains ten million words. The samples of the corpus represent the materials in between 1990-2009, and for the purpose of the study, the verb "gel-" was taken into consideration. In addition to the limitations stated above, the examined types of the verb "gel-" were limited to 41 out of 458 types. The main purpose of the limitation was to determine the cut-off point in order to extract significant patterns. In order to achieve this, the types that were frequently used in the corpus were selected.

Operational Definitions

Before moving to literature review section, it would be better to define some basic terms of corpus linguistics. Baker, Hardie, and McEnery (2006) define the basic terms as in below:

Token: A token is the basic corpus processing unit that is described by a given corpus processing tool or approach. It also shows the size of a given corpus as the number of total word forms.

Type: A type is each unique tokens that occurs once or more in the corpus. To give an example from Turkish, the sentence "*dilim seni dilim dilim dilerim*" includes 5 tokens. However the word "*dilim*" is repeated and we can conclude that the sentence contains 3 types, namely "*dilim*", "*seni*" and "*dilerim*".

Lemma: A lemma is a 'set of lexical forms having the same stem and belonging to the same major word class class, differing only in inflection and/or spelling (Francis and Kucera, 1982 cited in Baker, Hardie, and McEnery, 2006).

Below are the tokens, types and lemmas of the sentence "*dilim seni dilim dilim dilerim*"

Tokens = dilim, seni, dilim, dilim, dilerim
Types = dilim, seni, dilerim
Lemmas = dil (NOUN), dil (VERB), dilim (NOUN), sen (PRONOUN)

Part-of-Speech Tagging: A type of annotation or tagging whereby grammatical categories are assigned to words, morphemes or phrases, usually via an automatic tagger although human post-editing may take place as a final stage. For example < V+nz2+bfs+p3s> is the tagging for the word "vazgeçilmesi" in Turkish.

Tagset: A collection of tags (or codes) that occur in an encoding or tagging scheme used to annotate corpora in order to facilitate a more sophisticated analysis. In the annotation for the word “vazgeçilmesi” in Turkish, V: Verb, nz2:nominalizer, bfs: buffer phoneme s, p3s: 3rd person singular possessive are used from the predefined tagset.

Complex predicate: “The term complex predicate is used to designate a construction that involves two or more predicational elements (such as nouns, verbs and adjectives) which predicate as a single element” (Butt, 2003: 1-2). In Turkish, *akla gelmek, kitap okumak, iyi gelmek* are some examples for complex predicates.

I. REVIEW OF LITERATURE

One of the charming aspects of corpus linguistics is that it appears to open many doors in terms of the automatic processing of texts. The availability of corpus allows us to identify the frequently co-occurring sequences of both lexical items and grammatical units on naturally occurring data by using specialized computer applications which selects, sorts, matches the text (Willis, 1997; Sinclair, 1991). When the purpose of the corpus-based pattern studies is examined under the domain of corpus, word, meaning, and grammar, it is seen that the studies mostly carried on via automatically Part-of-Speech tagged and automatically parsed big corpora.

Although patterns can also be examined intuitively, intuition cannot be named as a reliable source in a single text; therefore, it is advantageous to have a corpus to extract what is typically patterned and what is not. In other words, the intuition is based on our previous experience of language, and the corpus is a reliable replacement for our previous experience. Sinclair (1991) also notes that the intuitively carried on studies can only be replaced when technology offers an electronic corpus that allows researchers to list the details. Hunston (2010:154-155) proposes three reasons for language users and researchers who find it difficult to identify patterns. The first and the second suggestions are directly related to intuition-based studies. The proposed suggestions of Hunston are as in below:

> The first reason: repetition in naturally occurring conversation is transient, fleeting, it may have no perceptible effect, or its effects may not be ascribed to the repetition itself… The second reason: Speakers of a language have relatively unturned intuitions about frequency and about frequency of co-occurrence in particular… Intuitions come into play when a user of a language encounters something that sounds

> unusual… The third reason: patterning involves the repetition of 'things', but those 'things' may be of many different kinds. Two or more words may frequently co-occur, as in *was found guilty*, but we msy also regard adjectives such as *dead*, *alive*, *unconscious* and the phrase *in a coma* as represent a single pattern…

Biber (1993: 531) states that one of the main problems of applied NLP is gaps in between lexicon, missing words, word senses, and inadequate descriptions of word use in context. The use of large corpora provides us to enlarge the stock of words included in lexicon; however, it became more problematic while identifying additional word senses and uses since concordances provide so much data.

I. 1. Pattern Studies in General

Studying patterns in a language is one of the popular aspects in corpus linguistics researches. Sinclair (1991) and other corpus linguists (Hunston and Francis, 1999; Weinert, 1995; Wray, 1999) claim that all languages are patterned, and all words can be described in terms of their patterns. With corpus methodolgy, the pattern studies are carried on by using big corpora easily to discover the interaction among lexis, semantics and grammar.

Mahlberg (2005) states that an important advantage of pattern studies is that they enable large generalizations, since words sharing pattern features can be grouped together. However, the disadvantage of patterns is that the representations of lexical items remain incomplete. She also notes that in comparison to Sinclair's detailed description of a lexical item, patterns can only tell us very little about the idiosyncratic behavior of types. The usefulness of the pattern approach would be questionable if the focus were on surface features only.

The leading figures in pattern analysis for English Hunston and Francis (1999: 1) claim that there is an interrelated relationship between particular lexical items and the grammatical units that form a part before and after those lexical items, and all the words can be described in terms of their patterns. Hunston and Francis (1999: 3) add that each pattern or grammatical item occurs within a restricted set of lexical items, and each lexical item occurs within a restricted set of patterns or grammatical units. They maintain that patterns are closely associated with meaning in two ways:

a) In many cases, different senses of a lexical item are distinguished by their typical occurrence in different patterns,

b) Words which have a given pattern show tendency to share a form of meaning.

In their book *Pattern Grammar* Hunston and Francis (1999:37) describe patterns as "all the words and structures which are regularly associated with the word and which contribute to its meaning". They also argue that a word can have different patterns, and the same pattern can occur with different words. They use a coding schema in order to demonstrate a language use. The schema below represents the major codes that are located in their coding system. In Hunston and Francis (1999:45-59), you can find detailed information about coding schema developed and used by the researchers.

v: verb group

n: noun group

adj: adjective group

adv: adverb group

that: clause introduced by that (realized or not)

-ing: clause introduced by an '-ing' form

to-inf: clause introduced by a to-infinitive form

wh: clause introduced by a wh-word (including how)

with quote: used with direct objects

In the coding schema of Hunston and Francis, for example, the coding "ADJ on n" represents a pattern in which a noun group "n" and a preposition "on" are preceded by an adjective. The upper-case ADJ refers to a word class whose pattern is focused on. The coding "ADJ on n" represents, for instance, "dependent on me". The coding "V to-inf" is another pattern which indicates "began to laugh".

As maintained by Hunston and Francis (1999: 7), until 1970s, there had been strong compulsion with both structuralism and Chomskyan approach to treat grammar as a system which is independent of lexis. However, after 70s, there has been a growing interest on lexis which postulates that the central principle of language is lexis but not grammar. Pawley and Syder (1983: 217) suggest that lexical items need to be described both as individual items, and they were created from rules of grammar. Hunston and Francis (1999: 7) point out that a large amount of language exposed is not constructed from basic sense and syntax relationship; however, it occurs in sequences of morphemes that are mostly fixed in form. These sequences or relationship between collocation and grammar are described in different terms. Although they share many common perspectives, these approaches or descriptions do not seem very similar to each other. Hunston and Francis

(1999: 7) and Hoey (2009: 33) summarize the studies and naming trends related to finding language patterns as in the following:

> Nattinger and DeCarrico (1989, 1992) use the term *Lexical Phrases,* Cowie (1992) following Mitchell in Cowie (1988) uses the term *Composites*, Keller in Cowie (1988) uses the term *Gambits*, Melcuk (1988, 1995) uses *Phrasemes*, Krashen (1981) states *Prefabricated routines and patterns*, Pawley and Syder (1983) define as *Sentence stems*, Weinert (1995) and Wray (1999) uses the term *Formulaic Language*, Hunston and Francis (1999) use *Pattern Grammar*, and lastly, Hoey (2009) describes them as *Lexical Priming*.

Hunston and Francis (1999: 7-11) also note that the common concerns of all the studies listed above come from three areas: psycholinguistics, language teaching, and lexicography. The main concern of psycholinguists is to deal with how expert speakers of language store and use the language system, and how learners acquire first or second language; in language teaching perspective, researchers who are interested in language teaching try to reach native-like comprehension and production of the language. In other words, for researchers in the field of language teaching, lexical phrases are very important since they should allow language learners to produce similar language production to native speakers. Lastly, lexicographers deal with the frequency and importance of lexical phrases in varying degrees to which lexical phrases are open to variation, and the lexical phrases and the importance of lexical phrases to a model of language that gives lexical aspects and grammar equal priority.

Although Krashen (1981, cited in Hunston and Francis, 1999) informs us about using routines and patterns is only a small part of language since they do not have an impact upon creative language use, Paters (1983, cited in Hunston and Francis, 1999) argues that formulaic speech or language use is an important aspect of creative language.

Paters also points out that not only children but also adults store the language in phrases as well as in the forms of words and syntactic rules.

It is also important to note the trend named as Neo-Firthian corpus linguistics approach (McEnery and Hardie, 2012) at this point. The Neo-Firthian refers to an approach to corpus linguistics followed by a group of scholars. The researchers are labelled as Neo-Firthian corpus linguists since they follow an approach to language suggested by J. R. Firth. Sinclair can be named as the most-prominent proponent of the Neo-Firthian approach since he gathered most of Firth's ideas together with a corpus linguistic methodology. McEnery and Hardie (2012: 122) mention other key scholars of Neo-Firthian approach as Michael Hoey, Susan Hunston, Bill Louw, Michael Stubbs, Wolfgang Teubert and Elena Tognini-Bonelli. These names are or have previously been associated with the University of Birmingham. The central ideas proposed by Neo-Firthians are *collocation* and *discourse*.

There are many terms that Neo-Firthian linguists brought into corpus linguistics studies. The term *semantic prosody* also referred to as discourse prosody was originally outlined by Louw (1993 cited in McEnery and Hardie, 2012:135), and semantic prosody is a concept of Neo-Firthian concordance based analysis of collocation. It is a concept related to that of connotation in more traditional approaches to semantics. *Collocation-via-concordance* is one way analyzing data adopted by Neo-Firthian linguists. Stubbs (1995 cited in McEnery and Hardie, 2012) argues that with quantitative linguistic data, we do not need to follow complex statistical procedures at all. It is sufficient to count and list the items. This method is referred to as *non-statistical technique*, in other words *collocation-via-concordance.*

Mahlberg (2005: 22) states that collocation can be interpreted as illustrating a fundamental point about meaning in text: combinations of words in text reflect patterns of co-selection that contribute to the creation of meaning. It is important to note that Sinclair (1998 cited in Mahlberg 2005) focuses on detailed accounts of individual items for extracting collocations; however, Hunston and Francis (1999) suggest that the pattern is a tool for capturing similarities between the node word and its grammatical items. Moreover, Hoey (2009) argues that features of texts also play an important role in lexical description of a language. Sinclair (1991) suggests lexical item to describe units of meaning that are larger than a single word and proposed the following schema for the analysis of unit of meaning in a corpus. In line with Sinclair, Mahlberg (2005:23) states that a lexical item is a unit whose internal structure is characterized by 2 obligatory, and 3 optional categories of co-selection. The first and the second categories are obligatory, and the rest are the optional concepts below.

1- core: the invariable part of a lexical item

2- semantic prosody: subtle element of pragmatic meaning

3- collocation: co-occurrence of words

4- colligation: co-occurrence of grammatical items

5- semantic preference: the restriction of regular co-occurrence to items which share semantic feature.

McEnery and Hardie (2012) underscore once more that that colligation, semantic preference and discourse prosodies are all abstractions of collocation. Semantic preference connects the node word to some word in its context generated from a particular

semantic field; however, semantic prosody connects the node word to some expression of evaluation which may not be a single word, but requires wider context. In other words, as well as colligation, semantic preference groups elements on the basis of semantic similarity. Citing from Sinclair (1991) they also point out that that a word collocates not only with a lexical item but also with some grammatical units. Such kinds of collocations are referred to as colligations (McEnery and Hardie, 2012: 130).

I. 2. A Lexical Approach to the Description of English

The history of an approach to the description of English words with respect to pattern grammar begins in 1950s. Hornby (1954) can be named as the avant-garde of the pattern studies with his work *A Guide to Patterns and Usage in English.* Hornby's work not only deals with the learning patterns of the verbs but also deals with learning patterns of nouns and adjectives as well. His study *A Guide to Patterns and Usage in English* covers 25 verb patterns, 4 noun patterns, and 3 adjective patterns. He argues that when a language learner learns a word, s/he also learns the patterns of that word as well. In other words, he argues that knowledge of how to put words together is as important as knowledge of their meanings.

It is also important to note that John Sinclair is one of the most influential and revolutionary figures in corpus-based researches and linguistics. Sinclair's approach (1991) can be named as the first corpus-driven study since he investigated language by observing large amounts of naturally-occurring, electronically-stored discourse in a corpus by using corpus applications. Sinclair argues that one should use corpora for pattern studies since the data is authentic, and it is not selected on linguistic grounds. He claims that there has to be lots of systematically organized, balanced, and representative data to be examined. In

addition to the preliminaries stated above, the data should not be annotated in terms of existing theories. Since pattern studies are based on morphological tagging, Sinclair (1991) lists several problems that annotation software created.

1. Automatic taggers and parsers have limited accuracy,

2. If the manual annotation is used, it is very time-consuming. [1]

Sinclair (1991: 104) indicates that sense and structure are mutually interdependent. He uses the term structure to point to a lexical item and its patterns and collocations. He investigates that if a word has several senses, and is used in several patterns, each pattern will occur more frequently with one of the senses than the others. Sinclair (1991: 65) postulates that there is a strong tendency for sense and syntax to be associated; however, this association is not one-to-one. It is not expectable that a sense of a word is found only in one pattern or that one pattern is found only with one sense of a word. He also adds that if there was a one-to-one association, there would not be any ambiguities; however, ambiguity is possible, but it is very rare in normal interaction. Sinclair asks a question at this point: Does a pattern necessitate the selection of a particular sense of a word, or does the selection of a particular sense necessitate the use of particular pattern? In other words, if sense and pattern are interrelated, is this association a causal one?

Bearing in mind those questions asked by Sinclair, we should define the two proposed principles by Sinclair (1991: 109, 110): The *open-choice principle* and the *idiom principle.* Sinclair notes that one principle is not enough, and no principle has been advanced which accounts for the evidence in a satisfactory way.

[1] Throughout this study, both automatic and manual annotation methods have been used.

The first principle proposed by Sinclair is the open-choice principle. He argues that the open-choice principle is a way of seeing language text as the result of a very large number of complex choices. At each point, where a unit is completed, a large number of choices appear, and the only restriction is the grammaticalness (Sinclair, 1991: 109). He also proposes that this is a kind of 'slot-and-filler' model. The texts are the series of slots which have to be filled from a lexicon which satisfies local restrictions. In other words, the language is the result of a very large number of complex choices. When a language user comes across with a unit like a word, a phrase, or a clause, a large number of choices opens up, and the only restriction is the grammaticality.

The second principle proposed by Sinclair is the idiom principle (Sinclair, 1991: 110). The idiom principle argues that words do not occur randomly in a text, and we are not able to produce normal text by using open-choice principle. In its simplest form, the idiom principle is seen in simultaneous choice of two words. For example, *for instance* operates as a single word; however, it is made up with two words. The idea of meanings are made in chunks of language that are more-or-less predictable, but not fixed, sequences of morphemes leads Sinclair to propose the idiom principle. According to Sinclair, the principle of idiom is that a language user has available to him or her large number of semi-preconstructed phrases that constitute single choices although they might appear to be analyzable into segments. On the other hand, the open-choice principle argues that when a language user faced with an instance of language use, has to decide whether to interpret this as a chunk, or as a series of individual items.

Hoey (2009: 33) points out that a number of linguistic positions have attempted to describe the relationship between collocation and grammar. Although they share common features, they do not especially similar. In addition to works of (Sinclair, 1996,

2004), Hunston and Francis (1999), Hoey (2009) proposes a new approach named Lexical Priming. Hoey lists three lexical priming claims since they are the comparison points with other approaches. First of all, he claims that whenever we encounter a word, syllable or combination of words, we subconsciously remember its collocations, semantic associations, colligations, and pragmatic associations. Second, in addition to remembering all the features stated above, we also note subconsciously the genre, style, and social situation it is used in. The third set of lexical priming argues that in addition to noting all the co-textual and contextual features of a word or cluster of words, we also notice the text-linguistic characteristics of a word or cluster. In other words, whenever we encounter a word, we subconsciously remember positions in a text that it occurs in, the cohesion it favors or avoids, and its semantic associations. Hoey (2009: 36) believes that when we encounter a word, we are likely to use it in the same lexical content, with the same grammar, in the same semantic context, as part of the same genre/style, in the same kind of social and physical context, with a similar pragmatics and in similar textual ways. Hoey (2009: 46) says that all three approaches –Sinclair's idiom principle (Sinclair, 1996, 2004), Hunston and Francis's (1999) Pattern Grammar, Hoey's Lexical Priming (2004, 2005) – contribute something to our understanding of the interrelationship of lexis and grammatical patterning.

Hoey (2009: 34) also note that when a learner encounter a word, syllable or combination of words, s/he subconsciously learns the collocations that the node word occurs with, the associated meanings also called semantic associations, the discoursive functions it contributes to serving also called pragmatic associations.

The following section covers the methodological issues that have been dealt with throughout the study.

II. METHODOLOGY

II. 1. Corpus Design

First of all, for the purpose of the study, the 10-million-word subcorpus was constructed. While building the corpus, we follow the balance criteria of TNC as a model and whenever needed, necessary adjustments were made. In total, 1.055 different written texts were included in as a written part and 358 different texts of audio and video recordings of daily speech and focused conversations as in meetings covers the spoken part of the corpus. Table 1 shows the proportion of the subcorpus according to the domains, Table 2 summarizes the proportion of the Imaginative Prose texts in the subcorpus according to derived text types, Table 3 shows the proportion of the Informative texts in the subcorpus according to media, and lastly Table 4 sums up the proportion of Informative texts in the subcorpus according to domains.

Table 1. Proportion of the subcorpus according to the domains

Domain	Percentage	Total Number of Words	Planned number of words
1. Imaginative Prose	19	1.901.174	1.900.000
2. Informative Texts	81%	7.956.406	8.100.000

Table 2. Proportion of the Imaginative Prose texts in the subcorpus according to the derived text types

Derived text Type	Percentage	Total words in number
1. Academic Prose	95%	1.806.708
2. Fiction and Verse	2%	37.059
3. Drama	3%	57.407

Table 3. Proportion of the Informative texts in the subcorpus according to the media

Media	Percentage	Total words in number
1. Books	46,1%	3.667.944
2. Periodicals	37,1%	2.951.859
2.1. Journals	14,9%	1.185.466
2.2. Newspapers	11,1%	883.176
2.3. Magazines	11,1%	883.217
3. Other published written material	6,09%	484.550
4. Unpublished written material	2,5%	198.912
5. Spoken texts	8,21%	653.228

Table 4. Proportion of Informative texts in the subcorpus according to the domains

Domain	Percentage	Total words in number
1. Informative: Natural and pure sciences	5,03%	400.207
2. Informative: Applied science	10,21%	812.349
3. Informative: Social science	20,08%	1.597.646
4. Informative: World affairs	22,57%	1.795.761
5. Informative: Arts	8,78%	698.572
6. Informative: Belief and thought	5,00%	397.820
7. Informative: Leisure	18,29%	1.455.226
8. Informative: Commerce and finance	10,04%	798.823

Because of Optical Character Recognition (OCR) errors in the process of digitalizing the corpus texts, and the duplicate texts, the planned number of words couldn't be complied. After the subcorpus was created, all the texts were merged into a single UTF-8 encoded text in order to handle future works easily.

II. 2. Corpus Processing

After the corpus was constructed, sentence boundary detection was needed. Sentence boundary detection made us observe the phraseology associated with a sense of a word, particularly in terms of the meaningful units that precede or follow the word in sentence level. For sentence boundary detection, GENIA Sentence Splitter (Kim et al., 2003), which runs on Unix-like operating systems, was used. Kim et al. (2003) state that GENIA Sentence Splitter (GeniaSS) is a sentence splitter optimized for biomedical texts. GeniaSS reads a text and splits it into sentences by inserting line breaks. The application automatically detects candidate positions for splitting sentences by using previously selected delimiters such as commas, single/double quotation marks, and parenthesis etc.

Although the application worked fine on most of the sentences for the subcorpus, the application generated some errors. At the point that automatic sentence boundary detection did not work, all the lines involving two or more combined sentences were checked and corrected manually for the whole corpus. The common errors that were seen and manually corrected in sentence boundary detection process are listed below:

1. The question mark and the exclamation marks were not recognized as a sentence delimiter, so they were treated as one sentence.

Example (1):

Line 1: Onun için noldu? <D 110> Sürekli sil baştan bi şey inşa etmek zorunda kaldım.

Line 2: Hani tanınmış bir yazar olsam neyse, ama nerede! Yoksa biraz tanınıyor muyum?

2. Since the application does not use any lexicon for abbreviations, most of the abbreviations were dealt as different sentences by the application.

Example (2):

Line 1: Bu nedenle de Anadolu'da mevcut bütün yer, kent, dağ, ova, ırmak adları, **M.**

Line 2: **Ö.** 6. 5. 4. bin yıllarda yaşamış bu halk tarafından verilen adlardır.

3. The overuse of the punctuation marks, like quotation marks, usually led to unnecessary sentence boundary detections.

Example (3):

Line 1: Prof.

Line 2: Dr.

Line 3: Onur Erol; "Estetik olmak için beklemeye tahammülleri yok.

Line 4: Elinde Angelina Jolie'nin resmiyle geliyor.

Line 5: Henüz 14 yaşında ve doktora resmi uzatıp "beni de böyle yap" diyor."

4. Although the two lines in example (4) are made up of one sentence in actual communication, the application automatically turned that into two different sentences. The punctuation mark “dot” created unnecessary sentence boundary detections as exemplified below.

Example (4):

Line 1: Nitekim USADEM Koordinatörü sosyolog Prof. İbrahim Armağan, "Gençlikte köklü değişim 1980 sonrasında başlamıştır.

Line 2: Bu dönemde bireyselleşen gençlik, giderek paraya dayalı renkli bir yaşam biçimine yöneliyor" demektedir.

5. The lines which do not have dots at the end of the sentence never taken as different sentences by the application. In order to solve this problem, manual checking and correction were needed.

Example (5):

Line 1: Hafife Teyze'ye askerlerin gelişini babama söylesem mi diye günlerce düşündüm, sonunda: "Baba" dedim, "Hafize Teyze'ye geceleri askerler geliyor, biz çok korktuk!"**(.)** Babamın bana kızacağını sanıyordum, neden öyle düşünüyordum bilemiyorum.

After all the sentences were regularly splitted into one sentence per line format, there were totally 868.081 lines in nearly 10-million-word corpus. All those sentences required sentence tags for later processes. In order to solve this problem, the lines were sent to Microsoft Excel, and then the excel file was used to add <s> (sentence initiation tag) tag before all the sentences to the first column. Second column covered all the sentences in the corpus, and the third column consisted of </s> (closing sentence tag) tag. The final version of the Excel File was extracted to a single UTF-8 encoded text file afterwards.

In later process, web-based corpus analysis tool called CQPweb (Hardie, 2012) was used for different purposes; however, the text file needed some modifications in order to be used on corpus workbench tool (CQPweb). CQPweb is described as in below:

> CQPweb is a new web-based corpus analysis system, intended to address the conflicting requirements for usability and power in corpus analysis software. To do this, its user interface emulates the BNCweb system. Like BNCweb, CQPweb is built on two separate query technologies: the IMS Open Corpus Workbench and the MySQL relational database. CQPweb's main innovative feature is its flexibility; its more generalised data model makes it compatible with any corpus. The analysis options available in CQPweb include:

> concordancing; collocations; distribution tables and charts; frequency lists; and keywords or key tags Hardie (2012: 381).

The first modification that was made during the adaptation process of the text to compatible file format of CQPweb was converting the text to vertical text format (.vrt). In order to achieve that, Notepad++ was used. In the first stage, all the spaces converted into new line with advanced search and replace option. Space was given as a search term, and \r\n was given as an extended replace item. CQPweb also required all the tokens located in a single line. In order to solve this problem, all the punctuation marks and symbols were listed, and they were also changed with a new line parameter (\r\n). The punctuation marks and symbols that have to be located on a new line are listed below[2]:

Table 5. Punctuation marks and symbols in the subcorpus

.	*	\	◦	]
,	-	;	@	_
“	&	<	≠	{
”	%	>	β	}
’	#	^	=	⅓
?	+	(	≥	•
!	÷	)	≤	››
±	/	$	[	‹‹

At this point, we should emphasize a point. Although there are several PoS-Taggers mainly for English and other languages, it is really difficult to find a reliable one for Turkish. The taggers not only automatically convert the linear texts into vertical (one

[2] <text id=”any number”> is required for text initiation tag at the beginning of the text file, and </text> text closing tag at the end of the text file. The punctuation marks /, ”,<, > are also required for pointing sentence and text initiation and closing. In order to solve this problem the escape character ~~~~ was used for sentence closing tag, and ~~ was used as sentence initiation tag. After the text format was ready in one token per line format, (each punctuation mark must be in a new line) the escape characters were changed into their old-state. These are put manually at the end of the process of converting the text to one token per line.

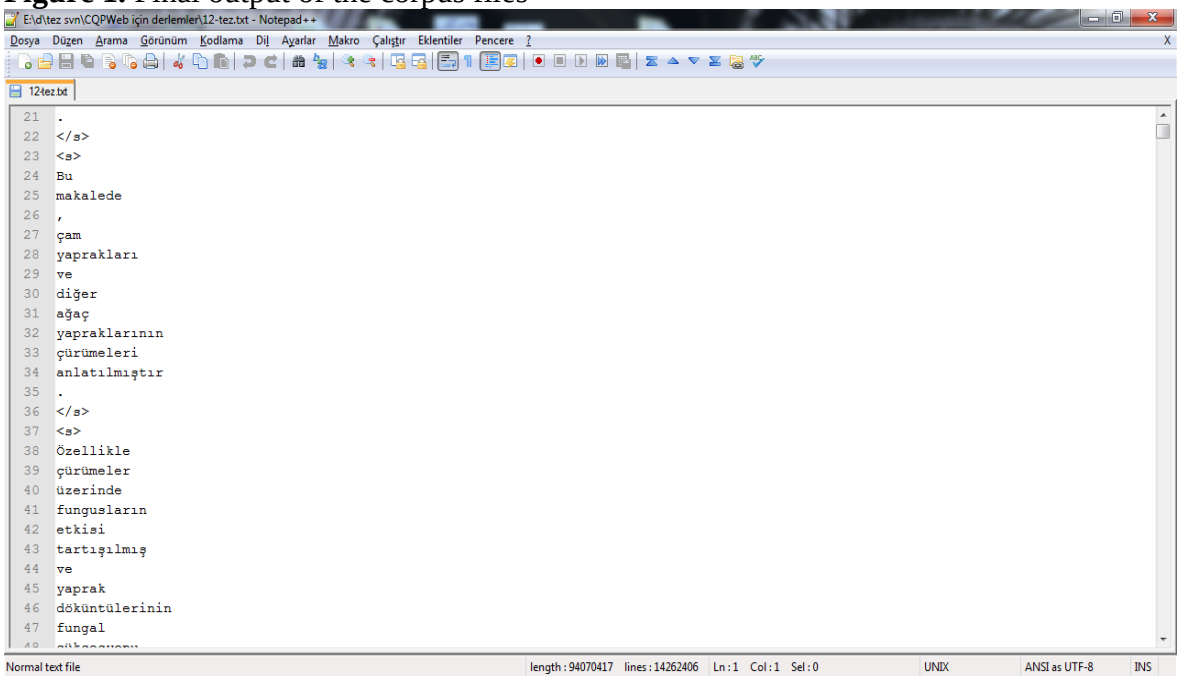
token per line) format but also they assign related tags and lemma information to the tokens. Schmid (1995, 1996) exemplifies a well-known tagger, TreeTagger, which converts the input file not only to vertical text format (.vrt) with a tab-delimited PoS-tag and lemma values but also to linear text format. CLAWS also identifies sentence-boundary automatically. Table 6 exemplifies the sample vertical text format output of CLAWS.

Table 6. Sample output of CLAWS

WORD	**PoS-Tag**	**Lemma**
<s>		
The	DT	the
CLAWS	NP	CLAWS
is	VBZ	be
easy	JJ	easy
to	TO	to
use	VB	use
.		
</s>		

If we go back to the main topic, at the end, the final version of the corpus consists of 14.262.406 lines having their sentence tags. Figure 1 demonstrates the final version of a sample text from the corpus which is compatible with CQPweb interface.

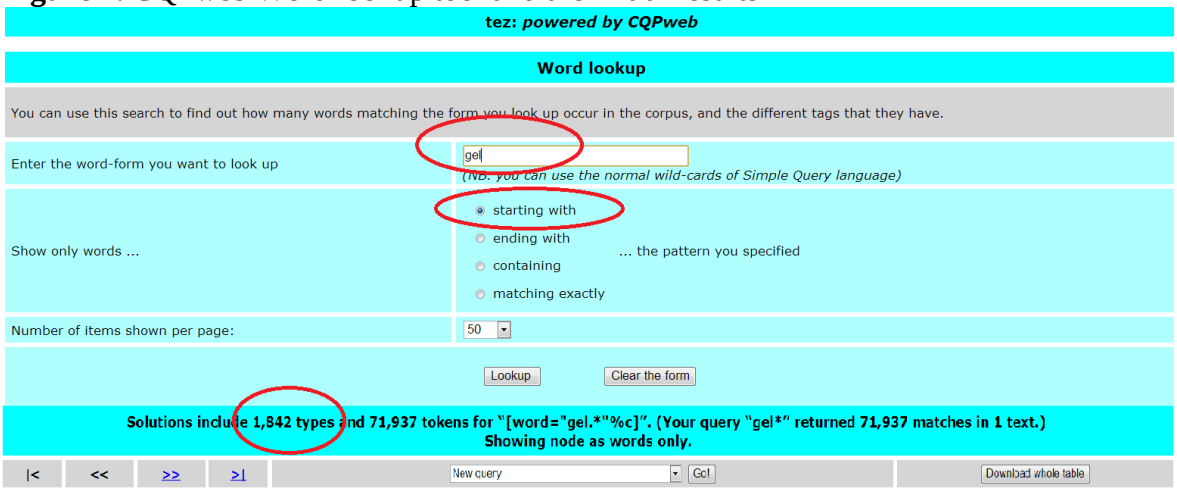
Figure 1. Final output of the corpus files



It is also important to note that in this study, CQPweb was used without PoS-Tags and lemma information for the first time. The first version was only used to generate all the possible combinations of the verb “gel-” and concordance lines of predicative forms of “gel-”.

CQPweb has a built-in “Word lookup” tool in order to list all the possible instances of the string begins with “gel-”. After generating the list, there were totally 1.842 different types of the verb “gel-”. Figure 2 demonstrates the usage of Word lookup tool, and the sample result of generation process.

Figure 2. CQPweb Word lookup tool and the initial results



No.	Search result	No. of occurrences	Percent
1	gelen	6410	8.91%
2	geldi	4076	5.67%
3	gelir	4050	5.63%
4	geliyor	2205	3.07%
5	gelecek	2051	2.85%
6	gelmiş	1597	2.22%
7	gelip	1501	2.09%
8	Geleneksel	1356	1.88%
9	gelişme	1354	1.88%
10	gelişmiş	1317	1.83%
11	Gel	1186	1.65%
12	geldiği	1135	1.58%
13	gelince	1046	1.45%
14	gelmekçedir	935	1.3%
15	gelmiştir	860	1.2%
16	gelişmeler	800	1.11%
17	gelmişti	789	1.1%
18	geldiğini	787	1.09%
19	geldiğinde	735	1.02%

Although the word lookup tool in CQPweb listed 1.842 different types starting with the string *gel-*, for the purpose of the study, as the first step, all the other forms apart from predicative function of the verb *gel-* were omitted from the data. For instance, the word "gelir" in the example "Ailenin **gelir** düzeyi yaşanılan bölge annenin eğitim durumu kardeş sayısı cinsiyet ve buna benzer pek çok etken sınav başarısını sınavdan yıllarca önce belirlemeye başlamaktadır ." was omitted because"gelir" is used as a noun. Since the main scope of the study is dealing with the predicative forms of the type *gel-*, the instances as in "Kimyacılara göre asil kolay paslanmayan anlamına **gelir**" were left for analysis throughout the study. The result of word lookup query revealed that there were 458 different types of the verb "gel-" which were used as a predicate. The least frequently used

entries in the corpus were not taken into consideration. The most frequently used forms of the verb were also generated, and they were separately indexed for future application.

When the generation process of the concordance lines was completed, a new corpus involving only sentences of the most frequently used forms of the verb "gel-" was constructed by using the generated concordance lines. The new corpus has 569.184 different tokens in total. Table 7 summarizes the types included in the final version of the corpus and their frequency information.

Table 7. Most frequently used forms of the verb *gel-*

	TYPE	FREQUENCY		TYPE	FREQUENCY
1	gelir	4050	22	gelirler	224
2	geliyor	2205	23	geliyorum	196
3	gelecek	2051	24	gelme	191
4	gelmiş	1597	25	gelirdi	191
5	Gel	1186	26	gelebilecek	149
6	gelmektedir	935	27	gelmişler	146
7	gelmiştir	860	28	gelelim	143
8	gelmişti	789	29	geliyo	126
9	geliyordu	662	30	gelmekte	122
10	Gelin	616	31	geliyorlar	119
11	geldim	556	32	geliyoruz	117
12	geldik	507	33	gelmişlerdi	116
13	gelmez	481	34	gelirim	108
14	geldiler	374	35	gelmiyordu	103
15	gelsin	356	36	gelmemişti	102
16	gelebilir	284	37	gelmeyecek	90
17	gelmedi	283	38	geleceğim	86
18	geldin	283	39	gelecekti	78
19	geldiniz	274	40	gelmemiş	76
20	gelmiyor	254			
21	gelecektir	247	41	gelmişlerdir	62

Upon building 569.184 word size corpus, we need to annotate it morphologically to identify argument patterns of the verb *gel-* systematically. For

morphological annotation process, the application named NooJ (Silberztein, 2003) and its Turkish module (Aksan and Mersinli, 2011) were used. Silberztein (2003) defines the application as in below:

> NooJ is a linguistic development environment that includes large-coverage dictionaries and grammars, and parses corpora in real time, and it includes tools to create and maintain large-coverage lexical resources, as well as morphological and syntactic grammars. Dictionaries and grammars are applied to texts in order to locate morphological, lexical and syntactic patterns and tag simple and compound words.

NooJ_TR and its tagset have been modified since 2011. The current tagset used in Nooj_TR presented by Demirhan and Aksan (2012) consists of sixteen different High-Level tags like *N* for Nouns, *A* for Adjectives, and the Low-Level Tagset covers ninety eight different tags like *imprf* for the suffix –yor, and *AV11* for the suffix –sA. Tables 8, 9, 10, 11, and 12 list all the tags that are used in NooJ_TR.

Table 8. High Level Tagset for Nominals

TAG	Part-of-Speech
N	Noun
A	Adjective
PN	Pronoun
NP	Proper Name
AB	Abbreviation
AV	Adverb
PP	Postposition
DET	Determiner
NU	Number
ON	Onomatopoeia
CL	Clitics

Table 9. High Level Tagset for Verbs

TAG	Part-of-Speech
V	Verb

Table 10. High Level Tagset for the Others

TAG	Part-of-Speech
CJ	Conjunction
IJ	Interjection
Q	Question
FR	Foreign Words
ER	Spelling Error

Table 11. Nominal Affix Tagset

AFFIX	FUNCTION	TAG
lAr	number/person	pl
I	buffer phoneme	bfi
n	buffer phoneme	bfn
(y)	buffer phoneme	bfy
(s)	buffer phoneme	bfs
(ş)	buffer phoneme	bfsh
NOMINATIVE	case	nom
I	case	acc
In[GEN]	case	gen
A[DAT]	case	dat
DA[LOC]	case	loc
DAn[ABL]	case	abl
ile	case	ins
Im[1Psn]	person_copula	c1s
Iz[1Ppl]	person_copula	c1p
sIn[2Psn]	person_copula	c2s
sInIz[2Ppl]	person_copula	c2p
	person_copula	c3s
lAr[3Ppl]	person_copula	c3p
m[Poss]	possessive	p1s
mIz[Poss]	possessive	p1p
n	possessive	p2s
nIz[Poss]	possessive	p2p
I	possessive	p3s
lArI	possessive	p3p
i	verb	Vi
DIr	copula	cop
DI[Past]	copula	past
mIş[Perf]	copula	perf
m[1Psn]	person	1s
n[2Psn]	person	2s
k[1Ppl]	person	1p
nIz[2Ppl]	person	2p
[3Psn]	person	3s
lAr[3Ppl]	person	3p
sInIz[2Ppl]	person	2p

AFFIX	FUNCTION	TAG
sIn[2Psn]	person	2s
Iz[1Ppl]	person	1p
Im[1Psn]	person	1s
mAk_NN	nominal	nz1
AcAk_NN	nominal	pc1
mA_NN	nominal	nz2
DIk_NN	nominal	pc2
An_AJ	adjectival	pc3
ki_AJ	adjectival	kiA
ki_PN	pronominal	kiP
cA_AV	adverbial	AV13
cAsInA_AV	adverbial	AV12
ken_AV	adverbial	AV10
sA_AV	adverbial	AV11

Table 12. Verbal Affix Tagset

AFFIX	FUNCTION	TAG
(y)	buffer phoneme	bfy
(I)	buffer phoneme	bfi
A	buffer phoneme	bfa
yor	imperfective	iprf
bil	auxiliary verb	Va1
ver	auxiliary verb	Va2
dur	auxiliary verb	Va3
gel	auxiliary verb	Va4
gör	auxiliary verb	Va5
yaz	auxiliary verb	Va6
kal	auxiliary verb	Va7
koy	auxiliary verb	Va8
AyIm[IMP]	imperative	imp1
sIn[IMP]	imperative	imp2
AlIm[IMP]	imperative	imp3
In(Iz)[IMP]	imperative	imp4
sInlAr[IMP]	imperative	imp5
mA	negative	neg
ik[1Ppl]	person	1p
k[1Ppl]	person	1p
(I)z[1Ppl]	person	1p
(I)m[1Psn]	person	1s
nIz[2Ppl]	person	2p
sInIz[2Ppl]	person	2p
sIn[2Psn]	person	2s
n[2Psn]	person	2s
lAr[3Ppl]	person	3p
r[Aor]	aorist	aor

AFFIX	FUNCTION	TAG
z[Aor]	aorist	aor
mAktA[Cont]	imperfective	cont
AcAk[Futr]	future	futr
mAlI[Necc]	necessity	necc
DI[Pas]	past / perfective	past
mIş[Per]	referential/perfective	perf
i	verb	Vi
DIr(P)	copula	cop
AlI_AV	adverbial	AV01
ArAk_AV	adverbial	AV02
ArAktAn_AV	adverbial	AV03
AsIyA_AV	adverbial	AV04
DIkçA_AV	adverbial	AV05
IncA_AV	adverbial	AV06
Ip_AV	adverbial	AV07
mAdAn_AV	adverbial	AV08
mAksIzIn_AV	adverbial	AV09
ken_AV	adverbial	AV10
sA_AV	adverbial	AV11
cAsInA_AV	adverbial	AV12

Although NooJ has a built-in function to generate complex concordances, with respect to all types of Finite State and Context-Free patterns, the output format of the application needs to be reorganized. In order to reduce the workload, all the types in 569.184 word corpus were listed by the frequency list tool of the CQPweb, and annotated by NooJ_TR. After generating frequency list, there were totally 69.249 different listed types in the corpus. Table 13 summarizes the automatically assigned tag numbers to the tokens located in the corpus.

Table 13. Assigned tag numbers and their samples

Tag Number	Total Tag Number	Sample	
Words with 7 tags	33	- yazın,AV+acc - yazın,AV+p3s - yazın,N+acc - yazın,N+p3s	- yazı,N+p2s+acc - yazı,N+bfn+acc - yazı,N+bfn

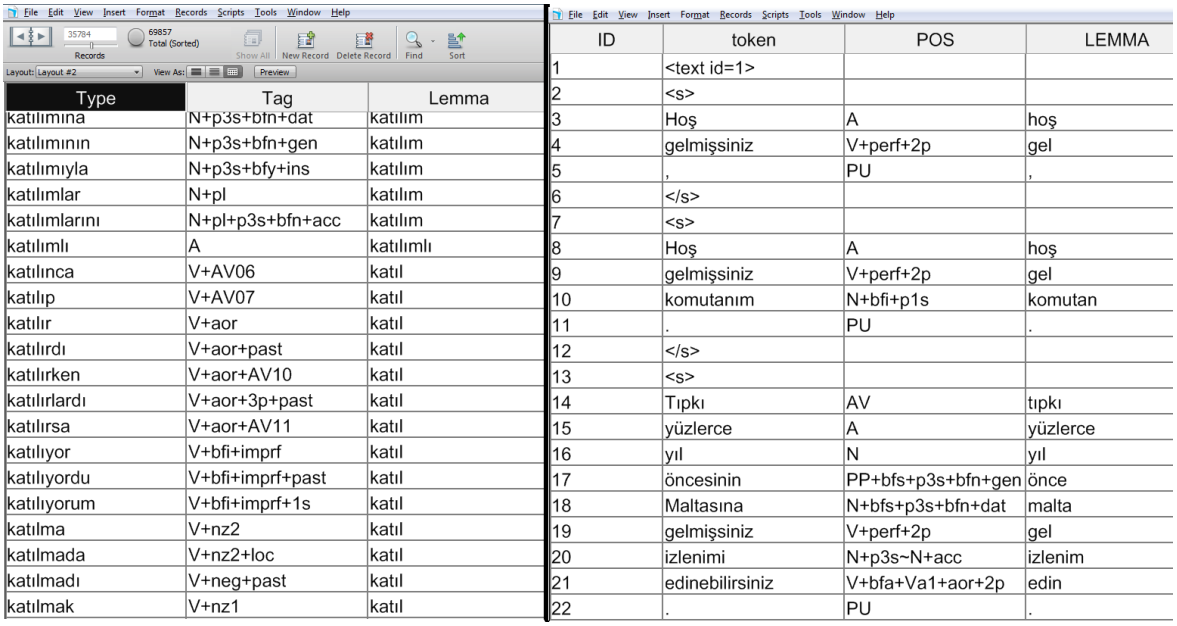
Tag Number	Total Tag Number	Sample	
Words with 6 tags	142	- ala,A+p2s+gen	- alan,N+gen
		- ala,A+bfn+gen	- alan,V+imp4
		- alan,N+bfi+p2s	- al,V+pc3+bfi+p2s
Words with 5 tags	205	- çıkacak,N+c1s - çıkacak,N+bfi+p1s - çık,V+futr+1s	- çık,V+pc1+c1s - çık,V+pc1+bfi+p1s
Words with 4 tags	1.385	- yolun,V+imp6	- yol,N+gen
		- yol,N+bfi+p2s	- yol,V+imp4
Words with 3 tags	2.376	- aday,N+acc	- ada,N+bfy+acc
		- aday,N+p3s	
Words with 2 tags	21.654	- aç,V+neg+aor	
		- açmaz,N	
Words with 1 tags	35.972	- zuhur,N+ins	
Words which has no tag	7.482	- Žižek,NP	

The total number of the ambiguous annotation result was 25.762 with 2, 3, 4, 5, and 6 different types of tags. Most of these ambiguous annotation results go under 2 different annotation types. The entries with multiple tags were manually checked consulting their context of use, and corrected manually. For example, NooJ_TR automatically inserted DT_PN tag to the word “bu” as in “Filistin ' in tecrit edilmesi anlamına gelir **bu**”. The correct tag assignment should be PN (i.e. pronoun) for this sample concordance; however, in the example “**bu sürece** damga vurur hale gelmiştir”, “bu” must be treated as a determiner, and DT tag must be assigned to the token.

In addition to ambiguous annotation types, there were also 7.482 different types are also checked manually for morphological annotation.. For instance, since the word “Hayrünnisa” is not located in NooJ_TR dictionaries, the word couldn’t be annotated by using NooJ_TR. The entries like “Hayrünnisa” were annotated manually by assigning appropiate tags. All the types without automatically assigned tags were checked in their context of use as well. It is also important to note that NooJ_TR also generated wrong annotation results. For example, in most of the cases, the annotation result of N+pl+p2s (partililerin) was not properly annotated through the application. In every case, the expected annotation result N+pl+gen (**partililerin** görüşü) was not seen in the output file.

Upon these manual checkings of annotation process, 69.249 different types of words in a corpus were locally stored in Microsoft Excel file. Afterwards, the excel file involved all the types and related tags and lemma information of the tokens. This new file was used for the future applications. All those processes were carried on via File Maker Pro 10 Advanced. Firstly, the lexicon file was imported to File Maker then the corpus file was separately imported to the application. After importing process finished, the relationship between text, tag, and lemma was established. In order to continue working on CQPweb, all the entries were exported to a tab-delimited text file after the matching process. Figure 3 exemplifies the process explained above:

Figure 3. Tagging process of the whole corpus



Type	Tag	Lemma
katılımına	N+p3s+bfn+dat	katılım
katılımının	N+p3s+bfn+gen	katılım
katılımıyla	N+p3s+bfy+ins	katılım
katılımlar	N+pl	katılım
katılımlarını	N+pl+p3s+bfn+acc	katılım
katılımlı	A	katılımlı
katılınca	V+AV06	katıl
katılıp	V+AV07	katıl
katılır	V+aor	katıl
katılırdı	V+aor+past	katıl
katılırken	V+aor+AV10	katıl
katılırlardı	V+aor+3p+past	katıl
katılırsa	V+aor+AV11	katıl
katılıyor	V+bfi+imprf	katıl
katılıyordu	V+bfi+imprf+past	katıl
katılıyorum	V+bfi+imprf+1s	katıl
katılma	V+nz2	katıl
katılmada	V+nz2+loc	katıl
katılmadı	V+neg+past	katıl
katılmak	V+nz1	katıl

ID	token	POS	LEMMA
1	<text id=1>		
2	<s>		
3	Hoş	A	hoş
4	gelmişsiniz	V+perf+2p	gel
5	,	PU	,
6	</s>		
7	<s>		
8	Hoş	A	hoş
9	gelmişsiniz	V+perf+2p	gel
10	komutanım	N+bfi+p1s	komutan
11	.	PU	.
12	</s>		
13	<s>		
14	Tıpkı	AV	tıpkı
15	yüzlerce	A	yüzlerce
16	yıl	N	yıl
17	öncesinin	PP+bfs+p3s+bfn+gen	önce
18	Maltasına	N+bfs+p3s+bfn+dat	malta
19	gelmişsiniz	V+perf+2p	gel
20	izlenimi	N+p3s~N+acc	izlenim
21	edinebilirsiniz	V+bfa+Va1+aor+2p	edin
22	.	PU	.

The final version of the text that is carrying PoS-tags and lemma information became usable in CQPweb after all. Figure 4 illustrates sample search with high-level tag and sample result page of the search.

Figure 4. Sample tag search and sample result page of CQPweb

At a later stage, TextNSP (Banerjee and Pedersen, 2003) which is a flexible and easy to use software tool that supports the identification and analysis of Ngrams, sequences of N token in a text was used in order to reveal all the bigrams, trigrams, and fourgrams in the corpus. The outputs of TextNSP showed once again that since Turkish has a flexible word order, the studies focusing on lexis-grammar interaction cannot be restricted to bigrams, trigrams, fourgrams and so on. McEnery and Hardie (2012: 129) summarize the common practice of using collocation window span as in the following:

> In computational linguistics there has been a 'common practice of using a five-word span for collocate searching' (Seretan and Wehrli, 2007:75) and when collocation is operationalized in terms of n-grams, larger spans may be used. However, it has also been suggested that collocation should not be controlled by fixed-length word-spans, but that it should, rather, be calculated with regard to the syntactic structures within which the node word appears.

Therefore, apart from bigrams like "haline geldi, hale geldi, meydana geldi, anlamına geldi", all the generated trigram and fourgrams lists were omitted. The bigrams were used as a starting point for generating all the complements of these bigrams. Hunston (2010:162-163) points out that since the starting point for identifying patterns is linguistic form, and the collocates of a given word can also be used to limit the search. She claims that many concordancers allow generating bigrams or trigrams containing the node word, and generating all those lists can be accepted as the starting point for further, more manageable researches. Following tables (14-23) show the entire bigrams list generated from 10 types observed frequently in the corpus. It is also important to note that the lists were generated on the basis of affirmative types.

Table 14. Bigrams of *geldi*

Bigrams	**Frequency**
haline geldi	103

Bigrams	Frequency
hale geldi	81
gibi geldi	68
araya geldi	59
gündeme geldi	51
meydana geldi	51
aklıma geldi	45
yanıma geldi	44
yanına geldi	43
gün geldi	31
dünyaya geldi	30
da geldi	28
geri geldi	28
aklına geldi	26
zamanı geldi	25

Table 15. Bigrams of *gelir*

Bigrams	Frequency
anlamına gelir	221
meydana gelir	186
hale gelir	81
haline gelir	67
başında gelir	25
önce gelir	22
sonra gelir	18
ileri gelir	17
dünyaya gelir	16

Bigrams	Frequency
araya gelir	14
gibi gelir	14
karşılık gelir	14
gündeme gelir	13
iyi gelir	13
de gelir	10

Table 16. Bigrams of *geliyor*

Bigrams	Frequency
gibi geliyor	111
anlamına geliyor	74
hale geliyor	34
haline geliyor	29
nereden geliyor	29
gidip geliyor	28
anlama geliyor	25
meydana geliyor	20
gündeme geliyor	17
başında geliyor	16
da geliyor	16
denk geliyor	15
gibime geliyor	15
aklıma geliyor	13
akla geliyor	12

Table 17. Bigrams of *gelecek*

Bigrams	**Frequency**
karşıya gelecek	22
hale gelecek	15
gündeme gelecek	14
haline gelecek	12
araya gelecek	9
zaman gelecek	9
da gelecek	8
de gelecek	7
İstanbul'a gelecek	6
meydana gelecek	6
iktidara gelecek	5
biraraya gelecek	4
birlikte gelecek	4
duruma gelecek	4
garip gelecek	4

Table 18. Bigrams of *gelmiş*

Bigrams	**Frequency**
hale gelmiş	30
haline gelmiş	18
kadar gelmiş	18
meydana gelmiş	13
yanına gelmiş	10
de gelmiş	9
da gelmiş	7
durumuna gelmiş	7

Bigrams	Frequency
Ankara’ya gelmiş	6
evine gelmiş	6
gün gelmiş	6
gündeme gelmiş	6
ile gelmiş	6
kendine gelmiş	6
mı gelmiş	6

Table 19. Bigrams of *gel*

Bigrams	Frequency
hadi gel	33
kendine gel	17
da gel	12
sen gel	12
buraya gel	11
de gel	10
istersen gel	9
al gel	7
çabuk gel	6
kaçma gel	6
atla gel	5
bana gel	5
git gel	5
kalk gel	5

Table 20. Bigrams of *gelmektedir*

Bigrams	Frequency
anlamına gelmektedir	189
meydana gelmektedir	110
hale-haline gelmektedir	84
başında gelmektedir	39
ileri gelmektedir	33
akla gelmektedir	26
gündeme gelmektedir	17
da gelmektedir	12
karşılık gelmektedir	11
duruma gelmektedir	7
buradan gelmektedir	6
sırada gelmektedir	6
anlama gelmektedir	5
başta gelmektedir	5
denk gelmektedir	5

Table 21. Bigrams of *gelmiştir*

Bigrams	Frequency
haline gelmiştir	177
hale gelmiştir	140
meydana gelmiştir	78
gündeme gelmiştir	54
zamanı gelmiştir	18
durumuna gelmiştir	13
duruma gelmiştir	12
kadar gelmiştir	10

Bigrams	Frequency
noktasına gelmiştir	10
konumuna gelmiştir	9
anlamına gelmiştir	8
olarak gelmiştir	7
çoktan gelmiştir	5
dünyaya gelmiştir	5
da gelmiştir	4

Table 22. Bigrams of *gelmişti*

Bigrams	Frequency
haline gelmişti	44
hale gelmişti	41
de-da gelmişti	20
zamanı gelmişti	16
gibi gelmişti	12
meydana gelmişti	11
için gelmişti	10
iyi gelmişti	10
yanıma-yanına gelmişti	10
duruma gelmişti	9
bana gelmişti	8
kadar gelmişti	8
mı-mi gelmişti	7
bize gelmişti	6
gündeme gelmişti	6

Table 23. Bigrams of *geliyordu*

Bigrams	Frequency
anlamına geliyordu	38
gibi geliyordu	38
gidip geliyordu	27
sesi-sesler geliyordu	24
sesleri geliyordu	22
ileri geliyordu	10
anlama geliyordu	8
da geliyordu	7
haline geliyordu	7
koku-kokusu geliyordu	7
meydana geliyordu	7
doğru geliyordu	7
gündeme geliyordu	6
hale geliyordu	6
iyi geliyordu	6

In addition to the lists above, there were 8 negative types out of 41 types listed in Table 7. Table (24-31) list all the entire bigrams list of the negative forms of the type of *gel-*; however, their frequencies are relatively small in number, so they were all excluded. For the later studies, they should also be accepted as a starting point.

Table 24. Bigrams of *gelmez*

Bigrams	Frequency
anlamına gelmez	8
bile gelmez	8
meydana gelmez	6

Bigrams	Frequency
aklına gelmez	5
anlama gelmez	5
yarar-zarar gelmez	5
hayır gelmez	4
manasına gelmez	4
şakaya gelmez	4
şey gelmez	4
aklıma gelmez	3
da gelmez	3
daha gelmez	3
de gelmez	3
ekrana gelmez	3
işime gelmez	3

Table 25. Bigrams of *gelmedi*

Bigrams	Frequency
aklıma gelmedi	9
şey gelmedi	8
bile gelmedi	7
daha gelmedi	5
de gelmedi	5
henüz gelmedi	5
kimse gelmedi	5
cevap gelmedi	4
sıra gelmedi	4
tepki gelmedi	4

Bigrams	Frequency
yabancı gelmedi	4
yanıt gelmedi	4
zamanı gelmedi	4
aklımıza gelmedi	3
başına gelmedi	3
haline gelmedi	3
hiç gelmedi	3
niye gelmedi	3
gündeme gelmedi	2
meydana gelmedi	2

Table 26. Bigrams of *gelmiyor*

Bigrams	Frequency
anlamına gelmiyor	43
şey gelmiyor	10
gibi gelmiyor	7
da gelmiyor	6
aklıma gelmiyor	5
içimden gelmiyor	5
cazip gelmiyor	4
anlamlı gelmiyor	3
bile gelmiyor	3
ileri gelmiyor	3
mantıklı gelmiyor	3
sesi gelmiyor	2

Table 27. Bigrams of *gelme*

Bigrams	Frequency
sen gelme	4
üstüme gelme	3
eve gelme	1

Table 28. Bigrams of *gelmiyordu*

Bigrams	Frequency
bile gelmiyordu	7
şey gelmiyordu	7
da-de gelmiyordu	6
anlamına gelmiyordu	4
aklıma gelmiyordu	3
birşey gelmiyordu	3
hiç gelmiyordu	2
işime gelmiyordu	2
ses gelmiyordu	2
yapmak gelmiyordu	2

Table 29. Bigrams of *gelmemişti*

Bigrams	Frequency
aklıma-aklına gelmemişti	18
hiç gelmemişti	5
bile gelmemişti	4
eve gelmemişti	3
henüz gelmemişti	3
daha gelmemişti	2
de gelmemişti	2

Bigrams	Frequency
gibi gelmemişti	2
hala gelmemişti	2
kimse gelmemişti	2
şey gelmemişti	2
avukatım gelmemişti	1

Table 30. Bigrams of *gelmeyecek*

Bigrams	Frequency
Gelmeyecek	4
geri gelmeyecek	3
işine gelmeyecek	3
sıra gelmeyecek	2

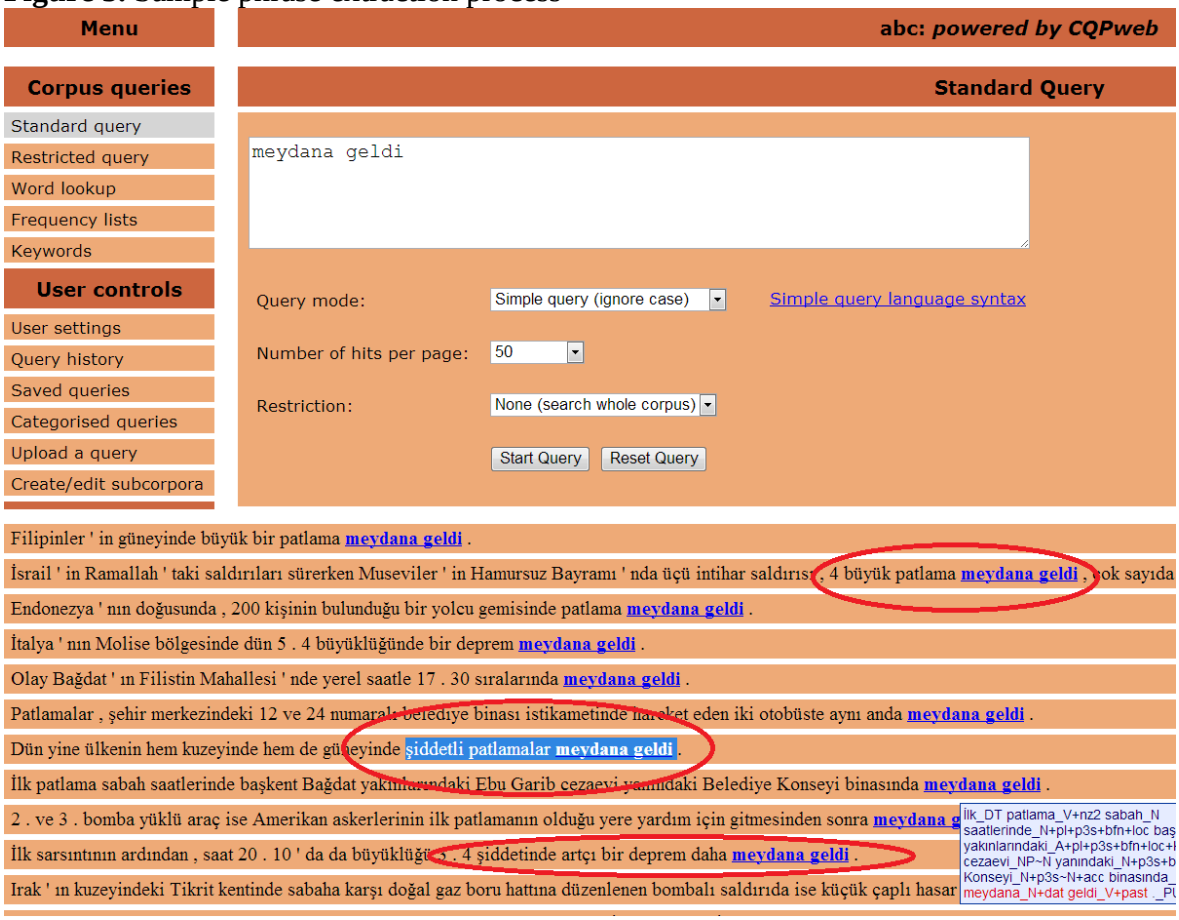
Table 31. Bigrams of *gelmemiş*

Bigrams	Frequency
aklına gelmemiş	3
de gelmemiş	1
rahmet gelmemiş	1
henüz gelmemiş	1

After the generation process of all bigrams including the verb *gel-* via TextNSP, the phrases of the type *gel-* were extracted on CQPweb. Firstly, the bigrams were entered as a search term to CQPweb query interface, and then the phrases of all the types were extracted manually, and copied to text file one by one for future applications. The reason for using manual extraction of the phrases is that Turkish does not have a

reliable automatic syntactic parser. Figure 5 exemplifies sample output of extraction process of the phrases.

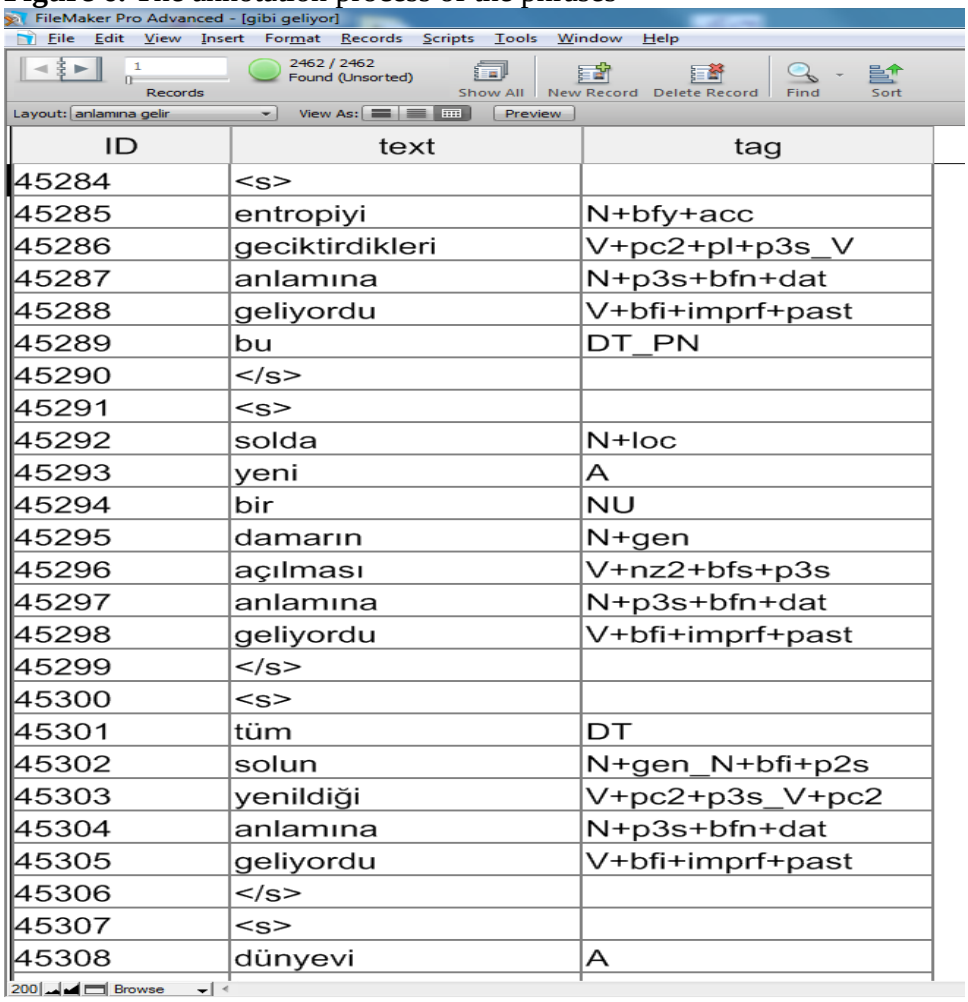
Figure 5. Sample phrase extraction process



After having saved all the phrases of the related bigrams, we needed to annotate all the phrases with previously created lexicon. The lexicon file which was located on File Maker Pro was used to tag all the phrases which were previously saved to a text file. The text file was firstly imported to File Maker Pro, and then the application automatically tagged all the tokens in that text file. After having annotated all the phrases, the matching entries were exported to an excel file and the excel file is used to list all the

structural information about the phrases. Figure 6 demonstrates the annotation process of the phrases.[3]

Figure 6. The annotation process of the phrases

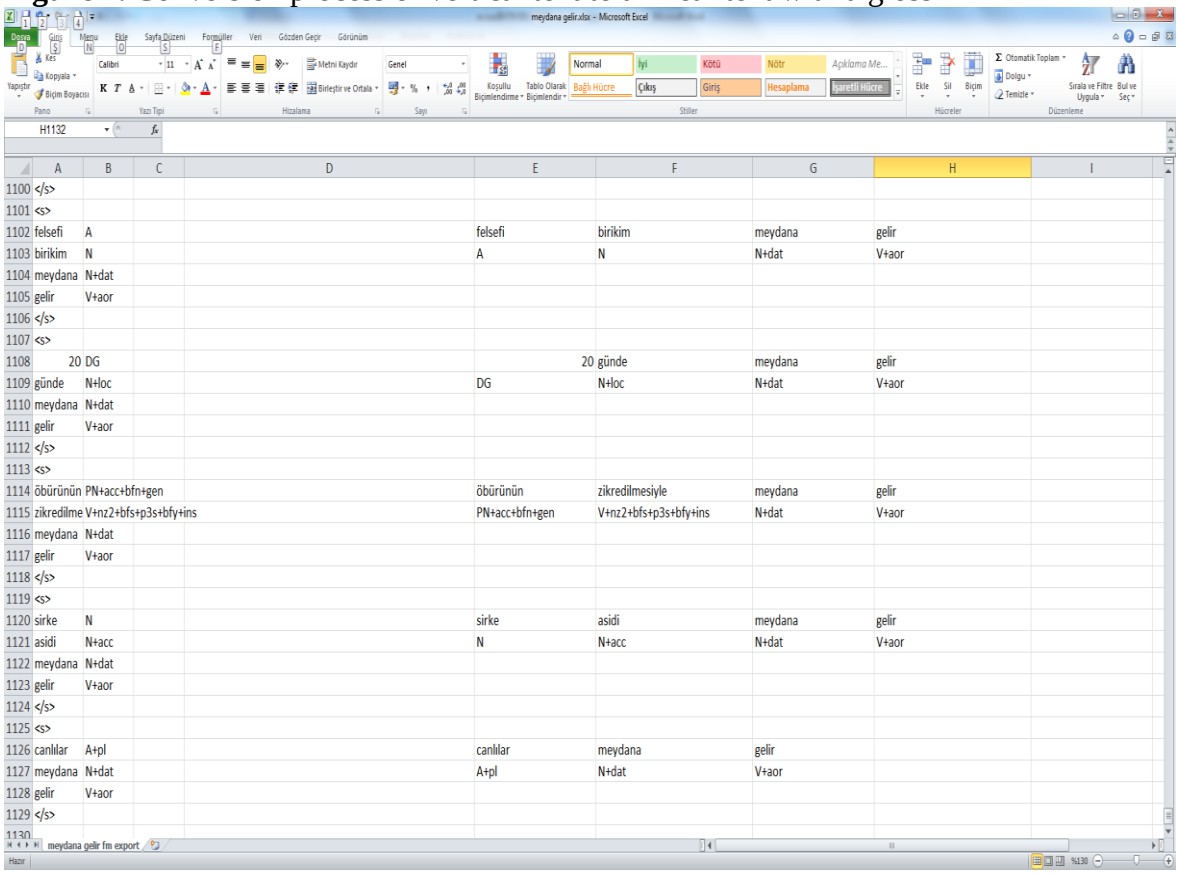


ID	text	tag
45284	<s>	
45285	entropiyi	N+bfy+acc
45286	geciktirdikleri	V+pc2+pl+p3s_V
45287	anlamına	N+p3s+bfn+dat
45288	geliyordu	V+bfi+imprf+past
45289	bu	DT_PN
45290	</s>	
45291	<s>	
45292	solda	N+loc
45293	yeni	A
45294	bir	NU
45295	damarın	N+gen
45296	açılması	V+nz2+bfs+p3s
45297	anlamına	N+p3s+bfn+dat
45298	geliyordu	V+bfi+imprf+past
45299	</s>	
45300	<s>	
45301	tüm	DT
45302	solun	N+gen_N+bfi+p2s
45303	yenildiği	V+pc2+p3s_V+pc2
45304	anlamına	N+p3s+bfn+dat
45305	geliyordu	V+bfi+imprf+past
45306	</s>	
45307	<s>	
45308	dünyevi	A

After all the phrases were annotated via File Maker Pro, the vertical format of the output that the application supplied was converted into linear text with a gloss of each text. Figure 7 shows the conversion process of vertical text to a linear text with a gloss.

[3] While annotating the phrases, the <s> tag and the </s> tag refer to the initiation and the ending of the phrases.

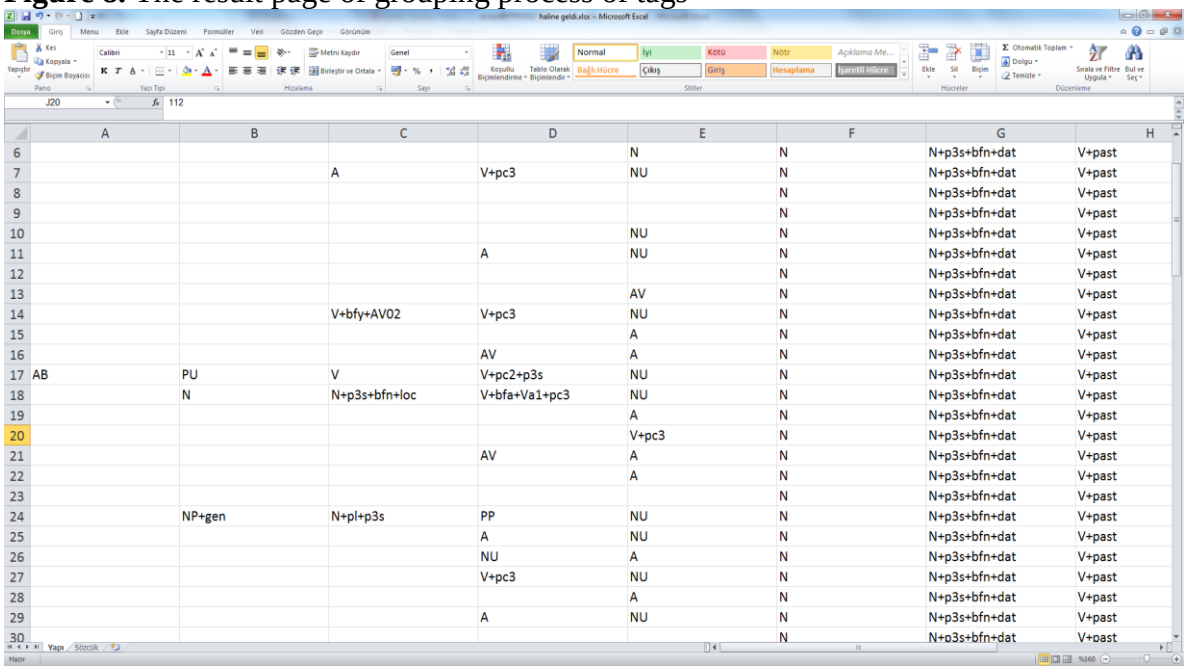
Figure 7. Conversion process of vertical text to a linear text with a gloss



	A	B	C	D	E	F	G	H	I
1100	</s>								
1101	<s>								
1102	felsefi	A			felsefi	birikim	meydana	gelir	
1103	birikim	N			A	N	N+dat	V+aor	
1104	meydana	N+dat							
1105	gelir	V+aor							
1106	</s>								
1107	<s>								
1108	20	DG				20	günde	meydana	gelir
1109	günde	N+loc			DG	N+loc	N+dat	V+aor	
1110	meydana	N+dat							
1111	gelir	V+aor							
1112	</s>								
1113	<s>								
1114	öbürünün	PN+acc+bfn+gen			öbürünün	zikredilmesiyle	meydana	gelir	
1115	zikredilme	V+nz2+bfs+p3s+bfy+ins			PN+acc+bfn+gen	V+nz2+bfs+p3s+bfy+ins	N+dat	V+aor	
1116	meydana	N+dat							
1117	gelir	V+aor							
1118	</s>								
1119	<s>								
1120	sirke	N			sirke	asidi	meydana	gelir	
1121	asidi	N+acc			N	N+acc	N+dat	V+aor	
1122	meydana	N+dat							
1123	gelir	V+aor							
1124	</s>								
1125	<s>								
1126	canlılar	A+pl			canlılar	meydana	gelir		
1127	meydana	N+dat			A+pl	N+dat	V+aor		
1128	gelir	V+aor							
1129	</s>								
1130									

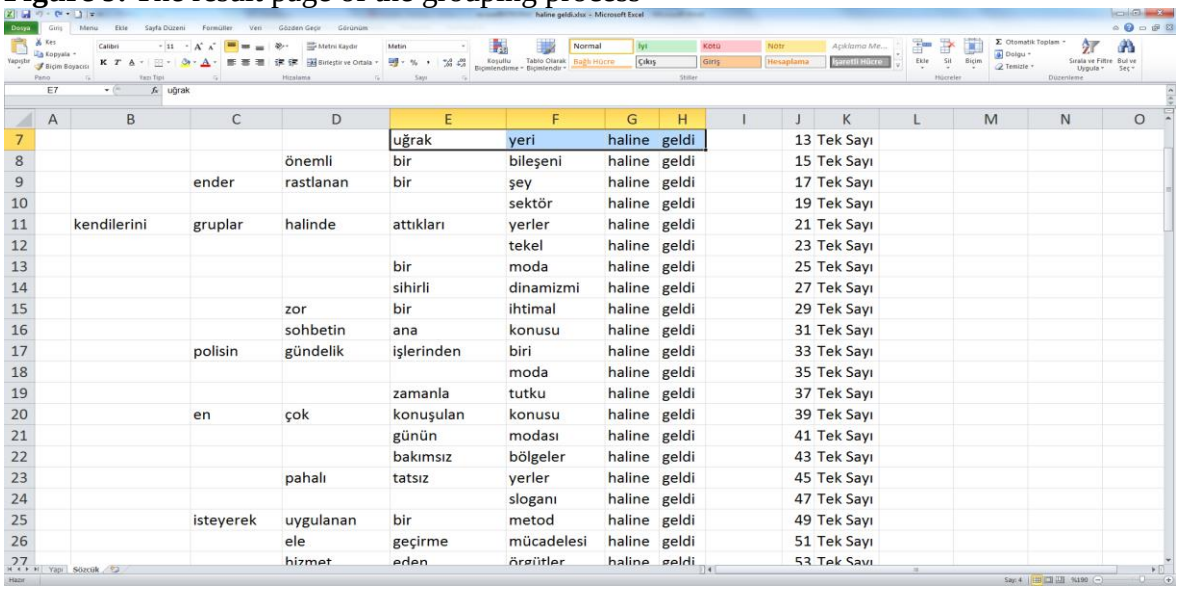
After all, the predicates in linear text must be located in order to list all the recursive patterns after conversion process. All the predicates in linear text were aligned to one under the other via Excel. The ID number was given to each line in order to group all the morphological tags and words on a separate excel sheet. Figure 8 demonstrates the result page of grouping process of tags and Figure 9 displays the result page of grouping the words.

Figure 8. The result page of grouping process of tags



	A	B	C	D	E	F	G	H
6					N	N	N+p3s+bfn+dat	V+past
7			A	V+pc3	NU	N	N+p3s+bfn+dat	V+past
8						N	N+p3s+bfn+dat	V+past
9						N	N+p3s+bfn+dat	V+past
10					NU	N	N+p3s+bfn+dat	V+past
11				A	NU	N	N+p3s+bfn+dat	V+past
12						N	N+p3s+bfn+dat	V+past
13					AV	N	N+p3s+bfn+dat	V+past
14			V+bfy+AV02	V+pc3	NU	N	N+p3s+bfn+dat	V+past
15					A	N	N+p3s+bfn+dat	V+past
16				AV	A	N	N+p3s+bfn+dat	V+past
17	AB	PU	V	V+pc2+p3s	NU	N	N+p3s+bfn+dat	V+past
18		N	N+p3s+bfn+loc	V+bfa+Va1+pc3	NU	N	N+p3s+bfn+dat	V+past
19					A	N	N+p3s+bfn+dat	V+past
20					V+pc3	N	N+p3s+bfn+dat	V+past
21				AV	A	N	N+p3s+bfn+dat	V+past
22					A	N	N+p3s+bfn+dat	V+past
23						N	N+p3s+bfn+dat	V+past
24		NP+gen	N+pl+p3s	PP	NU	N	N+p3s+bfn+dat	V+past
25				A	NU	N	N+p3s+bfn+dat	V+past
26				NU	A	N	N+p3s+bfn+dat	V+past
27				V+pc3	NU	N	N+p3s+bfn+dat	V+past
28					A	N	N+p3s+bfn+dat	V+past
29				A	NU	N	N+p3s+bfn+dat	V+past
30						N	N+p3s+bfn+dat	V+past

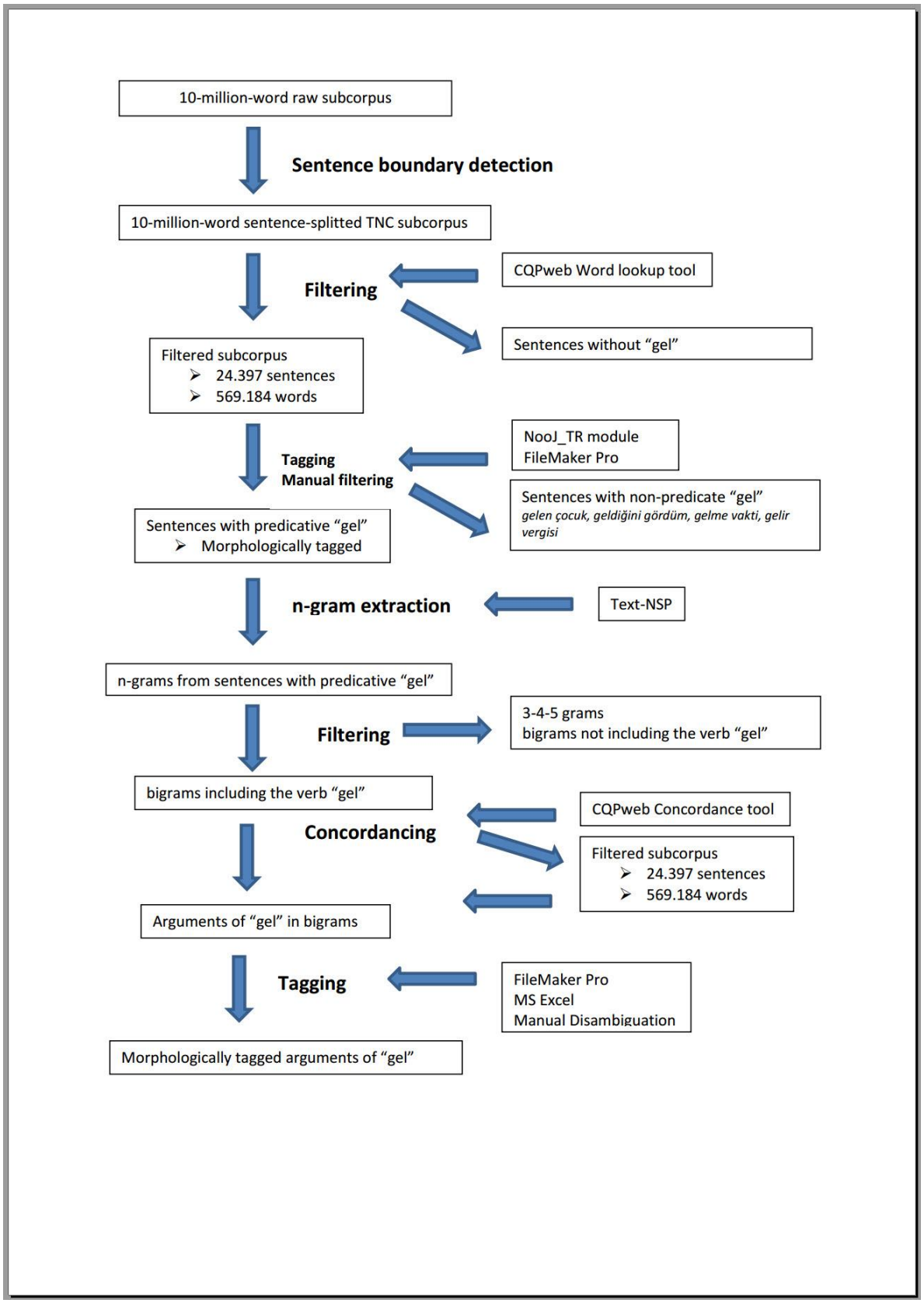
Figure 9. The result page of the grouping process



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
7					uğrak	yeri	haline	geldi		13	Tek Sayı				
8				önemli	bir	bileşeni	haline	geldi		15	Tek Sayı				
9			ender	rastlanan	bir	şey	haline	geldi		17	Tek Sayı				
10						sektör	haline	geldi		19	Tek Sayı				
11		kendilerini	gruplar	halinde	attıkları	yerler	haline	geldi		21	Tek Sayı				
12						tekel	haline	geldi		23	Tek Sayı				
13					bir	moda	haline	geldi		25	Tek Sayı				
14					sihirli	dinamizmi	haline	geldi		27	Tek Sayı				
15				zor	bir	ihtimal	haline	geldi		29	Tek Sayı				
16				sohbetin	ana	konusu	haline	geldi		31	Tek Sayı				
17			polisin	gündelik	işlerinden	biri	haline	geldi		33	Tek Sayı				
18						moda	haline	geldi		35	Tek Sayı				
19					zamanla	tutku	haline	geldi		37	Tek Sayı				
20			en	çok	konuşulan	konusu	haline	geldi		39	Tek Sayı				
21					günün	modası	haline	geldi		41	Tek Sayı				
22					bakımsız	bölgeler	haline	geldi		43	Tek Sayı				
23				pahalı	tatsız	yerler	haline	geldi		45	Tek Sayı				
24						sloganı	haline	geldi		47	Tek Sayı				
25			isteyerek	uygulanan	bir	metod	haline	geldi		49	Tek Sayı				
26				ele	geçirme	mücadelesi	haline	geldi		51	Tek Sayı				
27				bizmet	eden	örgütler	haline	geldi		53	Tek Sayı				

Figure 10 summarizes the methodology developed in the creation of the corpus. The left side of the figure covers the main steps related to database. On the right side of the figure the tools which are utilized in these steps are presented. The filtered and excluded data are also indicated on the right. The arrows show the input and the output processes.

Figure 10. Steps followed in the construction of the corpus



The following section will cover the findings and the discussions about the study. The basis will be formed by the complementation patterns of 10 most frequently observed type/word form of “gel-” and their meaning groups.

III. FINDINGS AND DISCUSSIONS

One should bear in mind that the use of statistical methods and concordance applications is normally only the first stage of a linguistic investigation. Interpretation is the human activity. The process of gathering and organizing corpus evidence is made up with focusing on repeated occurrences rather than single occurrences. This does not mean that one should ignore the unique and single occurrences, but the evaluation process is very difficult with single occurrences at this point. Therefore, it should be noted that a language pattern which is not accidentally used has to occur twice at least.

The first part of the findings and discussions section of the study will discuss the most frequently used complementation patterns of 10 most frequently observed word forms of "gel-" in the corpus, and the second part will cover the meaning groups observed among these complementation patterns.

III. 1. Complementation Patterns of Type "gel-"

Almost all the bigrams of verb "gel-" retrieved from the corpus are either *complex predicates* (anlamına gel-) or *fixed expressions* (gibi gel-). The justification for not using the term "light verb" is that "lightness" is a matter of degree as also stated in Uçar (2010). In this study, the term "complex predicate" refers to occurrences of *gel-* since in most of the instances, its prototypical meaning, although metaphorically, is preserved. There are other examples categorized as *others* (as in **gidip geliyor, çabuk gel, git gel, bana gel,** etc.); however, their observed frequency is relatively small in number, and they were also excluded from the analysis.

"The term complex predicate is used to designate a construction that involves two or more predicational elements (such as nouns, verbs and adjectives) which predicate as a single element, i.e., their arguments map onto a monoclausal syntactic structure. One person's complex predicate or compound verb is another person's serial verb, composite predicate, auxiliary construction, or even a control construction." (Butt, 2003: 1-2). In other words, complex predicate is a multi-word compound that serves as a single verb. On the other hand, a fixed expression is a standard form of expression that has taken on a more specific meaning than the expression itself. The fixed expressions are different from a proverb, and they are used as a part of a sentence.

The complex predicates of "gel-" are most frequently formed with the combination of bare, dative, possessive+dative, possessive+locative marked nouns or adjectives with the verb "gel-". The following samples are the most frequently used forms of complex predicates:

Bare noun: *karşılık gel-*

Dative marked noun: *gündeme gel-*

Possessive+dative marked noun: *haline gel-, anlamına gel-, meydana gel-*

Locative marked noun: *başta gel-*

Possessive+locative marked noun: *başında gel-*

Adjective: *iyi gel-, garip gel-*

In this study, the complementation patterns of the most frequently used forms of complex predicates were retrieved by comparing all of the most frequently used types of

gel-. After having listed all the types of *gel-* (Tables 14-23), the observed frequencies of the most frequently used forms of "gel-" with their Left 1 collocates were listed. From Table 32 to Table 37, the most frequently observed Left 1 collocates and "gel-" with its inflected forms were shown. We only focused on bigrams "*haline gel-, hale gel-, anlamına gel-, meydana gel-, gündeme gel-,* and *gibi gel-*" because they were the most commonly occurred complex predicate elements in our data.

Table 32. Frequency of occurrence of *haline gel-*

Left 1 Collocate	Type	Frequency
haline	gelmiştir	177
haline	geldi	103
haline	gelmektedir	84
haline	gelir	67
haline	gelmişti	44
haline	geliyor	29
haline	gelmiş	18
haline	gelecek	12
haline	geldiler	10
haline	geliyordu	7
haline	geldik	3
haline	gel	0
haline	gelin	0
haline	geldim	0
haline	gelmez	0

In the first three rows of Table 32, we see "*gelmiştir, geldi,* and *gelmektedir* as mostly preferred types of verb *gel* choosing the nominal haline (hal+p3s+bfn+dat) as their left 1 collocate. These mostly preferred types and their pattern structure will be exemplified in *The complementation patterns of haline gel-* section.

Table 33. Frequency of occurrence of *hale gel-*

Left 1 Collocate	Type	Frequency
hale	gelmektedir	84
hale	geldi	81
hale	gelir	81
hale	gelmişti	41

Left 1 Collocate	Type	Frequency
hale	geliyor	34
hale	gelmiş	30
hale	gelecek	15
hale	geldiler	10
hale	geldik	9
hale	geliyordu	6
hale	geldim	3
hale	gel	0
hale	gelin	0
hale	gelmez	0

Table 34. Frequency of occurrence of *anlamına gel-*

Left 1 Collocate	Type	Frequency
anlamına	gelir	221
anlamına	gelmektedir	189
anlamına	geliyor	74
anlamına	geliyordu	38
anlamına	gelmiştir	8
anlamına	gelmez	8
anlamına	gelecek	3
anlamına	geldi	0
anlamına	gelmiş	0
anlamına	gel	0
anlamına	gelmişti	0
anlamına	gelin	0
anlamına	geldim	0
anlamına	geldik	0
anlamına	geldiler	0

Table 35. Frequency of occurrence of *meydana gel-*

Left 1 Collocate	Type	Frequency
meydana	gelir	186
meydana	gelmektedir	110
meydana	gelmiştir	78
meydana	geldi	51
meydana	geliyor	20
meydana	gelmiş	13
meydana	gelmişti	11
meydana	geliyordu	7
meydana	gelecek	6
meydana	gelmez	6

meydana	gel	0
meydana	gelin	0
meydana	geldim	0
meydana	geldik	0
meydana	geldiler	0

Table 36. Frequency of occurrence of *gündeme gel-*

Left 1 Collocate	Type	Frequency
gündeme	gelmiştir	54
gündeme	geldi	51
gündeme	geliyor	17
gündeme	gelmektedir	17
gündeme	gelecek	14
gündeme	gelir	13
gündeme	gelmiş	6
gündeme	gelmişti	6
gündeme	geliyordu	6
gündeme	gel	0
gündeme	gelin	0
gündeme	geldim	0
gündeme	geldik	0
gündeme	gelmez	0
gündeme	geldiler	0

Table 37. Frequency of occurrence of *gibi gel-*

Left 1 Collocate	Type	Frequency
gibi	geliyor	111
gibi	geldi	68
gibi	geliyordu	38
gibi	gelir	14
gibi	gelmişti	12
gibi	geldim	4
gibi	gelmiştir	3
gibi	gelecek	0
gibi	gelmiş	0
gibi	gel	0
gibi	gelmektedir	0
gibi	gelin	0
gibi	geldik	0
gibi	gelmez	0
gibi	geldiler	0

If we go back to our research questions once more, the structural manifestations of phrases which are regularly associated with complementation patterns used in different types of the verb “gel-” are described as in the following sub-sections.

III. 1.1. The complementation patterns of *haline gel-*

III. 1. 1. 1. haline gelmiştir

Almost all the complementation patterns of *haline gel-* are modified by DT-‘bir’ in corpus data. “DT N haline gel” is the predominant structure. The following are the samples of this structure:

Table 38. Patterns of haline gelmiştir – *(A) DT (N) N haline gelmiştir*

açık	bir	Meclis	haline	gelmiştir
A	DT	N	N+p3s+bfn+dat	V+perf+cop
ileri	bir	kurum	haline	gelmiştir
A	DT	N	N+p3s+bfn+dat	V+perf+cop
	bir	alışkanlık	haline	gelmiştir
	DT	N	N+p3s+bfn+dat	V+perf+cop
bir	protesto	yöntemi	haline	gelmiştir
DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
bir	sanat	kolu	haline	gelmiştir
DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop

(1) Dünya savaşı sırasında müttefik ülkelerin mamul madde gıda maddeleri ve çeşitli hammadde ihtiyacını karşılayan Kanada böylece hem sanayi alanında önemli bir gelişme göstermiş hem de artan mali gücüyle birlikte İngiltere ' ye bile borç verecek düzeye gelmiş ; savaşla birlikte silahlı kuvvetleri daha *ileri bir kurum haline gelmiştir* .

(2) Açlık grevi Batıda zaman içerisinde giderek daha az ilgi çeken *bir protesto yöntemi haline gelmiştir* .

Table 39 exemplifies “A N haline gelmiştir” pattern with two examples observed in the corpus.

Table 39. Patterns of haline gelmiştir – *A N haline gelmiştir*

tek	seçenek	haline	gelmiştir
A	N	N+p3s+bfn+dat	V+perf+cop
tek	ölçüt	haline	gelmiştir
A	N	N+p3s+bfn+dat	V+perf+cop

(3) Dinin toplumsal örgütlenmesi , dini ideolojiyi merkeze yerleştiren bir siyasi partiye burjuva ideolojisinin liberal versiyonlarının krize girdiği bir sırada diğerlerine göre avantajlı kılmıştır . Diğer düzen partilerinin kırlardaki yerleşik oy depoları olarak değerlendirdiği cemaatler , 80 sonrasında kentlere taşınmış 90 ' lı yıllarla beraber , köşe dönmece liberalizmin tükendiği noktada yoksullaşan orta sınıflara sığınma kapısı oluşturmuştur . Refah Partisi kısa sürede bu kapının açıldığı *tek seçenek haline gelmiştir* .

(4) Dünyayı bize gösterilen biçimde algılamamız kavramamız tanımlamamız yaşamamız gerçek ve doğru olan *tek ölçüt haline gelmiştir* .

The sample lines of the pattern “AV A N(+p3s|bfs+p3s) haline gelmiştir” can be seen in Table 40. The | (pipe) symbol here refers to the alternatives of p3s and bfs+p3s, and the brackets () refer to the optional entries.

Table 40. Patterns of haline gelmiştir – *AV A N(+p3s|bfs+p3s) haline gelmiştir*

en	*cazip*	*bölge*	*haline*	*gelmiştir*
AV	A	N	N+p3s+bfn+dat	V+perf+cop
en	büyük	nedeni	haline	gelmiştir
AV	A	N+p3s	N+p3s+bfn+dat	V+perf+cop
en	önemli	meşgalesi	haline	gelmiştir
AV	A	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop

(5) Sonuç olarak Ortadoğu hem düşük üretim maliyeti hem de kuyu başına üretim ve rezerv miktarları nedeniyle petrol şirketleri *açısından en cazip bölge haline gelmiştir* .

(6) Politika , artık tarikatların *en önemli meşgalesi haline gelmiştir* .

The final predominat pattern observed with *haline gelmiştir* has the "AV A N+pl+(p3s+bfn) abl haline gelmiştir" structure. Table 41 exemplifies the mentioned complement structure of *haline gelmiştir*.

Table 41. Patterns of haline gelmiştir – *AV A N+pl (+p3s+bfn)+abl haline gelmiştir*

en	önemli	sorunlarından	biri	haline	gelmiştir
AV	A	N+pl+p3s+bfn+abl	PN	N+p3s+bfn+dat	V+perf+cop
en	önemli	etkinliklerden	birisi	haline	gelmiştir
AV	A	N+pl+abl	PN	N+p3s+bfn+dat	V+perf+cop

(7) Üniversitelerimizde karşılaşılan bilimsel yağmacılık ve bilim hırsızlığı , ülkemizde *en önemli sorunlarından biri haline gelmiştir* .

(8) İnsanoğlunun yerleşik düzene geçmesi ve tarımsal üretimi öğrenmeye başlamasıyla birlikte sulama , günlük yaşamın *en önemli etkinliklerden birisi haline gelmiştir* .

III. 1. 1. 2. haline geldi

With complex predicate *haline geldi*, the predominant patterns are also formed by bir-DT. The following table samples "(A|V+(neg)+aor|pc2|pc3) DT (N) N haline geldi".

Table 42. Patterns of haline gelmiştir – *(A|V+(neg)+aor|pc2|pc3) DT (N) N haline geldi*

ayrılmaz	bir	parçası	haline	geldi
V+neg+aor	DT	N+bfs+p3s	N+p3s+bfn+dat	V+past
tanıdığı	bir	kulüp	haline	geldi
V+pc2+p3s	DT	N	N+p3s+bfn+dat	V+past
	bir	moda	haline	geldi
	DT	N	N+p3s+bfn+dat	V+past
zor	bir	ihtimal	haline	geldi
A	DT	N	N+p3s+bfn+dat	V+past
uygulanan	bir	metod	haline	geldi

V+pc3	DT	N	N+p3s+bfn+dat	V+past
önemli	bir	yaşam biçimi	haline	geldi
A	DT	N N+p3s	N+p3s+bfn+dat	V+past

(9) Böylece öpüşme Avrupalıların yaşamlarının *ayrılmaz bir parçası haline geldi* .

(10) Bu yazma eylemi benim için *önemli bir yaşam biçimi haline geldi* .

Table 43 below, shows other most frequently used pattern "AV A N haline geldi" of *haline geldi*. In these samples, it is documented that noun phrases in *haline geldi* are frequently modified by AV A N.

Table 43. Patterns of haline geldi - *AV A N haline geldi*

en	çalışkan	futbolcu	haline	geldi
AV	A	N	N+p3s+bfn+dat	V+past
en	önemli	araç	haline	geldi
AV	A	N	N+p3s+bfn+dat	V+past
en	nadide	parçası	haline	geldi
AV	A	N+bfs+p3s	N+p3s+bfn+dat	V+past

(11) Romanya Milli Takımı ' nda ve İspanya ' da oynadığı dönemlerde antrenmanları hiç sevmeyen Hagi , artık G . Saray ' da topsuz idmanlarda bile *en çalışkan futbolcu haline geldi* .

(12) Kelime dağarcığının *en nadide parçası haline geldi* .

III. 1. 1. 3. haline gelmektedir

The third frequently used complex predicate is *haline gelmektedir*. The most recurring pattern with *haline gelmektedir* is DT N (bfs)+(p3s). The following table exemplifies this usage.

Table 44. Patterns of haline gelmektedir – *DT N (bfs)+(p3s) haline gelmektedir*

	hayatın	bir		parçası	haline	gelmektedir
	N+gen	DT		N+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
		bir		model	haline	gelmektedir
		DT		N	N+p3s+bfn+dat	V+cont+cop
başlı	başına	bir	risk	faktörü	haline	gelmektedir

A	N+p3s+bfn+dat	DT	N	N+p3s	N+p3s+bfn+dat	V+cont+cop
	büyük	bir	serüvenin	materyali	haline	gelmektedir
	A	DT	N+gen	N+p3s	N+p3s+bfn+dat	V+cont+cop

(13) İnsanlar doğdukları günden itibaren bir eğitim süreci içine girmekte , *eğitim hayatın bir parçası haline gelmektedir* .

(14) Örneğin CIA ' nın Ortadoğu Masası eski şeflerinden ABD ' nin Türkiye ve İslam siyasetlerinin oluşturulması konusunda uzun süre Beyaz Saray ' a danışmanlık yapan Graham Fuller Foreign Affairs dergisinin Mart - Nisan 2002 tarihli sayısında şunları yazıyordu : Türkiye kesinlikle *bir model haline gelmektedir* .

The internal structure of noun phrase can include genitive-possessive constructions as exemplified in Table 45.

Table 45. Patterns of haline gelmektedir – *N+pl+gen N N+p3s haline gelmektedir | N N+pl+p3s+bfn+gen N+p3s haline gelmektedir*

Kürtlerin	ilgi	odağı	haline	gelmektedir
NP+pl+gen	N	N+p3s	N+p3s+bfn+dat	V+cont+cop
petrol	şirketlerinin	odağı	haline	gelmektedir
N	N+pl+p3s+bfn+gen	N+p3s	N+p3s+bfn+dat	V+cont+cop

(15) HEP hem PKK ' nın desteğini almakta hem de bölgede bulunan aydın / entelektüel *Kürtlerin ilgi odağı haline gelmektedir* .

The overall pattern of *haline gel-* can be seen in the following table.

Table 46. The overall pattern of *haline gel-*

(AV)	(A)	(DT)	N	*haline gel-*
	(V+(neg)+aor|pc2|pc3)	N+abl	(PN)	

III. 1. 2. The Complementation Patterns of hale gel-

This section will discuss the complementation patterns of *hale gel-*. Table 33 shows us that the most frequently used inflected form of *hale gel-* is the complex predicate *hale gelmektedir*. For the complementation patterns of *hale gel-*, unlike *haline*, "hale gel**ir**, hale gel**mektedir**, and hale gel**iyor**" are ranked as the commonly used inflected forms in the formation of complex predicates. The pattern structures of *hale gel-* significantly display a wide variety when compared to *haline gel-*.

III. 1. 2. 1. hale gelmektedir

The most commonly used pattern structure with *hale gelmektedir* is "AV A hale gelmektedir". Table 47 exemplifies the most frequently used pattern structure of *hale gelmektedir*.

Table 47. Patterns of hale gelmektedir – *AV A hale gelmektedir*

işletme	açısından	çok	önemli	hale	gelmektedir
NP	N+bfs+p3s+bfn+abl	AV	A	N+dat	V+cont+cop
	vazgeçilmesi	çok	zor	hale	gelmektedir
	V+nz2+bfs+p3s	AV	A	N+dat	V+cont+cop
sistem	kurmaktan	daha	zor	hale	gelmektedir
N	V+nz1+abl	AV	A	N+dat	V+cont+cop
dış	etkilere	daha	açık	hale	gelmektedir
N	N+pl+dat	AV	A	N+dat	V+cont+cop

(16) Hizmet kalitesinin ölçümü , *işletme açısından çok önemli hale gelmektedir* .

(17) 10 . Selektif politika uygulamalarının içerdiği teşvik sistemleri kaynakları etkin dağılımından uzaklaşması piyasa sinyallerinin bozulması davranışsal değişiklikler gibi çok ciddi olumsuz sonuçlar üretebilmekte ve bu tür politikalar bir kez uygulanmaya başlandıktan sonra *vazgeçilmesi çok zor hale gelmektedir* .

Table 48. Patterns of hale gelmektedir - *N+pl+p3s V+aor hale gelmektedir*

DNA	parçacıkları	görünür	hale	gelmektedir
AB	N+pl+p3s	V+aor	N+dat	V+cont+cop
bakteri	plakları	görünür	hale	gelmektedir
N	N+pl+p3s	V+aor	N+dat	V+cont+cop

(18) Böylece 10 nükleotidden birkaç bin nükleotide kadar olan farklı büyüklükteki *DNA parçacıkları görünür hale gelmektedir* .

III. 1. 2. 2. hale geldi

For the complex pattern -*hale geldi*-, the most prominent pattern structure is formed by bir-DT which precedes *hale geldi*. We found three different pattern types formed with *haline geldi*. Table 49-51 exemplify all the patterns formed with *hale geldi*.

Table 49. Patterns of hale geldi – *AV A hale geldi*

eskisine	oranla	çok	daha	önemli	hale	geldi		
A+bfs+p3s+bfn+dat	N+ins	DT	AV	A	N+dat	V+past		
			daha	önemli	hale	geldi	benim	için
			AV	A	N+dat	V+past	PN+bfi+p1s	PP
	her	şeyden	daha	önemli	hale	geldi		
	DT	N+abl	AV	A	N+dat	V+past		

(19) Uluslararası sermaye adına hareket eden ABD ' nin uzun vadeli yönelimleri *eskisine oranla çok daha önemli hale geldi* ve bu yönelimlerin güncel gelişmeler üzerindeki doğrudan baskısı arttı .

(20) Onurlu bir insan olmak iyi bir asker olmaktan *daha önemli hale geldi benim için* .

Table 50. Patterns of hale geldi – *V+neg+aor|A DT hale geldi*

	örtülmez	bir	hale	geldi
	V+neg+aor	DT	N+dat	V+past
olmazsa	olmaz	bir	hale	geldi
V+neg+aor+AV11	V+neg+aor	DT	N+dat	V+past
	yankılı	bir	hale	geldi
	A	DT	N+dat	V+past

(21) Suçluluğum içimde büyüdü *örtülmez bir hale geldi* .

(22) Çok geçmeden sesi *yankılı bir hale geldi* .

Table 51. Patterns of hale geldi – *DT hale geldi*

Türkiye	bu	hale	geldi
NP	DT	N+dat	V+past
Ondan	bu	hale	geldi
PN+bfn+abl	DT	N+dat	V+past

(23) *Türkiye bu hale geldi . . .*

(24) *Ondan bu hale geldi* iş .

III. 1. 2. 3. hale gelir

The third frequently used form of *gel-* with its left 1 collocate *hale* is *hale gelir.* With *hale gelir,* we can argue that 4 different pattern structures are observed in the corpus. Although their frequencies are relatively small in number in our corpus, we have not excluded these occurrences. Yet, they need to be checked in big size corpora.Tables 52-55 exemplify all the pattern structures observed with *hale gelir*.

Table 52. Patterns of hale gelir – *V(+neg)+aor hale gelir*

gözle	görünür	hale	gelir
N+ins	V+aor	N+dat	V+aor
idare	edilemez	hale	gelir
N	V+bfa+neg+aor	N+dat	V+aor
kontrol	edemez	hale	gelir
N	V+bfa+neg+aor	N+dat	V+aor
inkâr	edemez	hale	gelir
N	V+bfa+neg+aor	N+dat	V+aor

(25) Toplumsal değişimde bir hızlanma *gözle görünür hale gelir* .

(26) Çiller şöyle devam etti : Seçim ertelenirse kimse ne olacağını düşünmüyor . Çünkü ondan sonra yapmak istedikleri şey barajı yüzde 5 ' e indirmek . İnerse 10 - 15 parti Meclis ' e girer . Yedi - sekiz partili koalisyonlar olur . Türkiye *idare edilemez hale gelir* . Yarın (bugün) grup kararı almakla kalmayıp tüm liderleri dolaşarak seçim iptalinin yanlış olduğunu anlatacağız .

Table 53. Patterns of hale gelir – AV DT A hale gelir

daha	az	güvenli	hale	gelir
AV	DT	A	N+dat	V+aor
daha	az	kullanışlı	hale	gelir
AV	DT	A	N+dat	V+aor
		olanaklı	hale	gelir
		A	N+dat	V+aor
		olanaksız	hale	gelir
		A	N+dat	V+aor

(27) Bununla birlikte silahlanmaya yapılan çok yüklü yatırımlar da ülkeye kısa vadede daha büyük güvenlik sağlarken Amerikan ekonomisinin ticari rekabet gücünü öylesine aşındırabilir ki ülke uzun vadede *daha az güvenli hale gelir* .

(28) İnsan eylemlerini doğru ya da yanlış olarak nitelemek *olanaksız hale gelir* .

Table 54. Patterns of hale gelir – *N+pl+p3s+bfn+acc N+p3s+bfn+dat V+bfa+neg+aor hale gelir*

Sözlerini	yerine	getiremez	hale	gelir
N+pl+p3s+bfn+acc	N+p3s+bfn+dat	V+bfa+neg+aor	N+dat	V+aor
İşlerini	yerine	getiremez	hale	gelir
N+pl+p3s+bfn+acc	N+p3s+bfn+dat	V+bfa+neg+aor	N+dat	V+aor

(29) Örneğin , iktidarını yavaş yavaş kaybeden Kral , sözünü dinletemez olduğunda emrinde olması gereken Muhafız , Kral ' ın *sözlerini yerine getiremez hale gelir* .

Table 55. Patterns of hale gelir – *V+pc1|pc2+p3s+bfn+acc V+bfa+neg+aor hale gelir*

yemesi	gerektiğini	bilemez	hale	gelir
V+nz2+bfs+p3s	V+pc2+p3s+bfn+acc	V+bfa+neg+aor	N+dat	V+aor
ne	yapacağını	bilemez	hale	gelir
PN	V+pc1+p3s+bfn+acc	V+bfa+neg+aor	N+dat	V+aor

(30) Diyetler birbirini izledikçe , diyet medyası sağ olsun , bu inanışlara bir de günbegün , yeni - son bulunan - en bilimsel kurallar eklendikçe . . . diyetzede ne yapacağını , ne *yemesi gerektiğini bilemez hale gelir . . .*

(31) Çocuk ne zaman , nerede , *ne yapacağını bilemez hale gelir* .

The overall pattern of *hale gel-* can be seen in the following table.

Table 56. The overall pattern of *hale gel-*

AV	A V+(neg)+aor	(DT-bir)	*hale gel-*
DT-bu			

III. 1. 3. The Complementation Patterns of anlamına gel-

This section will be about the complementation patterns of *anlamına gel-*. If we go back to Table 34, it shows us that the most frequently used type of *anlamına gel-* is *anlamına gelir*. For the complementation patterns of *anlamına gel-*, similar to *hale gel-*, "anlamına gel**ir**, anlamına gel**mektedir**, and anlamına gel**iyor**" are ranked as the commonly used complex predicates.

III. 1. 3. 1. anlamına gelir

Similar to *hale gel-*, the most commonly used pattern structure with *anlamına gelir* is formed by modification with bir-DT. Table 57 exemplifies the most frequently occurred samples of the pattern structures of *anlamına gelir.*

The modification of nominals with *bir* is also observed with nouns in bare form just before *anlamına gelir*. The following table shows this usage.

Table 57. Patterns of anlamına gelir – *(A) DT N anlamına gelir*

	bir	kriz	anlamına	gelir
	DT	N	N+p3s+bfn+dat	V+aor
önemsiz	bir	güç	anlamına	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
	bir	bilinç	anlamına	gelir
	DT	N	N+p3s+bfn+dat	V+aor

(32) Yıkılmaya yüz tutmuş bir yapının çökmesi büyük veya küçük ama mutlaka *bir kriz anlamına gelir* .

(33) Böyle düşünüldüğünde Tanrı , manevî değerlerin ve ideallerin kesin zaferini temin etmeyle alakalı bir güç anlamına ve madde de , bu değerlerin bozulmasında veya başanlmasında *önemsiz bir güç anlamına gelir* .

The other frequently observed pattern structure with *anlamına gelir* is A|N V+nz2+bfs+p3s. Although the preceding structure of A|N V+nz2+bfs+p3s differs, almost all the preceding words are nouns. Table 58 displays this usage.

Table 58. Patterns of anlamına gelir – A|N *V+nz2+bfs+p3s anlamına gelir*

terk	edilmesi	anlamına	gelir
N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
kurban	edilmesi	anlamına	gelir
N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
olumlu	olması	anlamına	gelir
A	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
gerçek	olması	anlamına	gelir
A	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
yok	olması	anlamına	gelir
N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
yok	edilmesi	anlamına	gelir
N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor

(34) Bu durum davanın geleneksel iktidar mücadelelerinin manevralarına *terk edilmesi anlamına gelir* .

(35) PESEZ reaksiyonunda , 2 - dezoksi oz aranacak çözeltiye ksantidrolün (C13H10O2) asetik asitteki çözeltisinden katılır , pembe rengin oluşması , sonucun *olumlu olması anlamına gelir* .

The third commonly used pattern structure of *anlamına gelir* is V+pc2+p3s *anlamına gelir*. The lexical items preceding the pattern *olduğu* (V+pc2+p3s) *anlamına gelir* also differ significantly in this usage.

Table 59. Patterns of anlamına gelir – *V+pc2+p3s anlamına gelir*

aykırı	olduğu	anlamına	gelir
A	V+pc2+p3s	N+p3s+bfn+dat	V+aor
repertuvarı	olduğu	anlamına	gelir
N+p3s	V+pc2+p3s	N+p3s+bfn+dat	V+aor
para	olduğu	anlamına	gelir
N	V+pc2+p3s	N+p3s+bfn+dat	V+aor

(36) Bu ilke aynı zamanda , yasanın amaçlamadığı bir sonuca yol açması halinde yasanın harfi harfine uygulanmasının hukuka *aykırı olduğu anlamına gelir* .

(37) Bu kimliklerin kurulduğu sınırlı bir hikâyeler ve uygun temsiliyetler *repertuvarı olduğu anlamına gelir* .

The last frequently used pattern structure of *anlamına gelir* is made up with AV A V+nz2 anlamına gelir. The following table exemplifies this usage.

Table 60. Patterns of anlamına gelir – *AV A V+nz2 anlamına gelir*

daha	açık	olma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor
daha	büyük	ışıma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor
daha	küçük	ışıma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor

(38) Bu da bölgeye özgü rahatsızlıklara *daha açık olma anlamına gelir* .

(39) UV , frekansı mor (violet) ışığın frekansından *daha büyük ışıma anlamına gelir* (dalga boyu daha kısa) .

There are also other pattern structures of *anlamına gelir*; however, their frequency is relatively small in number. For the least frequently observed items, see Appendix 3.

III. 1. 3. 2. anlamına gelmektedir

The second most frequently used complex predicate *anlamına gelmektedir* has several pattern structures; however, the four types seem to be occurring many times in the corpus, and we can say that they are the predominant pattern structures of *anlamına gelmektedir*.

The first pattern structure is made up with "A DT N anlamına gelmektedir". The examples below show that *anlamına gelmektedir* prefers an adjective, bir-DT, and a bare noun.

Table 61. Patterns of anlamına gelmektedir – *A DT N anlamına gelmektedir*

önemli	bir	olanak	anlamına	gelmektedir
A	DT	N	N+p3s+bfn+dat	V+cont+cop
yoğun	bir	işbirliği	anlamına	gelmektedir
A	DT	N	N+p3s+bfn+dat	V+cont+cop
büyük	bir	pazar	anlamına	gelmektedir
A	DT	N	N+p3s+bfn+dat	V+cont+cop

(40) Diğer yandan söz konusu bölgenin emekçi halklarının giderek daha fazla ortaklaşan çıkarları işçi sınıfının enternasyonal mücadelesinin geliştirilmesi açısından da *önemli bir olanak anlamına gelmektedir* .

(41) Bu yalnızca ülke içinde değil ; ülkeler arasında da *yoğun bir işbirliği anlamına gelmektedir* .

The second recurrent structure seems to be "N V+pc2+p3s" which precedes *anlamına gelmektedir*. The following table displays the usage with examples.

Table 62. Patterns of anlamına gelmektedir – *N V+pc2+p3s anlamına gelmektedir*

bakanlık	olduğu	anlamına	gelmektedir
N	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
bireycilik	olduğu	anlamına	gelmektedir

N	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
sahip	olduğu	anlamına	gelmektedir
N	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop

(42) Bakanlıkların gerçek anlamda başları müsteşar olduğuna göre bu MSB ' nin askerler tarafından yönetilen bir *bakanlık olduğu anlamına gelmektedir* .

(43) Bu , psikanalitik öncül ve perspektifin , 20 . yüzyıl Amerika ' sının temel toplumsal felsefesi , *bireycilik olduğu anlamına gelmektedir* .

The examples above are the patterns that are predominantly used with *anlamına gelmektedir*. There are also other pattern structures which are formed with *anlamına gelmektedir*. The modification in those examples mostly occurs with bir-DT; however, the place of modification changes in most of the examples.

III. 1. 3. 3. anlamına geliyor

Anlamına geliyor is the third frequently used with *anlamına gel-*. With complex predicate *anlamına geliyor,* we can say that 4 different pattern structures are observed in the corpus. Since their frequencies are relatively small in number, they should also be tested before being used as starting point. Table 63-66 exemplify all the pattern structures observed with *hale gelir*.

Table 63. Patterns of anlamına geliyor – *V+pc2+p3s anlamına geliyor*

daha	çok	imkân	olduğu	anlamına	geliyor
AV	DT	N	V+pc2+p3s	N+p3s+bfn+dat	V+bfi+imprf
	yakın	ilişkileri	olduğu	anlamına	geliyor
	A	N+pl+p3s	V+pc2+p3s	N+p3s+bfn+dat	V+bfi+imprf
organizmam	tarafından	tüketilmiş	olduğu	anlamına	geliyor
N+p1s	N+p3s+bfn+abl	V+perf	V+pc2+p3s	N+p3s+bfn+dat	V+bfi+imprf

(44) Bu gelişmeler tekelleşmenin arttığı ve spekülasyon için şimdi *daha çok imkân olduğu anlamına geliyor* .

(45) Bu da Longgapu Mağarası sakinlerinin , ya bilinen en eski Homo alt türü olan Homo habilis ya da Homo erectus ' un Afrika ' daki öncülü sayılan Homo ergaster ile *yakın ilişkileri olduğu anlamına geliyor* .

Table 64. Patterns of anlamına geliyor – *N+(p3s+bfn+dat|bfy+dat)+nz1 anlamına geliyor*

denklemin	dışına	düşmek	anlamına	geliyor
N+gen	N+p3s+bfn+dat	V+nz2	N+p3s+bfn+dat	V+bfi+imprf
bir	araya	getirmek	anlamına	geliyor
DT	N+bfy+dat	V+nz1	N+p3s+bfn+dat	V+bfi+imprf

(46) Dolayısıyla AB için bu koşullarda bir de Türkiye ' yi kaybetmek bölgeyle bütün fiziki bağlarını yitirmek ve *denklemin dışına düşmek anlamına geliyor* .

(47) Emm içerde siviller varken emm silahlarını yeni bırakmış PKK unsurlarının da kampa getirilmesi zaten bugüne kadar emm hep uzak tutulması gereken iki unsuru *bir araya getirmek anlamına geliyor* .

Table 65. Patterns of anlamına geliyor – *A DT V+nz2|N anlamına geliyor*

çok	büyük	bir	ilerleme	anlamına	geliyor
DT	A	DT	V+nz2	N+p3s+bfn+dat	V+bfi+imprf
	dinamik	bir	model	anlamına	geliyor
	A	DT	N	N+p3s+bfn+dat	V+bfi+imprf

(48) Apeyron kavramı Thales ' inkine oranla *çok büyük bir ilerleme anlamına geliyor* .

(49) Bu yakın gelecek tablosu son derece *dinamik bir model anlamına geliyor* .

Table 66. Patterns of anlamına geliyor – *A N+pl V+bfy|bfa (+bfa) Va1+pc1 (+pl) p3s anlamına geliyor*

farklı	bilgiler	ekleyebilecekleri	anlamına	geliyor
A	N+pl	V+bfy+bfa+Va1+pc1+pl+p3s	N+p3s+bfn+dat	V+bfi+imprf
farklı	sonuçlar	verebileceği	anlamına	geliyor
A	N+pl	V+bfa+Va1+pc1+p3s	N+p3s+bfn+dat	V+bfi+imprf

(50) Böylece araç , başka programların ve internet sayfalarının kendi ortam kitaplığına erişmesine imkan tanır : Bunun , yabancı uygulamaların belirlenen erişim haklarına bağlı

olarak her bir bilgisayar üzerinde hangi albümlerin kayıtlı olduğunu görebilecekleri veya hatta *farklı bilgiler ekleyebilecekleri anlamına geliyor* .

(51) Bu da anlık hava durumu tahminlerinin oldukça *farklı sonuçlar verebileceği anlamına geliyor* .

The overall pattern of *anlamına gel-* can be seen in the following table.

Table 67. The overall pattern of *anlamına gel-*

(AV)	(A)	(DT)	N V+nz2|pc2|nz1	*anlamına gel-*

III. 1. 4. The Complementation Patterns of meydana gel-

This section explains the complementation patterns of meydana gel-. Table 35 shows us that the most frequently used type of meydana gel- is the complex predicate *meydana gelir*. For the complementation patterns of *meydana gel-*, the first and the second complex patterns are similar to *anlamına gel-*; however, the third frequently used complex predicate is different, and it is *meydana gelmiştir*.

III. 1. 4. 1. meydana gelir

The most frequently used complex predicate *meydana gelir* is formed by three predominant pattern structures. The first one is V+nz2+bfs+acc N+p3s meydana gelir. Table 68 below exemplifies this usage.

Table 68. Patterns of meydana gelir – *V+nz2+bfs+p3s N+p3s meydana gelir*

bağlanması	sonucu	meydana	gelir
V+nz2+bfs+p3s	N+p3s	N+dat	V+aor
birleşmesi	sonucu	meydana	gelir
V+nz2+bfs+p3s	N+p3s	N+dat	V+aor
üretilmesi	sonucu	meydana	gelir

V+nz2+bfs+p3s	N+p3s	N+dat	V+aor

(52) Bu yapı peptid zincirlerinin heliks kıvrımlarında karşı karşıya gelen kısımlar arasında yer alan bir amino asitin karboksil oksijeninin karşısındaki amino asitin amino grubundaki azotuna hidrojen bağı ile *bağlanması sonucu meydana gelir* (1 . ve 4 . amino asitler arasında) .

The second frequently observed pattern structure is formed by bir-DT. Below are the examples of this usage.

Table 69. Patterns of meydana gelir – *DT N N (+pl) meydana gelir*

bir	takım	değişiklikler	meydana	gelir
DT	N	N+pl	N+dat	V+aor
bir	dizi	reaksiyon	meydana	gelir
DT	N	N	N+dat	V+aor

(53) Bir göçmenin yaşı cinsiyeti göç nedeni üyesi olduğu toplumsal sınıf eğitim düzeyi ve kültürel geçmişi ne olursa olsun ve ülkede kalma süresi ne kadar olursa olsun göçmenlik durumundan dolayı onun iç dünyasında *bir takım değişiklikler meydana gelir* .

(54) Besin maddeleri alındığında metabolizma adı verilen ve vücudumuzdaki tüm kimyasal olayları ifade eden *bir dizi reaksiyon meydana gelir* .

The other pattern structure observed with *meydana gelir* is formed by clitics. The common structure that precedes clitics is formed by N+bfs+p3s+bfn+loc.

Table 70. Patterns of meydana gelir - *N+bfs+p3s+bfn+loc CL meydana gelir*

diş	etlerinde	de	meydana	gelir
N	N+pl+p3s+bfn+loc	CL	N+dat	V+aor
predatör	saldırısında	da	meydana	gelir
N	N+bfs+p3s+bfn+loc	CL	N+dat	V+aor

(55) İşte bu yosun tabakanın aynısı ağızda dişler üzerinde ve *diş etlerinde de meydana gelir* .

You can also find the other detailed samples of the patterns of *meydana gelir* in Appendix 4.

III. 1. 4. 2. meydana gelmektedir

meydana gelmektedir is the other frequently used complex predicate which is observed with a noun (meydan) which has dative case (-A) in the corpus. Table 71 shows DT V+nz2 meydana gelmektedir pattern structure with its examples.

Table 71. Patterns of meydana gelmektedir – *DT V+nz2 meydana gelmektedir*

bir	düşme	meydana	gelmektedir
DT	V+nz2	N+dat	V+cont+cop
bir	gelişme	meydana	gelmektedir
DT	V+nz2	N+dat	V+cont+cop

(56) Meyve türlerine ait çeliklere uygulanan hormon konsantrasyonlarının bir noktaya kadar optimal etkiyi gösterdikten sonra , uygulanan doz arttıkça köklenme oranında *bir düşme meydana gelmektedir* .

Another pattern is the N(+pl) CJ N+pl+abl meydana gelmektedir. The following are the samples of this usage.

Table 72. Patterns of meydana gelmektedir - *N(+pl) CJ N+pl+abl meydana gelmektedir*

temsilciler	ve	rehberlerden	meydana	gelmektedir
N+pl	CJ	N+pl+abl	N+dat	V+cont+cop
rakam	ve	yazılardan	meydana	gelmektedir
N	CJ	N+pl+abl	N+dat	V+cont+cop
yazı	ve	çizgilerden	meydana	gelmektedir
N	CJ	N+pl+abl	N+dat	V+cont+cop

(57) Yürütme komitesi ; grup liderleri , üst ve orta kademe *yönetiminden temsilciler ve rehberlerden meydana gelmektedir* .

The third pattern structure observed with *meydana gelmektedir* is NU N+abl meydana gelmektedir. Unlike other complex predicates formed by *gel-*, *meydana gelmektedir* prefers *numbers* (NU) as Left 2 collocate. *meydana gel-* has two different senses. The use of numbers in the examples below denotes the meaning of "to be made up of".

Table 73. Patterns of meydana gelmektedir – *NU N+abl meydana gelmektedir*

üç	kavisten	meydana	gelmektedir
NU	N+abl	N+dat	V+cont+cop
iki	aşamadan	meydana	gelmektedir
NU	N+abl	N+dat	V+cont+cop
altı	bölümden	meydana	gelmektedir
NU	N+abl	N+dat	V+cont+cop
üç	şeritten	meydana	gelmektedir
NU	N+abl	N+dat	V+cont+cop

(58) Minareyle bütünlük arzetmeyen ve ona bir perçinle tutturulan cihaz , yere paralel olarak 40 cm . arayla üst üste yerleştirilen iki demir çubukla birleştirilen daha uzun bir mil ve bunun iki yanında açık kısmı yukarı bakan sivri bir kemer şeklinde tanzim edilmiş iç - içe *üç kavisten meydana gelmektedir* .

The following examples form the last remarkable pattern structure of *meydana gelmektedir*. In these examples, we see that the adjectives are used in between numbers and ablative marked nouns.

Table 74. Patterns of meydana gelmektedir – *NU A N(+abl) meydana gelmektedir*

iki	yarım	daireden	meydana	gelmektedir
NU	A	N+abl	N+dat	V+cont+cop
iki	ayrı	sistemden	meydana	gelmektedir
NU	A	N+abl	N+dat	V+cont+cop

(59) Saat , sağlam vaziyetteki bir milin merkez teşkil ettiği 15 ° aralıklarla çizilmiş saat çizgileriyle , bunları alt tarafta sınırlayan *iki yarım daireden meydana gelmektedir* .

III. 1. 4. 3. meydana gelmiştir

meydana gelmiştir is the third frequently used form of *meydana gel-*. With *meydana gelmiştir,* we can say that 3 different predominant pattern structures are observed in the corpus. Table 75-77 exemplify all the pattern structures observed with *meydana gelmiştir.*

Table 75. Patterns of meydana gelmiştir – *N(+pl) CJ N+pl meydana gelmiştir*

nefes	ve	mersiyeler	meydana	gelmiştir
N	CJ	N+pl	N+dat	V+perf+cop
kuyruklar	ve	haleler	meydana	gelmiştir
N+pl	CJ	N+pl	N+dat	V+perf+cop

(60) Mersiyeler , şiirler , makterler , deyiş , *nefes ve mersiyeler meydana gelmiştir* .

(61) Kuyruklu yıldızlar , yörüngeleri üzerinde dönen tozlu buz yığınlarıdır ki bunların sathı , güneşten gelen ısıyla buharlaşmış ve bu buharlardan *kuyruklar ve haleler meydana gelmiştir* .

Table 76. Patterns of meydana gelmiştir – *NU(+abl) AV|N N+abl meydana gelmiştir*

birden	fazla	molekülden	meydana	gelmiştir
NU+abl	AV	N+abl	N+dat	V+perf+cop
bir	iç	kısımdan	meydana	gelmiştir
NU	N	N+abl	N+dat	V+perf+cop

(62) Bazı glusitler ise *birden fazla molekülden meydana gelmiştir* .

(63) Hücre stoplazmaları koyu kıvamda bir dış kısım ve daha akıcı olan *bir iç kısımdan meydana gelmiştir* .

Table 77. Patterns of meydana gelmiştir – *A|DT| N+(nz2)pl meydana gelmiştir*

kültürel	değişiklikler	meydana	gelmiştir
A	N+pl	N+dat	V+perf+cop
çarpıcı	değişmeler	meydana	gelmiştir
A	V+nz2+pl	N+dat	V+perf+cop
bazı	değişiklikler	meydana	gelmiştir
DT	N+pl	N+dat	V+perf+cop

(64) Müslümanlar İspanya , Portekiz , İtalya , Kıbrıs ve Fransa ' nın bir bölümünü içine alan , Avrupa ' nın büyük bir kısmını ele geçirdiklerinde buralarda çok önemli ilmî ve *kültürel değişiklikler meydana gelmiştir* .

(65) Kadınların ücretli işgücü olarak emek piyasasına girmeleriyle , çalışma yaşamının ve genel olarak toplumsal yaşamın niteliğinde *çarpıcı değişmeler meydana gelmiştir* .

The overall pattern of *meydana gel-* can be seen in the following table.

Table 78. The overall pattern of *meydana gel-*

(DT)	N	(V+nz2 sonucu)		*meydana gel*
	(V+nz2)	N+loc	CL	(to occur, to happen)
NU	(A)	N+abl		*meydana gel* (to be made up of)

III. 1. 5. The Complementation Patterns of gündeme gel-

gündeme gelmiştir, gündeme geldi, gündeme geliyor are the top three ranked inflected forms of *gündeme gel-*. The usage of adverbs and clitics is significant among the seven identified inflected patterns of *gündeme gel-*.

III. 1. 5. 1. gündeme gelmiştir

Table 79. Patterns of gündeme gelmiştir – *N|DT CL gündeme gelmiştir*

yönetim	değişiklikleri	de	gündeme	gelmiştir
N	N+pl+p3s	CL	N+dat	V+perf+cop

yönetim	kavramı	da	gündeme	gelmiştir
N	N+p3s	CL	N+dat	V+perf+cop
bazı	politikalar	da	gündeme	gelmiştir
DT	N+pl	CL	N+dat	V+perf+cop

(66) Buna koşut olarak *yönetim değişiklikleri de gündeme gelmiştir* .

(67) Bu nedenle finansal sektörde yaşanan krize yönelik olarak doğrudan etki gösterecek politikaların yanısıra reel sektöre yönelik ve bankacılık sektörünü dolaylı olarak destekleyecek *bazı politikalar da gündeme gelmiştir* .

Table 80. Patterns of gündeme gelmiştir – *A|DT A|DT N V+AV02 gündeme gelmiştir*

yeni	bir	sorun	olarak	gündeme	gelmiştir
A	DT	N	V+AV02	N+dat	V+perf+cop
bir	ekonomik	alternatif	olarak	gündeme	gelmiştir
DT	A	N	V+AV02	N+dat	V+perf+cop
bir	başka	sorun	olarak	gündeme	gelmiştir
DT	DT	N	V+AV02	N+dat	V+perf+cop

(68) İş bulabilen anneler içinde çocukların bakımı *yeni bir sorun olarak gündeme gelmiştir.*

(69) Pasifik kaplanlarıyla yakın ilişkiler kurduğunu Asya Afrika ve Ortadoğu ülkelerine *bir ekonomik alternatif olarak gündeme gelmiştir* .

Table 81. Patterns of gündeme gelmiştir – *AV gündeme gelmiştir*

	6.	maddesi	ile	yeniden	gündeme	gelmiştir
	DG	N+bfs+p3s	CJ	AV	N+dat	V+perf+cop
Asya	tipi	üretim	tarzı	yeniden	gündeme	gelmiştir
NP	N+acc	N	N+p3s	AV	N+dat	V+perf+cop

(70) Ünlü Sovyet doğabilimcilerinden E . Varga ' nın verdiği bilgilere göre Sovyetler Birliği döneminde de ancak 1920 - 1925 yılları arasında Batılı endüstri devletlerinde yakın bir gelecekte bir sosyalist devrimin gerçekleşebileceğinden artık iyice umut kesilip ,

devrimci mücadelenin Doğuya kaydırılmasına karar verilince *Asya tipi üretim tarzı yeniden gündeme gelmiştir* .

III. 1. 5. 2. gündeme geldi

Table 82. Patterns of gündeme geldi – *CL gündeme geldi*

	yardım	da	gündeme	geldi
	N	CL	N+dat	V+past
ziyaretin	iptali	de	gündeme	geldi
N+gen	N+p3s	CL	N+dat	V+past
	gerileme	de	gündeme	geldi
	V+nz2	CL	N+dat	V+past
Mert'in	askerliği	de	gündeme	geldi
NP+gen	N+p3s	CL	N+dat	V+past

(71) İkili görüşmede Türkiye ' nin Filistin yönetimine yapmayı kararlaştırdığı *yardım da gündeme geldi* .

(72) İP lideri Doğu Perinçek ' in iki hafta önce İsviçre ' de yaptığı konuşmada Ermeni soykırımını reddettiği gerekçesiyle gözaltına alınmasının ardından , iki ülke ilişkilerinde gerilim yaşanırken , İsviçre Ekonomi Bakanı Joseph Deiss ' ın eylülde yapacağı *ziyaretin iptali de gündeme geldi* .

Table 83. Patterns of gündeme geldi – *N|V+nz2 N+p3s gündeme geldi*

operasyon	olasılığı	gündeme	geldi
N	N+p3s	N+dat	V+past
kaybetme	olasılığı	gündeme	geldi
V+nz2	N+p3s	N+dat	V+past

(73) Daha sonraki günlerde sık sık *operasyon olasılığı gündeme geldi* .

III. 1. 5. 3. gündeme geliyor

Table 84. Patterns of gündeme geliyor – *AV gündeme geliyor*

yeniden	gündeme	geliyor
AV	N+dat	V+bfi+imprf

sürekli	gündeme	geliyor
AV	N+dat	V+bfi+imprf
sık sık	gündeme	geliyor
AV	N+dat	V+bfi+imprf

(74) Eski ABD başkanlarından Richard Nixon ' ı koltuğundan eden Watergate skandalı çeyrek yüzyıl sonra festivalde *yeniden gündeme geliyor* .

Table 85. Patterns of gündeme geliyor – *N|DT N|N+p3s(+bfs+p3s) gündeme geliyor*

centrism	görüşü	gündeme	geliyor
N	N+p3s	N+dat	V+bfi+imprf
özerklik	konusu	gündeme	geliyor
N	N+bfs+p3s	N+dat	V+bfi+imprf
şu	soru	gündeme	geliyor
DT	N	N+dat	V+bfi+imprf

(75) Europa - *centrism görüşü gündeme geliyor* .

(76) Buraya baktığımız zaman da *özerklik konusu gündeme geliyor* .

The overall pattern of *gündeme gel-* can be seen in the following table.

Table 86. The overall pattern of gündeme gel

(DT)	N|V+nz2	(CL)	*gündeme gel-*
(V+AV02|AV)			

III. 1. 6. The Complementation Patterns of gibi gel-

According to Göksel and Kerslake (2005: 412), *gibi gel-* is defined as "an informal idiom combined with the dative marked form of a personal pronoun or of any noun phrase referring (a) human being(s), means 'seem (to someone)'". *gibi gel-* is also unique, and thus included in the study, in that it is not a complex predicate, but a fixed

expression used mostly with noun clauses. The following sub-sections present all the pattern structures of *gibi gel-*.

III. 1. 6. 1. gibi geliyor

Table 87. Patterns of gibi geliyor –*DT N|N+Vi+perf gibi geliyor (PN+dat)*

bir	çözüm	gibi	geliyor	bana
DT	N	PP	V+bfi+imprf	PN+dat
bir	gidiş	gibi	geliyor	bana
DT	N	PP	V+bfi+imprf	PN+dat
bir	şey	gibi	geliyor	
DT	N	PP	V+bfi+imprf	
bir	mucize	gibi	geliyor	
DT	N	PP	V+bfi+imprf	
bir	ifade	gibi	geliyor	
DT	N	PP	V+bfi+imprf	
bir	işmiş	gibi	geliyor	
DT	N+Vi+perf	PP	V+bfi+imprf	
bir	şakaymış	gibi	geliyor	
DT	N+Vi+perf	PP	V+bfi+imprf	
bir	örtüymüş	gibi	geliyor	
DT	N+Vi+perf	PP	V+bfi+imprf	

(77) Bulutlar verevler gölgeler bir yandan form ve şeklin birbirinden ayrılmasına diğer yandan da tekrarın monotonluğuna *bir çözüm gibi geliyor bana* .

(78) Evimizi bahçemizi adamızı tasarlamaksa öte yandan sanki birey olarak bizlerin kolayca altından kalkabileceği *bir işmiş gibi geliyor* .

Table 88. Patterns of gibi geliyor –*(PN+dat) AV A gibi geliyor*

	Biraz	hayal	gibi	geliyor
	AV	A	PP	V+bfi+imprf
bana	biraz	kötü	gibi	geliyor
PN+dat	AV	A	PP	V+bfi+imprf

(79) *Biraz hayal gibi geliyor* ama bir gün olur herhalde .

(80) Bu yüzden belki bu emm dostluk arkadaşlık ilişkisini daha çok hani cana yakın bir şekilde belki de daha dürüst olmamızı sağlıcak ama ben şu an da alışamadığım için *bana biraz kötü gibi geliyor* çünkü emm başkaları sorumsuzluk yaptığı zaman bunun ceremesini bizde çekebiliyoruz .

Table 89. Patterns of gibi geliyor *–DT N N(+perf) gibi geliyor (bana)*

bir	şey	var	gibi	geliyor	bana
DT	N	N	PP	V+bfi+imprf	PN+dat
bir	husus	var	gibi	geliyor	bana
DT	N	N	PP	V+bfi+imprf	PN+dat
bir	farklılık	var	gibi	geliyor	bana
DT	N	N	PP	V+bfi+imprf	PN+dat
bir	şey	varmış	gibi	geliyor	
DT	N	N+perf	PP	V+bfi+imprf	
biraz	fark	var	gibi	geliyor	bana
DT	N	N	PP	V+bfi+imprf	PN+dat

(81) İyi bilmem ama bu işte eşek şakası mı desem eşşek işi mi desem , öyle *bir şey var gibi geliyor bana* ? !

(82) C : Yani o güzel çünkü bu benim yapıştırdığım görüntüsü kötü kötü yapıştırdığım için kötü orda *bir şey varmış gibi geliyor* .

Table 90. Patterns of gibi geliyor – *değil gibi geliyor PN+dat*

	Pek	mümkün	değil	gibi	geliyor	bana
	AV	A	N	PP	V+bfi+imprf	PN+dat
yanlış	bir	iş	değil	gibi	geliyor	insana
A	DT	N	N	PP	V+bfi+imprf	N+dat

(83) SG : Hı - hıı çift anadal bunlar arasında *pek mümkün değil gibi geliyor bana* yani tiyatroyu okuyan bir öğrenci Türk müsikisinden çift anadalı yani yapabilir ama .

(84) Gelişmiş ülkelerin bilim adamları tarafından kendi ülkeleri için geliştirilen kuramlar ile azgelişmiş ülkeleri incelemek ilk bakışta pek de *yanlış bir iş değil gibi geliyor insana* : Öyle ya gelişmiş olan ülkeler insanlığın en ileri teknolojik aşamasını temsil ettiklerine göre gelişmemiş ülkeler de er ya da geç onların bulunduğu yere geleceklerdir .

III. 1. 6. 2. gibi geldi

Table 91. Patterns of gibi geldi – *AV A gibi geldi (PN+dat)*

daha	etkili	gibi	geldi	
AV	A	PP	V+past	
daha	etkili	gibi	geldi	bana
AV	A	PP	V+past	PN+dat

(85) C : Evet yani o en azından tüm deliklerden geliyor ve *daha etkili gibi geldi* bana temizlendiğini hissediyorum .

Table 92. Patterns of gibi geldi – *PN|A DT N|N+perf gibi geldi (NP+dat)*

bana	bir	sene	gibi	geldi	
PN	DT	N	PP	V+past	
basit	bir	yanıt	gibi	geldi	
A	DT	N	PP	V+past	
Mavi suratlı	bir	adammış	gibi	geldi	
A	DT	N+perf	PP	V+past	
	bir	işkence	gibi	geldi	Memed'e
	DT	N	PP	V+past	NP+dat

(86) O yol *bana bir sene gibi geldi* .

(87) Oturduğu duvar dibinden seyrettiği koca gövdeli dut ağacının haşin yeşil saçlarının uzandığı gök ona kocaman *mavi suratlı bir adammış gibi geldi* .

Table 93. Patterns of gibi geldi – *DT|AV N gibi geldi (NP+dat)*

bir	söz	gibi	geldi	bana
DT	N	PP	V+past	PN+dat
bir	şey	gibi	geldi	bana
DT	N	PP	V+past	PN+dat

biraz	eğlencelik	gibi	geldi
AV	N	PP	V+past
biraz	telepati	gibi	geldi
AV	N	PP	V+past

(88) Candarmanın Gidelim sözü uzaktan gelen vızıltılı *bir söz gibi geldi bana* .

(89) *Biraz eğlencelik gibi geldi* bana ; anlaması kolay finali çarpıcı .

Table 94. Patterns of gibi geldi – *PP geldi PN+bfn+dat*

kurtarabilir	gibi	geldi	ona
V+bfa+Va1+aor	PP	V+past	PN+bfn+dat
bakıyormuş	gibi	geldi	ona
V+bfi+imprf+perf	PP	V+past	PN+bfn+dat
ediyormuş	gibi	geldi	ona
V+bfi+imprf+perf	PP	V+past	PN+bfn+dat
kesişecekler	gibi	geldi	ona
V+futr+3p	PP	V+past	PN+bfn+dat
özümsedi	gibi	geldi	ona
V+past	PP	V+past	PN+bfn+dat

(90) Sanki gözlerini yumar da güçlü bir şekilde hayal ederse hafızasızlığın dişlerinden bir şeyler *kurtarabilir gibi geldi ona* .

(91) Tepenin altına vardığında gözleri hâlâ yaşlıydı köye yavaşlayarak girdi Heja ' ların evine baktı mor saçlı kadın duvarın dibinde duruyordu sanki kadın kendisine daha dikkatli *bakıyormuş gibi geldi ona* kadına gülümsedi .

III. 1. 6. 3. gibi geliyordu

Table 95. Patterns of gibi geliyor – *A DT N gibi geliyordu (PN+dat)*

tatlı	bir	ninni	gibi	geliyordu	
A	DT	N	PP	V+bfi+imprf+past	
ağır	bir	yük	gibi	geliyordu	
A	DT	N	PP	V+bfi+imprf+past	
ölümcül	bir	şey	gibi	geliyordu	kendisine

A	DT	N	PP	V+bfi+imprf+past	PN+bfs+p3s+bfn+dat
hoş	bir	ezgi	gibi	geliyordu	kulağıma
A	DT	N	PP	V+bfi+imprf+past	N+bfi+p1s+dat
büyülü	bir	ezgi	gibi	geliyordu	kulağıma
A	DT	N	PP	V+bfi+imprf+past	N+bfi+p1s+dat

(92) Gecenin sessizliğini bozan kurbağa ve çekirge sesleri , insanın kulağına *tatlı bir ninni gibi geliyordu.*

(93)En sevdiği şey olan tatil sabahı şimdi *ağır bir yük gibi geliyordu* .

The overall pattern of *gibi gel-* can be seen in the following table.

Table 96. The overall pattern of *gibi gel-*

<table>
<tr><td rowspan="3">(PN|NP+dat)</td><td rowspan="3">(AV)</td><td>(DT)</td><td>(A)</td><td>N</td><td rowspan="3">gibi gel-</td><td rowspan="3">(PN|NP+dat|N)</td></tr>
<tr><td colspan="3">Noun Clause</td></tr>
<tr><td colspan="3">Existential Clause</td></tr>
</table>

III. 2. Inflection-based Observations on Complementation Patterns of "gel-"

In III. 1. and its sub-sections, the most frequently observed complementation patterns and their structural manifestations of Left 1 collocates of "gel-" are identified, and their detailed and overall patterns are described. In this part of the study, the relationship of inflectional suffixes (TAM markers, negative marker -mA etc.) on the verb "gel-" and its argument selections will be discussed. Above, we defined all the complementation patterns of affirmative bigrams formed with gel-; however, in imperative and negative forms of gel- , we observed that the complementation patterns change significantly. In what follows these observations are presented.

- **Imperative form of "gel-" and its complements:** The Left 1 collocates of the imperative form of "gel-" are significantly different from the most frequently observed types of "gel-": *"gelmiştir, geldi, gelmektedir, gelir, gelmişti, geliyor, gelmiş, gelecek,*

geldiler, geliyordu, geldik, geldim". Most of the collocates below seem to be unique for the imperative form of "gel"- (see Table 19).

For instance, "hadi gel" is used as a fixed expression, and supports other imperatives such as "izleyelim, yatalım, gidelim".

(94) Hadi gel içeri gidelim.

(95) Hadi gel yatalım.

(96) Hadi gel bir film izleyelim.

On the other hand, with other imperative forms such as "al, atla, kalk, git" preceding the verb "gel-", "gel" is used in its prototypical sense "to come" usually presented in the dictionaries in the first order.

(97) Cips al gel.

(98) İlk uçağa atla gel.

- **Negative forms of gel- and their complements:** The observed frequency of the negative forms of *gel-* is relatively small in number in the corpus. The affirmative types cover the wide range of the data, and in III. 1., we analysed frequently observed types (*haline, hale, anlamına, meydana, gündeme, gibi* gel-). Here, with negative marker –mA, while the frequently observed affirmative types such as "haline-gündeme-meydana gel-" are barely identified, the type "hale gel-" is never observed in its negative form in the corpus. The predominant negative marked type of "gel-" (*anlamına gelmiyor, aklıma gelmedi*) in the corpus are exemplified below (see Tables 24-31 for detailed lists):

(99) Her değişim elbette ilerleme *anlamına gelmiyor*.

(100) Rektörün ismi şu anda *aklıma gelmedi*.

- **TAM Markers and complements of *hale geldi*:** In the complementation patterns of *hale gelmektedir* and *hale gelir*, immediately before these complex predicates, adjectives are the required elements; however, immediately before *hale geldi*, we observed a subtle difference. The structures of arguments are not limited to adjectives for constructing a pattern. In other words, the use of bir-DT preceding *hale gel* is mostly observed with perfective –DI in the corpus as seen in the following examples (101-102). However, this observation requires a further research, and inflectional preference of *hale gel-* can be used as a starting point. [4]

(101) Yaşadıklarım 2002 Nâzım Hikmet Yılı ile birleşince daha *anlamlı bir hale geldi*.

(102) Artık sinema yapmak *önemli bir hale geldi* .

III. 3. Meaning Based Observations on Complementation Patterns of "gel-"

In this section, the pattern-meaning interaction will be revealed in terms of the semantic properties of the verb *gel-* and its complements. First, the dictionary definitions and corpus-driven senses of *gel-* will be discussed, and then the meaning categories identified in the predominant complementation patterns of *gel-* will be presented.

III. 3. 1. Dictionary Meaning and Corpus-driven Meaning of "gel-"

The 47 senses mentioned in TDK Güncel Sözlük (TDK, 2010) and Ötüken Türkçe Sözlük (Çağbayır, 2007) are listed in Table 97.

Table 97. Dictionary definitions of *gel-*

1. (GTS) (ÖS) Ulaşmak, varmak: *"Gurbetten gelmişim yorgunum, hancı."* -B. S. Erdoğan.

[4] The same structure can be seen in *hale gelmektedir* with 2 different instances, in *hale gelir* with 4 instances, and in *hale geldi*, there are 10 different instances.

2. (GTS) Getirmek: *"Adamı Ödemiş'ten aldım geldim, her masrafını çektim."* -N. Cumalı.
3. (GTS) (ÖS) Oturmaya, ziyarete gitmek: *Dün akşam amcamlar bize geldi.*
4. (GTS) (ÖS) İsabet etmek: *Attığı top gözüme geldi*
5. (GTS) (ÖS) Varlığını sürdürmek, yaşamak, intikal etmek: *Eski çağlardan birçok anıt çağımıza kadar gelmiştir.*
6. (GTS) (ÖS) Ortaya çıkmak, doğmak, olmak, kaynaklanmak.
7. (GTS) Belli bir süre dolmak: *"Vakit kuşluğu aşmış, öğleye geliyordu."* -N. Cumalı.
8. (GTS) (ÖS) Belli bir zamana ulaşmak, yetişmek.
9. (GTS) Kadar olmak: *Boyu ancak omzuna geliyor.*
10. (GTS) (ÖS) Çıkmak, yönelmek: *Merak etme, ondan kimseye kötülük gelmez.*
11. (GTS) (ÖS) İzlemek, takip etmek: *Çocuklar arkadan geliyordu.*
12. (GTS) Bir yerden alınıp bir yere ulaştırılmak: *Kahve Brezilya'dan geliyor.*
13. (GTS) Katılmak, eklenmek: *Türkçede ekler kelimelerin sonuna gelir.*
14. (GTS) (ÖS) Türemek, kökü bir yere dayanmak.
15. (GTS) (ÖS) Daha önce üzerinde durulmuş olan bir konuya yeniden dönmek, gittiği yerden geriye dönmek: *Şimdi sözü burada kesip asıl konumuza gelelim.*
16. (GTS) Sonuç çıkmak: *Bu davranışlardan ne gelir bilinmez.*
17. (GTS) (ÖS) Dayanmak, tahammül etmek, katlanmak: *Birazcık üşütmeye gelmiyor, hemen hastalanıyor.*
18. (GTS) Kendine yapılan herhangi bir davranış veya durumu iyi karşılamak: *"Kadri o adamlardandır ki iyi davranmaya, yüz vermeye gelmez."* -M. Ş. Esendal. *"Bizim baştan savma işe gelmediğimizi bilirsin."* -R. H. Karay.
19. (GTS) (ÖS) *(-e)* Bir şeye sonradan inanmak, sonradan doğruluğuna hak vermek, eğilim göstermek, kabul etmek, araştırma sonucu doğruluğu anlaşılmak: *Dediğime geldiniz mi?*
20. (GTS) (ÖS) Etkili olmak, yararı görünmek, etkisini herhangi bir biçimde göstermek: *Buranın havası iyi geldi. Burası bana çok sıcak geldi.*
21. (GTS) Kazanılmak, sağlanılmak: *Çiftlikten onlara ayda beş yüz milyon lira gelir.*
22. (GTS) Uymak: *Bu ayakkabı sana küçük gelir.*
23. (GTS) Olmak, -e uğramak: *Felç gelmek. Başımıza bir bela geldi.*
24. (GTS) (ÖS) Akmak: *Burnundan kan geldi. Musluktan su gelmiyor.*
25. (GTS) (ÖS) Düşmek, rast gelmek: *Buraya ışık gelmiyor.*
26. (GTS) Görünmek, sanılmak: *"Baygın da olsa yabancı bir kadını böyle kucağında tutmak ona pek ayıp bir şey gibi geldi."* -H. Taner.
27. (GTS) (ÖS) *(-e)* Uygun düşmek: *"Caddelerde oturmaya gelmez."* -Ö. Seyfettin.
28. (GTS) (ÖS) *(-e)* Başlamak, ortaya çıkmak, çatmak.
29. (GTS) (ÖS) Belli bir bedele mal olmak: *Bu bardakların tanesi yüz liraya geldi.*
30. (GTS) Biriyle birlikte gitmek: *Ben İstanbul'a gidiyorum, benimle gelir misiniz?*
31. (GTS) (ÖS) Gereksinme duymak, ihtiyacı olmak, ihtiyaç anlatan deyimler kurmaya yarayan bir fiil: *Uykusu gelmek.*
32. (GTS) *(yar)* Kök veya gövdeleri sonuna **-a (-e)** eki almış fiillere gelerek süreklilik bildiren birleşik fiiller oluşturur: *Alışageldiğimiz bir anlamı vardı.*
33. (GTS) **-mez, -mezlik** ile birlikte yapmacık anlatan deyimler yapar: *Görmezlikten gelmek. İşitmezlikten gelmek.*
34. (GTS) Yönelme durumundaki bazı kelimelere getirilerek birleşik fiil yapar: *Yola gelmek. Meydana gelmek. Hatıra gelmek. Akla gelmek.*
35. (GTS) (ÖS) **-dikçe, -esi, -e gelmek** biçiminde kullanılan sıfat-fiil eklerinden sonra geldiğinde önceki fiille ilgili olarak pekiştirilmiş bir istek ve sürerlik bildiren bir fiil: *Baktıkça bakası gelmek. Yedikçe yiyesi gelmek.*
36. (GTS) (ÖS) Herhangi bir sırada bulunmak: *Başta gelmek. Önde gelmek. Birinci gelmek.*
37. (ÖS) İnmek.
38. (ÖS) Aktarılmış olmak; naklolunmak; hikaye edilmek (eAT,OsT (aynı).
39. (ÖS) Bir yerden ithal edilmiş olmak.
40. (ÖS) dbl. Sonuna eklenmek.

41. (ÖS) (Bir konu için) incelemek, ele almak.
42. (ÖS) Hissedilmek, meydana çıkmak.
43. (ÖS) (ağız) (Hamur için) mayalanmak.
44. (ÖS) (Olumlu emir kipinde) öğüt vermek (anlamı taşır).
45. (ÖS) (Bir şeye, birine, bir yere)+(-ince yapılı bağ fiil olarak) söz konusu edildiğinde (anlamı verir).
46. (ÖS) (-dikten yapılı bağ fiilden sonra) yapmacıklık (anlamı katar).
47. (ÖS) (OsT) Sözü edilmek; geçmek, varit olmak.

Quantitatively, it is striking that within the top fifteen most frequently occurred bigrams of *gel-*, only three of them are used in their prototypical sense "Ulaşmak, varmak- to come" as seen in (103-105). On the other hand, morphosyntactically, the prototypical meaning is only apparent in 2nd person imperative form of gel- as in (106).

(103) 13 yaşında Çorum ' dan çıkıp *Ankara'ya gelmiş*.

(104) Almanya Milli Futbol Takımı , yarın özel bir uçakla Frankfurt ' tan *İstanbul'a gelecek*.

(105) Adam geç bir saatte yorgun argın *evine gelmiş*.

(106) Komutanım sen beni dinle *buraya gel*!

Among the top 15 occurrences of bigrams of *gel-*, the dominant bigrams are complex predicates, namely "*haline, hale, anlamına, meydana, gündeme*" or fixed expressions i.e. "*gibi gel-, akla gel-*" as analysed in detail in the previous section. The prototypical sense of *gel-*, not overtly but conceptually exists in all these complex predicates and fixed expressions.

The two different meanings of *meydana gel-* are significant examples of pattern-meaning correlation. The difference in meaning correlates with grammatical pattern. The complex predicate *meydana gel-* has two meanings: "1-to happen, to occur" and "2-to be made of". In the first meaning, the preceding noun or noun clause is used in its bare form (e.g., *hasar meydana geldi*), while in the second meaning, an ablative marked noun is required (e.g., *üç bölümden meydana gelmektedir*).

III. 3. 2. Meaning Groups Observed in Patterns of "gel-"

The complementation patterns of complex predicate "haline-hale-anlamına-meydana-gündeme *gel-"*are determined in III. 1. In this part, we will focus on semantic properties of nouns and adjectives constituting the major part of these complementation patterns. In this respect, nouns and adjectives will be classified according to recurrent meaning groups extracted from the concordance lines.

- **Support Nouns:** Sinclair (1991) defines support noun as words reduced in meaning, in other words, "as nouns which are rarely used alone" (89). For English, he gives *notion, position, kind, type, sort, example, object* as examples of support nouns while discussing the correlation between lexis and grammar regarding the preposition "*of*". Similar arguments on nouns in English under the rubric of general nouns are seen in the works of Hasan and Halliday (1976) and in Mahlberg (2005) as a recent study adopting a corpus theoretical approach.

In line with Sinclair (1991), support nouns are also observed in Turkish in the complementation patterns of *haline gel-* in our data. Table 98 lists some of the most frequently occurred support nouns.

Table 98. Support nouns in the complementation patterns of *haline gel-*

	SUPPORT NOUNS		
bir	şey unsur parça olay problem sorun etken faktör unsur	olgu yer alan zorunluluk zaruret konu vaka dünya kural	haline gelmiştir haline geldi haline gelmektedir

As mentioned in Sinclair (1991), the support nouns are rarely used alone, and their lexical forces are enchanced through various kinds of modifications. The excerpts (107-108) taken from the corpus display that to overcome the vagueness of "bir olgu-bir alan haline gelmiştir", adjective clauses are used to specify the support nouns (see Appendix 1 for more examples).

(107) Artan bu seyahat eğilimleri sonucu **turizm olayı** coğrafi olarak daha geniş bir alana yayılmış ve **bütün dünya ziyaretçileri tarafından kullanılan** *bir olgu haline gelmiştir*.

(108) Toplumun oluşturmadığı ve korumadığı **üniversite** ise, kimileri iyi niyetli de olsa, **siyasal müdahalelerin at oynattığı** *bir alan haline gelmiştir*.

- **Evaluative Adjectives:** According to Thompson and Hunston (2000: 5) "evaluation is the broad cover term for the expression of the speaker or writer's attitude or stance towards, viewpoint on, or feelings about the entities or propositions that he or she is talking about". Thompson and Hunston (2000: 21) identify three groups of linguistic signals of evaluation, namely comparators (such as comparative adjectives and expressions of negativity), markers of subjectivity (e.g. modals, sentence adverbs, report and attribution structures), and markers of value. While these markers are lexical units, comparators and markers of subjectivity are grammatical ones.

Within this perspective, the adjectives in the complementation patterns of *hale gel-* mostly have an evaluative meaning intensified by adverbs *daha, çok.*

Table 99. Evaluative adjectives in the complementation patterns of *hale gel-*

	EVALUATIVE ADJECTIVES		
daha çok	önemli zor anlamlı anlamsız kaotik yararsız	açık etkili popüler zorunlu bağımlı	hale gelmektedir hale geldi hale gelir

In excerpts (109-110) "*daha açık hale gelmektedir, çok zor hale gelmektedir*" express speaker's evaluative attitude or stance towards the topic under discussion.

(109) Küreselleşen dünyamızda, ekonomiler dış etkilere **daha** *açık hale gelmektedir*.

(110) 10. Selektif politika uygulamalarının içerdiği teşvik sistemleri kaynakları etkin dağılımından uzaklaşması piyasa sinyallerinin bozulması davranışsal değişiklikler gibi çok ciddi olumsuz sonuçlar üretebilmekte ve bu tür politikalar bir kez uygulanmaya başlandıktan sonra vazgeçilmesi **çok** *zor hale gelmektedir*.

CONCLUSION

The aim of the study is to describe the complementation patterns of the verb *gel-* following the principles of pattern grammar described in Hunston and Francis (1999). Based on these principles, we developed a notation schema that accounts for the colligational behavior of the verb *gel-*, and classified the data according to the meaning of the arguments.

The study is based on a naturally occurring corpus data which is extracted from Turkish National Corpus (TNC). Ten-million-word, sentence splitted corpus is formed, and the sentences and patterns including the verb *gel-* are extracted from this corpus. After constructing a corpus of all the sentences, the bigrams of *gel-* are extracted via TextNSP. The bigrams are used for generating the complementation patterns of *gel-*. In this phase of the study, only the first three most frequent types of the bigrams *–haline, hale, anlamına, meydana, gündeme, gibi gel-* are taken into consideration. Then, the patterns are classified according to their arguments and adjuncts. All the analyses are based on this fully-annotated and classified patterns.

Major concluding remarks of this study are as follows:

1- A well-organized data extraction process is crucial for corpus-based studies in linguistics. In this respect, the text processing methodology developed in this study presents a framework including a wide variety of tools, text processing techniques, and database construction methods.

2- This study shows the close correlation between lexis and grammar in the analysis of complex predicates of *gel-* in Turkish.

3- Structurally, the grammatical mappings of the overall complementation patterns of *haline-hale-anlamına-meydana-gündeme-gibi gel-* showed both arguments and adjuncts. The adequacy of these mappings is provided by naturally occurring language data in the corpus.

4- The type-based frequency lists of *gel-* and its overall complementation patterns showed that the main factor on choosing the types of arguments is not TAM markers, but grammatical mood namely imperative or negative.

5- Semantically, the regularities in the grammatical pattern structures are strongly related to differences in meaning as shown in the case of *meydana gel-*. The arguments of the complex predicates can also be grouped by their semantic properties, and can form meaning groups in themselves. As an example, *haline gel-* mostly prefers support nouns as its arguments whereas *hale gel-* prefers evaluative adjectives.

Suggestions for further studies are as follows:

1- Structurally and semantically, the grammatical mapping of the overall patterns provided by this study can be regarded as a starting point to identify lexis-grammar correlation of other similar verbs such as *git-, gir-, çık-, var-, düş-, uzan-, otur-, bak-*. For such purposes, all the lexical items that share a given notational sequence may be grouped under relevant patterns.

2- Methodologically, the steps followed in the construction of the corpus and the tools utilized in extraction and processing of the data described in detail can serve as a guideline for other corpus-based pattern studies.

3- Following the same methodology, the light verb constructions in Turkish can also be analysed.

REFERENCES

Aksan, M. and Mersinli, Ü. (2010). A corpus based NooJ module for Turkish. Gavriilidou, Z., Chatzipapa, E., Papadopoulou, L. ve Silberztein, M. (Ed.). In proceedings of *the NooJ 2010 international conference and workshop,* (pp. 29-39). Komotini, Greece: Democritus University of Thrace.

Aksan, Y., Aksan, M., Koltuksuz, A. Sezer, T., Mersinli, Ü., Demirhan, U. U., Yılmazer, H., Atasoy, G., Öz, S., Yıldız, İ. and Kurtoğlu, Ö. (2012). Construction of the Turkish National Corpus (TNC). In proceedings of *the eight international conference on language resources and evaluation (LREC 2012*), (pp. 3223-3227). İstanbul.

Ambati, B. R., Reddy S. and Kilgarriff, A. (2012). Word sketches for Turkish. In proceedings of *the eight international conference on language resources and evaluation (LREC 2012),* (pp. 2945-2950). İstanbul.

Ayscough, S. and Pre-1801 Imprint Collection (Library of Congress). (1790). *Shakespeare's dramatic works; with explanatory notes*. London: J. Stockdale.

Baker, P., Hardie, A., and McEnery, T. (2006). *A glossary of corpus linguistics*. Edinburgh: Edinburgh University Press.

Banerjee, S and Pedersen, T. (2003). The design, implementation, and use of the (n)gram (s)tatistic (p)ackage. In proceedings of *the fourth international conference on intelligent text processing and computational linguistics*, (pp. 370-381). Mexico City, Mexico.

Biber, D. (1993). Co-occurrence patterns among collocations: a tool for corpus-based lexical knowledge acquisition. *Computational Linguistics*, *19 (3)*, 531-538.

Butt, M. (2003). The light verb jungle. *Harvard Working Papers in Linguistics*, 9, 1-49.

Clark, A., Fox, C., and Lappin, S. (2010). *The handbook of computational linguistics and natural language processing*. Chichester, West Sussex; Malden, MA: Wiley-Blackwell.

Cowie, A. P. (1988). Stable and creative aspects of vocabulary use. R. Carter and M. McCarthy (Ed.), *Vocabulary and language teaching*, (pp. 126–139). Longman.

Cruden, A. and Pre-1801 Imprint Collection (Library of Congress). (1738). *A complete concordance to the holy scriptures of the old and new testament*. London: Attic Books.

Crystal, D. (1992). *An encyclopedic dictionary of language andlanguages*. Oxford, UK ; Cambridge, Mapp., USA: Blackwell.

Çağbayır, Y. (2007). *Ötüken Türkçe sözlük*. İstanbul: Ötüken Neşriyat.

Dalkılıç G. and Çebi Y. (2004). Zipf's law and mandelbrot's constants for Turkish language using Turkish corpus (TurCo). In proceedings of *the third international conference on advances in information systems*, (pp. 273-282). İzmir.

Davies, M. (2008). *The corpus of contemporary American English: 450 million words, 1990-present*. Access date: 16.10.2012. Available online at http://corpus.byu.edu/coca/

Demirhan, U. and Aksan, M. (2012). Tagset for NooJ Turkish module. Vučković, K., Bekavac B., Silberztein, M. (Ed.), In *Automatic processing of various levels of linguistic phenomena: selected papers from the NooJ 2011 international conference,* (pp. 86-95). Cambridge Scholars Publishing: Newcastle.

Francis, W. N. and Kućera, H. (1964). Brown corpus manual. Unpublished manuscript, Brown University, Rhode Island, US.

Francis, W. N. and Kućera, H. (1982). *Frequency analysis of English usage: lexicon and grammar*. Boston: Houghton Mifflin.

Göksel, A. and Kerslake, C. (2005) *Turkish: a comprehensive grammar*. London: Routledge

Grishman, R. (1986). *Computational linguistics: an introduction*. Cambridge Cambridgeshire/New York: Cambridge University Press.

Halliday, M. A. K. and Hasan, R. (1976). *Cohesion in English*. London: Longman.

Hardie, A. (2012). CQPweb - combining power, flexibility and usability in a corpus analysis tool. *International journal of corpus linguistics, 17 (3)*, 380-409.

Hoey, M. (2004). Lexical priming and the properties of text. A. Partington, J. Morley, & L. Haarman (Ed.), In *Corpora and discourse,* (pp. 385–412). Bern: Peter Lang.

Hoey, M. (2005). *Lexical priming: a new theory of words and language.* London: Routledge.

Hoey, M. (2009). Corpus-driven approaches to grammar: the search for common ground. U. Römer and R. Schulze (Ed.), In *Exploring the lexis-grammar interface,* (pp. 33-47). Amsterdam/Philadelphia: John Benjamins Publishers Company.

Hoffmann, S. (2008). *Corpus linguistics with BNCweb : a practical guide*. Frankfurt am Main: Peter Lang.

Hornby, A. S. (1954). *A guide to patterns and usage in English*. London: OUP.

Hunston, S. and Francis, G. (1999). *Pattern grammar : a corpus-driven approach to the lexical grammar of English*. Amsterdam/Philadelphia: John Benjamins Publishers Company.

Hunston, S. (2010). How can a corpus be used to explore patterns? A. O'Keeffe and M. McCarthy (Ed.), In *Routledge handbook of corpus linguistics,* (pp. 152-166). London: Routledge.

Kim, J. D., Ohta T., Tateishi Y., and Tsujii J. (2003). GENIA corpus - a semantically annotated corpus for bio-textmining. *Bioinformatics*, 19, 180-182.

Karadaş, D. and Ruhi Ş. (2009). Features for an internet accessible corpus of spoken Turkish discourse. *Working Papers in corpus-based linguistics and language education,* (pp. 311-320). Tokyo.

Krashen, S. D. (1981). *Second language acquisition and second language learning.* Oxford: Pergamon Press.

Louw,W. E. (1993). Irony in the text or insincerity in the writer? The diagnostic potential of semantic prosodies, M. Baker, G. Francis and E. Tognini-Bonelli (Ed.), In *Text and technology: in honour of John Sinclair*, (pp. 157–76). Amsterdam: John Benjamins.

Mahlberg, M. (2005). *English general nouns : a corpus theoretical approach*. Amsterdam/ Philadelphia: John Benjamins Publishers Company.

McEnery, T. and Hardie, A. (2012). *Corpus linguistics: method, theory, and practice.* Cambridge: Cambridge University Press.

Melćuk, I. (1988). Semantic description of lexical units in an explanatory combinatorial dictionary: basic principles and heuristic criteria. *International journal of lexicography, 1/3*, 165–188.

Melćuk, I. (1995). Phrasemes in language and phraseology in linguistics. Everaert et al. (Ed.), In *Idioms: structural and psychological perspectives* (pp. 167–232). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Meyer, C. F. (2002). *English corpus linguistics : an introduction.* Cambridge, UK ; New York: Cambridge University Press.

Nattinger, J. and DeCarrico, J. (1989). Lexical phrases, speech acts and teaching conversation. P. Nation and R. Carter (Ed.), In *Vocabulary acquisition,* (pp. 118–139). Amsterdam: AILA.

Nattinger, J. and DeCarrico, J. (1992). *Lexical phrases and language teaching*. Oxford: OUP.

Natural language processing. Access date: 16.04.2010, https://en.wikipedia.org/wiki/Natural_language_processing

O'Keeffe, A. and McCarthy, M. (2010). *The routledge handbook of corpus linguistics* (1st ed.). London/New York, NY: Routledge.

Pawley, A., and Syder, F. (1983). Two puzzles for linguistic theory: Nativelike selection and nativelike competence. J.C. Richards and R.W. Schmidt (Ed.), In *Language and communication* (pp. 191-227). London: Longman.

Peters, A. M. (1983). *The units of language acquisition*. Cambridge: CUP.

Reference guide for the British National Corpus (XML Edition) edited by Lou Burnard. (February 2007). Access date: 26.09.2012, http://www.natcorp.ox.ac.uk/XMLedition/URG/

Ruhi, Ş., Eröz-Tuğa, B., Hatipoğlu, Ç., Işık-Güler, H., Acar, M.G. C., Eryılmaz, K., Can, H., Karakaş, Ö. and Çokal-Karadaş, D. (2010). Sustaining a corpus for spoken Turkish discourse: Accessibility and corpus management issues. *LREC 2010*, 44-48. Access date: 23.11.2012. Retrived from http://lrec-conf.org/proceedings/lrec2010/ workshops/W20.pdf#page=52

Sak, H., Güngör, T. and Saraçlar, M. (2008). Turkish language resources: Morphological parser, morphological disambiguator and web corpus. *GoTAL 2008*, 5221, 417-427.

Say, B., Zeyrek D., Oflazer K. and Özge U. (2002). Development of a corpus and a treebank for present-day written Turkish. K. İmer, and G. Doğan (Ed.), In proceedings of *the eleventh international conference on Turkish linguistics.* (pp.183-192). Eastern Mediterranean University Press.

Schmid, H. (1994). Probabilistic part-of-speech tagging using decision trees. In proceedings of *international conference on new methods in language processing*, (pp. 1-9), Access date: 09.11.2012. ftp://ftp.ims.uni-stuttgart.de/pub/corpora/tree-tagger1.pdf

Schmid, H. (1995). Improvements in part-of-speech tagging with an application to German. *ACL SIGDAT-Workshop*, 1-9. Access date: 09.11.2012. ftp://ftp.ims.uni-stuttgart.de/pub/corpora/tree-tagger2.pdf

Silberztein, M. (2003). *NooJ manual*. Access date: 17 September 2011. http://www.nooj4nlp.net

Sinclair, J. M. (1991). *Corpus, concordance, collocation.* Oxford: Oxford University Press.

Sinclair, J. M. (1996). The search for units of meaning. *Textus, 9* (1), 75–106.

Sinclair, J. M. (1998). The lexical item. E. Weigand (Ed.), In *Contrastive Lexical Semantics* (pp. 1–24). Amsterdam/Philadelphia: John Benjamins Publishers Company.

Sinclair, J. M. (1999). A way with common words. H. Hasselgard and S. Oksefjell (Ed.), In *Out of corpora: studies in honour of Stig Johansson* (pp. 157-180). Amsterdam: Rodopi.

Sinclair, J.M. (2004). *Trust the text. Language, corpus and discourse.* London: Routledge.

Stubbs, M. (1995). Collocations and semantic profiles: on the cause of the trouble with quantitative studies. *Functions of language,* 2 (1): 23–55.

Stubbs, M. (2009). Technology and phraseology: with notes on the history of corpus linguistics. U. Römer & R. Schulze (Ed.), In *Exploring the lexis-grammar interface* (pp. 15-31). Amsterdam/Philadelphia: John Benjamins Publishers Company.

Thompson, G. and Hunston, S. (2000). Evaluation: an introduction. S. Hunston and G. Thompson (Ed.), In *Evaluation in text: authorial stance and the construction of discourse* (pp. 1-27). Oxford University Press.

Transcribing and annotating spoken language with EXMARaLDA. (2004). Access date: 22.04.2013, http://www1.uni-hamburg.de/exmaralda/files/Paper_LREC.pdf

Türkçe Sözlük. (2010). Access date: 15.03.2013, http://www.tdk.gov.tr

Uçar, A. (2010). Light verb constructions in Turkish dictionaries: Are they sub-meanings of polysemous verbs? *Mersin University journal of linguistics and literature,* 7 (1), 1-17.

Weinert, R. (1995). The role of formulaic language in second language acquisition. *Applied linguistics,* 16, 180-205.

Wray, A. (1999). Formulaic language in learners and native speakers. *Language teaching,* 32, 213-231.

APPENDIX 1 : PATTERNS OF “haline gel-”

1. 1. haline gelmiştir

daha	açık	bir	Meclis	haline	gelmiştir
AV	A	DT	N	N+p3s+bfn+dat	V+perf+cop
ticareti	yapılır	bir	meyve	haline	gelmiştir
N+p3s	V+aor	DT	N	N+p3s+bfn+dat	V+perf+cop
	kullanılan	bir	olgu	haline	gelmiştir
	V+pc3	DT	N	N+p3s+bfn+dat	V+perf+cop
doğayla	tek	bir	beden	haline	gelmiştir
N+bfy+ins	A	DT	N	N+p3s+bfn+dat	V+perf+cop
at	oynattığı	bir	alan	haline	gelmiştir
N	V+pc2+p3s	DT	N	N+p3s+bfn+dat	V+perf+cop
		bir	unsur	haline	gelmiştir
		DT	N	N+p3s+bfn+dat	V+perf+cop
	ideolojinin	bir	parçası	haline	gelmiştir
	N+bfn+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
Türkiye	sorununun	bir	parçası	haline	gelmiştir
NP	N+p3s+bfn+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
	karakteristik	bir	yön	haline	gelmiştir
	N	DT	N	N+p3s+bfn+dat	V+perf+cop
	şükretmek	bir	gelenek	haline	gelmiştir
	V+nz1	DT	N	N+p3s+bfn+dat	V+perf+cop
			gelenek	haline	gelmiştir
			N	N+p3s+bfn+dat	V+perf+cop
			gelenek	haline	gelmiştir
			N	N+p3s+bfn+dat	V+perf+cop
özel	teolojik	bir	terim	haline	gelmiştir
A	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	formel	bir	disiplin	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	artık	bir	oyuncak	haline	gelmiştir
	AV	DT	N	N+p3s+bfn+dat	V+perf+cop
		bir	gelenek	haline	gelmiştir
		DT	N	N+p3s+bfn+dat	V+perf+cop
	sayısal	bir	olay	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	tam	bir	zaruret	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
çok	popüler	bir	alan	haline	gelmiştir
DT	A	DT	N	N+p3s+bfn+dat	V+perf+cop
çok	uluslu	bir	şirket	haline	gelmiştir
DT	A	DT	N	N+p3s+bfn+dat	V+perf+cop
çok	tehlikeli	bir	alışkanlık	haline	gelmiştir

DT	A	DT	N	N+p3s+bfn+dat	V+perf+cop
çok	önemli	bir	problem	haline	gelmiştir
DT	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	önemli	bir	sorun	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
en	önemli	etkinliklerden	birisi	haline	gelmiştir
AV	A	N+pl+abl	PN	N+p3s+bfn+dat	V+perf+cop
	güçlü	bir	olasılık	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	önemli	bir	kurum	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	terkedeceği	bir	yer	haline	gelmiştir
	V+pc1+p3s	DT	N	N+p3s+bfn+dat	V+perf+cop
	Antalya	bir	marka	haline	gelmiştir
	NP	DT	N	N+p3s+bfn+dat	V+perf+cop
daha	ileri	bir	kurum	haline	gelmiştir
AV	N	DT	N	N+p3s+bfn+dat	V+perf+cop
ihracat	kaçınılmaz	bir	zorunluluk	haline	gelmiştir
N	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	ortak	bir	kaynak	haline	gelmiştir
	N	DT	N	N+p3s+bfn+dat	V+perf+cop
	ortak	bir	gelenek	haline	gelmiştir
	N	DT	N	N+p3s+bfn+dat	V+perf+cop
	resmi	bir	kurum	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
başlı	başına	bir	sektör	haline	gelmiştir
A	N+p3s+bfn+dat	DT	N	N+p3s+bfn+dat	V+perf+cop
inkar	edelemez	bir	zorunluluk	haline	gelmiştir
N	V+bfa+neg+aor	DT	N	N+p3s+bfn+dat	V+perf+cop
	mutlak	bir	zorunluluk	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	yerleşmiş	bir	gelenek	haline	gelmiştir
	V+perf	DT	N	N+p3s+bfn+dat	V+perf+cop
artık	kanayan	bir	yara	haline	gelmiştir
AV	V+bfy+pc3	DT	N	N+p3s+bfn+dat	V+perf+cop
		bir	sanayi	haline	gelmiştir
		DT	N	N+p3s+bfn+dat	V+perf+cop
	kirden	bir	tavan	haline	gelmiştir
	N+abl	DT	N	N+p3s+bfn+dat	V+perf+cop
sık	rastlanmayan	bir	şey	haline	gelmiştir
AV	V+nz2+bfy+nz2	DT	N	N+p3s+bfn+dat	V+perf+cop
hatta	alışılmış	bir	olgu	haline	gelmiştir
CJ	V+perf	DT	N	N+p3s+bfn+dat	V+perf+cop

	vazgeçilmez	bir	parçası	haline	gelmiştir
	V+neg+aor	DT	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
	tartışmalı	bir	konu	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	uygulanabilir	bir	teknoloji	haline	gelmiştir
	V+bfa+Va1+aor	DT	N	N+p3s+bfn+dat	V+perf+cop
gerçekten	zor	bir	sınav	haline	gelmiştir
AV	A	DT	N	N+p3s+bfn+dat	V+perf+cop
sorunları	ağırlaştıran	bir	etken	haline	gelmiştir
N+pl+acc	V+pc3	DT	N	N+p3s+bfn+dat	V+perf+cop
	lanet	bir	şey	haline	gelmiştir
	N	DT	N	N+p3s+bfn+dat	V+perf+cop
dalgalanmaları	büyültücü	birer	faktör	haline	gelmiştir
V+nz2+pl+acc	N	N	N	N+p3s+bfn+dat	V+perf+cop
	bilimde	birer	vaka	haline	gelmiştir
	N+loc	N	N	N+p3s+bfn+dat	V+perf+cop
		birer	belirleyici	haline	gelmiştir
		N	A	N+p3s+bfn+dat	V+perf+cop
etkileyen	bir	görünüm	adeta	haline	gelmiştir
V+bfy+pc3	DT	N	AV	N+p3s+bfn+dat	V+perf+cop
	bir	protesto	yöntemi	haline	gelmiştir
	DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
	bir	sanat	kolu	haline	gelmiştir
	DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
	bir	dünya	tekeli	haline	gelmiştir
	DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
	bir	korsan	yatağı	haline	gelmiştir
	DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
	bir	genel	kural	haline	gelmiştir
	DT	A	N	N+p3s+bfn+dat	V+perf+cop
			kural	haline	gelmiştir
			N	N+p3s+bfn+dat	V+perf+cop
	bir	ticari	iş	haline	gelmiştir
	DT	A	N	N+p3s+bfn+dat	V+perf+cop
önemli	bir	ulaşım	yolu	haline	gelmiştir
A	DT	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
önemli	bir	gündem	maddesi	haline	gelmiştir
A	DT	N	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
sürekli	bir	kültür	öğesi	haline	gelmiştir
A	DT	N	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
		tek	seçenek	haline	gelmiştir

		A	N	N+p3s+bfn+dat	V+perf+cop
	cephenin	tek	sahibi	haline	gelmiştir
	N+bfn+gen	A	N+p3s	N+p3s+bfn+dat	V+perf+cop
		tek	ölçüt	haline	gelmiştir
		A	N	N+p3s+bfn+dat	V+perf+cop
bir	bahane	bulunması	alışkanlık	haline	gelmiştir
DT	N	V+nz2+bfs+p3s	N	N+p3s+bfn+dat	V+perf+cop
bir	sınıf	savaşının	arenası	haline	gelmiştir
DT	N	N+p3s+bfn+gen	NP	N+p3s+bfn+dat	V+perf+cop
dış	ticaretini	düzenleyen	unsur	haline	gelmiştir
N	N+p3s+bfn+acc	V+bfy+pc3	N	N+p3s+bfn+dat	V+perf+cop
dış	ticaret	politikası	aracı	haline	gelmiştir
N	N	N+bfs+p3s	N+p3s	N+p3s+bfn+dat	V+perf+cop
krizlerin	en	büyük	nedeni	haline	gelmiştir
N+pl+gen	AV	A	N+p3s	N+p3s+bfn+dat	V+perf+cop
tarikatların	en	önemli	meşgalesi	haline	gelmiştir
N+pl+gen	AV	A	N+bfs+p3s	N+p3s+bfn+dat	V+perf+cop
	en	vazgeçilmez	uğraşı	haline	gelmiştir
	AV	V+neg+aor	N	N+p3s+bfn+dat	V+perf+cop
Türk	diplomasisinin	yapısal	uzantıları	haline	gelmiştir
NP	N+bfs+p3s+bfn+gen	A	N+pl+p3s	N+p3s+bfn+dat	V+perf+cop
Türk	ebrû	sanatının	sembolü	haline	gelmiştir
NP	N	N+p3s+bfn+gen	N+p3s	N+p3s+bfn+dat	V+perf+cop
	artık	günlük	olaylar	haline	gelmiştir
	AV	N	N+pl	N+p3s+bfn+dat	V+perf+cop
	artık	bir	oyuncak	haline	gelmiştir
	AV	DT	N	N+p3s+bfn+dat	V+perf+cop
en	önemli	sağlık	sorunu	haline	gelmiştir
AV	A	N	N+p3s	N+p3s+bfn+dat	V+perf+cop
en	önemli	etkinliklerden	birisi	haline	gelmiştir
AV	A	N+pl+abl	PN	N+p3s+bfn+dat	V+perf+cop
	önemli	bir	sorun	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop
	önemli	bir	kurum	haline	gelmiştir
	A	DT	N	N+p3s+bfn+dat	V+perf+cop

1. 2. haline geliyordu

şehir	yaşamının	bir	gereği	haline	geliyordu
N	N+p3s+bfn+gen	DT	N+p3s	N+p3s+bfn+dat	V+bfi+imprf+past

	boş	bir	tümce	haline	geliyordu
	A	DT	N	N+p3s+bfn+dat	V+bfi+imprf+past
	SHP	toplumun	hedefi	haline	geliyordu
	AB	N+gen	N+p3s	N+p3s+bfn+dat	V+bfi+imprf+past
ulusalcı	tepkinin	de	hedefi	haline	geliyordu
N	N+bfn+gen	CL	N+p3s	N+p3s+bfn+dat	V+bfi+imprf+past

1. 3. haline geldi

	ayrılmaz	bir	parçası	haline	geldi
	V+neg+aor	DT	N+bfs+p3s	N+p3s+bfn+dat	V+past
dünyanın	tanıdığı	bir	kulüp	haline	geldi
N+bfn+gen	V+pc2+p3s	DT	N	N+p3s+bfn+dat	V+past
	önemli	bir	bileşeni	haline	geldi
	A	DT	N+acc	N+p3s+bfn+dat	V+past
		bir	moda	haline	geldi
		DT	N	N+p3s+bfn+dat	V+past
	zor	bir	ihtimal	haline	geldi
	A	DT	N	N+p3s+bfn+dat	V+past
isteyerek	uygulanan	bir	metod	haline	geldi
V+bfy+AV02	V+pc3	DT	N	N+p3s+bfn+dat	V+past
	sıradan	bir	olgu	haline	geldi
	A	DT	N	N+p3s+bfn+dat	V+past
	değişmez	bir	özelliği	haline	geldi
	V+neg+aor	DT	N+p3s	N+p3s+bfn+dat	V+past
	önemsiz	bir	kurum	haline	geldi
	A	DT	N	N+p3s+bfn+dat	V+past
oldukça	popüler	bir	oyuncak	haline	geldi
AV	A	DT	N	N+p3s+bfn+dat	V+past
	zararlı	bir	gösteri	haline	geldi
	A	DT	N	N+p3s+bfn+dat	V+past
	kocaman	bir	gülücük	haline	geldi
	A	DT	N	N+p3s+bfn+dat	V+past
		bir	refleks	haline	geldi
		DT	N	N+p3s+bfn+dat	V+past
		bir	araç	haline	geldi
		DT	N	N+p3s+bfn+dat	V+past
		bir	zorunluluk	haline	geldi
		DT	N	N+p3s+bfn+dat	V+past
en	gözde	mekanlarından	biri	haline	geldi
AV	A	N+pl+p3s+bfn+abl	PN	N+p3s+bfn+dat	V+past
en	çok	konuşulan	konusu	haline	geldi
AV	DT	V+pc3	N+bfs+p3s	N+p3s+bfn+dat	V+past

	en	yaygın	kolu	haline	geldi
	AV	A	N+p3s	N+p3s+bfn+dat	V+past
	en	çalışkan	futbolcu	haline	geldi
	AV	A	N	N+p3s+bfn+dat	V+past
	en	önemli	araç	haline	geldi
	AV	A	N	N+p3s+bfn+dat	V+past
en	çok	yaygınlaşan	akımı	haline	geldi
AV	DT	V+pc3	N+acc	N+p3s+bfn+dat	V+past
en	çok	okunan	gazete	haline	geldi
AV	DT	V+pc3	N	N+p3s+bfn+dat	V+past
	en	nadide	parçası	haline	geldi
	AV	A	N+bfs+p3s	N+p3s+bfn+dat	V+past
dünyanın	en	borçlu	ülkesi	haline	geldi
N+bfn+gen	AV	A	N+bfs+p3s	N+p3s+bfn+dat	V+past
		ana	konu	haline	geldi
		N	N	N+p3s+bfn+dat	V+past
	sohbetin	ana	konusu	haline	geldi
	N+gen	N	N+bfs+p3s	N+p3s+bfn+dat	V+past
önemli	bir	tartışma	maddesi	haline	geldi
A	DT	V+nz2	N+bfs+p3s	N+p3s+bfn+dat	V+past
önemli	bir	yaşam	biçimi	haline	geldi
A	DT	N	N+p3s	N+p3s+bfn+dat	V+past
devlet	politikalarının	belirleyici	öğesi	haline	geldi
N	N+pl+p3s+bfn+gen	A	N+bfs+p3s	N+p3s+bfn+dat	V+past
Belgrad	politikasının	temel	kitabı	haline	geldi
NP	N+bfs+p3s+bfn+gen	N	N+p3s	N+p3s+bfn+dat	V+past

1. 4. haline gelmiş

bu	da	bir	sorun	haline	gelmiş
PN	CL	DT	N	N+p3s+bfn+dat	V+perf
		bir	moda	haline	gelmiş
		DT	N	N+p3s+bfn+dat	V+perf
dışa	açık	bir	ekonomi	haline	gelmiş
N+dat	A	DT	N	N+p3s+bfn+dat	V+perf
mecliste	üçüncü	büyük	parti	haline	gelmiş
N+loc	A	A	N	N+p3s+bfn+dat	V+perf

1. 5. haline gelecek

	hayati	bir	sorun	haline	gelecek
	A	DT	N	N+p3s+bfn+dat	V+futr
	tüketici	bir	toplum	haline	gelecek
	N	DT	N	N+p3s+bfn+dat	V+futr
dışsal	olumsal	bir	dışavurum	haline	gelecek
A	A	DT	N	N+p3s+bfn+dat	V+futr
	sürekli	bir	alışkanlık	haline	gelecek
	A	DT	N	N+p3s+bfn+dat	V+futr

1. 6. haline gelmektedir

	gelişen	bir	sektör	haline	gelmektedir
	V+pc3	DT	N	N+p3s+bfn+dat	V+cont+cop
	köktenci	bir	ideoloji	haline	gelmektedir
	N	DT	N	N+p3s+bfn+dat	V+cont+cop
	gerçek	bir	sorun	haline	gelmektedir
	N	DT	N	N+p3s+bfn+dat	V+cont+cop
		bir	ögesi	haline	gelmektedir
		DT	N+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
	gelişen	bir	sektör	haline	gelmektedir
	V+pc3	DT	N	N+p3s+bfn+dat	V+cont+cop
eğitim	hayatın	bir	parçası	haline	gelmektedir
N	N+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
		bir	unsuru	haline	gelmektedir
		DT	N+p3s	N+p3s+bfn+dat	V+cont+cop
	kesinlikle	bir	model	haline	gelmektedir
	AV	DT	N	N+p3s+bfn+dat	V+cont+cop
her	çeşidin	bir	sembolü	haline	gelmektedir
DT	N+gen	DT	N+p3s	N+p3s+bfn+dat	V+cont+cop
[redacted]					
büyük	bir	serüvenin	materyali	haline	gelmektedir
A	DT	N+gen	N+p3s	N+p3s+bfn+dat	V+cont+cop
	bir	sosyal	varlık	haline	gelmektedir
	DT	A	N	N+p3s+bfn+dat	V+cont+cop
[redacted]					
	Kürtlerin	ilgi	odağı	haline	gelmektedir
	NP+pl+gen	N	N+p3s	N+p3s+bfn+dat	V+cont+cop
dünya	petrol	şirketlerinin	odağı	haline	gelmektedir
N	N	N+pl+p3s+bfn+gen	N+p3s	N+p3s+bfn+dat	V+cont+cop
[redacted]					
çevrenin	en	önemli	sorunu	haline	gelmektedir
N+bfn+gen	AV	A	N+p3s	N+p3s+bfn+dat	V+cont+cop

	kamusal	kurumların	sorunu	haline	gelmektedir
	A	N+pl+gen	N+p3s	N+p3s+bfn+dat	V+cont+cop
		önemli	unsurları	haline	gelmektedir
		A	N+pl+p3s	N+p3s+bfn+dat	V+cont+cop

1. 7. haline gelir

evrenselin	bir	parçası	haline	gelir
A+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+aor
kuramının	bir	parçası	haline	gelir
N+p3s+bfn+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+aor
tarihi	bir	varlık	haline	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
akıllı	bir	varlık	haline	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
vazgeçilmez	bir	kavram	haline	gelir
V+neg+aor	DT	N	N+p3s+bfn+dat	V+aor
		kavram	haline	gelir
		N	N+p3s+bfn+dat	V+aor
eden	bir	kavram	haline	gelir
V+pc3	DT	N	N+p3s+bfn+dat	V+aor
gereksiz	bir	fazlalık	haline	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
başına	bir	amaç	haline	gelir
N+p3s+bfn+dat	DT	N	N+p3s+bfn+dat	V+aor
konabileceği	bir	öğe	haline	gelir
	bir	Maske	haline	gelir
	DT	N	N+p3s+bfn+dat	V+aor
bakışımlı	bir	öteki	haline	gelir
A	DT	A	N+p3s+bfn+dat	V+aor
dini	bir	zorunluluk	haline	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
	bir	güç	haline	gelir
	DT	N	N+p3s+bfn+dat	V+aor
sıradan	bir	olay	haline	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
kısıtlayan	bir	faktör	haline	gelir
V+bfy+pc3	DT	N	N+p3s+bfn+dat	V+aor
dayanılmaz	bir	cehennem	haline	gelir
V+neg+aor	DT	N	N+p3s+bfn+dat	V+aor
kişiliğin	bir	parçası	haline	gelir
N+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+aor
bir	reklam	filmi	haline	gelir
NU	N	N+p3s	N+p3s+bfn+dat	V+aor

biçimlendirilen	bir	mekan	haline	gelir
V+pc3	DT	N	N+p3s+bfn+dat	V+aor
	kesimin	hedefi	haline	gelir
	N+gen	N+p3s	N+p3s+bfn+dat	V+aor
zehirli	oklarının	hedefi	haline	gelir
A	N+pl+p3s+bfn+gen	N+p3s	N+p3s+bfn+dat	V+aor

1. 8. haline geliyor

	dev	bir	ağaç	haline	geliyor
	N	DT	N	N+p3s+bfn+dat	V+bfi+imprf
	teknik	bir	kelime	haline	geliyor
	N	DT	N	N+p3s+bfn+dat	V+bfi+imprf
	stratejik	bir	devlet	haline	geliyor
	A	DT	N	N+p3s+bfn+dat	V+bfi+imprf
		bir	tutku	haline	geliyor
		DT	N	N+p3s+bfn+dat	V+bfi+imprf
	ciddi	bir	iş	haline	geliyor
	A	DT	N	N+p3s+bfn+dat	V+bfi+imprf
çok	yıkıcı	bir	araç	haline	geliyor
DT	A	DT	N	N+p3s+bfn+dat	V+bfi+imprf
	en	makul	açıklama	haline	geliyor
	AV	A	V+nz2	N+p3s+bfn+dat	V+bfi+imprf
dünyanın	en	etkin	gücü	haline	geliyor
N+bfn+gen	AV	A	N+p3s	N+p3s+bfn+dat	V+bfi+imprf

1. 9. haline gelmişti

cerrahi	müdahalelerin	bir	parçası	haline	gelmişti
A	N+pl+gen	DT	N+bfs+p3s	N+p3s+bfn+dat	V+perf+past
	müstakil	bir	sanat	haline	gelmişti
	A	DT	N	N+p3s+bfn+dat	V+perf+past
	Büyüyüp	bir	endüstri	haline	gelmişti
	V+bfy+AV07	DT	N	N+p3s+bfn+dat	V+perf+past
	Hayat	bir	geyiktir	haline	gelmişti
	N	DT	N+cop	N+p3s+bfn+dat	V+perf+past
kaldırım	kocaman	bir	meydan	haline	gelmişti
N	A	DT	N	N+p3s+bfn+dat	V+perf+past
	yaşanılmış	bir	kesiti	haline	gelmişti
	V+perf	DT	N+p3s	N+p3s+bfn+dat	V+perf+past
çok	önemli	bir	olay	haline	gelmişti
DT	A	DT	N	N+p3s+bfn+dat	V+perf+past

artık	tam	bir	saplantı	haline	gelmişti
AV	A	DT	N	N+p3s+bfn+dat	V+perf+past
gösterilerinin	en	ateşli	merkezi	haline	gelmişti
N+pl+p3s+bfn+gen	AV	A	A	N+p3s+bfn+dat	V+perf+past
	en	önemli	merkezi	haline	gelmişti
	AV	A	A	N+p3s+bfn+dat	V+perf+past
üretim	için	önemli	engeller	haline	gelmişti
N	PP	A	N+pl	N+p3s+bfn+dat	V+perf+past

APPENDIX 2 : PATTERNS OF “hale gel-”

2. 1. hale geldi

Her	şeyden	daha	önemli	hale	geldi
DT	N+abl	AV	A	N+dat	V+past
		örtülmez	bir	hale	geldi
		V+neg+aor	DT	N+dat	V+past
		yankılı	bir	hale	geldi
		A	DT	N+dat	V+past
	çok	yaygın	bir	hale	geldi
	DT	A	DT	N+dat	V+past
	olmazsa	olmaz	bir	hale	geldi
	V+neg+aor+AV11	V+neg+aor	DT	N+dat	V+past
	tehdit	eder	bir	hale	geldi
	N	V+aor	DT	N+dat	V+past
sinema	yapmak	önemli	bir	hale	geldi
N	V+nz1	A	DT	N+dat	V+past
	daha	anlamlı	bir	hale	geldi
	AV	A	DT	N+dat	V+past
	daha	net	duyar	hale	geldi
	AV	AV	V+aor	N+dat	V+past
	daha	da	karmaşık	hale	geldi
	AV	CL	A	N+dat	V+past
	aynı	oranda	karmaşık	hale	geldi
	DT	N+loc	A	N+dat	V+past
	daha	çok	tartışılır	hale	geldi
	AV	DT	V+aor	N+dat	V+past
	TBMM	çok	partili	hale	geldi
	AB	DT	A	N+dat	V+past
kömür	üretimini	tehdit	eder	hale	geldi
N	N+p3s+bfn+acc	N	V+aor	N+dat	V+past
	sistemi	tehdit	eder	hale	geldi
	N+acc	N	V+aor	N+dat	V+past
		Türkiye	bu	hale	geldi
		NP	DT	N+dat	V+past

2. 2. hale gelir

	bazen	imkansız	hale	gelir
	AV	A	N+dat	V+aor

		imkânsız	hale	gelir
		A	N+dat	V+aor
DNA	bantları	görünür	hale	gelir
AB	N+pl+p3s	V+aor	N+dat	V+aor
	gözle	görünür	hale	gelir
	N+ins	V+aor	N+dat	V+aor
daha	az	güvenli	hale	gelir
AV	DT	A	N+dat	V+aor
daha	az	kullanışlı	hale	gelir
AV	DT	A	N+dat	V+aor
daha	aydınlık	bir	hale	gelir
AV	A	DT	N+dat	V+aor
şüphe	eder	bir	hale	gelir
N	V+aor	DT	N+dat	V+aor
		olanaklı	hale	gelir
		A	N+dat	V+aor
		olanaksız	hale	gelir
		A	N+dat	V+aor
	idare	edilemez	hale	gelir
	N	V+bfa+neg+aor	N+dat	V+aor
	kontrol	edemez	hale	gelir
	N	V+bfa+neg+aor	N+dat	V+aor
	inkâr	edemez	hale	gelir
	N	V+bfa+neg+aor	N+dat	V+aor
	daha	açık	hale	gelir
	AV	A	N+dat	V+aor
		açık	hale	gelir
		A	N+dat	V+aor
	daha	problemli	hale	gelir
	AV	A	N+dat	V+aor
		kullanılamaz	hale	gelir
		V+bfa+neg+aor	N+dat	V+aor
bir	bölümü	kullanılamaz	hale	gelir
DT	N+p3s	V+bfa+neg+aor	N+dat	V+aor
sosyal	yetkilerini	kullanamaz	hale	gelir
A	N+pl+p3s+bfn+acc	V+bfa+neg+aor	N+dat	V+aor
		mümkün	hale	gelir

			A	N+dat	V+aor
	söz	etmek	mümkün	hale	gelir
	N	V+nz1	A	N+dat	V+aor
			mümkün	hale	gelir
			A	N+dat	V+aor
	sözlerini	yerine	getiremez	hale	gelir
	N+pl+p3s+bfn+acc	N+p3s+bfn+dat	V+bfa+neg+aor	N+dat	V+aor
üstlendiği	işleri	yerine	getiremez	hale	gelir
V+pc2+p3s	N+pl+acc	N+p3s+bfn+dat	V+bfa+neg+aor	N+dat	V+aor
10	güne	kadar	hazır	hale	gelir
DG	N+dat	PP	A	N+dat	V+aor
		iltifata	hazır	hale	gelir
		N+dat	A	N+dat	V+aor
ne	yemesi	gerektiğini	bilemez	hale	gelir
PN	V+nz2+bfs+p3s	V+pc2+p3s+bfn+acc	V+bfa+neg+aor	N+dat	V+aor
	ne	yapacağını	bilemez	hale	gelir
	PN	V+pc1+p3s+bfn+acc	V+bfa+neg+aor	N+dat	V+aor

2. 3. hale gelmektedir

diğer	ürün	özellikleri	önemli	hale	gelmektedir
DT	N	N+pl+p3s	A	N+dat	V+cont+cop
diğer	ürün	özellikleri	önemli	hale	gelmektedir
DT	N	N+pl+p3s	A	N+dat	V+cont+cop
işletme	açısından	çok	önemli	hale	gelmektedir
NP	N+bfs+p3s+bfn+abl	DT	A	N+dat	V+cont+cop
	vazgeçilmesi	çok	zor	hale	gelmektedir
	V+nz2+bfs+p3s	DT	A	N+dat	V+cont+cop
		önemi	anlaşılır	hale	gelmektedir
		N+p3s	V+aor	N+dat	V+cont+cop
modellerin	geliştirilmesinin	önemi	anlaşılır	hale	gelmektedir
N+pl+gen	V+nz2+bfs+p3s+bfn+gen	N+p3s	V+aor	N+dat	V+cont+cop
sonuçlar	dikkate	alındığında	anlaşılabilir	hale	gelmektedir
N+pl	N+dat	V+pc2+p3s+bfn+loc	V+bfa+Va1+aor	N+dat	V+cont+cop

evrimi	kavrandığı	zaman	anlamlı	hale	gelmektedir
N+p3s	V+pc2+p3s	N	A	N+dat	V+cont+cop
	bu	nedenle	anlamsız	hale	gelmektedir
	DT	AV+ins	A	N+dat	V+cont+cop
	DNA	parçacıkları	görünür	hale	gelmektedir
	AB	N+pl+p3s	V+aor	N+dat	V+cont+cop
	bakteri	plakları	görünür	hale	gelmektedir
	N	N+pl+p3s	V+aor	N+dat	V+cont+cop
		tamamen	kaotik	hale	gelmektedir
		AV	A	N+dat	V+cont+cop
	toprak	tamamen	yararsız	hale	gelmektedir
	N	AV	A	N+dat	V+cont+cop
daha	çok	ithalata	bağımlı	hale	gelmektedir
AV	DT	N+dat	A	N+dat	V+cont+cop
	dış	kaynaklara	bağımlı	hale	gelmektedir
	N	N+pl+dat	A	N+dat	V+cont+cop
	vazgeçilmesi	çok	zor	hale	gelmektedir
	V+nz2+bfs+p3s	DT	A	N+dat	V+cont+cop
dış	etkilere	daha	açık	hale	gelmektedir
N	N+pl+dat	AV	A	N+dat	V+cont+cop
		daha	etkili	hale	gelmektedir
		AV	A	N+dat	V+cont+cop
		daha	popüler	hale	gelmektedir
		AV	A	N+dat	V+cont+cop
	açıklama	yapılması	zorunlu	hale	gelmektedir
	V+nz2	V+nz2+bfs+p3s	A	N+dat	V+cont+cop
		gidilmesi	zorunlu	hale	gelmektedir
		V+nz2+bfs+p3s	A	N+dat	V+cont+cop
	daha	zor	ulaşılır	hale	gelmektedir

AV	A	V+aor	N+dat	V+cont+cop
		izlenebilir	hale	gelmektedir
		V+bfa+Va1+aor	N+dat	V+cont+cop
		izlenemez	hale	gelmektedir
		V+bfa+neg+aor	N+dat	V+cont+cop

APPENDIX 3 : PATTERNS OF “anlamına gel-”

3. 1. anlamına gelir

çocuk	sayısının	azalması	anlamına	gelir
N	N+bfs+p3s+bfn+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
ölenlerin	sayılarının	azalması	anlamına	gelir
V+pc3+pl+gen	N+pl+p3s+bfn+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
bir	tür	aklama	anlamına	gelir
DT	N	V+nz2	N+p3s+bfn+dat	V+aor
bir	ayırım	yaptığı	anlamına	gelir
DT	N	V+pc2+p3s	N+p3s+bfn+dat	V+aor
bir	ölçüde	öğrenilmesi	anlamına	gelir
DT	N+loc	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
durumu	açığa	çıkarmak	anlamına	gelir
N+acc	N+dat	V+nz1	N+p3s+bfn+dat	V+aor
faiz	oranlarının	artması	anlamına	gelir
N	N+pl+p3s+bfn+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
	ikramiye	artışı	anlamına	gelir
	N	N+p3s	N+p3s+bfn+dat	V+aor
	bir	kriz	anlamına	gelir
	DT	N	N+p3s+bfn+dat	V+aor
önemsiz	bir	güç	anlamına	gelir
A	DT	N	N+p3s+bfn+dat	V+aor
	bir	bilinç	anlamına	gelir
	DT	N	N+p3s+bfn+dat	V+aor
açmazlarının	kurban	edilmesi	anlamına	gelir
N+pl+p3s+bfn+gen	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
	yürekli	olmak	anlamına	gelir
	A	V+nz1	N+p3s+bfn+dat	V+aor
hukuka	aykırı	olduğu	anlamına	gelir
N+dat	A	V+pc2+p3s	N+p3s+bfn+dat	V+aor
	göreli	olduğu	anlamına	gelir
	V+AV01	V+pc2+p3s	N+p3s+bfn+dat	V+aor
test	etmekte	olduğu	anlamına	gelir
N	V+cont	V+pc2+p3s	N+p3s+bfn+dat	V+aor
nesnenin	para	olduğu	anlamına	gelir
N+bfn+gen	N	V+pc2+p3s	N+p3s+bfn+dat	V+aor
	dönecek	olduğumuz	anlamına	gelir
	V+futr	V+pc2+bfi+p1p	N+p3s+bfn+dat	V+aor

	tarafından	belirlenmesi	anlamına	gelir
	N+p3s+bfn+abl	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
Yaratan	tarafından	emredilmiş	anlamına	gelir
V+pc3	N+p3s+bfn+abl	V+perf	N+p3s+bfn+dat	V+aor
saldırgan	davranışların	kullanılması	anlamına	gelir
A	N+pl+bfi+p2s	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
heyet	veya	meclis	anlamına	gelir
N	CJ	N	N+p3s+bfn+dat	V+aor
felaket	veya	bela	anlamına	gelir
N	CJ	N	N+p3s+bfn+dat	V+aor
sonucun	olumlu	olması	anlamına	gelir
N+gen	A	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
yerine	getirilmiş	olması	anlamına	gelir
N+p3s+bfn+dat	V+perf	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
ilkenin	hâkim	olması	anlamına	gelir
N+bfn+gen	A	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
çoktan	bitmiş	olması	anlamına	gelir
AV	V+perf	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
varlığının	gerçek	olması	anlamına	gelir
N+p3s+bfn+gen	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
engel	niteliğinde	olmaması	anlamına	gelir
N	N+p3s+bfn+loc	V+neg+nz2+bfs+p3	N+p3s+bfn+dat	V+aor
bellekten	yok	olması	anlamına	gelir
N+abl	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
	yok	edilmesi	anlamına	gelir
	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
	yerine	getirildiği	anlamına	gelir
	N+p3s+bfn+dat	V+pc2+p3s	N+p3s+bfn+dat	V+aor
yükümlülüklerini	yerine	getirmemesi	anlamına	gelir
N+pl+p3s+bfn+acc	N+p3s+bfn+dat	V+neg+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
yükümlülüklerinin	sona	ermesi	anlamına	gelir
N+pl+p3s+bfn+gen	N+dat	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+aor
mükellefiyetinin	sona	erdiği	anlamına	gelir
N+p3s+bfn+gen	N+dat	V+pc2+p3s	N+p3s+bfn+dat	V+aor
felaket	veya	bela	anlamına	gelir
N	CJ	N	N+p3s+bfn+dat	V+aor
saygın	,	saygıdeğer	anlamına	gelir
A	PU	A	N+p3s+bfn+dat	V+aor

daha	açık	olma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor
daha	büyük	ışıma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor
daha	küçük	ışıma	anlamına	gelir
AV	A	V+nz2	N+p3s+bfn+dat	V+aor
yasama	yetkisinin	devri	anlamına	gelir
V+nz2	N+bfs+p3s+bfn+gen	NP	N+p3s+bfn+dat	V+aor
	yürütmeye	devri	anlamına	gelir
	V+nz2+bfy+dat	NP	N+p3s+bfn+dat	V+aor
rekabet	ortamında	bulunduğu	anlamına	gelir
N	N+p3s+bfn+loc	V+pc2+p3s	N+p3s+bfn+dat	V+aor

3. 2. anlamına gelmektedir

önemli	bir	olanak	anlamına	gelmektedir
A	DT	N	N+p3s+bfn+dat	V+cont+cop
azımsanmayacak	bir	hoşgörü	anlamına	gelmektedir
V+neg+bfy+futr	DT	N	N+p3s+bfn+dat	V+cont+cop
neredeyse	bir	ayrıcalık	anlamına	gelmektedir
AV	DT	N	N+p3s+bfn+dat	V+cont+cop
önemli	bir	olanak	anlamına	gelmektedir
A	DT	N	N+p3s+bfn+dat	V+cont+cop
alacağın	tahsil	edilmesi	anlamına	gelmektedir
V+pc1+bfi+p2s	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
dayandığı	ilkelerin	incelenmesi	anlamına	gelmektedir
V+pc2+p3s	N+pl+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
	bireycilik	olduğu	anlamına	gelmektedir
	N	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
uyuşturucu	kullanmakta	olduğu	anlamına	gelmektedir
N	V+cont	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
	bağımsızlığın	olmadığı	anlamına	gelmektedir
	N+gen	V+nz2+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
vurulmaktan	muaf	olmadığı	anlamına	gelmektedir
V+nz1+abl	N	V+nz2+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
turizm	gelirlerinin	artması	anlamına	gelmektedir
N	N+pl+p3s+bfn+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop

siyasal	yatırım	yapılması	anlamına	gelmektedir
A	N	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
siyasal	iktidarın	paylaşılması	anlamına	gelmektedir
A	N+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
çıkışa	işaret	etmek	anlamına	gelmektedir
N+dat	N	V+nz1	N+p3s+bfn+dat	V+cont+cop
	ithal	etmek	anlamına	gelmektedir
	A	V+nz1	N+p3s+bfn+dat	V+cont+cop
	Sözleşmenin	uygulanması	anlamına	gelmektedir
	V+nz2+bfn+gen	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
faizsiz	çalışan	bankacılık	anlamına	gelmektedir
A	V+pc3	N	N+p3s+bfn+dat	V+cont+cop
gerekli	olan	ortam	anlamına	gelmektedir
A	V+pc3	N	N+p3s+bfn+dat	V+cont+cop
tamamen	ortadan	kaldırılması	anlamına	gelmektedir
AV	N+abl	V+nz2+bfs+p3s	N+p3s+bfn+dat	V+cont+cop
yalnızlık	düzeyinin	yükseldiği	anlamına	gelmektedir
N	N+p3s+bfn+gen	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop
zımnen	kabul	edildiği	anlamına	gelmektedir
AV	N	V+pc2+p3s	N+p3s+bfn+dat	V+cont+cop

3. 3. anlamına geliyor

yakın	ilişkileri	olduğu	anlamına	geliyor
A	N+pl+p3s	V+pc2+p3s	N+p3s+bfn+dat	V+bfi+imprf
daha	az	çeşitlilik	anlamına	geliyor
AV	DT	N	N+p3s+bfn+dat	V+bfi+imprf
dinamik	bir	model	anlamına	geliyor
A	NU	N	N+p3s+bfn+dat	V+bfi+imprf
tutucu	etkisinin	artacağı	anlamına	geliyor
A	N+bfs+p3s+bfn+gen	V+pc1+p3s	N+p3s+bfn+dat	V+bfi+imprf

APPENDIX 4 : PATTERNS OF “meydana gel-”

4. 1. meydana gelir

		sonucu	meydana	gelir
		N+p3s	N+dat	V+aor
	karboksillenmesi	sonucu	meydana	gelir
	V+nz2+bfs+acc	N+p3s	N+dat	V+aor
feda	etmeleri	sonucu	meydana	gelir
N	V+nz2+pl+p3s	N+p3s	N+dat	V+aor
	birleşmesi	sonucu	meydana	gelir
	V+nz2+bfs+p3s	N+p3s	N+dat	V+aor
	birleşmesi	sonucu	meydana	gelir
	V+nz2+bfs+p3s	N+p3s	N+dat	V+aor
	üretilmesi	sonucu	meydana	gelir
	V+nz2+bfs+p3s	N+p3s	N+dat	V+aor
		sonucu	meydana	gelir
		N+p3s	N+dat	V+aor
	etkileşim	sonucu	meydana	gelir
	N	N+p3s	N+dat	V+aor
bir	zorunluluk	sonucu	meydana	gelir
DT	N	N+p3s	N+dat	V+aor
bir	takım	değişiklikler	meydana	gelir
DT	N	N+pl	N+dat	V+aor
bir	talep	artışı	meydana	gelir
DT	N	N+p3s	N+dat	V+aor
bir	dizi	reaksiyon	meydana	gelir
DT	N	N	N+dat	V+aor
bir	madde	de	meydana	gelir
DT	N	CL	N+dat	V+aor
	saldırısında	da	meydana	gelir
	N+bfs+p3s+bfn+loc	CL	N+dat	V+aor
	beyinde	de	meydana	gelir
	N+loc	CL	N+dat	V+aor
	körlükler	de	meydana	gelir
	N+pl	CL	N+dat	V+aor
		de	meydana	gelir
		CL	N+dat	V+aor
	hücrelerinde	de	meydana	gelir
	N+pl+p3s+bfn+loc	CL	N+dat	V+aor
	bazı	gazlarla	meydana	gelir
	DT	N+pl+ins	N+dat	V+aor
	bazı	değişimler	meydana	gelir
	DT	N+pl	N+dat	V+aor

yavaş	yavaş	değişim	meydana	gelir
A	A	N	N+dat	V+aor
homojen	bir	tabakadan	meydana	gelir
A	DT	N+abl	N+dat	V+aor
yakın	bir	yerinde	meydana	gelir
A	DT	N+p3s+bfn+loc	N+dat	V+aor
	bir	lokavt	meydana	gelir
	DT	N	N+dat	V+aor
kaygan	bir	tabaka	meydana	gelir
N	DT	N	N+dat	V+aor
alışkanlıkların	bir	topluluğu	meydana	gelir
N+pl+gen	DT	N+p3s	N+dat	V+aor
kimyasal	bir	tepkime	meydana	gelir
A	DT	N	N+dat	V+aor
	bir	kitle	meydana	gelir
	DT	N	N+dat	V+aor
	bir	kıskanma	meydana	gelir
	DT	V+nz2	N+dat	V+aor
	bağımsız	olarak	meydana	gelir
	A	V+AV02	N+dat	V+aor
	bağlı	olarak	meydana	gelir
	PP	V+AV02	N+dat	V+aor
iki	kırık	uç	meydana	gelir
NU	A	N	N+dat	V+aor
iki	yavru	hücre	meydana	gelir
NU	N	N	N+dat	V+aor
	yavru	hücreler	meydana	gelir
	N	N+pl	N+dat	V+aor
iki	önemli	olay	meydana	gelir
NU	A	N	N+dat	V+aor
benzer	bir	olay	meydana	gelir
A	DT	N	N+dat	V+aor
çok	sayıda	çizgilerden	meydana	gelir
DT	N+loc	N+pl+abl	N+dat	V+aor
çok	güzel	görünümler	meydana	gelir
DT	A	N+pl	N+dat	V+aor
		sonucunda	meydana	gelir
		N+p3s+bfn+loc	N+dat	V+aor
bu	hareketler	sonucunda	meydana	gelir

DT	N+pl	N+p3s+bfn+loc	N+dat	V+aor
Bu	sebeplerden	neler	meydana	gelir
DT	N+pl+abl	PN+pl	N+dat	V+aor
etanol	ve	karbondioksit	meydana	gelir
N	CJ	N	N+dat	V+aor
karbondioksit	ve	su	meydana	gelir
N	CJ	N	N+dat	V+aor
hidrojen	ve	helyumdan	meydana	gelir
N	CJ	N+abl	N+dat	V+aor
	Zıtlar	nasıl	meydana	gelir
	A+pl	AV	N+dat	V+aor
	iman	nasıl	meydana	gelir
	N	AV	N+dat	V+aor
		nasıl	meydana	gelir
		AV	N+dat	V+aor
	Sesimiz	Nasıl	Meydana	Gelir
	N+bfi+p1p	AV	N+dat	V+aor
	bu	katmanda	meydana	gelir
	DT	N+loc	N+dat	V+aor
	bu	şekilde	meydana	gelir
	DT	N+loc	N+dat	V+aor
	kilometre	altında	meydana	gelir
	N	N+p3s+bfn+loc	N+dat	V+aor
	kilometrelerce	altında	meydana	gelir
	N+pl+AV13	N+p3s+bfn+loc	N+dat	V+aor

4. 2. meydana gelmektedir

köklenme	oranında	bir	düşme	meydana	gelmektedir
V+nz2	N+p3s+bfn+loc	DT	V+nz2	N+dat	V+cont+cop
		bir	gelişme	meydana	gelmektedir
		DT	V+nz2	N+dat	V+cont+cop
	önemli	bir	darboğaz	meydana	gelmektedir
	A	DT	N	N+dat	V+cont+cop
		huzursuzluklar	da	meydana	gelmektedir
		N+pl	CL	N+dat	V+cont+cop
aynı	anda	z2	de	meydana	gelmektedir
DT	N+loc	AB	CL	N+dat	V+cont+cop
		aldehitler	de	meydana	gelmektedir

		N+pl	CL	N+dat	V+cont+cop
çapraz	birleşmeler	ile	de	meydana	gelmektedir
A	V+nz2+pl	CJ	CL	N+dat	V+cont+cop
çapraz	olarak	çizilen	çizgilerden	meydana	gelmektedir
A	V+AV02	V+pc3	N+pl+abl	N+dat	V+cont+cop
eşit	aralıklarla	çizilen	çizgilerden	meydana	gelmektedir
A	N+pl+ins	V+pc3	N+pl+abl	N+dat	V+cont+cop
		onüç	çizgiden	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
		saat	çizgilerinden	meydana	gelmektedir
		N	N+pl+p3s+bfn+abl	N+dat	V+cont+cop
		düz	çizgiden	meydana	gelmektedir
		A	N+abl	N+dat	V+cont+cop
		düz	çizgilerden	meydana	gelmektedir
		A	N+pl+abl	N+dat	V+cont+cop
		düz	çizgilerden	meydana	gelmektedir
		A	N+pl+abl	N+dat	V+cont+cop
		yirmi	çizgiden	meydana	gelmektedir
		N+p1s+acc	N+abl	N+dat	V+cont+cop
	yazı	ve	çizgilerden	meydana	gelmektedir
	N	CJ	N+pl+abl	N+dat	V+cont+cop
biribirine	paralel	on	çizgiden	meydana	gelmektedir
PN+bfn+dat	A	N	N+abl	N+dat	V+cont+cop
		15	çizgiden	meydana	gelmektedir
		DG	N+abl	N+dat	V+cont+cop
		beş	çizgiden	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
	yarım	saatlik	çizgilerden	meydana	gelmektedir
	A	A	N+pl+abl	N+dat	V+cont+cop
		dokuz	çizgiden	meydana	gelmektedir
		NB	N+abl	N+dat	V+cont+cop
	iki	ana	çizgiden	meydana	gelmektedir
	NU	N	N+abl	N+dat	V+cont+cop
çapraz	olarak	çizilen	çizgilerden	meydana	gelmektedir
A	V+AV02	V+pc3	N+pl+abl	N+dat	V+cont+cop
çapraz	birleşmeler	ile	de	meydana	gelmektedir
A	V+nz2+pl	CJ	CL	N+dat	V+cont+cop
		etrafındaki	çizgilerden	meydana	gelmektedir
		N+p3s+bfn+loc+kiA	N+pl+abl	N+dat	V+cont+cop
		kavisli	çizgilerden	meydana	gelmektedir
		A	N+pl+abl	N+dat	V+cont+cop
		altı	bölümden	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop

	iki	yarım	daireden	meydana	gelmektedir
	NU	A	N+abl	N+dat	V+cont+cop
	iki	ayrı	sistemden	meydana	gelmektedir
	NU	A	N+abl	N+dat	V+cont+cop
	iki	ana	bölümden	meydana	gelmektedir
	NU	N	N+abl	N+dat	V+cont+cop
	iki	farklı	suret	meydana	gelmektedir
	NU	A	N	N+dat	V+cont+cop
		üç	kavisten	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
		iki	aşamada	meydana	gelmektedir
		NU	N+loc	N+dat	V+cont+cop
		iki	bölümden	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
		iki	şeritten	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
		üç	şeritten	meydana	gelmektedir
		NU	N+abl	N+dat	V+cont+cop
içbükey	ve	dışbükey	kavislerden	meydana	gelmektedir
A	CJ	N	N+pl+abl	N+dat	V+cont+cop
		saat	çizgilerinden	meydana	gelmektedir
		N	N+pl+p3s+bfn+abl	N+dat	V+cont+cop
		saat	işaretlerinden	meydana	gelmektedir
		N	N+pl+p3s+bfn+abl	N+dat	V+cont+cop
	bir	saat	şeridinden	meydana	gelmektedir
	DT	N	N+p3s+bfn+abl	N+dat	V+cont+cop
	bir	mil	yuvasından	meydana	gelmektedir
	DT	N	N+bfs+p3s+bfn+abl	N+dat	V+cont+cop
	bir	sezinin	birleşmesinden	meydana	gelmektedir
	DT	N+bfn+gen	V+nz2+bfs+p3s+bfn+abl	N+dat	V+cont+cop
doğru	bir	sıralamayla	kullanılmasıyla	meydana	gelmektedir
A	DT	V+nz2+bfy+ins	V+nz2+bfs+p3s+bfy+ins	N+dat	V+cont+cop
aşırı	bir	bilgi	birikimi	meydana	gelmektedir
A	DT	N	N+p3s	N+dat	V+cont+cop
yeni	bir	toplum	yapısı	meydana	gelmektedir
A	DT	N	N+bfs+p3s	N+dat	V+cont+cop
belirgin	bir	büzüşmeyle	birlikte	meydana	gelmektedir
A	DT	V+nz2+bfy+ins	AV	N+dat	V+cont+cop
çalışmalarla	birlikte	okunmasıyla	birlikte	meydana	gelmektedir
V+nz2+pl+ins	AV	V+nz2+bfs+p3s+bfy+ins	AV	N+dat	V+cont+cop
20	çeşit	amino	asitten	meydana	gelmektedir

DG	N	N	N+abl	N+dat	V+cont+cop
12	farklı	trisomik	tip	meydana	gelmektedir
DG	A	A	N	N+dat	V+cont+cop
	iki	yarım	daireden	meydana	gelmektedir
	NU	A	N+abl	N+dat	V+cont+cop
	iki	ana	çizgiden	meydana	gelmektedir
	NU	N	N+abl	N+dat	V+cont+cop
	iki	ayrı	sistemden	meydana	gelmektedir
	NU	A	N+abl	N+dat	V+cont+cop
	iki	farklı	suret	meydana	gelmektedir
	NU	A	N	N+dat	V+cont+cop
	iki	ana	bölümden	meydana	gelmektedir
	NU	N	N+abl	N+dat	V+cont+cop
		bu	dönüşlerden	meydana	gelmektedir
		DT	N+pl+abl	N+dat	V+cont+cop
		bu	tesir	meydana	gelmektedir
		DT	N	N+dat	V+cont+cop

4. 3. meydana gelmiştir

	büyük	çatlamalar	meydana	gelmiştir
	A	V+nz2+pl	N+dat	V+perf+cop
ilişkilerinde	büyük	çatlamalar	meydana	gelmiştir
N+pl+p3s+bfn+loc	A	V+nz2+pl	N+dat	V+perf+cop
	büyük	çatlamalar	meydana	gelmiştir
	A	N	N+dat	V+perf+cop
oranlarında	önemli	gelişmeler	meydana	gelmiştir
N+pl+p3s+bfn+loc	A	V+nz2+pl	N+dat	V+perf+cop
	önemli	farklılıklar	meydana	gelmiştir
	A	N+pl	N+dat	V+perf+cop
piyasasında	önemli	değişiklikler	meydana	gelmiştir
N+bfs+p3s+bfn+loc	A	N+pl	N+dat	V+perf+cop
felsefesinde	önemli	değişiklikler	meydana	gelmiştir
N+bfs+p3s+bfn+loc	A	N+pl	N+dat	V+perf+cop
bazı	yapısal	değişimler	meydana	gelmiştir
DT	A	N+pl	N+dat	V+perf+cop
bazı	istenilmeyen	hadiseler	meydana	gelmiştir
DT	V+nz2+bfy+pc3	N+pl	N+dat	V+perf+cop
ve	pazar	yapısında	meydana	gelmiştir
CJ	N	N+bfs+p3s+bfn+loc	N+dat	V+perf+cop
ve	kültürel	değişiklikler	meydana	gelmiştir

CJ	A	N+pl	N+dat	V+perf+cop
	çarpıcı	değişmeler	meydana	gelmiştir
	N	V+nz2+pl	N+dat	V+perf+cop
ise	bazı	değişiklikler	meydana	gelmiştir
V+AV11	DT	N+pl	N+dat	V+perf+cop
	irreversible	değişiklikler	meydana	gelmiştir
	FR	N+pl	N+dat	V+perf+cop
'	lik	azalma	meydana	gelmiştir
PU	DR	V+nz2	N+dat	V+perf+cop
	bir	azalma	meydana	gelmiştir
	DT	V+nz2	N+dat	V+perf+cop
piyasasında	bir	bolluk	meydana	gelmiştir
N+bfs+p3s+bfn+loc	DT	N	N+dat	V+perf+cop
zorunlu	bir	şekilde	meydana	gelmiştir
A	DT	N+loc	N+dat	V+perf+cop
büyük	bir	kuruluş	meydana	gelmiştir
A	DT	N	N+dat	V+perf+cop
önemli	bir	daralma	meydana	gelmiştir
A	DT	V+nz2	N+dat	V+perf+cop
birden	fazla	molekülden	meydana	gelmiştir
NU+abl	PP	N+abl	N+dat	V+perf+cop
den	fazla	deprem	meydana	gelmiştir
abl	PP	N	N+dat	V+perf+cop
	21	deprem	meydana	gelmiştir
	DG	N	N+dat	V+perf+cop
bir	değişim	aralığı	meydana	gelmiştir
DT	N	N+p3s	N+dat	V+perf+cop
bir	iç	kısımdan	meydana	gelmiştir
DT	N	N+abl	N+dat	V+perf+cop
nefes	ve	mersiyeler	meydana	gelmiştir
N	CJ	N+pl	N+dat	V+perf+cop
kuyruklar	ve	haleler	meydana	gelmiştir
N+pl	CJ	N+pl	N+dat	V+perf+cop