

## Course Project Report

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## 1 Tags

Discussing the results of AnnCorra and UD tagging in my chosen Indian Language, Bengali.

## 1.1 UD

Based on the results of tagging 100 sentences with UD tags, we present the following results.

It is to be noted that a number of issues arise from trying to tag bengali with UD tags, including but not limited to a dearth of tags for specific use cases, requiring the use of a general tag covering all the various nuanced use cases that are present in the language. A detailed analysis will be provided later.

Tag	Examples	Linguistic Cues
<b>nsubj</b>	<b>bijepi</b> korbe kal shukrobar	POS: Noun
	ekti porjay porjonto <b>tader</b> shekhano hoy	Suffixes: -er, -r (possessive),
	<b>tini</b> tader byaboharic ingreji ou gonit poraten	POS: Pronoun

<b>obj</b>	tini <b>tader</b> byaboharic ingreji ou gonit shekhan tar biddaloyer nirdhishto kono <b>pathshuchi</b> ba boi nei	POS: Pronoun; Suffixes: der POS: Noun
<b>iobj</b>	ekta <b>porjay</b> porjonto tader shekhano hoy	Multiple Example 2
<b>csubj</b>	<b>ja she bollo</b> ta shotti O <b>jai bole</b> tai thik	"ja... ta" construction "jai... tai" construction
<b>ccomp</b>	she bollo je tumi shantar katte <b>pochondo</b> koro she bollo tumi shantar katte <b>pochondo</b> koro	POS: Noun; "je" construction Verb suffix: -lo
<b>advcl</b>	durghotonata <b>holo</b> raat hotei khabe bolei she biyebareite <b>elo</b>	POS: Verb; Postposition: hotei Postposition: bolei
<b>advmod</b>	<b>raage</b> uttejito maanushti mere dilo	POS: Adverb; "adv adj noun" construction
<b>aux</b>	she <b>more</b> gechhe	Words defining actions of 'do' verbs like gechhe, aache
<b>nmod</b>	<b>uttejito</b> chheleta kaandlo	POS: Adjective
<b>nmod:poss</b>	<b>chheletir</b> table bhenge gechhe	POS: Noun; Suffixes: -r
<b>nummod</b>	aami <b>tin</b> chicken dish khelam aamake <b>chollish</b> taka dao toh	POS: Noun POS: Noun; Is a number
<b>acl</b>	<b>bihsoyta</b> , jemon she dekhe, besh bhalo	POS: Noun, Suffixes: -ta, "... jemon..." construction
<b>amod</b>	daaktar <b>laal</b> maangsho khete baaron korechen dosh koti <b>takar</b> dhar nilam	POS: Adjective POS: Noun, phrase describing noun
<b>conj</b>	chheleta boro ou <b>lomba</b> hoyechhe	POS: any (adjective); second part of a conjunction
<b>cc</b>	chheleta boro <b>ou</b> lomba hoyechhe	POS: Conjunction
<b>fixed</b>	She <b>tomar</b> jonno kendeche	Suffixes: -ar
<b>flat</b>	uni holen <b>Satyajit Ray</b>	POS: Noun; Names are flat
<b>compound</b>	khabar <b>tebile</b> esho	POS: Noun; Compound nouns are compound
<b>punct</b>	oho re khokha , ki korchhish re	POS: Punctuation
<b>root</b>	aami oke <b>pochhondo</b> kori	POS: Verb

Table 1: Discussion on UD tags

## 1.2 AnnCorra

Based on the results of tagging 100 sentences with AnnCorra tags, we present the following results. While the issues with AnnCorra are less pronounced than that of UD with regards to ambiguity, several concerns remain: including but not limited to a general confusion over the applicability of tags in cases and weak intra-chunk relations. A detailed analysis will be provided later.

Tag	Examples	Linguistic Cues
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<b>k1</b>	<b>bulabulite</b> dhAna kheYechhe <b>AmAra</b> shIta karachhe <b>AmAdera</b> siTi kaleja khuba bhAla AnandamaTha <b>baNkimachandra</b> kartRRika rachita	POS: Noun; Suffixes: -te POS: Pronoun, Suffixes: -Ara POS: Pronoun; Suffixes: -r (possessive) POS: Noun; Postposition: kartRRika (also dbArA and diYe)
<b>k2</b>	bhUmikampa sAjAno gochhAno <b>sha-</b> <b>haraTA</b> dhibansa karala tini <b>buddhadebake</b> parameshbarera abatAra balena	POS: Noun; Suffixes: -TA POS: Noun; Suffixes: -ke
<b>k2m</b>	Ami mAke <b>chiThi</b> likhachhi	POS: Noun
<b>k2g</b>	Ami <b>mAke</b> chiThi likhachhi	POS: Noun; Suffixes: -ke
<b>k3</b>	gAdhAke <b>chAbuka</b> mAro gAdhAke <b>chAbuka</b> diYe mAro	POS: Noun POS: Noun; Postposition: diYe
<b>k4</b>	rAm mohanke mArlo	POS: Noun; Suffixes: -ke
<b>k5</b>	<b>nadIra</b> ghATa theke ghaTa bhese ela AmAra <b>ghara</b> theke mandirera chU.DA dekhA yAYa.	POS: Noun; Postposition: theke POS: Noun; Postposition: theke
<b>k7p</b>	<b>bADite</b> phulera gAchha Achhe <b>kArkhaAnAy</b> kAj hoChe	POS: Noun; Suffixes: -te POS: Noun; Suffixes: -Ay
<b>k7t</b>	<b>bhore</b> sUrya oThe. <b>ChotobelAy</b> luDo kHeltAm	POS: Noun; Suffixes: -e POS: Noun; Suffixes: -Ay
<b>k7</b>	tArA <b>sAhitye</b> paNDita tArA khuba <b>sukhe</b> Achhe	POS: Noun; Suffixes: -ye POS: Noun; Suffixes: -e
<b>rh</b>	<b>bhaYe</b> bhule yAYa debatAra nAma.	POS: Noun; Suffixes: -e
<b>ru</b>	ratana <b>unnatira</b> janya kaThora parishrama kare	POS: Noun, Suffixes: -ra, Postposition: janya
<b>r6v</b>	<b>rAmera</b> ekaTA meYe Achhe	POS: Noun; Suffixes: -era (genitive marker); Verb: Achhe
<b>des</b>	rAma bA.Di <b>giYechhila</b>	POS: Verb; Suffixes: -echhila (nomina- tive marker)
<b>ras</b>	simA <b>nIrAra</b> sAthe melAte gela se <b>chini</b> chhA.DA chA khete pach- handa kare	Postposition: sAthe, diYe Postposition: chhA.DA, binA
<b>ccof</b>	darshaka upache pa.Dla nA <b>kintu</b> udaghATita hala eka natuna dika Filler text	Conjunct words; o, kintu, eba.n POS: Noun; Suffixes: -e
<b>adv</b>	rimi <b>shAntabhAbe</b> galpa balala	POS: adjective; Suffixes: -bhAbe

Table 2: Discussion on AnnCorra tags

## 2 Linguistic Challenges with Annotation

### (a) Differential Object marking

#### (b) Non-Nominative Subjects

Non-Nominative subjects refers to a situation where certain verbs specify that their subjects are to be in a case other than nominative. There are several constructions in bengali where non-nominative subjects exist, which the tagger can use to pick up the non-nominative nature.

Bengali *does not use the dative case*, unlike several other languages. The cases, however, can be seen as follows:

1. *Experiencer-Subject Construction*  
e.g: **rinar** dim bhaalo laage.
2. *Locative Case*  
e.g: **tomae** jotheshito shaahosh aache?

#### (c) Complex Predicates

Complex predicates are particularly hard to deal with when dependency tagging. In the given data, these primarily take the form of *Noun+Verb*, or *Verb+Verb*. The issue with tagging these is that it is often hard to tell which one should be tagged as the primary subject/object/verb, and which is to be tagged as an auxillary to that. The LWG nature of it forces a decision that is hard to make for human taggers, and automated taggers would here be suspect to the biases of the human tagger.

In bengali, we can largely classify this form into two representations:

##### 1. Conjunct Verbs (Noun + Verb)

When it is hard for a tagger to identify whether the noun should be a part of the verb complex, or as an accessory to the verb itself in LWG.

*aami kalke biye korbo*

##### 2. Compound Verbs (Verb + Verb)

In a similar case, only there are two verbs and it is hard for a tagger to identify the primary action that should be tagged. A lot of such cases occurred in the UD data.

*aami okhan theke uthe elam*

#### (d) Non-finite clauses: Conditional, Concessive, Relative, participial clauses

A Non-Finite verbs do not have subject, tense or number. Their form is not affected by the subject's person or number.

Consider the bengali clause: *jodio keo tar korha shunchhilo na, she boktei thaklo.*

There is no ambiguity in this sentence, despite its concessive clause form. Due to the restrictive nature of the sentence construction, concessive clauses, which is associated here with a finite verb, do not appear to have any examples of non-finite constructions. The same goes for conditional, concessive, relative, and participial clauses - with bengali.

#### (e) Ambiguity (Coordination, Attachment)

As Bangla is a relatively free word order language, the words of the sentence can change their places. Some of the representations are unmarked (most fluent) and some are marked (rare).

This leads to the possibility of multiple tree constructions possible for a single sentence. It is already an issue in more rigid word order languages like english, and the impact is doubly felt here. Not only are these sentences harder to computationally parse for a computer, even human beings can struggle to make sense of the meaning in some cases.

*mohan durbin diye aam khawa loktake dekhche*

While to the regular human being this sentence makes perfect sense - only because you do not usually use telescopes to eat mangoes. For a computer however, there is no structural indication as to this ambiguity.

**(f) Ellipsis**

Ellipsis is when one leaves out words, referring to them with context. This is easy enough for humans to pick up, but like anaphora resolution, computers struggle with the task. The marker that would be referred to here is missing altogether.

**(g) Non-projectivity**

Non-projective structures contain a node with a discontinuous yield. These occur pretty frequently in Bengali, especially in longer sentences, aided by the language's free order. Ex 1: I saw a man yesterday who was singing  
Ex 2: A hearing is scheduled on the issue today Ex 3: To his wife, John gave a fantastic gift Ex 4: Which house, John bought?

**(h) Particles**

Used to mark attachment. Examples: *tao* (loktao khelo, cheletao uthlo, etc)

### 3 Tag Statistics

Statistics have been compiled for UD and AnnCorra tagging of the provided Hindi datasets.

In order to get the markers, I took a text diff (difflib.ndiff) of the provided hindi word and its base form as given in the dataset. In order to do that, a conversion to wx format was necessary.

#### 3.1 Tag and Markers

<i>Tag</i>	<i>Marker</i>	<i>Count</i>
pof__cn		18725
pof__cn	s	26
pof__cn	A	2
pof__cn	e	35
pof__cn	Z	32
pof__cn	I	57
pof__cn	M	77
pof__cn	Ms	2
pof__cn	in	2
pof__cn	.	21
pof__cn	erA	1
pof__cn	IM	19
pof__cn	OY	3
pof__cn	S	1
pof__cn	ja	6
pof__cn	ZZ	2
pof__cn	oM	3
pof__cn	o	6
pof__cn	n	22
pof__cn	e.	1
pof__cn	Ze	1
pof__cn	ZU	1
pof__cn	egA	1
pof__cn	es	2

pof_cn	eM	3
pof_cn	rrsa	1
pof_cn	r	1
pof_cn	ej	3
pof_cn	,000	1
pof_cn	ejZ	1
pof_cn	iyAM	1
pof_cn	va	1
pof_cn	m	2
pof_cn	sa	2
pof_cn	329	1
pof_cn	wA	1
pof_cn	XaX	1
r6		10611
r6	oM	1461
r6	unke	275
r6	e	1028
r6	iyOM	288
r6	ke	8
r6	unkI	238
r6	I	353
r6	iske	76
r6	iskI	80
r6	ne	910
r6	uske	97
r6	Z	83
r6	ere	10
r6	Are	33
r6	s	21
r6	isI	3
r6	M	87
r6	uskA	39
r6	iskA	82
r6	inkA	6
r6	Me	2
r6	,	3
r6	NULL	15
r6	Zne	30
r6	inkI	22
r6	uskI	68
r6	unkA	69

r6	o	27
r6	i	11
r6	ZiyoM	7
r6	ie	25
r6	yoM	11
r6	Ms	6
r6	isake	8
r6	N	1
r6	ZoM	16
r6	us	1
r6	isakI	7
r6	isakA	12
r6	ArI	39
r6	ArA	16
r6	kI	13
r6	erA	5
r6	Ze	14
r6	egI	1
r6	is	5
r6	erI	8
r6	m	1
r6	ja	8
r6	inke	10
r6	ZZ	4
r6	BI	5
r6	-	1
r6	IM	5
r6	vAne	1
r6	ye	3
r6	inake	6
r6	isko	1
r6	unse	1
r6	uhAre	1
r6	inakI	4
r6	Ane	3
r6	inakA	6
r6	kA	8
r6	aI	1
r6	uoM	9
r6	noM	10
r6	iy	1

r6	yA	1
r6	unIM	1
r6	ioM	1
r6	OY	1
r6	eM	1
r6	hiyoM	1
r6	n	1
r6	usI	4
r6	a	2
r6	bord	1
r6	ane	1
r6	iye	1
r6	jI	1
lwg--psp	I	7113
lwg--psp		48259
lwg--psp	e	7520
lwg--psp	oM	51
lwg--psp	Z	40
lwg--psp	o	2
lwg--psp	i	2
lwg--psp	k	1
lwg--psp	Ze	1
lwg--psp	ke	1
lwg--psp	A	1
lwg--psp	ZZ	9
lwg--psp	se	1
nmod		4174
nmod	gI	1
nmod	e	154
nmod	i	7
nmod	is	10
nmod	M	28
nmod	ne	481
nmod	NULL	18
nmod	oM	106
nmod	isse	5
nmod	inneM	6
nmod	Zne	9
nmod	Z	16
nmod	,	5
nmod	I	45



nmod	n	2
nmod	iyOM	13
nmod	inkI	1
nmod	yoM	7
nmod	iske	1
nmod	we	4
nmod	uneM	1
nmod	Ze	4
nmod	uI	1
nmod	nevAle	1
nmod	unkI	4
nmod	.	1
nmod	iy	1
nmod	ZA	1
nmod	333602	1
nmod	mI	1
nmod	kara	9
nmod	o	6
nmod	A	1
nmod	MI	1
nmod	isameM	2
nmod	usse	11
nmod	ie	17
nmod	eM	4
nmod	ZZ	2
nmod	s	2
nmod	us	3
nmod	unse	1
nmod	ZoM	2
nmod	unke	2
nmod	nA	1
nmod	ismeM	3
nmod	iyA	1
nmod	ZyA	1
nmod	wI	1
nmod	Ane	1
nmod	yA	2
nmod	Ms	2
nmod	yI	2
nmod	iyAM	1
nmod	iskI	2

nmod	nevAll	2
nmod	isa	1
nmod	ue	1
nmod	uske	2
nmod	erI	1
nmod	ArI	1
nmod	Are	1
nmod	iskA	2
nmod	erA	1
nmod	Zkara	1
k7		5446
k7	inmeM	52
k7	oM	818
k7	isameM	93
k7	iyom	94
k7	ne	447
k7	e	935
k7	is	207
k7	iske	19
k7	ismeM	152
k7	M	50
k7	Z	41
k7	uske	18
k7	I	1
k7	Me	4
k7	inke	1
k7	us	26
k7	yoM	30
k7	isa	13
k7	ina	6
k7	un	18
k7	uJame	1
k7	NULL	6
k7	s	4
k7	unke	14
k7	m	1
k7	Ms	1
k7	noM	8
k7	o	18
k7	we	1
k7	uJa	4

k7	Ze	5
k7	ie	8
k7	Zne	12
k7	inameM	22
k7	usI	1
k7	isake	2
k7	unmeM	22
k7	IM	2
k7	i	5
k7	meM	1
k7	usmeM	21
k7	ZiyoM	2
k7	isI	3
k7	Mne	1
k7	Are	6
k7	inIM	1
k7	isse	4
k7	,	1
k7	n	3
k7	ZoM	13
k7	uoM	5
k7	BI	2
k7	uskI	1
k7	ja	1
k7	in	4
k7	ZZ	2
k7	ke	3
k7	hAre	1
k7	iye	1
k7	se	1
k7	A	1
k7	inake	2
k7	Aw	1
k7	Ane	1
r6-k2	yoM	8
r6-k2		1171
r6-k2	I	14
r6-k2	ne	578
r6-k2	ie	10
r6-k2	e	114
r6-k2	oM	258

r6-k2	unkI	20
r6-k2	M	7
r6-k2	iskA	43
r6-k2	uskI	16
r6-k2	Z	5
r6-k2	unkA	12
r6-k2	iyom	36
r6-k2	isakI	3
r6-k2	Zne	13
r6-k2	iskI	28
r6-k2	inkA	4
r6-k2	uskA	12
r6-k2	i	4
r6-k2	iske	2
r6-k2	NULL	4
r6-k2	pawni	1
r6-k2	Ze	2
r6-k2	isakA	7
r6-k2	o	3
r6-k2	Ah	1
r6-k2	kI	1
r6-k2	BI	1
r6-k2	uske	2
r6-k2	unke	3
r6-k2	noM	2
r6-k2	is	3
r6-k2	Me	2
r6-k2	ye	1
r6-k2	isI	1
r6-k2	nane	1
r6-k2	erI	2
r6-k2	jI	1
pof		11196
pof	e	78
pof	Z	124
pof	ne	3
pof	M	31
pof	I	62
pof	Ze	9
pof	ZZ	7
pof	nA	10

pof	m	1
pof	eM	28
pof	kara	1
pof	iyAM	9
pof	Me	1
pof	NULL	11
pof	ZA	1
pof	la	1
pof	oM	3
pof	ZnA	1
pof	n	2
pof	iyAz	1
pof	aX	1
pof	A	1
pof	-	1
pof	wA	1
pof	u	1
rt	ne	870
rt	oM	142
rt		791
rt	iske	102
rt	iyom	21
rt	e	44
rt	o	6
rt	Zne	25
rt	Z	6
rt	Mne	1
rt	M	7
rt	in	1
rt	usI	1
rt	unke	18
rt	is	1
rt	ke	4
rt	BI	3
rt	uske	7
rt	Ane	1
rt	ZZ	1
rt	Are	3
rt	isse	1
rt	ere	2
rt	uoM	1

rt	s	3
rt	iskI	1
rt	isake	3
rt	A	1
rt	ZiyoM	2
rt	na	1
rt	yoM	1
rt	Ze	1
rt	Ms	1
rt	kara	1
rt	noM	1
rt	ZoM	1
rt	unkI	1
ras-pof		4
ras-pof	e	1
ras-pof	oM	1
main	I	1275
main	iyA	1055
main	A	2685
main	yA	938
main		5309
main	e	478
main	wI	138
main	wA	139
main	NULL	89
main	we	219
main	M	352
main	ue	30
main	uI	138
main	nA	135
main	egI	63
main	gI	57
main	eMge	121
main	i	62
main	ne	84
main	nI	62
main	MI	2
main	eM	19
main	ZwA	3
main	Ze	12
main	Z	48

main	ZA	22
main	uA	95
main	egA	77
main	Mge	45
main	IM	38
main	Me	2
main	uIM	1
main	gA	74
main	gay	8
main	eMgIM	1
main	ie	76
main	wIM	3
main	eMgI	16
main	Zne	2
main	vAyA	17
main	gae	13
main	vAwI	1
main	MyA	1
main	UMgI	1
main	UM	4
main	ZegA	4
main	ZI	6
main	Zwe	1
main	UMgA	1
main	,	7
main	iy	2
main	iey	6
main	yI	4
main	MgI	8
main	ZyA	3
main	iegA	2
main	ez	11
main	ZegI	1
main	zI	1
main	vA	2
main	null	1
main	kara	1
main	gIM	1
main	gaI	2
main	MgeM	1
main	AIM	1

main	MA	1
main	gaIM	1
main	Mne	1
main	MvAe	1
main	MvAI	1
main	z	1
main	vAwA	1
main	ZwI	1
main	MnA	1
main	ye	4
lwg__vaux		3577
lwg__vaux	gay	1167
lwg__vaux	wI	203
lwg__vaux	I	1258
lwg__vaux	iyA	770
lwg__vaux	we	233
lwg__vaux	M	672
lwg__vaux	ue	688
lwg__vaux	gaI	668
lwg__vaux	gae	667
lwg__vaux	ne	437
lwg__vaux	e	1040
lwg__vaux	A	405
lwg__vaux	eMgI	17
lwg__vaux	IM	52
lwg__vaux	wA	342
lwg__vaux	eM	35
lwg__vaux	eMge	84
lwg__vaux	Mge	33
lwg__vaux	egI	159
lwg__vaux	yA	57
lwg__vaux	uA	68
lwg__vaux	i	71
lwg__vaux	Z	9
lwg__vaux	Ze	8
lwg__vaux	nA	123
lwg__vaux	Zwe	1
lwg__vaux	gA	88
lwg__vaux	gaIM	18
lwg__vaux	nI	33
lwg__vaux	egA	287



lwg__vaux	uI	39
lwg__vaux	ZA	34
lwg__vaux	gayI	31
lwg__vaux	ie	3
lwg__vaux	UM	19
lwg__vaux	gI	21
lwg__vaux	UMgI	3
lwg__vaux	ZI	11
lwg__vaux	yegA	3
lwg__vaux	ZegA	4
lwg__vaux	oM	1
lwg__vaux	ezge	1
lwg__vaux	ZwA	5
lwg__vaux	iy	1
lwg__vaux	eMgIM	2
lwg__vaux	gaye	12
lwg__vaux	jAegA	1
lwg__vaux	wIM	5
lwg__vaux	ZegI	1
lwg__vaux	_NULL_	1
lwg__vaux	ya	1
lwg__vaux	ez	1
lwg__vaux	kara	4
lwg__vaux	MgI	3
lwg__vaux	MgeM	1
lwg__vaux	Iji	3
lwg__vaux	iye	1
lwg__vaux	yI	2
lwg__vaux	ye	3
lwg__vaux	ZwI	2
lwg__vaux	egeM	1
lwg__vaux	yeMge	1
lwg__vaux	yeMgI	1
lwg__vaux	o	1
lwg__vaux	Uz	1
lwg__vaux_cont	I	354
lwg__vaux_cont		3132
lwg__vaux_cont	M	1006
lwg__vaux_cont	gay	167
lwg__vaux_cont	IM	33
lwg__vaux_cont	wA	140

lwg__vaux_cont	e	359
lwg__vaux_cont	A	226
lwg__vaux_cont	egA	53
lwg__vaux_cont	we	18
lwg__vaux_cont	gaI	82
lwg__vaux_cont	UM	11
lwg__vaux_cont	eMge	8
lwg__vaux_cont	,	1
lwg__vaux_cont	wI	53
lwg__vaux_cont	oM	3
lwg__vaux_cont	gae	21
lwg__vaux_cont	ne	7
lwg__vaux_cont	gaIM	2
lwg__vaux_cont	gayI	6
lwg__vaux_cont	z	1
lwg__vaux_cont	gA	4
lwg__vaux_cont	egI	11
lwg__vaux_cont	Mge	2
lwg__vaux_cont	ya	1
lwg__vaux_cont	gI	1
lwg__vaux_cont	yegA	1
lwg__vaux_cont	ue	1
lwg__vaux_cont	eM	6
lwg__vaux_cont	Ze	1
lwg__vaux_cont	ye	1
lwg__vaux_cont	uA	1
lwg__vaux_cont	nA	2
lwg__vaux_cont	eMgI	1
lwg__vaux_cont	nI	1
rsym		16271
rsym	,	3356
rsym	'	688
rsym	_JOIN_	101
rsym	?	10
rsym	.	2
rsym	--	4
rsym	...	1
rsym	-	1
rsym	!	2
rsym	)	2
k1		14718

k1	unoMne	1268
k1	nA	499
k1	e	482
k1	NULL	155
k1	oM	812
k1	iyom	265
k1	I	26
k1	unkA	53
k1	unke	17
k1	noM	24
k1	ne	94
k1	ineM	4
k1	iyAM	71
k1	inhMne	10
k1	uneM	63
k1	eM	261
k1	is	17
k1	M	30
k1	usne	113
k1	ko	9
k1	ZiyoM	4
k1	Z	89
k1	iyAz	13
k1	use	24
k1	usI	2
k1	ez	7
k1	inoMne	4
k1	inkA	2
k1	o	3
k1	uI	1
k1	inakA	2
k1	,	7
k1	BI	12
k1	ZZ	13
k1	uskA	5
k1	iyA	8
k1	erI	1
k1	haa	1
k1	A	7
k1	Mne	1
k1	m	2

k1	ZeM	3
k1	ise	10
k1	yAM	7
k1	ArA	2
k1	yAz	3
k1	isake	2
k1	isae	4
k1	uJe	4
k1	Ms	2
k1	inheM	2
k1	yoM	9
k1	unko	2
k1	inke	1
k1	umane	1
k1	isne	3
k1	unoneM	1
k1	unkI	4
k1	ZoM	1
k1	usse	1
k1	Ze	5
k1	inko	1
k1	isane	13
k1	uske	2
k1	unse	3
k1	ja	2
k1	n	5
k1	i	2
k1	iM	1
k1	nI	5
k1	s	3
k1	ya	1
k1	vAnA	1
k1	uoM	1
k1	isse	1
k1	erA	1
k1	ZnI	1
k1	d	1
k1	Are	1
k1	iskA	1
k1	yA	3
k1	iske	2

k1	ZA	1
k1	isakA	2
k1	isameM	2
k1	ze	1
k1	ZnA	2
k1	inameM	1
k1	unmeM	1
k1	iskI	1
k1	inase	1
k1	inmeM	1
k1	uskI	1
k1	ZiyAz	1
k4		1210
k4	oM	468
k4	e	27
k4	uneM	135
k4	iyom	99
k4	ineM	7
k4	isak	1
k4	use	50
k4	unko	3
k4	uJe	15
k4	inheM	6
k4	yoM	12
k4	uoM	1
k4	eM	12
k4	usse	5
k4	se	2
k4	unse	10
k4	BI	1
k4	ise	14
k4	noM	4
k4	is	12
k4	s	1
k4	unke	1
k4	ie	3
k4	iMyom	1
k4	M	1
k4	ko	7
k4	ja	2
k4	ne	8

k4	usko	1
k4	o	1
k4	,	1
k4	inak	1
k4	Z	4
k4	Ms	1
k4	NULL	2
k4	iyAM	1
k4	ZiyoM	3
k4	ZoM	1
k4	Zne	1
k2		11658
k2	ise	171
k2	,	5
k2	yoM	30
k2	e	446
k2	iyom	132
k2	uneM	127
k2	oM	740
k2	Z	74
k2	NULL	43
k2	ZiyAz	1
k2	eM	143
k2	nA	183
k2	nI	8
k2	M	39
k2	isI	4
k2	kara	2
k2	i	4
k2	I	15
k2	s	3
k2	unse	14
k2	inheM	23
k2	yAM	13
k2	ne	135
k2	ZiyoM	5
k2	iyAM	47
k2	use	91
k2	is	12
k2	yAz	1
k2	ineM	20

k2	ez	3
k2	uJe	10
k2	usse	11
k2	isko	10
k2	o	5
k2	UM	1
k2	ie	3
k2	ZeM	1
k2	isase	3
k2	IM	1
k2	un	1
k2	noM	6
k2	egI	3
k2	ZnA	4
k2	we	4
k2	unko	3
k2	BI	8
k2	gA	1
k2	A	3
k2	iyA	5
k2	inse	1
k2	usko	1
k2	iMyoM	1
k2	isse	6
k2	uske	3
k2	unmeM	1
k2	iyAz	4
k2	ZZ	7
k2	isak	2
k2	ZoM	2
k2	unkI	1
k2	wI	4
k2	n	1
k2	Ze	8
k2	wA	2
k2	ko	3
k2	Zne	3
k2	inko	1
k2	se	1
k2	0,	1
k2	gI	1

k2	uoM	1
k2	uMgI	1
k2	yA	4
k2	vAnA	2
k2	eMge	2
k2	Mge	1
k2	eMgI	1
k2	unke	1
k2	ZZiyoM	1
k2	y	1
k2	OoM	1
k2	Mne	1
k2	uJase	1
k2	OY	1
k2	ZI	1
k2	iske	1
ccof	iyA	746
ccof		11495
ccof	I	956
ccof	NULL	209
ccof	Mge	54
ccof	eM	135
ccof	oM	632
ccof	egA	137
ccof	iegA	3
ccof	yA	283
ccof	uI	105
ccof	gaI	4
ccof	we	251
ccof	vAyA	8
ccof	nA	272
ccof	e	573
ccof	egI	102
ccof	Ze	21
ccof	M	351
ccof	eMgI	16
ccof	ne	395
ccof	wI	178
ccof	gA	105
ccof	wA	211
ccof	Z	101



ccof	nI	77
ccof	gae	15
ccof	uA	96
ccof	A	618
ccof	Me	4
ccof	iyOM	147
ccof	i	29
ccof	eMge	173
ccof	gay	9
ccof	yoM	24
ccof	ZwA	7
ccof	Zne	10
ccof	ZyA	4
ccof	IM	30
ccof	o	18
ccof	ie	73
ccof	ZI	13
ccof	s	9
ccof	UM	9
ccof	gI	91
ccof	ue	25
ccof	uske	5
ccof	ZZ	4
ccof	iyAM	22
ccof	use	1
ccof	vAI	1
ccof	vA	3
ccof	Ms	6
ccof	AoM	1
ccof	ZeM	1
ccof	Zwe	3
ccof	unke	7
ccof	N	2
ccof	MnI	1
ccof	ZAnA	1
ccof	yI	5
ccof	UMgI	5
ccof	erA	1
ccof	yAz	1
ccof	w	1
ccof	ZeMge	1

ccof	Ane	1
ccof	UMgA	4
ccof	MgI	4
ccof	ZegA	15
ccof	uneM	5
ccof	ZegI	2
ccof	ioM	1
ccof	vAeMge	1
ccof	iske	1
ccof	vAne	2
ccof	yIM	1
ccof	MyA	1
ccof	Zye	1
ccof	iyAz	5
ccof	unkI	2
ccof	ZwI	3
ccof	kara	8
ccof	egeM	1
ccof	AyA	2
ccof	,	4
ccof	es	1
ccof	ZnA	8
ccof	AnA	1
ccof	wIM	3
ccof	ZAyA	1
ccof	uoM	2
ccof	ZIM	1
ccof	Zkara	1
ccof	un	2
ccof	ZoM	5
ccof	unse	1
ccof	eg	1
ccof	yAM	1
ccof	av	1
ccof	ez	5
ccof	n	3
ccof	unko	1
ccof	ZA	12
ccof	ja	3
ccof	iye	3
ccof	r	1

ccof	usne	1
ccof	riM	2
ccof	ye	4
ccof	uIM	3
ccof	yU	1
ccof	ke	1
ccof	iy	2
ccof	ZZiyoM	1
ccof	Iji	1
ccof	ue...	1
ccof	z	1
ccof	Ijie	1
ccof	uskI	1
ccof	MvAe	1
ccof	NA	1
ccof	ZiyoM	1
nmod__adj	is	2021
nmod__adj		18419
nmod__adj	M	27
nmod__adj	I	869
nmod__adj	u	1
nmod__adj	noM	321
nmod__adj	e	1293
nmod__adj	in	389
nmod__adj	us	136
nmod__adj	oM	89
nmod__adj	Z	237
nmod__adj	Ze	50
nmod__adj	ZI	48
nmod__adj	isI	134
nmod__adj	isa	59
nmod__adj	ZoM	30
nmod__adj	usI	30
nmod__adj	o	5
nmod__adj	ina	32
nmod__adj	,	40
nmod__adj	,000	4
nmod__adj	eM	19
nmod__adj	un	61
nmod__adj	BI	12
nmod__adj	wIn	2

nmod_adj	unIM	8
nmod_adj	me	2
nmod_adj	IM	11
nmod_adj	mI	1
nmod_adj	,898	1
nmod_adj	0,	6
nmod_adj	r	1
nmod_adj	z	1
nmod_adj	Me	1
nmod_adj	Ms	1
nmod_adj	,,	6
nmod_adj	A	4
nmod_adj	aBI	2
nmod_adj	Put	1
nmod_adj	hIM	1
nmod_adj	inIM	8
nmod_adj	n	4
nmod_adj	,480	1
nmod_adj	maka	1
nmod_adj	musli	1
nmod_adj	m	2
nmod_adj	EsI	1
nmod_adj	ZZ	1
nmod_adj	vIM	1
nmod_adj	EM	1
nmod_adj	i	2
nmod_adj	nirmiwa	1
nmod_adj	iyom	1
nmod_adj	s	1
nmod_adj	ZU	1
nmod_adj	ww	1
nmod_adj	Are	1
nmod_adj	a	1
rs		1432
rs	egA	3
rs	I	5
rs	oM	3
rs	A	4
rs	,	1
rs	e	5
rs	iyA	2

rs	eMge	1
rs	nA	3
rs	NULL	6
rs	ne	1
rs	ej	1
rs	()	1
rs	eM	1
rs	uI	1
rs	Z	1
rs	Ze	1
rs	gA	2
rs	ZegI	1
rs	ie	2
rs	egI	1
rs	i	1
rs	0,	1
rs	iyAM	1
rs	yA	1
rs	.	1
fragof	I	40
fragof		166
fragof	e	70
fragof	is	3
fragof	wI	1
fragof	M	1
k7t		5123
k7t	iske	122
k7t	e	254
k7t	isse	85
k7t	I	1
k7t	Mne	4
k7t	oM	195
k7t	we	19
k7t	Z	12
k7t	ne	324
k7t	isake	7
k7t	uske	28
k7t	ie	8
k7t	o	23
k7t	NULL	18
k7t	M	10

k7t	Ze	2
k7t	m	3
k7t	iyOM	8
k7t	BI	2
k7t	Zne	5
k7t	i	7
k7t	nA	1
k7t	kara	1
k7t	xillI	1
k7t	ja	1
k7t	uI	1
k7t	ZoM	1
k7t	unse	1
adv		1807
adv	e	69
adv	I	5
adv	M	22
adv	Zkara	3
adv	we	5
adv	oM	7
adv	kara	15
adv	Z	13
adv	iske	1
adv	ne	4
adv	iw	6
adv	mAwra	1
adv	NULL	1
adv	A	1
k4a	uneM	71
k4a	uJe	17
k4a	oM	76
k4a	eM	19
k4a		167
k4a	is	9
k4a	use	16
k4a	iyOM	7
k4a	ke	1
k4a	ise	4
k4a	ko	8
k4a	inheM	2
k4a	e	2

k4a	unko	5
k4a	heM	1
k4a	ija	1
k4a	BI	3
k4a	ineM	1
vmod		1391
vmod	we	628
vmod	kara	821
vmod	iyom	28
vmod	i	17
vmod	IM	1
vmod	wI	8
vmod	ie	9
vmod	ne	116
vmod	e	72
vmod	Z	12
vmod	A	20
vmod	ke	63
vmod	iyA	7
vmod	uA	4
vmod	Zie	1
vmod	isse	2
vmod	oM	77
vmod	iske	128
vmod	I	18
vmod	unke	24
vmod	Zwe	6
vmod	isake	4
vmod	NULL	13
vmod	ZZ	1
vmod	eMge	1
vmod	M	10
vmod	Zkara	32
vmod	uske	9
vmod	nA	12
vmod	yoM	3
vmod	yA	1
vmod	wA	9
vmod	inke	7
vmod	ZoM	1
vmod	Zne	3

vmod	ue	3
vmod	akara	1
vmod	ZyA	1
vmod	Ane	2
vmod	eM	8
vmod	is	2
vmod	vAkara	2
vmod	s	1
vmod	gA	1
vmod	gae	1
vmod	nI	3
vmod	ZI	1
vmod	jAnabUJaara	1
vmod	egA	1
vmod	inake	4
vmod	isI	1
vmod	egeM	1
vmod	kra	1
vmod	ZA	1
vmod	ZiyoM	1
vmod	rAMj	1
sent-adv	iske	68
sent-adv	e	5
sent-adv		279
sent-adv	M	36
sent-adv	IM	5
sent-adv	isI	2
sent-adv	ne	1
sent-adv	Z	1
sent-adv	isase	1
sent-adv	isse	4
sent-adv	I	4
sent-adv	NULL	1
sent-adv	unke	1
lwg__rp		4144
lwg__rp	e	12
lwg__rp	I	8
lwg__rp	Z	6
lwg__rp	A	1
lwg__neg		1945
k1s		2410



k1s	NULL	33
k1s	ne	13
k1s	I	40
k1s	e	41
k1s	pawni	1
k1s	Z	26
k1s	noM	4
k1s	M	3
k1s	nA	12
k1s	m	1
k1s	prwbxXa	1
k1s	inhMne	1
k1s	iyAM	1
k1s	eM	1
k1s	oM	1
k1s	6.8	1
k1s	n	1
k1s	iyA	1
k1s	kara	1
k1s	A	1
k1s	wA	1
k1s	se	1
mod	e	42
mod	Z	21
mod		1835
mod	is	324
mod	,	8
mod	wA	3
mod	0,	3
mod	I	15
mod	oM	2
mod	isse	1
mod	yoM	1
mod	Ze	1
mod	,000	1
mod	iyom	1
mod	M	2
mod	ZU	1
mod	ina	1
mod	we	1
mod	A	1

k2s		384
k2s	NULL	3
k2s	nA	5
k2s	e	5
k2s	Z	3
k2s	ZI	1
k2s	A	1
k2s	eM	1
k2s	ne	2
k2s	ise	2
k2s	iyA	1
k2s	oM	1
k2s	BI	1
k2s	wA	1
nmod__relc		353
nmod__relc	I	96
nmod__relc	A	91
nmod__relc	wI	27
nmod__relc	Z	8
nmod__relc	e	62
nmod__relc	yA	42
nmod__relc	wA	25
nmod__relc	wIM	1
nmod__relc	uA	14
nmod__relc	iyA	92
nmod__relc	M	35
nmod__relc	egeM	1
nmod__relc	uI	19
nmod__relc	ue	7
nmod__relc	we	35
nmod__relc	Ze	2
nmod__relc	ie	8
nmod__relc	eMge	16
nmod__relc	nI	4
nmod__relc	gI	8
nmod__relc	egI	7
nmod__relc	ne	7
nmod__relc	yI	1
nmod__relc	gae	4
nmod__relc	ZwI	1
nmod__relc	nA	19

nmod_relc	gA	10
nmod_relc	IM	3
nmod_relc	egA	6
nmod_relc	ZI	3
nmod_relc	eM	3
nmod_relc	ZegA	1
nmod_relc	eMgI	1
nmod_relc	zA	1
nmod_relc	ZA	1
nmod_relc	ZwA	1
nmod_relc	oM	1
nmod_relc	MgI	1
nmod_relc	ez	1
nmod_relc	i	3
nmod_relc	Mge	3
nmod_relc	NULL	1
k7p		3439
k7p	oM	492
k7p	M	318
k7p	e	242
k7p	ZoM	3
k7p	usmeM	1
k7p	Z	22
k7p	inameM	2
k7p	uske	3
k7p	Are	2
k7p	NULL	19
k7p	ne	3
k7p	unke	1
k7p	Ze	2
k7p	I	2
k7p	o	2
k7p	iyoM	21
k7p	isameM	5
k7p	IM	4
k7p	BI	1
k7p	s	2
k7p	se	1
k7p	us	3
k7p	un	2
k7p	ej	1

k7p	isa	2
k7p	MsoM	1
k7p	eM	4
k7p	jZa	1
k7p	ismeM	2
k7p	ere	1
k7p	zvo	1
k7p	iske	4
k7p	ke	1
k7p	usI	1
k7p	is	5
k7p	unmeM	1
k7p	ZiyoM	2
k7p	in	1
k7p	a	1
rsp	kara	14
rsp		127
rsp	M	2
rsp	e	6
rsp	I	1
rsp	1	1
rsp	0,	1
rsp	Z	1
rsp	ne	1
rsp	,	1
jjmod__intf		332
jjmod__intf	I	8
jjmod__intf	M	1
jjmod__intf	Z	2
jjmod__intf	Ze	1
jjmod__intf	e	1
nmod__k2inv	I	75
nmod__k2inv		21
nmod__k2inv	e	110
nmod__k2inv	A	8
nmod__k2inv	uI	13
nmod__k2inv	ie	37
nmod__k2inv	ue	24
nmod__k2inv	i	19
nmod__k2inv	yA	4
nmod__k2inv	we	10

nmod__k2inv	vAyA	1
nmod__k2inv	Ze	5
nmod__k2inv	vAI	1
nmod__k2inv	iyA	3
nmod__k2inv	ZI	2
nmod__k2inv	ne	3
nmod__k2inv	Z	1
nmod__k2inv	ZwI	1
nmod__k2inv	uA	1
nmod__k2inv	ye	1
nmod__k2inv	iy	1
nmod__k2inv	wI	2
k2p		401
k2p	M	29
k2p	uneM	1
k2p	ZoM	1
k2p	iyom	1
k2p	oM	9
k2p	e	7
k2p	un	1
ras-k2	oM	19
ras-k2	ne	17
ras-k2		111
ras-k2	e	13
ras-k2	inase	1
ras-k2	iyom	5
ras-k2	yoM	1
ras-k2	uske	1
ras-k2	usse	1
ras-k2	unke	1
ras-k2	iske	1
pof__redup		164
pof__redup	we	6
pof__redup	Ze	1
pof__redup	e	20
pof__redup	I	6
pof__redup	M	1
pof__redup	Z	1
pof__redup	i	1
pof__redup	ZI	1
k5	oM	130

k5		833
k5	ZiyoM	3
k5	M	25
k5	iyom	27
k5	e	57
k5	noM	2
k5	ZZ	1
k5	ne	18
k5	inmeM	25
k5	ismeM	4
k5	U	1
k5	isameM	6
k5	isse	9
k5	unse	7
k5	I	1
k5	se	2
k5	inameM	6
k5	s	3
k5	inse	3
k5	Z	2
k5	use	1
k5	unmeM	1
k5	ja	2
k5	is	3
k5	usse	3
k5	n	1
k5	in	1
k5	IM	1
k5	eM	1
k5	yoM	1
k5	unke	1
k5	Me	1
k5	isase	1
r6-k1	oM	60
r6-k1		278
r6-k1	Z	8
r6-k1	ne	59
r6-k1	uskA	7
r6-k1	e	18
r6-k1	is	2
r6-k1	uskI	8

r6-k1	Zne	7
r6-k1	unke	1
r6-k1	iskA	16
r6-k1	iyom	7
r6-k1	I	5
r6-k1	unkI	9
r6-k1	unkA	6
r6-k1	iskI	3
r6-k1	iske	2
r6-k1	inkA	3
r6-k1	vAne	1
r6-k1	uske	2
r6-k1	kA	1
r6-k1	noM	2
r6-k1	Ziyom	1
r6-k1	M	7
r6-k1	unoMne	1
r6-k1	yoM	2
r6-k1	inakI	1
r6-k1	isakI	1
r6-k1	isakA	1
r6-k1	ye	1
rd		226
rd	e	14
rd	oM	35
rd	I	4
rd	ArI	1
rd	iyom	9
rd	uskI	1
rd	unkI	4
rd	uske	1
rd	NULL	1
rd	unke	1
rd	ie	1
rd	yoM	1
ras-k1	unke	20
ras-k1		475
ras-k1	ke	1
ras-k1	iyom	41
ras-k1	oM	109
ras-k1	NULL	4

ras-k1	e	11
ras-k1	unse	6
ras-k1	ere	1
ras-k1	Are	4
ras-k1	uske	5
ras-k1	isse	3
ras-k1	ne	9
ras-k1	iske	3
ras-k1	yoM	4
ras-k1	usse	2
ras-k1	uoM	1
ras-k1	BI	1
ras-k1	Ms	1
ras-k1	oz	1
ras-k1	se	1
ras-k1	ZiyoM	1
ras-k1	is	1
ras-k1	i	1
k7a	iske	34
k7a	e	18
k7a		430
k7a	oM	170
k7a	uske	3
k7a	isake	12
k7a	ne	2
k7a	iyom	13
k7a	isI	5
k7a	i	1
k7a	unke	9
k7a	o	2
k7a	Z	1
k7a	Zne	2
k7a	M	1
jjmod		788
jjmod	ne	26
jjmod	e	44
jjmod	isse	7
jjmod	oM	43
jjmod	M	13
jjmod	ismeM	3
jjmod	Z	6



jjmod	unse	1
jjmod	,	2
jjmod	is	1
jjmod	Are	1
jjmod	unke	6
jjmod	usmeM	3
jjmod	iske	2
jjmod	0,	2
jjmod	kara	4
jjmod	noM	1
jjmod	Zne	1
jjmod	iyom	5
jjmod	usse	4
jjmod	ja	1
jjmod	NULL	1
jjmod	ie	2
jjmod	eM	1
jjmod	i	1
jjmod	Ms	1
jjmod	I	2
jjmod	uskI	1
rh	isI	6
rh		683
rh	ne	178
rh	isse	113
rh	om	75
rh	e	55
rh	usse	6
rh	Z	11
rh	isase	61
rh	iyom	9
rh	M	1
rh	isakI	3
rh	Zne	8
rh	ie	9
rh	yoMki	1
rh	yoM	7
rh	uske	1
rh	iske	13
rh	ZZ	3
rh	isake	15

rh	inakI	1
rh	inake	1
rh	inase	2
rh	iskI	4
rh	iyA	1
rh	unkI	1
rh	i	2
rh	I	2
rh	ZZiyom	1
rh	eM	1
rh	kara	2
rh	Mne	1
rh	Ze	1
rh	is	1
rh	egI	1
k3		374
k3	oM	76
k3	ZZ	1
k3	e	19
k3	M	5
k3	isse	6
k3	usse	1
k3	isase	5
k3	iyom	7
k3	isake	6
k3	unke	4
k3	iske	6
k3	Z	2
k3	NULL	2
k3	s	2
k3	,	1
k3	inake	2
k3	inase	2
k3	inIM	1
nmod__k1inv	I	170
nmod__k1inv	e	304
nmod__k1inv		184
nmod__k1inv	uI	101
nmod__k1inv	wI	18
nmod__k1inv	ue	104
nmod__k1inv	i	17

nmod_k1inv	A	37
nmod_k1inv	we	75
nmod_k1inv	Me	8
nmod_k1inv	ie	27
nmod_k1inv	gae	10
nmod_k1inv	Ze	26
nmod_k1inv	ne	34
nmod_k1inv	ZA	1
nmod_k1inv	yA	3
nmod_k1inv	ZI	9
nmod_k1inv	uA	3
nmod_k1inv	IM	3
nmod_k1inv	kara	3
nmod_k1inv	wA	3
nmod_k1inv	Zwe	7
nmod_k1inv	ZwI	9
nmod_k1inv	Zne	1
nmod_k1inv	iyA	4
nmod_k1inv	Z	1
nmod_k1inv	NULL	3
nmod_k1inv	gaI	1
nmod_k1inv	j	1
nmod_k1inv	M	1
nmod_k1inv	ave	1
nmod_k1inv	iA	1
nmod_k1inv	MI	1
k2g		34
k2g	oM	2
k2g	ne	1
k2g	noM	1
ras-neg		45
ras-neg	e	9
ras-neg	i	1
ras-neg	iyom	1
ras-neg	M	1
ras-neg	oM	2
ras-neg	ne	7
ras-neg	iske	1
ras-neg	ue	1
rbmod_relc	M	2
rbmod_relc	I	5

rbmod__relc	wI	1
rbmod__relc		11
rbmod__relc	egA	2
rbmod__relc	iyA	2
rbmod__relc	uI	2
rbmod__relc	e	2
rbmod__relc	gA	1
mod__wq	is	24
mod__wq		35
mod__wq	i	7
mod__wq	e	4
mod__wq	I	2
nmod__emph		43
k2u		34
k2u	Ze	1
k2u	e	2
k2u	oM	2
k2u	iyOM	1
k1u		65
k1u	e	3
k1u	ne	3
k1u	oM	12
k1u	isse	3
k1u	iyOM	2
k1u	o	1
k1u	usse	1
k1u	ja	1
rbmod	I	1
rbmod		31
rbmod	is	1
ras-r6		3
rtu		1
r6v		20
r6v	ne	2
r6v	iskI	1
r6v	oM	2
r6v	inake	1
r6v	ArA	1
jk1		6
jk1	unse	1
jk1	oM	2

jk1	use	1
rad	ie	1
rad		5
psp__cl	e	4
psp__cl		2
psp__cl	I	2
ras-k7		6
ras-k7	oM	4
ras-k7	Z	1
vmod__adv		1
-		4
k7u		8
k7u	e	1
k7u	Z	1
k7u	oM	1
ras-k4		4
ras-k4	unke	1
ras-k4	oM	1
nmod__pofinv	uI	2
nmod__pofinv	ie	5
nmod__pofinv	ue	3
nmod__pofinv	I	2
nmod__pofinv	e	2
nmod__pofinv	iyA	1
nmod__pofinv	ne	1
k7pu		6
ras-k7p		5
pk1		6
pk1	oM	1
pk1	unoMne	1
k3u		1
k7tu	e	1
k7tu	oM	1
k7tu		1
ras__k7		2
jjmod__relc	A	1
mk1	oM	1
k4u	oM	1
k4u		1
ras-r6-k2	Z	1
ras-r6-k2		1

ras-rt	1
ras-k4a	1
enm	1
enm e	1
undef	1

Table 3: AnnCorra-Marker relation for Provided Hindi Data

<i>Tag</i>	<i>Marker</i>	<i>Count</i>
det		2625
det	is	1947
det	e	241
det	isI	126
det	in	373
det	inIM	8
det	I	158
det	isa	53
det	us	132
det	BI	12
det	un	61
det	Are	1
det	usI	28
det	ina	27
det	wA	1
det	ZI	1
det	Z	9
det	oM	2
det	o	4
det	,	1
det	unIM	8
det	i	8
det	EsI	1
det	hIM	1
det	ZZ	1
det	Ze	1
det	aBI	2
nmod		19232
nmod	oM	2061
nmod	iskA	131
nmod	isameM	17
nmod	I	372

nmod	s	27
nmod	ne	1538
nmod	unke	281
nmod	iskI	106
nmod	inameM	10
nmod	iske	115
nmod	e	1325
nmod	M	178
nmod	jI	2
nmod	.	2
nmod	kara	12
nmod	uske	103
nmod	unkI	245
nmod	kA	7
nmod	iyom	359
nmod	uskA	55
nmod	kI	12
nmod	inmeM	46
nmod	ke	11
nmod	BI	7
nmod	inkI	22
nmod	inke	11
nmod	Z	117
nmod	m	2
nmod	isakA	19
nmod	ArI	37
nmod	isakI	10
nmod	ismeM	48
nmod	Are	35
nmod	ZoM	20
nmod	iyAz	1
nmod	yoM	35
nmod	inkA	13
nmod	Ms	10
nmod	uskI	90
nmod	unkA	77
nmod	isI	5
nmod	nA	4
nmod	uoM	7
nmod	ZiyoM	10
nmod	Zne	49

nmod	is	52
nmod	eM	7
nmod	333602	1
nmod	us	7
nmod	noM	17
nmod	ArA	14
nmod	riM	1
nmod	se	2
nmod	wA	1
nmod	erI	10
nmod	ie	34
nmod	erA	7
nmod	pawni	1
nmod	uneM	1
nmod	Ze	15
nmod	ja	9
nmod	isa	4
nmod	isse	13
nmod	Ane	3
nmod	a	4
nmod	usse	12
nmod	aI	1
nmod	o	38
nmod	ere	11
nmod	ane	1
nmod	A	1
nmod	isake	8
nmod	unse	2
nmod	inakI	5
nmod	iyA	1
nmod	1	1
nmod	ye	5
nmod	()	1
nmod	ZZ	6
nmod	n	4
nmod	Ah	1
nmod	i	14
nmod	Put	1
nmod	hiyoM	1
nmod	inake	9
nmod	0,	2



nmod	usI	4
nmod	,	1
nmod	Me	5
nmod	iyAM	2
nmod	unmeM	10
nmod	vAne	2
nmod	bord	1
nmod	inakA	3
nmod	egA	1
nmod	egI	1
nmod	iyē	1
nmod	iy	1
nmod	nane	1
nmod	ioM	1
nmod	-	1
nmod	ej	1
nmod	un	3
nmod	OY	1
nmod	N	1
nmod	u	1
nmod	yA	2
nmod	unIM	1
nmod	ina	1
nmod	gA	1
nmod	IM	4
nmod	isase	1
nmod	jZa	1
case	I	5600
case		41856
case	e	6434
case	is	123
case	oM	11
case	A	2
case	wA	1
case	o	2
case	ke	1
case	Z	45
case	se	1
case	i	1
case	,	6
case	yoM	1

case	0,	3
case	M	1
case	ZZ	9
case	Ze	1
advmod		3105
advmod	M	18
advmod	I	13
advmod	e	10
advmod	ne	29
advmod	we	5
advmod	Zkara	3
advmod	kara	17
advmod	,	2
advmod	Z	13
advmod	Ze	1
advmod	A	1
advmod	ie	2
advmod	oM	4
advmod	0,	1
advmod	noM	1
advmod	iw	4
advmod	Zne	1
advmod	mAwra	1
amod	I	716
amod		8910
amod	ne	460
amod	e	1011
amod	Z	76
amod	M	11
amod	kara	8
amod	maka	1
amod	ZI	41
amod	Ze	50
amod	n	2
amod	i	8
amod	IM	10
amod	nevAll	2
amod	we	4
amod	Zne	9
amod	ie	16
amod	Ane	1

amod	ZU	2
amod	vIM	1
amod	Me	1
amod	uI	1
amod	me	1
amod	musli	1
amod	eM	17
amod	A	4
amod	is	6
amod	o	5
amod	ZyA	1
amod	nevAle	1
amod	isa	1
amod	mI	2
amod	Zkara	1
amod	yI	2
amod	m	1
amod	MI	1
amod	nirmiwa	1
amod	ww	1
amod	nI	1
amod	z	1
amod	ZA	1
amod	yA	2
amod	iy	1
amod	iyA	1
amod	EM	1
amod	wI	1
amod	nA	1
amod	ue	1
amod	r	1
root		4270
root	yA	962
root	eM	41
root	wA	163
root	iyA	1148
root	A	2689
root	e	479
root	we	238
root	wI	170
root	ez	12

root	M	56
root	wIM	4
root	vAyA	18
root	yAz	1
root	I	1394
root	ie	82
root	se	1
root	iye	6
root	iyAz	4
root	Iji	1
root	kara	5
root	iegA	5
root	gA	82
root	ne	101
root	eMge	134
root	nA	178
root	egI	72
root	Mge	50
root	s	2
root	egA	97
root	ZA	24
root	uA	114
root	IM	34
root	Z	78
root	ZI	9
root	vAwA	1
root	uI	167
root	yAM	1
root	oM	10
root	i	65
root	Ijie	1
root	nI	69
root	ZegA	5
root	ye	6
root	Ze	14
root	gae	23
root	ZyA	3
root	ue	32
root	gI	73
root	gay	10
root	UMgI	2

root	eMgIM	1
root	ZeM	1
root	vA	3
root	AnA	1
root	yI	7
root	ZwI	2
root	Zne	4
root	gaI	6
root	ZoM	1
root	MnA	1
root	iske	2
root	ZwA	5
root	Zwe	1
root	UMgA	1
root	unke	3
root	eMgI	17
root	ke	1
root	ZZ	1
root	MgI	10
root	iy	2
root	ZegI	1
root	vAwI	1
root	iyAM	1
root	MA	1
root	MvAe	1
root	MvAI	1
root	iyoM	2
root	MI	2
root	o	2
root	Me	2
root	UM	2
root	noM	1
root	uIM	2
root	isse	1
root	Mne	1
root	gIM	1
root	zI	1
root	egeM	1
root	gaIM	1
root	MgeM	1
root	av	1

root	MyA	1
cop		1921
cop	M	536
cop	e	136
cop	I	114
cop	UM	9
cop	IM	17
cop	z	2
cop	oM	1
punct		15436
punct	,	2541
punct	'	638
punct	e	5
punct	?	9
punct	_JOIN_	94
punct	!	2
punct	is	10
punct	--	4
punct	,000	1
punct	I	3
punct	)	2
punct	Ze	1
punct	...	1
punct	.	1
obj	ise	157
obj	oM	723
obj	inheM	23
obj	e	545
obj		9014
obj	iyom	135
obj	eM	180
obj	yA	91
obj	noM	6
obj	we	87
obj	nA	286
obj	yoM	28
obj	s	2
obj	ne	176
obj	isase	3
obj	iyAz	4
obj	vAyA	2

obj	wI	61
obj	egA	62
obj	inse	1
obj	ez	3
obj	ZoM	3
obj	Z	101
obj	OoM	1
obj	gI	37
obj	eMge	94
obj	I	319
obj	A	197
obj	uA	37
obj	use	87
obj	egI	66
obj	Mge	21
obj	ue	9
obj	uneM	122
obj	iyAM	43
obj	ZAyA	1
obj	iyA	323
obj	ZI	9
obj	M	76
obj	wA	72
obj	ZZ	9
obj	ZnA	10
obj	uI	35
obj	i	14
obj	un	1
obj	0,	1
obj	ZegA	6
obj	nI	44
obj	ZeM	1
obj	Zye	1
obj	usse	11
obj	uJe	10
obj	UMgI	2
obj	isse	6
obj	IM	2
obj	gA	42
obj	Zne	4
obj	ZA	6

obj	ie	26
obj	,	1
obj	gay	4
obj	y	1
obj	unko	3
obj	ZiyoM	5
obj	BI	8
obj	eMgI	11
obj	unse	13
obj	yAM	13
obj	iske	1
obj	isko	8
obj	ZegI	2
obj	o	6
obj	ZwA	1
obj	Ze	11
obj	is	14
obj	isI	4
obj	ineM	19
obj	ZeMge	1
obj	wIM	2
obj	MgI	1
obj	uJase	1
obj	vAnA	2
obj	ZIM	1
obj	unkI	1
obj	ke	1
obj	unke	2
obj	eg	1
obj	prwbxXa	1
obj	OY	1
obj	uske	3
obj	ko	2
obj	gae	1
obj	isak	2
obj	ZZiyoM	2
obj	yAz	1
obj	Ms	1
obj	UM	1
obj	uoM	1
obj	kara	2



obj	yIM	1
obj	iyē	1
obj	yI	1
obj	ye	1
obj	Are	1
obj	UMgA	2
obj	uMgI	1
obj	se	1
obj	usko	1
obj	inko	1
obj	n	1
obj	iMyoM	1
compound		28206
compound	I	122
compound	oM	5
compound	IM	18
compound	e	124
compound	nA	9
compound	la	1
compound	M	104
compound	s	26
compound	sa	2
compound	Z	153
compound	iyAz	1
compound	eM	30
compound	kara	1
compound	iyA	1
compound	wA	2
compound	.	20
compound	e.	1
compound	ZI	1
compound	Ze	9
compound	ZZ	8
compound	,000	1
compound	n	22
compound	-	1
compound	iyAM	9
compound	ZnA	1
compound	ue	3
compound	o	5
compound	uI	2

compound	Ms	2
compound	we	6
compound	ie	4
compound	egA	1
compound	r	1
compound	ne	4
compound	in	1
compound	ja	5
compound	ZA	1
compound	rrsa	1
compound	ej	2
compound	329	1
compound	i	1
compound	OY	3
compound	m	3
compound	S	1
compound	es	2
compound	va	1
compound	A	2
compound	Me	1
compound	aX	1
compound	XaX	1
compound	ejZ	1
nsubj		12559
nsubj	e	443
nsubj	iyAz	9
nsubj	eM	245
nsubj	oM	811
nsubj	nA	466
nsubj	ez	6
nsubj	M	31
nsubj	ne	85
nsubj	ko	15
nsubj	iyOM	251
nsubj	iyA	29
nsubj	ineM	4
nsubj	unoMne	1198
nsubj	is	69
nsubj	m	2
nsubj	ya	1
nsubj	yAz	2

nsubj	uneM	116
nsubj	isakA	2
nsubj	isameM	1
nsubj	ija	1
nsubj	ue	1
nsubj	use	31
nsubj	A	23
nsubj	usne	103
nsubj	inhMne	10
nsubj	wI	5
nsubj	Z	76
nsubj	ZeM	2
nsubj	uI	3
nsubj	I	48
nsubj	iyAM	67
nsubj	isane	12
nsubj	uskA	5
nsubj	s	2
nsubj	inoMne	4
nsubj	Mne	1
nsubj	BI	14
nsubj	Ms	2
nsubj	ZoM	1
nsubj	,	1
nsubj	uJe	17
nsubj	noM	24
nsubj	ZyA	1
nsubj	egI	4
nsubj	o	2
nsubj	isae	4
nsubj	eMge	1
nsubj	unkA	50
nsubj	ie	4
nsubj	yA	15
nsubj	unse	3
nsubj	ZnI	1
nsubj	inheM	2
nsubj	usI	2
nsubj	n	5
nsubj	yAM	5
nsubj	nI	5

nsubj	yoM	8
nsubj	ise	9
nsubj	ArA	2
nsubj	gI	2
nsubj	ZnA	1
nsubj	ke	1
nsubj	Ze	3
nsubj	inkA	2
nsubj	inko	1
nsubj	vAnA	1
nsubj	we	3
nsubj	gA	1
nsubj	iM	1
nsubj	ZiyAz	1
nsubj	ZA	1
nsubj	unke	13
nsubj	inase	1
nsubj	unkI	2
nsubj	unko	7
nsubj	isse	1
nsubj	isake	1
nsubj	uA	4
nsubj	inakA	2
nsubj	ZiyoM	3
nsubj	iske	2
nsubj	uoM	1
nsubj	ja	2
nsubj	i	1
nsubj	d	1
nsubj	unoneM	1
nsubj	ZZ	11
nsubj	erA	1
nsubj	unmeM	1
nsubj	isne	3
nsubj	usse	1
nsubj	wA	2
nsubj	inmeM	1
nsubj	erI	1
nsubj	umane	1
nsubj	ze	1
nsubj	uskI	1

nsubj	haa	1
aux		2883
aux	wA	201
aux	uA	61
aux	we	199
aux	M	628
aux	ue	645
aux	gay	290
aux	I	1105
aux	i	37
aux	uI	38
aux	wI	158
aux	A	410
aux	iyA	525
aux	e	873
aux	Mge	32
aux	gA	84
aux	Iji	3
aux	ez	1
aux	gae	242
aux	nA	28
aux	ezge	1
aux	egA	82
aux	egI	55
aux	gI	20
aux	gaI	262
aux	IM	51
aux	gaIM	8
aux	UM	19
aux	eMge	55
aux	gayI	12
aux	eM	19
aux	ne	113
aux	yegA	1
aux	UMgI	2
aux	yA	39
aux	eMgI	12
aux	kara	4
aux	Z	1
aux	nI	5
aux	ye	3

aux	wIM	4
aux	eMgIM	2
aux	Uz	1
aux	MgI	3
aux	gaye	2
aux	ie	2
aux	Zwe	1
aux	yI	2
aux	MgeM	1
aux	yeMgI	1
aux	oM	1
aux	egeM	1
aux	o	1
aux	jAegA	1
nummod		3866
nummod	n	2
nummod	Z	138
nummod	oM	69
nummod	ZoM	29
nummod	noM	310
nummod	iyom	1
nummod	0,	6
nummod	,,	6
nummod	,	34
nummod	e	4
nummod	,480	1
nummod	,000	3
nummod	o	1
nummod	wIn	2
nummod	M	1
nummod	,898	1
cc		5167
cc	,	31
cc	is	16
cc	isse	1
cc	Z	4
cc	ina	1
cc	I	1
cc	e	1
obl		17975
obl	e	1634

obl	Z	96
obl	s	12
obl	oM	2123
obl	isse	217
obl	iyom	260
obl	inameM	17
obl	ne	806
obl	isake	41
obl	isameM	81
obl	unke	76
obl	is	198
obl	Are	8
obl	ke	5
obl	Ziyom	8
obl	I	14
obl	us	24
obl	iske	427
obl	oz	1
obl	we	18
obl	Ms	4
obl	ja	5
obl	o	40
obl	xillI	1
obl	ismeM	104
obl	na	1
obl	BI	8
obl	inIM	2
obl	kara	1
obl	ZoM	17
obl	M	439
obl	uske	64
obl	nA	4
obl	isase	62
obl	isI	15
obl	usmeM	20
obl	uoM	6
obl	un	19
obl	yoM	39
obl	Ane	1
obl	IM	10
obl	Ze	11

obl	Mne	4
obl	ie	17
obl	i	16
obl	unse	15
obl	unmeM	11
obl	inke	6
obl	unkI	5
obl	Zne	20
obl	ina	5
obl	noM	7
obl	inse	3
obl	inmeM	28
obl	A	2
obl	vAne	1
obl	usse	16
obl	usI	2
obl	isko	1
obl	n	3
obl	jAnabUJaara	1
obl	rAMj	1
obl	in	7
obl	ZZ	8
obl	m	4
obl	U	1
obl	ere	2
obl	eM	9
obl	iskI	5
obl	isa	11
obl	use	2
obl	uneM	1
obl	hAre	1
obl	MsoM	1
obl	inake	7
obl	nI	1
obl	se	3
obl	inase	5
obl	0,	1
obl	Me	4
obl	iyAM	2
obl	unoMne	1
obl	isakI	3



obl	iyē	1
obl	ArA	1
obl	ZZiyoM	1
obl	uJa	4
obl	unkA	1
obl	ue	1
obl	inakI	1
obl	iyA	1
obl	ej	1
obl	eMge	1
obl	zvo	1
obl	meM	1
obl	uskI	1
obl	Aw	1
obl	uI	1
advcl	ne	1146
advcl	ke	59
advcl	kara	772
advcl	A	45
advcl	we	632
advcl	i	16
advcl	wI	33
advcl		478
advcl	yA	14
advcl	egA	5
advcl	eM	14
advcl	wA	36
advcl	ez	1
advcl	ue...	1
advcl	I	50
advcl	e	80
advcl	Zwe	6
advcl	Zkara	32
advcl	Z	13
advcl	uA	11
advcl	nA	21
advcl	ZA	2
advcl	ie	17
advcl	Ane	3
advcl	eMge	3
advcl	iyA	46

advcl	gI	1
advcl	Zne	36
advcl	is	7
advcl	ue	3
advcl	ZwI	1
advcl	ZyA	1
advcl	M	5
advcl	Mne	2
advcl	nI	4
advcl	vAI	1
advcl	uI	5
advcl	akara	1
advcl	Zie	1
advcl	iye	1
advcl	uIM	1
advcl	IM	3
advcl	vAkara	2
advcl	UMgA	1
advcl	gae	1
advcl	gA	1
advcl	Mge	1
advcl	Ze	1
advcl	ZwA	1
advcl	kra	1
mark		9758
mark	I	1100
mark	e	677
mark	oM	39
mark	is	32
mark	i	2
mark	Z	3
mark	k	1
mark	nA	1
mark	we	1
mark	,	1
conj	M	22
conj		4171
conj	oM	369
conj	e	137
conj	iyAz	3
conj	we	47

conj	wA	40
conj	eM	29
conj	wI	16
conj	es	1
conj	A	129
conj	iyOM	86
conj	ne	166
conj	iyA	111
conj	ie	16
conj	yA	55
conj	ez	3
conj	yoM	10
conj	I	169
conj	yAz	1
conj	nA	47
conj	nI	16
conj	gA	21
conj	Ze	8
conj	uA	12
conj	uoM	1
conj	uI	11
conj	gI	13
conj	Z	37
conj	riM	1
conj	unke	3
conj	eMge	17
conj	uske	5
conj	ZnA	2
conj	egI	9
conj	Ms	3
conj	egA	18
conj	Mge	10
conj	ZA	2
conj	i	6
conj	ZegA	2
conj	uneM	1
conj	ZoM	2
conj	IM	8
conj	ZwA	2
conj	MyA	1
conj	ZyA	1

conj	Me	1
conj	ZAnA	1
conj	r	1
conj	iyAM	16
conj	kara	3
conj	o	5
conj	Zwe	2
conj	vA	1
conj	ue	7
conj	UMgI	1
conj	AyA	1
conj	s	4
conj	Ane	1
conj	ZZ	3
conj	gay	1
conj	gae	2
conj	UMgA	1
conj	vAyA	1
conj	ZI	1
conj	MnI	1
conj	ja	1
conj	vAne	1
conj	ioM	1
conj	Zne	2
conj	UM	1
conj	unse	1
conj	iske	1
conj	unkI	1
acl		770
acl	e	448
acl	A	89
acl	I	296
acl	vAI	1
acl	ise	2
acl	wI	31
acl	noM	1
acl	ie	69
acl	yA	38
acl	vAyA	4
acl	ne	47
acl	uA	7

acl	we	103
acl	ave	1
acl	ue	124
acl	nA	20
acl	uI	120
acl	Mge	5
acl	eMge	29
acl	Zwe	7
acl	Ze	34
acl	iyA	72
acl	egA	21
acl	ZegA	6
acl	eM	17
acl	ZwI	11
acl	gI	9
acl	ZI	12
acl	gA	15
acl	wA	22
acl	kara	2
acl	Me	8
acl	j	1
acl	egI	11
acl	Z	10
acl	gae	11
acl	ZyA	1
acl	i	34
acl	M	6
acl	eMgI	2
acl	ZA	2
acl	ZegI	1
acl	nI	8
acl	iyom	1
acl	AyA	1
acl	ZwA	1
acl	oM	3
acl	IM	4
acl	gay	1
acl	yI	1
acl	ye	1
acl	iy	1
acl	vAeMge	1

acl	gaI	1
acl	Zne	1
acl	MI	1
dep		3873
dep	I	8
dep	e	17
dep	M	1
dep	is	20
dep	Z	6
dep	A	1
acl:relcl	A	83
acl:relcl	oM	3
acl:relcl		334
acl:relcl	e	50
acl:relcl	we	39
acl:relcl	nA	18
acl:relcl	wA	26
acl:relcl	ue	8
acl:relcl	I	104
acl:relcl	IM	2
acl:relcl	wI	25
acl:relcl	yA	38
acl:relcl	iyA	92
acl:relcl	Z	9
acl:relcl	M	7
acl:relcl	ne	8
acl:relcl	gI	7
acl:relcl	uA	13
acl:relcl	uI	20
acl:relcl	egI	7
acl:relcl	gA	10
acl:relcl	eMge	13
acl:relcl	eMgI	1
acl:relcl	nI	4
acl:relcl	ZwI	1
acl:relcl	zA	1
acl:relcl	Ze	2
acl:relcl	ZA	1
acl:relcl	ZegA	1
acl:relcl	ZwA	1
acl:relcl	i	3

acl:relcl	eM	5
acl:relcl	ZI	3
acl:relcl	ie	7
acl:relcl	gae	3
acl:relcl	yI	1
acl:relcl	ere	1
acl:relcl	wIM	1
acl:relcl	Mge	2
acl:relcl	egA	7
acl:relcl	egeM	1
aux:pass	wA	243
aux:pass		3468
aux:pass	gae	408
aux:pass	M	925
aux:pass	gay	978
aux:pass	we	30
aux:pass	gaI	451
aux:pass	iyA	218
aux:pass	e	428
aux:pass	wI	78
aux:pass	I	447
aux:pass	Mge	2
aux:pass	gaye	9
aux:pass	ne	311
aux:pass	egI	111
aux:pass	egA	240
aux:pass	A	217
aux:pass	yA	13
aux:pass	gayI	22
aux:pass	IM	30
aux:pass	,	1
aux:pass	nA	84
aux:pass	nI	26
aux:pass	gaIM	11
aux:pass	eMgI	4
aux:pass	UM	10
aux:pass	eMge	33
aux:pass	eM	15
aux:pass	uA	1
aux:pass	i	29
aux:pass	oM	3

aux:pass	yegA	3
aux:pass	gA	4
aux:pass	ie	1
aux:pass	ya	2
aux:pass	ye	1
aux:pass	z	1
aux:pass	yeMge	1
aux:pass	wIM	1
aux:pass	iy	1
aux:pass	ue	1
dislocated		160
dislocated	I	39
dislocated	e	66
dislocated	is	4
nsubj:pass		362
nsubj:pass	oM	52
nsubj:pass	eM	6
nsubj:pass	I	3
nsubj:pass	ise	5
nsubj:pass	inameM	1
nsubj:pass	iyAM	3
nsubj:pass	uske	2
nsubj:pass	uneM	6
nsubj:pass	Are	1
nsubj:pass	iskA	1
nsubj:pass	iyom	14
nsubj:pass	inheM	1
nsubj:pass	uJe	1
nsubj:pass	Z	2
nsubj:pass	nA	1
nsubj:pass	eMge	1
nsubj:pass	isameM	1
nsubj:pass	unke	2
nsubj:pass	e	6
nsubj:pass	BI	1
nsubj:pass	ne	2
nsubj:pass	yA	1
nsubj:pass	A	1
nsubj:pass	inke	1
nsubj:pass	uI	1
nsubj:pass	unkI	1



xcomp		571
xcomp	e	12
xcomp	n	1
xcomp	I	17
xcomp	kara	1
xcomp	inhMne	1
xcomp	nA	3
xcomp	eMge	1
xcomp	Z	8
xcomp	ne	1
xcomp	oM	1
xcomp	noM	3
xcomp	m	1
xcomp	IM	1
xcomp	Mge	1
iobj		1122
iobj	ko	5
iobj	oM	449
iobj	use	50
iobj	ise	13
iobj	BI	1
iobj	ne	7
iobj	iyom	96
iobj	uneM	123
iobj	uJe	13
iobj	is	10
iobj	e	26
iobj	noM	4
iobj	yoM	11
iobj	Ms	1
iobj	ja	2
iobj	unse	10
iobj	Ziyom	3
iobj	inheM	5
iobj	ie	3
iobj	ineM	7
iobj	usse	4
iobj	eM	12
iobj	Zne	1
iobj	Z	3
iobj	se	1

iobj	ZoM	1
iobj	unko	3
iobj	isak	1
iobj	M	2
iobj	o	1
iobj	s	1
iobj	inak	1
iobj	unke	1
iobj	iyAM	1
iobj	iMyoM	1
vocative		5
vocative	ie	1

Table 4: UD-Marker relation for Provided Hindi Data

### 3.2 Markers and Tag

<i>Marker</i>	<i>Tag</i>	<i>Count</i>
	pof__cn	18725
	r6	10611
	nmod	4174
	k7	5446
	lwg__psp	48259
	pof	11196
	ras-pof	4
	lwg__vaux	3577
	lwg__vaux_cont	3132
	rsym	16271
	k1	14718
	k4	1210
	k2	11658
	ccof	11495
	rs	1432
	nmod__adj	18419
	k7t	5123
	r6-k2	1171
	adv	1807
	vmod	1391
	lwg__rp	4144
	lwg__neg	1945
	main	5309
	k1s	2410

k2s	384
nmod__relc	353
k7p	3439
jjmod__intf	332
k2p	401
pof__redup	164
mod	1835
sent-adv	279
rd	226
ras-k1	475
rt	791
jjmod	788
k3	374
rh	683
k5	833
fragof	166
k7a	430
nmod__k2inv	21
r6-k1	278
nmod__k1inv	184
k2g	34
rsp	127
k4a	167
ras-k2	111
ras-neg	45
mod__wq	35
nmod__emph	43
k2u	34
k1u	65
ras-r6	3
rtu	1
rbmod	31
r6v	20
jk1	6
rbmod__relc	11
ras-k7	6
vmod__adv	1
psp__cl	2
k7u	8
rad	5
ras-k4	4

	k7pu	6
	ras-k7p	5
	pk1	6
	k3u	1
	ras_k7	2
	k7tu	1
	k4u	1
	ras-rt	1
	ras-k4a	1
	ras-r6-k2	1
	enm	1
	undef	1
I	lwg__psp	7113
I	main	1275
I	lwg__vaux_cont	354
I	ccof	956
I	fragof	40
I	r6-k2	14
I	lwg__vaux	1258
I	nmod_k2inv	75
I	nmod__adj	869
I	nmod__relc	96
I	r6	353
I	k1	26
I	nmod_klinv	170
I	rs	5
I	k7t	1
I	pof__cn	57
I	k7	1
I	k2	15
I	pof	62
I	adv	5
I	nmod	45
I	k1s	40
I	rbmod__relc	5
I	jjmod__intf	8
I	rd	4
I	vmod	18
I	rbmod	1
I	lwg__rp	8
I	rsp	1

I	k7p	2
I	r6-k1	5
I	mod	15
I	k5	1
I	pof__redup	6
I	psp__cl	2
I	nmod__pofinv	2
I	mod__wq	2
I	sent-adv	4
I	rh	2
I	jjmod	2
yoM	r6-k2	8
yoM	k2	30
yoM	ccof	24
yoM	nmod	7
yoM	k7	30
yoM	r6	11
yoM	k4	12
yoM	rh	7
yoM	vmod	3
yoM	ras-k2	1
yoM	k1	9
yoM	mod	1
yoM	ras-k1	4
yoM	rd	1
yoM	r6-k1	2
yoM	rt	1
yoM	k5	1
ne	rt	870
ne	r6-k2	578
ne	lwg__vaux	437
ne	k7	447
ne	rh	178
ne	r6	910
ne	ccof	395
ne	k1	94
ne	main	84
ne	nmod	481
ne	jjmod	26
ne	vmod	116
ne	ras-k2	17

ne	k1s	13
ne	pof	3
ne	k7t	324
ne	r6-k1	59
ne	k2	135
ne	nmod__klinv	34
ne	k5	18
ne	k7p	3
ne	r6v	2
ne	k7a	2
ne	lwg__vaux_cont	7
ne	k1u	3
ne	rs	1
ne	nmod__relc	7
ne	adv	4
ne	ras-k1	9
ne	nmod__k2inv	3
ne	sent-adv	1
ne	k2s	2
ne	k4	8
ne	ras-neg	7
ne	k2g	1
ne	rsp	1
ne	nmod__pofinv	1
e	lwg__psp	7520
e	pof	78
e	r6	1028
e	sent-adv	5
e	mod	42
e	k2	446
e	main	478
e	ras-pof	1
e	k1	482
e	k7t	254
e	lwg__vaux	1040
e	nmod__adj	1293
e	ccof	573
e	k7	935
e	k7a	18
e	k7p	242
e	nmod__klinv	304

e	nmod	154
e	r6-k2	114
e	vmod	72
e	nmod__k2inv	110
e	nmod__relc	62
e	k4	27
e	adv	69
e	lwg__vaux_cont	359
e	jjmod	44
e	pof__cn	35
e	rt	44
e	rh	55
e	rd	14
e	lwg__rp	12
e	pof__redup	20
e	fragof	70
e	rs	5
e	k5	57
e	k1s	41
e	k3	19
e	k1u	3
e	r6-k1	18
e	ras-k2	13
e	ras-neg	9
e	rsp	6
e	ras-k1	11
e	psp__cl	4
e	k2s	5
e	k2u	2
e	k7u	1
e	mod__wq	4
e	k2p	7
e	k4a	2
e	k7tu	1
e	rbmod__relc	2
e	nmod__pofinv	2
e	enm	1
e	jjmod__intf	1
iyA	main	1055
iyA	ccof	746
iyA	lwg__vaux	770

iyA	vmod	7
iyA	nmod__relc	92
iyA	rs	2
iyA	k1	8
iyA	nmod__k2inv	3
iyA	k2	5
iyA	nmod__k1inv	4
iyA	rbmod__relc	2
iyA	nmod	1
iyA	rh	1
iyA	k2s	1
iyA	k1s	1
iyA	nmod__pofinv	1
oM	r6	1461
oM	ccof	632
oM	k7	818
oM	k7p	492
oM	ras-k2	19
oM	rt	142
oM	k5	130
oM	r6-k1	60
oM	k1	812
oM	k2	740
oM	lwg__psp	51
oM	nmod__adj	89
oM	k4	468
oM	r6-k2	258
oM	nmod	106
oM	rs	3
oM	k4a	76
oM	rh	75
oM	k7t	195
oM	k3	76
oM	k7a	170
oM	ras-k1	109
oM	ras-pof	1
oM	rd	35
oM	vmod	77
oM	jjmod	43
oM	lwg__vaux_cont	3
oM	adv	7



oM	k1u	12
oM	k2p	9
oM	pof__cn	3
oM	mod	2
oM	lwg__vaux	1
oM	pof	3
oM	k2u	2
oM	jk1	2
oM	k7tu	1
oM	k2g	2
oM	k1s	1
oM	mk1	1
oM	ras-neg	2
oM	ras-k7	4
oM	k4u	1
oM	r6v	2
oM	pk1	1
oM	k2s	1
oM	nmod__relc	1
oM	k7u	1
oM	ras-k4	1
gay	lwg__vaux	1167
gay	lwg__vaux_cont	167
gay	ccof	9
gay	main	8
unoMne	k1	1268
unoMne	r6-k1	1
unoMne	pk1	1
A	main	2685
A	lwg__vaux	405
A	nmod__relc	91
A	pof__cn	2
A	rs	4
A	ccof	618
A	nmod__k2inv	8
A	vmod	20
A	lwg__vaux_cont	226
A	nmod__k1inv	37
A	k1	7
A	nmod	1
A	k2	3

A	nmod__adj	4
A	k2s	1
A	lwg__psp	1
A	jjmod__relc	1
A	pof	1
A	rt	1
A	k7	1
A	lwg__rp	1
A	mod	1
A	k1s	1
A	adv	1
is	nmod__adj	2021
is	k7	207
is	nmod	10
is	k1	17
is	mod	324
is	k4a	9
is	mod__wq	24
is	fragof	3
is	r6-k1	2
is	k2	12
is	r6	5
is	rt	1
is	k4	12
is	jjmod	1
is	k5	3
is	vmod	2
is	r6-k2	3
is	rbmod	1
is	k7p	5
is	ras-k1	1
is	rh	1
,	rsym	3356
,	k2	5
,	rs	1
,	mod	8
,	r6	3
,	nmod	5
,	nmod__adj	40
,	lwg__vaux_cont	1
,	k1	7

,	jjmod	2
,	main	7
,	ccof	4
,	k7	1
,	k4	1
,	k3	1
,	rsp	1
wI	lwg__vaux	203
wI	main	138
wI	ccof	178
wI	vmod	8
wI	nmod__relc	27
wI	nmod__k1inv	18
wI	rbmod__relc	1
wI	lwg__vaux_cont	53
wI	k2	4
wI	nmod	1
wI	fragof	1
wI	nmod__k2inv	2
M	lwg__vaux_cont	1006
M	lwg__vaux	672
M	nmod__adj	27
M	k7p	318
M	main	352
M	ccof	351
M	nmod	28
M	k7	50
M	k1	30
M	k2p	29
M	r6	87
M	k2	39
M	rbmod__relc	2
M	r6-k2	7
M	pof	31
M	k5	25
M	pof__cn	77
M	adv	22
M	nmod__relc	35
M	jjmod	13
M	sent-adv	36
M	k3	5

M	rh	1
M	rsp	2
M	vmod	10
M	k1s	3
M	rt	7
M	k7t	10
M	jjmod__intf	1
M	ras-neg	1
M	k4	1
M	pof__redup	1
M	k7a	1
M	mod	2
M	nmod__k1inv	1
M	r6-k1	7
M	fragof	1
yA	main	938
yA	ccof	283
yA	nmod__relc	42
yA	lwg__vaux	57
yA	nmod__k2inv	4
yA	nmod__k1inv	3
yA	vmod	1
yA	nmod	2
yA	k2	4
yA	r6	1
yA	k1	3
yA	rs	1
uneM	k4a	71
uneM	k2	127
uneM	k1	63
uneM	k4	135
uneM	nmod	1
uneM	k2p	1
uneM	ccof	5
NULL	ccof	209
NULL	main	89
NULL	k1	155
NULL	k2s	3
NULL	k1s	33
NULL	k2	43
NULL	nmod	18

NULL	r6	15
NULL	k7	6
NULL	vmod	13
NULL	k7p	19
NULL	ras-k1	4
NULL	rs	6
NULL	k7t	18
NULL	r6-k2	4
NULL	pof	11
NULL	k3	2
NULL	nmod_klinv	3
NULL	k4	2
NULL	rd	1
NULL	sent-adv	1
NULL	jjmod	1
NULL	adv	1
NULL	nmod_relc	1
Mge	ccof	54
Mge	lwg_vaux	33
Mge	main	45
Mge	lwg_vaux_cont	2
Mge	k2	1
Mge	nmod_relc	3
iske	sent-adv	68
iske	k7t	122
iske	k7a	34
iske	r6	76
iske	rt	102
iske	k7	19
iske	vmod	128
iske	nmod	1
iske	r6-k2	2
iske	rh	13
iske	ccof	1
iske	adv	1
iske	r6-k1	2
iske	ras-k1	3
iske	k3	6
iske	jjmod	2
iske	k7p	4
iske	k1	2

iske	ras-neg	1
iske	ras-k2	1
iske	k2	1
unke	r6	275
unke	ras-k1	20
unke	k1	17
unke	vmod	24
unke	k7	14
unke	r6-k1	1
unke	ccof	7
unke	k7p	1
unke	rt	18
unke	k3	4
unke	k4	1
unke	r6-k2	3
unke	k7a	9
unke	nmod	2
unke	jjmod	6
unke	ras-k4	1
unke	rd	1
unke	ras-k2	1
unke	k2	1
unke	k5	1
unke	sent-adv	1
eM	ccof	135
eM	k2	143
eM	lwg__vaux	35
eM	k1	261
eM	k4a	19
eM	main	19
eM	nmod__adj	19
eM	k4	12
eM	pof	28
eM	nmod	4
eM	rs	1
eM	nmod__relc	3
eM	vmod	8
eM	k2s	1
eM	pof__cn	3
eM	lwg__vaux_cont	6
eM	k7p	4

eM	k1s	1
eM	k5	1
eM	jjmod	1
eM	r6	1
eM	rh	1
inmeM	k7	52
inmeM	nmod	6
inmeM	k5	25
inmeM	k1	1
ise	k2	171
ise	k1	10
ise	k4	14
ise	k4a	4
ise	k2s	2
kara	rsp	14
kara	vmod	821
kara	k2	2
kara	pof	1
kara	adv	15
kara	nmod	9
kara	nmod_k1inv	3
kara	ccof	8
kara	lwg__vaux	4
kara	jjmod	4
kara	k7t	1
kara	main	1
kara	rt	1
kara	rh	2
kara	k1s	1
we	lwg__vaux	233
we	vmod	628
we	main	219
we	ccof	251
we	pof__redup	6
we	k7t	19
we	lwg__vaux_cont	18
we	nmod_k1inv	75
we	adv	5
we	nmod	4
we	nmod__relc	35
we	nmod__k2inv	10

we	k7	1
we	k2	4
we	mod	1
egA	ccof	137
egA	rs	3
egA	lwg__vaux_cont	53
egA	main	77
egA	lwg__vaux	287
egA	rbmod__relc	2
egA	nmod__relc	6
egA	pof__cn	1
egA	vmod	1
ue	lwg__vaux	688
ue	main	30
ue	nmod__k1inv	104
ue	nmod__k2inv	24
ue	ccof	25
ue	nmod__relc	7
ue	vmod	3
ue	nmod__pofinv	3
ue	lwg__vaux_cont	1
ue	nmod	1
ue	ras-neg	1
gaI	lwg__vaux	668
gaI	ccof	4
gaI	lwg__vaux_cont	82
gaI	nmod__k1inv	1
gaI	main	2
iegA	ccof	3
iegA	main	2
nA	k1	499
nA	ccof	272
nA	main	135
nA	k2	183
nA	lwg__vaux	123
nA	k2s	5
nA	rs	3
nA	pof	10
nA	k1s	12
nA	vmod	12
nA	nmod__relc	19



nA	nmod	1
nA	k7t	1
nA	lwg__vaux_cont	2
iyom	r6	288
iyom	k2	132
iyom	k1	265
iyom	vmod	28
iyom	k7	94
iyom	rt	21
iyom	k4	99
iyom	ccof	147
iyom	ras-k1	41
iyom	k5	27
iyom	nmod	13
iyom	rh	9
iyom	r6-k2	36
iyom	ras-k2	5
iyom	r6-k1	7
iyom	k2p	1
iyom	k4a	7
iyom	k7p	21
iyom	k7a	13
iyom	rd	9
iyom	ras-neg	1
iyom	k3	7
iyom	k7t	8
iyom	k1u	2
iyom	jjmod	5
iyom	mod	1
iyom	k2u	1
iyom	nmod_adj	1
wA	main	139
wA	lwg__vaux_cont	140
wA	lwg__vaux	342
wA	ccof	211
wA	nmod_relc	25
wA	mod	3
wA	vmod	9
wA	nmod_klinv	3
wA	k2	2
wA	k2s	1

wA	pof__cn	1
wA	k1s	1
wA	pof	1
gae	lwg__vaux	667
gae	ccof	15
gae	nmod__klinv	10
gae	main	13
gae	lwg__vaux_cont	21
gae	nmod__relc	4
gae	vmod	1
Z	mod	21
Z	k2	74
Z	r6	83
Z	nmod__adj	237
Z	nmod__relc	8
Z	pof	124
Z	vmod	12
Z	ccof	101
Z	lwg__psp	40
Z	k7	41
Z	k7t	12
Z	pof__cn	32
Z	lwg__vaux	9
Z	main	48
Z	r6-k1	8
Z	rh	11
Z	nmod	16
Z	k7p	22
Z	k1	89
Z	r6-k2	5
Z	k1s	26
Z	rt	6
Z	jjmod	6
Z	adv	13
Z	k2s	3
Z	k5	2
Z	k7u	1
Z	nmod__k2inv	1
Z	sent-adv	1
Z	k7a	1
Z	lwg__rp	6

Z	nmod_klinv	1
Z	rs	1
Z	k3	2
Z	jjmod_intf	2
Z	k4	4
Z	ras-r6-k2	1
Z	rsp	1
Z	pof_redup	1
Z	ras-k7	1
ke	r6	8
ke	ras-k1	1
ke	vmod	63
ke	k4a	1
ke	rt	4
ke	lwg_psp	1
ke	k7p	1
ke	k7	3
ke	ccof	1
unkI	r6	238
unkI	r6-k2	20
unkI	nmod	4
unkI	r6-k1	9
unkI	ccof	2
unkI	k1	4
unkI	k2	1
unkI	rd	4
unkI	rh	1
unkI	rt	1
u	nmod_adj	1
u	pof	1
isameM	k7	93
isameM	k5	6
isameM	k7p	5
isameM	nmod	2
isameM	k1	2
noM	nmod_adj	321
noM	k1	24
noM	k5	2
noM	k1s	4
noM	k7	8
noM	k4	4

noM	k2	6
noM	r6-k2	2
noM	r6	10
noM	jjmod	1
noM	r6-k1	2
noM	k2g	1
noM	rt	1
IM	lwg__vaux_cont	33
IM	lwg__vaux	52
IM	vmod	1
IM	ccof	30
IM	main	38
IM	pof__cn	19
IM	nmod__adj	11
IM	sent-adv	5
IM	r6	5
IM	k7p	4
IM	k2	1
IM	k7	2
IM	nmod__klinv	3
IM	nmod__relc	3
IM	k5	1
isse	k7t	85
isse	rh	113
isse	nmod	5
isse	vmod	2
isse	jjmod	7
isse	k3	6
isse	k5	9
isse	k1u	3
isse	ras-k1	3
isse	mod	1
isse	k7	4
isse	k2	6
isse	rt	1
isse	sent-adv	4
isse	k1	1
uI	main	138
uI	ccof	105
uI	nmod__klinv	101
uI	lwg__vaux	39

uI	nmod__k2inv	13
uI	nmod__relc	19
uI	nmod	1
uI	k1	1
uI	nmod__pofinv	2
uI	rbmod__relc	2
uI	rs	1
uI	k7t	1
ie	r6-k2	10
ie	vmod	9
ie	ccof	73
ie	nmod__k1inv	27
ie	nmod__k2inv	37
ie	r6	25
ie	main	76
ie	rh	9
ie	rad	1
ie	k7t	8
ie	nmod__relc	8
ie	k7	8
ie	lwg__vaux	3
ie	k2	3
ie	nmod__pofinv	5
ie	nmod	17
ie	k4	3
ie	rd	1
ie	rs	2
ie	jjmod	2
isI	rh	6
isI	nmod__adj	134
isI	r6	3
isI	k2	4
isI	sent-adv	2
isI	k7a	5
isI	k7	3
isI	r6-k2	1
isI	vmod	1
in	nmod__adj	389
in	pof__cn	2
in	rt	1
in	k7	4

in	k5	1
in	k7p	1
,	rsym	688
gI	nmod	1
gI	main	57
gI	ccof	91
gI	lwg__vaux	21
gI	nmod__relc	8
gI	lwg__vaux_cont	1
gI	k2	1
vAyA	ccof	8
vAyA	main	17
vAyA	nmod__k2inv	1
iskI	r6	80
iskI	r6-k2	28
iskI	r6-k1	3
iskI	rh	4
iskI	rt	1
iskI	nmod	2
iskI	r6v	1
iskI	k1	1
egI	main	63
egI	ccof	102
egI	lwg__vaux	159
egI	r6	1
egI	nmod__relc	7
egI	k2	3
egI	lwg__vaux_cont	11
egI	rs	1
egI	rh	1
eMge	main	121
eMge	lwg__vaux	84
eMge	ccof	173
eMge	rs	1
eMge	vmod	1
eMge	lwg__vaux_cont	8
eMge	nmod__relc	16
eMge	k2	2
unkA	k1	53
unkA	r6	69
unkA	r6-k2	12

unkA	r6-k1	6
ZiyAz	k2	1
ZiyAz	k1	1
us	nmod__adj	136
us	k7	26
us	r6	1
us	nmod	3
us	k7p	3
eMgI	lwg__vaux	17
eMgI	ccof	16
eMgI	main	16
eMgI	nmod__relc	1
eMgI	k2	1
eMgI	lwg__vaux_cont	1
Ze	ccof	21
Ze	nmod__adj	50
Ze	pof__redup	1
Ze	lwg__vaux	8
Ze	main	12
Ze	pof	9
Ze	nmod__k1inv	26
Ze	nmod	4
Ze	nmod__relc	2
Ze	k7p	2
Ze	r6	14
Ze	k7	5
Ze	k2u	1
Ze	k7t	2
Ze	r6-k2	2
Ze	nmod__k2inv	5
Ze	pof__cn	1
Ze	mod	1
Ze	lwg__psp	1
Ze	k1	5
Ze	lwg__vaux_cont	1
Ze	k2	8
Ze	rs	1
Ze	jjmod__intf	1
Ze	rt	1
Ze	rh	1
i	nmod	7

i	main	62
i	vmod	17
i	ccof	29
i	nmod__k1inv	17
i	lwg__vaux	71
i	k2	4
i	mod__wq	7
i	r6	11
i	nmod__k2inv	19
i	r6-k2	4
i	ras-neg	1
i	lwg__psp	2
i	k7	5
i	k7a	1
i	k7t	7
i	k1	2
i	rh	2
i	nmod__adj	2
i	rs	1
i	jjmod	1
i	nmod__relc	3
i	pof__redup	1
i	ras-k1	1
s	pof__cn	26
s	r6	21
s	k2	3
s	ccof	9
s	k7	4
s	k5	3
s	k4	1
s	k7p	2
s	nmod	2
s	vmod	1
s	rt	3
s	k1	3
s	k3	2
s	nmod__adj	1
uske	r6	97
uske	k7	18
uske	k7a	3
uske	ccof	5



uske	k7p	3
uske	k7t	28
uske	vmod	9
uske	rh	1
uske	ras-k1	5
uske	rt	7
uske	k2	3
uske	r6-k2	2
uske	ras-k2	1
uske	k1	2
uske	r6-k1	2
uske	rd	1
uske	nmod	2
gA	ccof	105
gA	lwg__vaux	88
gA	main	74
gA	lwg__vaux_cont	4
gA	nmod__relc	10
gA	k2	1
gA	vmod	1
gA	rbmod__relc	1
gA	rs	2
uJe	k4a	17
uJe	k4	15
uJe	k2	10
uJe	k1	4
ere	r6	10
ere	ras-k1	1
ere	rt	2
ere	k7p	1
Are	r6	33
Are	k7p	2
Are	ras-k1	4
Are	k7	6
Are	jjmod	1
Are	rt	3
Are	k1	1
Are	nmod	1
Are	nmod__adj	1
ineM	k1	4
ineM	k4	7

ineM	k2	20
ineM	k4a	1
ZI	nmod__adj	48
ZI	ccof	13
ZI	lwg__vaux	11
ZI	nmod__klinv	9
ZI	main	6
ZI	k2s	1
ZI	nmod__k2inv	2
ZI	nmod__relc	3
ZI	vmod	1
ZI	pof__redup	1
ZI	k2	1
iyAM	k1	71
iyAM	k2	47
iyAM	ccof	22
iyAM	pof	9
iyAM	k1s	1
iyAM	nmod	1
iyAM	pof__cn	1
iyAM	k4	1
iyAM	rs	1
ZoM	k7p	3
ZoM	nmod__adj	30
ZoM	r6	16
ZoM	k2p	1
ZoM	vmod	1
ZoM	k1	1
ZoM	nmod	2
ZoM	k7	13
ZoM	ccof	5
ZoM	k2	2
ZoM	k7t	1
ZoM	k4	1
ZoM	rt	1
ismeM	k7	152
ismeM	k5	4
ismeM	jjmod	3
ismeM	nmod	3
ismeM	k7p	2
nI	ccof	77

nI	main	62
nI	k2	8
nI	lwg__vaux	33
nI	nmod__relc	4
nI	vmod	3
nI	k1	5
nI	lwg__vaux_cont	1
inhMne	k1	10
inhMne	k1s	1
Mne	k7t	4
Mne	rt	1
Mne	k1	1
Mne	k7	1
Mne	main	1
Mne	k2	1
Mne	rh	1
uA	ccof	96
uA	lwg__vaux	68
uA	vmod	4
uA	main	95
uA	nmod__relc	14
uA	nmod__k1inv	3
uA	nmod__k2inv	1
uA	lwg__vaux_cont	1
MI	main	2
MI	nmod	1
MI	nmod__k1inv	1
Me	ccof	4
Me	r6	2
Me	k7	4
Me	nmod__k1inv	8
Me	main	2
Me	pof	1
Me	nmod__adj	1
Me	r6-k2	2
Me	k5	1
uskA	r6	39
uskA	r6-k1	7
uskA	r6-k2	12
uskA	k1	5
ZwA	main	3

ZwA	ccof	7
ZwA	lwg__vaux	5
ZwA	nmod__relc	1
usne	k1	113
usne	ccof	1
isa	nmod__adj	59
isa	k7	13
isa	k7p	2
isa	nmod	1
usmeM	k7p	1
usmeM	k7	21
usmeM	jjmod	3
Zne	nmod	9
Zne	ccof	10
Zne	r6	30
Zne	rh	8
Zne	r6-k2	13
Zne	rt	25
Zne	r6-k1	7
Zne	main	2
Zne	k7	12
Zne	vmod	3
Zne	nmod__klinv	1
Zne	k7t	5
Zne	k7a	2
Zne	jjmod	1
Zne	k2	3
Zne	k4	1
usse	rh	6
usse	k2	11
usse	k4	5
usse	k3	1
usse	nmod	11
usse	k1	1
usse	k5	3
usse	k1u	1
usse	ras-k1	2
usse	jjmod	4
usse	ras-k2	1
ko	k1	9
ko	k4a	8

ko	k4	7
ko	k2	3
iskA	r6	82
iskA	r6-k2	43
iskA	r6-k1	16
iskA	k1	1
iskA	nmod	2
Zwe	lwg__vaux	1
Zwe	vmod	6
Zwe	ccof	3
Zwe	main	1
Zwe	nmod__klinv	7
inkA	r6	6
inkA	r6-k2	4
inkA	k1	2
inkA	r6-k1	3
ZiyoM	k5	3
ZiyoM	k1	4
ZiyoM	r6	7
ZiyoM	k2	5
ZiyoM	k7	2
ZiyoM	r6-k1	1
ZiyoM	k7p	2
ZiyoM	k4	3
ZiyoM	rt	2
ZiyoM	ras-k1	1
ZiyoM	ccof	1
ZiyoM	vmod	1
Zie	vmod	1
ZA	main	22
ZA	lwg__vaux	34
ZA	nmod__klinv	1
ZA	nmod	1
ZA	pof	1
ZA	ccof	12
ZA	nmod__relc	1
ZA	k1	1
ZA	vmod	1
isake	k7t	7
isake	k7a	12
isake	vmod	4

isake	r6	8
isake	k7	2
isake	rh	15
isake	k1	2
isake	k3	6
isake	rt	3
gaIM	lwg__vaux	18
gaIM	lwg__vaux_cont	2
gaIM	main	1
inke	k7	1
inke	r6	10
inke	vmod	7
inke	k1	1
ZyA	ccof	4
ZyA	vmod	1
ZyA	main	3
ZyA	nmod	1
usI	nmod__adj	30
usI	k1	2
usI	k7	1
usI	rt	1
usI	k7p	1
usI	r6	4
_JOIN_	rsym	101
inkI	r6	22
inkI	nmod	1
o	nmod__adj	5
o	ccof	18
o	r6	27
o	rt	6
o	lwg__psp	2
o	k1	3
o	k7	18
o	k7t	23
o	k2	5
o	k7p	2
o	pof__cn	6
o	nmod	6
o	r6-k2	3
o	k7a	2
o	k4	1

o	k1u	1
o	lwg__vaux	1
ina	nmod_adj	32
ina	k7	6
ina	mod	1
isak	k4	1
isak	k2	2
uskI	r6-k2	16
uskI	r6	68
uskI	r6-k1	8
uskI	rd	1
uskI	k7	1
uskI	ccof	1
uskI	jjmod	1
uskI	k1	1
use	k4	50
use	k1	24
use	k2	91
use	ccof	1
use	k4a	16
use	k5	1
use	jk1	1
wIM	nmod_relc	1
wIM	main	3
wIM	lwg__vaux	5
wIM	ccof	3
unse	k2	14
unse	ras-k1	6
unse	jk1	1
unse	jjmod	1
unse	k4	10
unse	k5	7
unse	r6	1
unse	nmod	1
unse	k1	3
unse	ccof	1
unse	k7t	1
n	nmod	2
n	pof__cn	22
n	k7	3
n	k1	5

n	k5	1
n	nmod__adj	4
n	ccof	3
n	k2	1
n	pof	2
n	k1s	1
n	r6	1
isase	rh	61
isase	k3	5
isase	k2	3
isase	sent-adv	1
isase	k5	1
,000	nmod__adj	4
,000	mod	1
,000	pof__cn	1
ZZ	k3	1
ZZ	k5	1
ZZ	ccof	4
ZZ	pof	7
ZZ	vmod	1
ZZ	k1	13
ZZ	r6	4
ZZ	pof__cn	2
ZZ	rh	3
ZZ	nmod	2
ZZ	k2	7
ZZ	rt	1
ZZ	lwg__psp	9
ZZ	k7	2
ZZ	nmod__adj	1
inheM	k2	23
inheM	k4	6
inheM	k4a	2
inheM	k1	2
un	nmod__adj	61
un	k7	18
un	k2	1
un	k7p	2
un	ccof	2
un	k2p	1
unko	k4	3



unko	k2	3
unko	k1	2
unko	k4a	5
unko	ccof	1
ArI	rd	1
ArI	r6	39
ArI	nmod	1
egeM	nmod__relc	1
egeM	ccof	1
egeM	lwg__vaux	1
egeM	vmod	1
BI	nmod__adj	12
BI	k1	12
BI	k4	1
BI	r6	5
BI	r6-k2	1
BI	k2	8
BI	k7p	1
BI	rt	3
BI	k7t	2
BI	k7	2
BI	k4a	3
BI	ras-k1	1
BI	k2s	1
yAM	k2	13
yAM	k1	7
yAM	ccof	1
pawni	k1s	1
pawni	r6-k2	1
UM	ccof	9
UM	lwg__vaux_cont	11
UM	lwg__vaux	19
UM	k2	1
UM	main	4
uJame	k7	1
iyAz	k1	13
iyAz	ccof	5
iyAz	k2	4
iyAz	pof	1
uIM	main	1
uIM	ccof	3

Ms	pof__cn	2
Ms	r6	6
Ms	ccof	6
Ms	k7	1
Ms	k1	2
Ms	nmod__adj	1
Ms	k4	1
Ms	nmod	2
Ms	ras-k1	1
Ms	jjmod	1
Ms	rt	1
isakI	rh	3
isakI	r6-k2	3
isakI	r6	7
isakI	r6-k1	1
inameM	k7p	2
inameM	k7	22
inameM	k5	6
inameM	k1	1
Zkara	adv	3
Zkara	vmod	32
Zkara	ccof	1
Zkara	nmod	1
wIn	nmod__adj	2
eMgIM	main	1
eMgIM	lwg__vaux	2
vAI	ccof	1
vAI	nmod__k2inv	1
vA	ccof	3
vA	main	2
gayI	lwg__vaux	31
gayI	lwg__vaux_cont	6
unIM	nmod__adj	8
unIM	r6	1
inase	ras-k2	1
inase	rh	2
inase	k3	2
inase	k1	1
N	r6	1
N	ccof	2
me	nmod__adj	2

m	k7	1
m	pof	1
m	k1	2
m	r6	1
m	k7t	3
m	k1s	1
m	nmod__adj	2
m	pof__cn	2
yAz	k2	1
yAz	ccof	1
yAz	k1	3
AoM	ccof	1
ZeM	ccof	1
ZeM	k1	3
ZeM	k2	1
uoM	k4	1
uoM	k7	5
uoM	r6	9
uoM	ccof	2
uoM	rt	1
uoM	ras-k1	1
uoM	k1	1
uoM	k2	1
.	pof__cn	21
.	nmod	1
.	rsym	2
.	rs	1
erA	pof__cn	1
erA	r6	5
erA	ccof	1
erA	k1	1
erA	nmod	1
ez	k2	3
ez	k1	7
ez	lwg__vaux	1
ez	main	11
ez	ccof	5
ez	nmod__relc	1
yoMki	rh	1
isakA	r6	12
isakA	r6-k2	7

isakA	k1	2
isakA	r6-k1	1
?	rsym	10
nevAle	nmod	1
inoMne	k1	4
OY	pof__cn	3
OY	r6	1
OY	k2	1
ArA	r6	16
ArA	k1	2
ArA	r6v	1
mI	nmod__adj	1
mI	nmod	1
inakA	k1	2
inakA	r6	6
,898	nmod__adj	1
MnI	ccof	1
kI	r6	13
kI	r6-k2	1
isko	k2	10
isko	r6	1
uJa	k7	4
U	k5	1
S	pof__cn	1
vAwI	main	1
se	k4	2
se	k5	2
se	k7p	1
se	k2	1
se	lwg__psp	1
se	k7	1
se	ras-k1	1
se	k1s	1
0,	nmod__adj	6
0,	mod	3
0,	jjmod	2
0,	rsp	1
0,	k2	1
0,	rs	1
ZAnA	ccof	1
iy	nmod	1

iy	main	2
iy	lwg__vaux	1
iy	r6	1
iy	nmod__k2inv	1
iy	ccof	2
yI	ccof	5
yI	nmod__relc	1
yI	main	4
yI	lwg__vaux	2
yI	nmod	2
erI	k1	1
erI	r6	8
erI	r6-k2	2
erI	nmod	1
	-	4
MyA	main	1
MyA	ccof	1
haa	k1	1
UMgI	ccof	5
UMgI	lwg__vaux	3
UMgI	main	1
1	rsp	1
ja	r6	8
ja	pof__cn	6
ja	k4	2
ja	k1	2
ja	k7	1
ja	k5	2
ja	ccof	3
ja	jjmod	1
ja	k1u	1
ja	k7t	1
w	ccof	1
r	nmod__adj	1
r	pof__cn	1
r	ccof	1
z	nmod__adj	1
z	lwg__vaux_cont	1
z	ccof	1
z	main	1
ZeMge	ccof	1

yegA	lwg__vaux	3
yegA	lwg__vaux_cont	1
Ane	ccof	1
Ane	rt	1
Ane	r6	3
Ane	vmod	2
Ane	nmod	1
Ane	k7	1
UMgA	ccof	4
UMgA	main	1
MgI	ccof	4
MgI	main	8
MgI	lwg__vaux	3
MgI	nmod__relc	1
ZegA	main	4
ZegA	ccof	15
ZegA	lwg__vaux	4
ZegA	nmod__relc	1
333602	nmod	1
ej	rs	1
ej	k7p	1
ej	pof__cn	3
ZegI	ccof	2
ZegI	lwg__vaux	1
ZegI	main	1
ZegI	rs	1
ioM	ccof	1
ioM	r6	1
vAeMge	ccof	1
-	r6	1
-	pof	1
-	rsym	1
unmeM	k7	22
unmeM	k2	1
unmeM	k5	1
unmeM	k7p	1
unmeM	k1	1
inakI	rh	1
inakI	r6	4
inakI	r6-k1	1
vAne	ccof	2

vAne	r6	1
vAne	r6-k1	1
yIM	ccof	1
k	lwg__psp	1
isae	k1	4
prwbxXa	k1s	1
inse	k5	3
inse	k2	1
Zye	ccof	1
ye	r6	3
ye	nmod__k2inv	1
ye	r6-k2	1
ye	lwg__vaux_cont	1
ye	lwg__vaux	3
ye	ccof	4
ye	main	4
ye	r6-k1	1
	rs	1
iye	main	6
iye	ccof	3
iye	lwg__vaux	1
iye	k7	1
iye	r6	1
e.	pof__cn	1
inake	r6	6
inake	rh	1
inake	vmod	4
inake	k3	2
inake	k7	2
inake	r6v	1
Ah	r6-k2	1
ZnA	k2	4
ZnA	ccof	8
ZnA	pof	1
ZnA	k1	2
la	pof	1
ezge	lwg__vaux	1
ZwI	nmod__relc	1
ZwI	nmod__k1inv	9
ZwI	ccof	3
ZwI	nmod__k2inv	1

ZwI	lwg__vaux	2
ZwI	main	1
meM	k7	1
akara	vmod	1
iw	adv	6
ZU	pof__cn	1
ZU	mod	1
ZU	nmod__adj	1
inIM	k7	1
inIM	nmod__adj	8
inIM	k3	1
ya	lwg__vaux_cont	1
ya	lwg__vaux	1
ya	k1	1
gaye	lwg__vaux	12
„	nmod__adj	6
usko	k2	1
usko	k4	1
uhAre	r6	1
heM	k4a	1
umane	k1	1
isne	k1	3
unoneM	k1	1
iMyoM	k2	1
iMyoM	k4	1
aBI	nmod__adj	2
AyA	ccof	2
es	ccof	1
es	pof__cn	2
jAegA	lwg__vaux	1
mAwra	adv	1
kA	r6	8
kA	r6-k1	1
Put	nmod__adj	1
aI	r6	1
AnA	ccof	1
hIM	nmod__adj	1
ZAyA	ccof	1
inko	k1	1
inko	k2	1
ZIM	ccof	1



_NULL_	lwg__vaux	1
isane	k1	13
eg	ccof	1
MsoM	k7p	1
vAkara	vmod	2
ija	k4a	1
av	ccof	1
iM	k1	1
jZa	k7p	1
rrsa	pof__cn	1
,480	nmod__adj	1
--	rsym	4
MgeM	lwg__vaux	1
MgeM	main	1
zI	main	1
zvo	k7p	1
inak	k4	1
Iji	lwg__vaux	3
Iji	ccof	1
maka	nmod__adj	1
hAre	k7	1
vAnA	k1	1
vAnA	k2	2
nane	r6-k2	1
null	main	1
6.8	k1s	1
aX	pof	1
jAnabUJaara	vmod	1
musli	nmod__adj	1
j	nmod__k1inv	1
zA	nmod__relc	1
xillI	k7t	1
riM	ccof	2
uMgI	k2	1
gIM	main	1
yU	ccof	1
EsI	nmod__adj	1
yeMge	lwg__vaux	1
yeMgI	lwg__vaux	1
nevAll	nmod	2
ZnI	k1	1

ejZ	pof__cn	1
d	k1	1
vIM	nmod__adj	1
EM	nmod__adj	1
ZZiyoM	ccof	1
ZZiyoM	k2	1
ZZiyoM	rh	1
ave	nmod__k1inv	1
AIM	main	1
oz	ras-k1	1
nirmiwa	nmod__adj	1
ue...	ccof	1
kra	vmod	1
MA	main	1
Ijie	ccof	1
va	pof__cn	1
ze	k1	1
na	rt	1
hiyoM	r6	1
iA	nmod__k1inv	1
ww	nmod__adj	1
y	k2	1
OoM	k2	1
sa	pof__cn	2
...	rsym	1
MvAe	ccof	1
MvAe	main	1
MvAI	main	1
NA	ccof	1
uJase	k2	1
Uz	lwg__vaux	1
vAwA	main	1
329	pof__cn	1
a	r6	2
a	k7p	1
a	nmod__adj	1
bord	r6	1
ane	r6	1
Aw	k7	1
!	rsym	2
)	rsym	2

XaX	pof_.cn	1
MnA	main	1
jI	r6	1
jI	r6-k2	1
rAMj	vmod	1

Table 5: Marker-AnnCorra relation for Provided Hindi Data

<i>Marker</i>	<i>Tag</i>	<i>Count</i>
	det	2625
	nmod	19232
	advmod	3105
	case	41856
	root	4270
	cop	1921
	punct	15436
	compound	28206
	nsubj	12559
	aux	2883
	nummod	3866
	cc	5167
	amod	8910
	obl	17975
	mark	9758
	acl	770
	dep	3873
	aux:pass	3468
	dislocated	160
	conj	4171
	obj	9014
	acl:relcl	334
	nsubj:pass	362
	xcomp	571
	advcl	478
	iobj	1122
	vocative	5
I	case	5600
I	amod	716
I	nmod	372
I	acl	296
I	compound	122

I	mark	1100
I	aux	1105
I	root	1394
I	dep	8
I	acl:relcl	104
I	advmod	13
I	obl	14
I	det	158
I	dislocated	39
I	nsubj:pass	3
I	advcl	50
I	aux:pass	447
I	conj	169
I	cop	114
I	xcomp	17
I	obj	319
I	nsubj	48
I	punct	3
I	cc	1
oM	nmod	2061
oM	obj	723
oM	acl:relcl	3
oM	obl	2123
oM	conj	369
oM	compound	5
oM	nsubj:pass	52
oM	nsubj	811
oM	iobj	449
oM	nummod	69
oM	mark	39
oM	root	10
oM	case	11
oM	det	2
oM	aux:pass	3
oM	advmod	4
oM	acl	3
oM	xcomp	1
oM	aux	1
oM	cop	1
ise	obj	157
ise	acl	2

ise	iobj	13
ise	nsubj:pass	5
ise	nsubj	9
yA	root	962
yA	obj	91
yA	advcl	14
yA	conj	55
yA	acl	38
yA	acl:relcl	38
yA	aux:pass	13
yA	aux	39
yA	nsubj	15
yA	nsubj:pass	1
yA	nmod	2
yA	amod	2
iskA	nmod	131
iskA	nsubj:pass	1
isameM	nmod	17
isameM	obl	81
isameM	nsubj	1
isameM	nsubj:pass	1
eM	root	41
eM	nsubj	245
eM	obj	180
eM	conj	29
eM	advcl	14
eM	nsubj:pass	6
eM	compound	30
eM	nmod	7
eM	aux	19
eM	acl	17
eM	aux:pass	15
eM	amod	17
eM	obl	9
eM	acl:relcl	5
eM	iobj	12
M	cop	536
M	conj	22
M	aux:pass	925
M	aux	628
M	root	56

M	advmod	18
M	nmod	178
M	nsubj	31
M	amod	11
M	compound	104
M	dep	1
M	obl	439
M	acl:relcl	7
M	obj	76
M	advcl	5
M	acl	6
M	case	1
M	nummod	1
M	iobj	2
ne	advcl	1146
ne	amod	460
ne	nmod	1538
ne	obl	806
ne	nsubj	85
ne	conj	166
ne	root	101
ne	obj	176
ne	acl	47
ne	iobj	7
ne	advmod	29
ne	aux:pass	311
ne	acl:relcl	8
ne	aux	113
ne	compound	4
ne	xcomp	1
ne	nsubj:pass	2
e	amod	1011
e	case	6434
e	obl	1634
e	acl	448
e	conj	137
e	obj	545
e	root	479
e	nsubj	443
e	acl:relcl	50
e	det	241

e	compound	124
e	nmod	1325
e	cop	136
e	aux	873
e	advmod	10
e	mark	677
e	dep	17
e	punct	5
e	aux:pass	428
e	xcomp	12
e	dislocated	66
e	advcl	80
e	iobj	26
e	nummod	4
e	nsubj:pass	6
e	cc	1
wA	root	163
wA	aux:pass	243
wA	aux	201
wA	conj	40
wA	acl:relcl	26
wA	advcl	36
wA	compound	2
wA	det	1
wA	obj	72
wA	case	1
wA	nmod	1
wA	acl	22
wA	nsubj	2
inheM	obj	23
inheM	iobj	5
inheM	nsubj	2
inheM	nsubj:pass	1
A	acl:relcl	83
A	root	2689
A	acl	89
A	advcl	45
A	aux	410
A	conj	129
A	obj	197
A	nsubj	23

A	aux:pass	217
A	case	2
A	advmod	1
A	obl	2
A	nmod	1
A	amod	4
A	dep	1
A	nsubj:pass	1
A	compound	2
iyA	root	1148
iyA	aux	525
iyA	aux:pass	218
iyA	conj	111
iyA	nsubj	29
iyA	acl:relcl	92
iyA	obj	323
iyA	compound	1
iyA	acl	72
iyA	advcl	46
iyA	nmod	1
iyA	obl	1
iyA	amod	1
is	det	1947
is	obl	198
is	case	123
is	nsubj	69
is	mark	32
is	nmod	52
is	iobj	10
is	dep	20
is	advcl	7
is	cc	16
is	punct	10
is	dislocated	4
is	obj	14
is	amod	6
,	punct	2541
,	cc	31
,	aux:pass	1
,	obj	1
,	advmod	2



,	nsubj	1
,	nummod	34
,	det	1
,	case	6
,	nmod	1
,	mark	1
Z	obl	96
Z	amod	76
Z	nummod	138
Z	nmod	117
Z	root	78
Z	compound	153
Z	obj	101
Z	advcl	13
Z	acl:relcl	9
Z	nsubj	76
Z	conj	37
Z	case	45
Z	det	9
Z	advmod	13
Z	acl	10
Z	aux	1
Z	nsubj:pass	2
Z	xcomp	8
Z	dep	6
Z	mark	3
Z	iobj	3
Z	cc	4
s	obl	12
s	nmod	27
s	obj	2
s	compound	26
s	root	2
s	nsubj	2
s	conj	4
s	iobj	1
uA	aux	61
uA	root	114
uA	acl	7
uA	obj	37
uA	conj	12

uA	advcl	11
uA	acl:relcl	13
uA	aux:pass	1
uA	nsubj	4
gae	aux:pass	408
gae	aux	242
gae	root	23
gae	acl	11
gae	acl:relcl	3
gae	conj	2
gae	obj	1
gae	advcl	1
ke	advcl	59
ke	obl	5
ke	nmod	11
ke	case	1
ke	root	1
ke	nsubj	1
ke	obj	1
isse	obl	217
isse	obj	6
isse	nmod	13
isse	cc	1
isse	nsubj	1
isse	root	1
gay	aux:pass	978
gay	aux	290
gay	root	10
gay	obj	4
gay	conj	1
gay	acl	1
kara	advcl	772
kara	nmod	12
kara	root	5
kara	amod	8
kara	obl	1
kara	xcomp	1
kara	compound	1
kara	advmod	17
kara	acl	2
kara	aux	4

kara	conj	3
kara	obj	2
iyom	obj	135
iyom	obl	260
iyom	conj	86
iyom	nmod	359
iyom	nsubj	251
iyom	iobj	96
iyom	nummod	1
iyom	nsubj:pass	14
iyom	acl	1
iyom	root	2
we	aux	199
we	root	238
we	conj	47
we	aux:pass	30
we	advcl	632
we	acl:relcl	39
we	obj	87
we	obl	18
we	acl	103
we	advmod	5
we	amod	4
we	compound	6
we	nsubj	3
we	mark	1
iyAz	conj	3
iyAz	nsubj	9
iyAz	root	4
iyAz	obj	4
iyAz	nmod	1
iyAz	compound	1
inameM	obl	17
inameM	nmod	10
inameM	nsubj:pass	1
ue	aux	645
ue	acl:relcl	8
ue	acl	124
ue	nsubj	1
ue	obj	9
ue	root	32

ue	advcl	3
ue	compound	3
ue	conj	7
ue	obl	1
ue	aux:pass	1
ue	amod	1
wI	root	170
wI	conj	16
wI	advcl	33
wI	aux	158
wI	acl	31
wI	aux:pass	78
wI	obj	61
wI	acl:relcl	25
wI	nsubj	5
wI	amod	1
ez	root	12
ez	nsubj	6
ez	aux	1
ez	advcl	1
ez	conj	3
ez	obj	3
IM	compound	18
IM	acl:relcl	2
IM	root	34
IM	aux	51
IM	amod	10
IM	obl	10
IM	aux:pass	30
IM	obj	2
IM	cop	17
IM	conj	8
IM	acl	4
IM	advcl	3
IM	xcomp	1
IM	nmod	4
vAI	acl	1
vAI	advcl	1
gaI	aux:pass	451
gaI	aux	262
gaI	root	6

gaI	acl	1
unke	nmod	281
unke	obl	76
unke	conj	3
unke	root	3
unke	nsubj:pass	2
unke	nsubj	13
unke	obj	2
unke	iobj	1
iskI	nmod	106
iskI	obl	5
i	aux	37
i	advcl	16
i	amod	8
i	root	65
i	obj	14
i	obl	16
i	case	1
i	conj	6
i	mark	2
i	det	8
i	acl	34
i	aux:pass	29
i	nmod	14
i	acl:relcl	3
i	compound	1
i	nsubj	1
wIM	root	4
wIM	aux	4
wIM	obj	2
wIM	acl:relcl	1
wIM	aux:pass	1
vAyA	root	18
vAyA	obj	2
vAyA	acl	4
vAyA	conj	1
uI	aux	38
uI	root	167
uI	acl	120
uI	conj	11
uI	obj	35

uI	nsubj	3
uI	acl:relcl	20
uI	compound	2
uI	amod	1
uI	advcl	5
uI	nsubj:pass	1
uI	obl	1
yAz	root	1
yAz	conj	1
yAz	nsubj	2
yAz	obj	1
iske	nmod	115
iske	obl	427
iske	obj	1
iske	root	2
iske	nsubj	2
iske	conj	1
nA	nsubj	466
nA	acl:relcl	18
nA	compound	9
nA	obj	286
nA	root	178
nA	aux	28
nA	conj	47
nA	acl	20
nA	obl	4
nA	nmod	4
nA	advcl	21
nA	aux:pass	84
nA	xcomp	3
nA	nsubj:pass	1
nA	mark	1
nA	amod	1
isake	obl	41
isake	nmod	8
isake	nsubj	1
isI	det	126
isI	nmod	5
isI	obl	15
isI	obj	4
es	conj	1

es	compound	2
ie	root	82
ie	conj	16
ie	acl	69
ie	advcl	17
ie	obl	17
ie	nmod	34
ie	obj	26
ie	amod	16
ie	nsubj	4
ie	compound	4
ie	iobj	3
ie	advmod	2
ie	vocative	1
ie	acl:relcl	7
ie	aux	2
ie	aux:pass	1
jI	nmod	2
se	root	1
se	nmod	2
se	case	1
se	obl	3
se	iobj	1
se	obj	1
.	nmod	2
.	compound	20
.	punct	1
uske	nmod	103
uske	obl	64
uske	conj	5
uske	nsubj:pass	2
uske	obj	3
iye	root	6
iye	advcl	1
iye	nmod	1
iye	obl	1
iye	obj	1
unkI	nmod	245
unkI	obl	5
unkI	obj	1
unkI	nsubj	2

unkI	conj	1
unkI	nsubj:pass	1
in	det	373
in	obl	7
in	compound	1
n	nummod	2
n	xcomp	1
n	amod	2
n	compound	22
n	nsubj	5
n	obl	3
n	nmod	4
n	obj	1
Mge	aux	32
Mge	root	50
Mge	aux:pass	2
Mge	acl	5
Mge	obj	21
Mge	conj	10
Mge	acl:relcl	2
Mge	xcomp	1
Mge	advcl	1
kA	nmod	7
gA	aux	84
gA	root	82
gA	conj	21
gA	acl:relcl	10
gA	acl	15
gA	obj	42
gA	aux:pass	4
gA	nsubj	1
gA	advcl	1
gA	nmod	1
Are	obl	8
Are	det	1
Are	nmod	35
Are	nsubj:pass	1
Are	obj	1
inIM	det	8
inIM	obl	2
noM	obj	6



noM	acl	1
noM	nummod	310
noM	nmod	17
noM	iobj	4
noM	obl	7
noM	nsubj	24
noM	root	1
noM	xcomp	3
noM	advmod	1
ZiyoM	obl	8
ZiyoM	nmod	10
ZiyoM	obj	5
ZiyoM	iobj	3
ZiyoM	nsubj	3
uskA	nmod	55
uskA	nsubj	5
Iji	aux	3
Iji	root	1
kI	nmod	12
ko	iobj	5
ko	nsubj	15
ko	obj	2
us	obl	24
us	det	132
us	nmod	7
iegA	root	5
,	punct	638
eMge	root	134
eMge	obj	94
eMge	acl	29
eMge	aux	55
eMge	advcl	3
eMge	conj	17
eMge	acl:relcl	13
eMge	aux:pass	33
eMge	nsubj	1
eMge	xcomp	1
eMge	nsubj:pass	1
eMge	obl	1
egI	root	72
egI	aux	55

egI	aux:pass	111
egI	obj	66
egI	acl:relcl	7
egI	conj	9
egI	nsubj	4
egI	acl	11
egI	nmod	1
inmeM	nmod	46
inmeM	obl	28
inmeM	nsubj	1
yoM	obj	28
yoM	conj	10
yoM	nmod	35
yoM	obl	39
yoM	iobj	11
yoM	nsubj	8
yoM	case	1
egA	advcl	5
egA	root	97
egA	aux	82
egA	obj	62
egA	aux:pass	240
egA	acl	21
egA	conj	18
egA	compound	1
egA	nmod	1
egA	acl:relcl	7
la	compound	1
use	iobj	50
use	nsubj	31
use	obj	87
use	obl	2
BI	nmod	7
BI	det	12
BI	iobj	1
BI	obl	8
BI	nsubj	14
BI	obj	8
BI	nsubj:pass	1
ezge	aux	1
oz	obl	1

Ms	obl	4
Ms	nmod	10
Ms	conj	3
Ms	iobj	1
Ms	nsubj	2
Ms	compound	2
Ms	obj	1
ja	obl	5
ja	nmod	9
ja	iobj	2
ja	compound	5
ja	nsubj	2
ja	conj	1
ZA	root	24
ZA	advcl	2
ZA	obj	6
ZA	conj	2
ZA	acl	2
ZA	acl:relcl	1
ZA	compound	1
ZA	nsubj	1
ZA	amod	1
ineM	nsubj	4
ineM	iobj	7
ineM	obj	19
ue...	advcl	1
isase	obj	3
isase	obl	62
isase	nmod	1
inkl	nmod	22
inke	nmod	11
inke	obl	6
inke	nsubj:pass	1
o	obl	40
o	case	2
o	det	4
o	nsubj	2
o	nmod	38
o	compound	5
o	obj	6
o	amod	5

o	conj	5
o	nummod	1
o	root	2
o	aux	1
o	iobj	1
unoMne	nsubj	1198
unoMne	obl	1
xillI	obl	1
isa	det	53
isa	nmod	4
isa	obl	11
isa	amod	1
gI	aux	20
gI	obj	37
gI	conj	13
gI	acl:relcl	7
gI	root	73
gI	advcl	1
gI	acl	9
gI	nsubj	2
m	nsubj	2
m	nmod	2
m	obl	4
m	amod	1
m	compound	3
m	xcomp	1
ismeM	obl	104
ismeM	nmod	48
na	obl	1
un	det	61
un	obl	19
un	obj	1
un	nmod	3
inse	obj	1
inse	obl	3
maka	amod	1
ya	nsubj	1
ya	aux:pass	2
ZI	root	9
ZI	amod	41
ZI	obj	9

ZI	det	1
ZI	compound	1
ZI	acl	12
ZI	acl:relcl	3
ZI	conj	1
?	punct	9
vAwA	root	1
isakA	nmod	19
isakA	nsubj	2
sa	compound	2
Ze	amod	50
Ze	conj	8
Ze	acl	34
Ze	obl	11
Ze	root	14
Ze	compound	9
Ze	nmod	15
Ze	advmod	1
Ze	obj	11
Ze	acl:relcl	2
Ze	nsubj	3
Ze	punct	1
Ze	case	1
Ze	det	1
Ze	advcl	1
ArI	nmod	37
ZoM	obl	17
ZoM	obj	3
ZoM	nmod	20
ZoM	nummod	29
ZoM	nsubj	1
ZoM	conj	2
ZoM	root	1
ZoM	iobj	1
isakI	nmod	10
isakI	obl	3
ave	acl	1
uneM	nsubj	116
uneM	iobj	123
uneM	obj	122
uneM	nmod	1

uneM	nsubj:pass	6
uneM	conj	1
uneM	obl	1
OoM	obj	1
inkA	nmod	13
inkA	nsubj	2
usI	det	28
usI	obl	2
usI	nsubj	2
usI	nmod	4
gaIM	aux	8
gaIM	aux:pass	11
gaIM	root	1
yAM	root	1
yAM	obj	13
yAM	nsubj	5
ija	nsubj	1
nI	conj	16
nI	root	69
nI	obj	44
nI	aux:pass	26
nI	aux	5
nI	acl:relcl	4
nI	nsubj	5
nI	advcl	4
nI	acl	8
nI	obl	1
nI	amod	1
gaye	aux:pass	9
gaye	aux	2
Zwe	advcl	6
Zwe	acl	7
Zwe	root	1
Zwe	conj	2
Zwe	aux	1
UM	aux	19
UM	cop	9
UM	aux:pass	10
UM	root	2
UM	obj	1
UM	conj	1

uskI	nmod	90
uskI	obl	1
uskI	nsubj	1
unkA	nmod	77
unkA	nsubj	50
unkA	obl	1
Zkara	advcl	32
Zkara	advmod	3
Zkara	amod	1
usmeM	obl	20
iyAM	obj	43
iyAM	nsubj:pass	3
iyAM	nsubj	67
iyAM	compound	9
iyAM	conj	16
iyAM	root	1
iyAM	nmod	2
iyAM	obl	2
iyAM	iobj	1
uoM	obl	6
uoM	nmod	7
uoM	conj	1
uoM	nsubj	1
uoM	obj	1
ZAyA	obj	1
_JOIN_	punct	94
Zne	nmod	49
Zne	amod	9
Zne	advcl	36
Zne	obl	20
Zne	obj	4
Zne	root	4
Zne	iobj	1
Zne	conj	2
Zne	advmod	1
Zne	acl	1
inhMne	xcomp	1
inhMne	nsubj	10
ina	det	27
ina	obl	5
ina	cc	1

ina	nmod	1
usne	nsubj	103
Ijie	root	1
nevAll	amod	2
ZegA	root	5
ZegA	obj	6
ZegA	acl	6
ZegA	conj	2
ZegA	acl:relcl	1
333602	nmod	1
Ane	obl	1
Ane	advcl	3
Ane	nmod	3
Ane	amod	1
Ane	conj	1
gayI	aux	12
gayI	aux:pass	22
!	punct	2
uJe	iobj	13
uJe	obj	10
uJe	nsubj	17
uJe	nsubj:pass	1
ArA	nmod	14
ArA	nsubj	2
ArA	obl	1
ZZ	obj	9
ZZ	compound	8
ZZ	nmod	6
ZZ	obl	8
ZZ	root	1
ZZ	case	9
ZZ	det	1
ZZ	conj	3
ZZ	nsubj	11
ZnA	obj	10
ZnA	conj	2
ZnA	compound	1
ZnA	nsubj	1
riM	nmod	1
riM	conj	1
ZeM	nsubj	2



ZeM	obj	1
ZeM	root	1
ye	root	6
ye	nmod	5
ye	aux	3
ye	aux:pass	1
ye	acl	1
ye	obj	1
Mne	obl	4
Mne	nsubj	1
Mne	advcl	2
Mne	root	1
e.	compound	1
unse	obl	15
unse	iobj	10
unse	obj	13
unse	nsubj	3
unse	nmod	2
unse	conj	1
0,	nummod	6
0,	obj	1
0,	nmod	2
0,	case	3
0,	advmod	1
0,	obl	1
ZyA	root	3
ZyA	nsubj	1
ZyA	advcl	1
ZyA	acl	1
ZyA	conj	1
ZyA	amod	1
unmeM	obl	11
unmeM	nmod	10
unmeM	nsubj	1
Zye	obj	1
yegA	aux	1
yegA	aux:pass	3
erI	nmod	10
erI	nsubj	1
isane	nsubj	12
ZwI	acl	11

ZwI	advcl	1
ZwI	root	2
ZwI	acl:relcl	1
inoMne	nsubj	4
usse	obj	11
usse	nmod	12
usse	obl	16
usse	iobj	4
usse	nsubj	1
UMgI	root	2
UMgI	aux	2
UMgI	obj	2
UMgI	conj	1
erA	nmod	7
erA	nsubj	1
pawni	nmod	1
eMgIM	root	1
eMgIM	aux	2
eMgI	aux	12
eMgI	aux:pass	4
eMgI	obj	11
eMgI	acl:relcl	1
eMgI	acl	2
eMgI	root	17
a	nmod	4
vA	root	3
vA	conj	1
,000	compound	1
,000	punct	1
,000	nummod	3
,,	nummod	6
Me	acl	8
Me	amod	1
Me	conj	1
Me	nmod	5
Me	obl	4
Me	root	2
Me	compound	1
-	compound	1
-	nmod	1
aI	nmod	1

AnA	root	1
y	obj	1
unko	obj	3
unko	iobj	3
unko	nsubj	7
j	acl	1
ere	nmod	11
ere	obl	2
ere	acl:relcl	1
isae	nsubj	4
ZU	amod	2
--	punct	4
ane	nmod	1
unIM	det	8
unIM	nmod	1
vAne	obl	1
vAne	nmod	2
vAne	conj	1
yI	root	7
yI	amod	2
yI	acl:relcl	1
yI	aux	2
yI	acl	1
yI	obj	1
ZwA	conj	2
ZwA	root	5
ZwA	obj	1
ZwA	acl:relcl	1
ZwA	acl	1
ZwA	advcl	1
ZnI	nsubj	1
MyA	conj	1
MyA	root	1
MnA	root	1
vIM	amod	1
isko	obj	8
isko	obl	1
UMgA	root	1
UMgA	conj	1
UMgA	advcl	1
UMgA	obj	2

ZegI	obj	2
ZegI	acl	1
ZegI	root	1
ZAnA	conj	1
me	amod	1
inakI	nmod	5
inakI	obl	1
zA	acl:relcl	1
jAnabUJaara	obl	1
musli	amod	1
r	conj	1
r	compound	1
r	amod	1
rAMj	obl	1
1	nmod	1
	nmod	1
Ah	nmod	1
U	obl	1
,480	nummod	1
ZeMge	obj	1
Put	nmod	1
hiyoM	nmod	1
inko	nsubj	1
inko	obj	1
nevAle	amod	1
MgI	root	10
MgI	obj	1
MgI	aux	3
hAre	obl	1
vAnA	nsubj	1
vAnA	obj	2
inake	nmod	9
inake	obl	7
EsI	det	1
MsoM	obl	1
z	cop	2
z	aux:pass	1
z	amod	1
rrsa	compound	1
hIM	det	1
AyA	acl	1

AyA	conj	1
iy	root	2
iy	nmod	1
iy	acl	1
iy	aux:pass	1
iy	amod	1
uJase	obj	1
Uz	aux	1
iM	nsubj	1
mI	amod	2
)	punct	2
ZiyAz	nsubj	1
akara	advcl	1
Zie	advcl	1
vAwI	root	1
ej	compound	2
ej	nmod	1
ej	obl	1
ZIM	obj	1
MA	root	1
MvAe	root	1
MvAI	root	1
inase	nsubj	1
inase	obl	5
MI	root	2
MI	amod	1
MI	acl	1
uIM	advcl	1
uIM	root	2
eg	obj	1
k	mark	1
329	compound	1
bord	nmod	1
wIn	nummod	2
inakA	nmod	3
inakA	nsubj	2
aBI	det	2
prwbxXa	obj	1
OY	compound	3
OY	obj	1
OY	nmod	1

isak	iobj	1
isak	obj	2
nane	nmod	1
vAkara	advcl	2
MgeM	aux	1
MgeM	root	1
ioM	nmod	1
ioM	conj	1
S	compound	1
yeMge	aux:pass	1
yeMgI	aux	1
ZZiyoM	obj	2
ZZiyoM	obl	1
,898	nummod	1
MnI	conj	1
uJa	obl	4
va	compound	1
yIM	obj	1
vAeMge	acl	1
d	nsubj	1
N	nmod	1
nirmiwa	amod	1
unoneM	nsubj	1
u	nmod	1
ww	amod	1
iw	advmod	4
egeM	aux	1
egeM	root	1
egeM	acl:relcl	1
...	punct	1
uMgI	obj	1
gIM	root	1
isne	nsubj	3
zI	root	1
zvo	obl	1
inak	iobj	1
meM	obl	1
aX	compound	1
XaX	compound	1
usko	obj	1
umane	nsubj	1

jAegA	aux	1
mAwra	advmod	1
ze	nsubj	1
Aw	obl	1
EM	amod	1
av	root	1
haa	nsubj	1
jZa	nmod	1
iMyoM	obj	1
iMyoM	iobj	1
ejZ	compound	1
kra	advcl	1

Table 6: Marker-UD relation for Provided Hindi Data

### 3.3 N-gram of tags

Include statistics about the frequency of n-gram of tags. Take  $n$  in the range [2,4].

#### 3.3.1 2-grams, UD

<i>tags</i>	<i>count</i>
r6 lwg__psp	13184
lwg__psp nmod__adj	9513
lwg__psp lwg__psp	7827
k7 lwg__psp	7713
lwg__psp pof	6378
k1 lwg__psp	6117
main lwg__vaux	5621
ccof lwg__vaux	5270
lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
lwg__vaux_cont rsym	4122
lwg__psp r6	3936
lwg__psp k2	3931
k7t lwg__psp	3894
k7p lwg__psp	3781
pof main	3597
rsym k1	3573
k2 lwg__psp	3322

pof ccof	3311
rsym nmod__adj	3275
main rsym	3152
nmod__adj k1	3109
rsym pof__cn	2885
pof__cn k1	2881
lwg__psp main	2805
main k2	2764
lwg__psp k7	2587
nmod__adj r6	2548
lwg__psp ccof	2538
pof__cn r6	2493
nmod__adj k2	2406
ccof lwg__psp	2294
pof__cn ccof	2260
nmod__adj nmod__adj	2258
nmod__adj pof__cn	2198
nmod__adj k7	2157
r6-k2 lwg__psp	2057
k1 main	1968
rt lwg__psp	1882
k1 nmod__adj	1874
lwg__psp nmod	1868
nmod__adj k7t	1754
k4 lwg__psp	1733
rsym r6	1708
lwg__psp lwg__rp	1705
nmod pof__cn	1661
k2 pof	1583
lwg__psp k7t	1428
k1 ccof	1373
rsym ccof	1323
k2 ccof	1282
lwg__neg ccof	1218
nmod lwg__psp	1157
rsym main	1112
k5 lwg__psp	1102
k1 r6	1089
k2 nmod__adj	1070
lwg__psp k7p	1062
k1s main	1047



pof__cn k2	1036
k2 k1	998
nmod__adj k7p	956
nmod__adj ccof	953
lwg__psp mod	952
k2 main	943
k1s ccof	941
lwg__psp vmod	910
pof__cn rsym	909
rsym k7t	887
ccof r6	871
ccof k1	862
pof__cn k7	817
nmod__adj nmod	804
vmod lwg__psp	803
k1 pof	802
k2 r6	800
k1 pof__cn	786
k1 k1s	782
pof vmod	780
lwg__rp nmod__adj	764
rh lwg__psp	759
rsym k7	748
lwg__psp nmod__klinv	737
mod nmod__adj	732
vmod lwg__vaux	722
lwg__vaux_cont lwg__vaux_cont	709
k2 pof__cn	694
nmod__adj pof	690
k7a lwg__psp	678
lwg__psp k1s	677
lwg__psp r6-k2	666
rsym k7p	646
pof lwg__neg	645
lwg__psp k4	640
ccof k2	631
ras-k1 lwg__psp	620
pof__cn nmod__adj	618
pof__cn k7p	608
k1 lwg__rp	599
nmod__relc lwg__vaux	598

ccof ccof	589
lwg__psp adv	579
ccof main	579
lwg__vaux k2	576
k2 vmod	565
jjmod lwg__psp	555
lwg__psp rt	552
ccof nmod	538
nmod ccof	537
lwg__rp pof	514
pof__cn k7t	507
pof__cn nmod	506
adv lwg__psp	506
main rs	497
r6 nmod__adj	487
pof r6	484
k3 lwg__psp	461
nmod__adj r6-k2	458
lwg__vaux main	453
nmod nmod__adj	453
k1 k2	450
pof rt	442
nmod__adj k1s	442
rsym k2	436
main k1	422
main nmod__adj	420
k7t nmod__adj	420
k1 k7t	416
lwg__vaux lwg__psp	415
lwg__neg main	413
r6-k1 lwg__psp	412
nmod__adj adv	411
nmod__klinv lwg__vaux	409
r6 ccof	403
r6 k2	402
k1 lwg__neg	401
ccof k7	397
pof__cn k4	384
nmod__adj rsym	377
nmod__adj mod	375
lwg__rp main	348

pof nmod__relc	342
nmod__adj k4	337
lwg__rp k1	329
lwg__rp ccof	329
rsym vmod	322
k7t k1	319
k1 k7	317
vmod nmod__adj	316
rsym nmod	312
rsym sent-adv	300
k2 k7	298
lwg__vaux ccof	296
k2 lwg__rp	294
rs rsym	293
k1 adv	292
r6 k1	291
pof r6-k2	289
rsym rh	281
k1 k7p	280
jjmod nmod	279
r6 pof__cn	277
ccof nmod__adj	273
lwg__psp k5	272
rs k1	271
lwg__rp r6	269
k2 lwg__neg	269
lwg__vaux k1	266
mod k1	259
k2 k7t	258
rd lwg__psp	254
lwg__psp rsym	253
nmod__relc rsym	249
k4a lwg__psp	248
lwg__psp nmod__k2inv	246
nmod__adj jjmod	242
nmod rsym	241
k7t r6	241
nmod__adj rt	240
rsym rs	239
rsym k7a	239
lwg__vaux nmod__adj	237

adv pof	237
rs nmod__adj	236
r6 k7	235
k2 rt	234
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rh nmod	4
nmod__emph lwg__rp	4
ccof nmod__k1inv	4
k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4
r6-k1 mod	4



lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4
k7 adv	4
lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux_cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4
ccof rsp	4
rsym k2u	4
nmod__emph ccof	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4
ccof k1u	4

k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__k1inv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__k1inv k3	3
ccof mod__wq	3
pof__redup k7p	3
k2g vmod	3
main nmod__k1inv	3
fragof k5	3
rbmod__relc adv	3
ras-k2 nmod__adj	3
nmod__k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3
nmod__adj pof__redup	3
ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod__relc	3
ras-k2 pof__cn	3
k2s r6-k2	3
k7a pof__cn	3
r6 ras-k2	3
pof__cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3
vmod rs	3

rh vmod	3
lwg__rp ras-k2	3
nmod__adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof__cn adv	3
k1u rsym	3
rt nmod__relc	3
rs k4a	3
rsym k1u	3
lwg__vaux.cont lwg__rp	3
k4a lwg__rp	3
lwg__psp k7u	3
adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3
vmod k3	3
k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux.cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3
k7t k2s	3

k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__klinv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3
mod k5	3
pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux.cont r6-k2	3
nmod__adj k7u	3
k4 k3	3
k5 vmod	3
pof__cn ras-pof	2
rd k1	2
pof__redup nmod__relc	2
nmod__relc lwg__neg	2
ccof jjmod__intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod__emph lwg__psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg__psp	2
mod k2p	2
k7 r6-k2	2

r6-k2 nmod	2
nmod__emph k4a	2
k2g pof	2
pof__redup vmod	2
nmod__k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2
k7 ras-k1	2
psp__cl pof	2
nmod__k2inv lwg__rp	2
k7t rsp	2
lwg__vaux_cont mod	2
r6-k2 lwg__rp	2
rsym ras-k7	2
rt lwg__neg	2
nmod__k1inv k1s	2
nmod__relc ras-k1	2
psp__cl k7	2
lwg__vaux_cont adv	2
nmod__adj nmod__k1inv	2
nmod__relc mod	2
k4 jjmod__intf	2
adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof__redup r6-k2	2
pof k4a	2
nmod__adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof__redup k4	2
ras-k4 pof__cn	2
rd lwg__neg	2

lwg_neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod_wq ccof	2
k5 nmod_k1inv	2
nmod_k1inv rt	2
rt rt	2
mod_wq rh	2
mod_wq r6-k2	2
rsym k7pu	2
k2p nmod_k2inv	2
jjmod_intf vmod	2
k1u ccof	2
adv jjmod	2
nmod_k1inv jjmod	2
nmod_k1inv k4a	2
ccof r6v	2
r6v lwg_rp	2
nmod_emph vmod	2
adv rs	2
pof_cn ras-k7p	2
ras-k7p lwg_psp	2
fragof rt	2
k2p rh	2
k7a lwg_vaux	2
k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof_cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg_rp nmod_k2inv	2
fragof k7p	2

pof mod	2
pof_redup rt	2
ccof rbmod_relc	2
r6-k2 k7t	2
nmod_k2inv k7t	2
nmod_adj k7tu	2
k4a main	2
k7a nmod_adj	2
k7 nmod_k1inv	2
fragof k3	2
main jjmod_intf	2
jjmod k7	2
rs rd	2
k4a nmod	2
lwg_neg pof_cn	2
k4 k5	2
nmod_relc k1s	2
nmod_relc lwg_psp	2
mod_wq k7p	2
pof mod_wq	2
ccof ras-k7p	2
k1u nmod_adj	2
pof k2p	2
nmod_k1inv k1u	2
ras-neg adv	2
k2g rsym	2
lwg_rp pof_redup	2
rd pof	2
nmod_adj main	2
k2s nmod	2
sent-adv rh	2
pof_cn rad	2
lwg_neg r6-k1	2
k1 k2s	2
main lwg_psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg_psp k4u	2
k4u lwg_psp	2

k1s jjmod	2
nmod__k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg__psp	2
ras-neg k2p	2
nmod__k2inv r6-k2	2
nmod__k1inv r6-k1	2
rh ras-k1	2
r6 nmod__k1inv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2
enm pof__cn	2
lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1
k4 lwg__neg	1
k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__k1inv lwg__neg	1
sent-adv k2p	1
jjmod k2	1
k2u k7	1



mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1
psp__cl mod	1
k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg__psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod__adj	1
rd k2	1
nmod__k2inv rh	1
k2 r6v	1
pof__redup adv	1
r6-k1 lwg__rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod__adj	1
lwg__vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod__wq	1
k4a r6-k1	1

k4a rsym	1
ras-neg pof	1
k2u nmod_adj	1
k7a r6-k2	1
k7t rs	1
pof_cn k7pu	1
k4a k1u	1
k1u lwg_rp	1
pof_cn r6v	1
rd lwg_rp	1
adv fragof	1
mod rs	1
jjmod k7t	1
rh r6v	1
rs jjmod_intf	1
rh mod_wq	1
vmod k7a	1
mod_wq r6-k1	1
lwg_neg k1s	1
k3 r6-k2	1
nmod_relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym -	1
- nmod_adj	1
rs nmod_emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod_emph pof	1
k5 lwg_rp	1
pof_redup mod	1
rh nmod_k1inv	1
rad nmod_adj	1
fragof lwg_psp	1
main mod_wq	1
rt mod	1
mod r6v	1
k7 rh	1

r6v rsym	1
lwg_neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod_k1inv	1
nmod_relc sent-adv	1
rd nmod_k1inv	1
r6v pof_cn	1
fragof k7a	1
lwg_psp k3u	1
k3u lwg_psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg_rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod_k2inv	1
nmod nmod_relc	1
pof jk1	1
rh jjmod_intf	1
k7p k1u	1
k2 k7tu	1
psp_cl k2	1
k4a rh	1
pof_cn ras_k7	1
ras_k7 lwg_psp	1
ccof ras_k7	1
ras_k7 ccof	1
rsp lwg_rp	1
k7a k7p	1
rh lwg_neg	1
pof k1u	1
rsym rbmod	1

nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux.cont k4a	1
nmod__emph mod	1
pk1 k2	1
jjmod k2g	1
r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__k1inv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__k1inv	1
rsym ras-k4	1
mod__wq vmod	1
vmod k2g	1
lwg__vaux.cont rbmod__rele	1
rbmod__rele nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__rele	1
jjmod__rele lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1
mod__wq rsym	1

k4 k2p	1
nmod__relc nmod	1
pof pof__redup	1
nmod__relc k5	1
nmod ras-k2	1
k1u jjmod__intf	1
pof k3	1
ccof k7u	1
k7u ccof	1
mod k2g	1
lwg__vaux.cont k5	1
k2 k2u	1
nmod__adj mk1	1
mk1 lwg__psp	1
adv ras-neg	1
r6 main	1
rd jjmod__intf	1
nmod__k1inv k2u	1
lwg__vaux.cont k3	1
ras-k2 k2	1
rd adv	1
ras-k2 main	1
rd lwg__vaux	1
r6v k2	1
r6-k2 k5	1
nmod__k2inv k3	1
k3 rt	1
rsym lwg__vaux	1
r6-k1 adv	1
r6-k2 sent-adv	1
nmod__k1inv ras-k1	1
lwg__psp ras-k4	1
pof k2g	1
k4 ras-k2	1
k1s nmod	1
pof__redup k1s	1
nmod r6v	1
k4 nmod__k1inv	1
nmod__adj pk1	1
jk1 k2	1
rs nmod__k1inv	1

rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1
lwg__rp sent-adv	1
rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1
nmod__k2inv mod	1
k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__relc	1
r6-k1 jjmod__intf	1
lwg__vaux_cont jjmod	1
rbmod__relc pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1
rsym ras-k7p	1

k7a r6	1
nmod__klinv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod__klinv	1
nmod__klinv main	1
lwg__psp ras-k4a	1
ras-k4a lwg__psp	1
r6-k1 ras-k2	1
k2 nmod__emph	1
sent-adv vmod	1
rt vmod	1
pof__redup jjmod	1
nmod__adj ras-r6-k2	1
nmod__adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1
pk1 pof__cn	1
pof__redup k2s	1
lwg__vaux_cont fragof	1
r6 rs	1
fragof nmod__pofinv	1
lwg__vaux_cont ras-neg	1
k3 lwg__neg	1
lwg__psp undef	1
undef pof__cn	1
pof__redup nmod__k2inv	1
nmod rd	1
k1u pof__cn	1
ras-k1 nmod__klinv	1
k3 k2p	1
pof__cn ras-k7	1

k4a r6-k2	1
mod k2u	1
k2u lwg__rp	1
nmod__adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod__relc	1
k4 rs	1
nmod nmod__k2inv	1
pof fragof	1
k3 nmod	1
lwg__vaux_cont rt	1
rt k7	1
r6 lwg__neg	1
fragof rh	1
main pk1	1
pk1 nmod__adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg__rp	1
rsp k7p	1
rsp r6	1
jjmod nmod__klinv	1
nmod__adj ras-k4	1
lwg__vaux_cont k4	1
nmod__pofinv lwg__psp	1
k7t nmod__emph	1

Table 7: 2-Grams (UD) and their frequencies

### 3.3.2 3-grams, UD

<i>tags</i>	<i>count</i>
r6 lwg__psp	13184
lwg__psp nmod__adj	9513
lwg__psp lwg__psp	7827
k7 lwg__psp	7713
lwg__psp pof	6378
k1 lwg__psp	6117
main lwg__vaux	5621
ccof lwg__vaux	5270



lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
lwg__vaux_cont rsym	4122
lwg__psp r6	3936
lwg__psp k2	3931
k7t lwg__psp	3894
k7p lwg__psp	3781
pof main	3597
rsym k1	3573
k2 lwg__psp	3322
pof ccof	3311
rsym nmod__adj	3275
main rsym	3152
nmod__adj k1	3109
rsym pof__cn	2885
pof__cn k1	2881
lwg__psp main	2805
main k2	2764
lwg__psp k7	2587
nmod__adj r6	2548
lwg__psp ccof	2538
pof__cn r6	2493
nmod__adj k2	2406
ccof lwg__psp	2294
pof__cn ccof	2260
nmod__adj nmod__adj	2258
nmod__adj pof__cn	2198
nmod__adj k7	2157
r6-k2 lwg__psp	2057
k1 main	1968
rt lwg__psp	1882
k1 nmod__adj	1874
lwg__psp nmod	1868
nmod__adj k7t	1754
k4 lwg__psp	1733
rsym r6	1708
lwg__psp lwg__rp	1705

nmod pof_cn	1661
k2 pof	1583
lwg_psp k7t	1428
k1 ccof	1373
rsym ccof	1323
k2 ccof	1282
lwg_neg ccof	1218
nmod lwg_psp	1157
rsym main	1112
k5 lwg_psp	1102
k1 r6	1089
k2 nmod_adj	1070
lwg_psp k7p	1062
k1s main	1047
pof_cn k2	1036
k2 k1	998
nmod_adj k7p	956
nmod_adj ccof	953
lwg_psp mod	952
k2 main	943
k1s ccof	941
lwg_psp vmod	910
pof_cn rsym	909
rsym k7t	887
ccof r6	871
ccof k1	862
pof_cn k7	817
nmod_adj nmod	804
vmod lwg_psp	803
k1 pof	802
k2 r6	800
k1 pof_cn	786
k1 k1s	782
pof vmod	780
lwg_rp nmod_adj	764
rh lwg_psp	759
rsym k7	748
lwg_psp nmod_klinv	737
mod nmod_adj	732
vmod lwg_vaux	722
lwg_vaux_cont lwg_vaux_cont	709

k2 pof__cn	694
nmod__adj pof	690
k7a lwg__psp	678
lwg__psp k1s	677
lwg__psp r6-k2	666
rsym k7p	646
pof lwg__neg	645
lwg__psp k4	640
ccof k2	631
ras-k1 lwg__psp	620
pof__cn nmod__adj	618
pof__cn k7p	608
k1 lwg__rp	599
nmod__relc lwg__vaux	598
ccof ccof	589
lwg__psp adv	579
ccof main	579
lwg__vaux k2	576
k2 vmod	565
jjmod lwg__psp	555
lwg__psp rt	552
ccof nmod	538
nmod ccof	537
lwg__rp pof	514
pof__cn k7t	507
pof__cn nmod	506
adv lwg__psp	506
main rs	497
r6 nmod__adj	487
pof r6	484
k3 lwg__psp	461
nmod__adj r6-k2	458
lwg__vaux main	453
nmod nmod__adj	453
k1 k2	450
pof rt	442
nmod__adj k1s	442
rsym k2	436
main k1	422
main nmod__adj	420
k7t nmod__adj	420

k1 k7t	416
lwg__vaux lwg__psp	415
lwg__neg main	413
r6-k1 lwg__psp	412
nmod__adj adv	411
nmod__k1inv lwg__vaux	409
r6 ccof	403
r6 k2	402
k1 lwg__neg	401
ccof k7	397
pof__cn k4	384
nmod__adj rsym	377
nmod__adj mod	375
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rd main	5
fragof r6-k2	5
lwg_vaux jjmod_intf	5
pof rd	5
rd nmod_adj	5



k2s pof__cn	5
k3 pof__cn	5
r6-k1 rsym	5
adv k5	5
k7t nmod__k2inv	5
k4 k7p	5
mod rsp	5
sent-adv k2	5
k4a pof__cn	5
k4 lwg__rp	5
k3 mod	5
k2 ras-neg	5
nmod r6-k1	5
nmod__emph nmod__adj	5
fragof k4	5
lwg__rp rd	5
lwg__rp rh	5
k2s rt	4
pof__redup lwg__rp	4
k2p lwg__rp	4
ccof ras-neg	4
ras-neg ccof	4
k2p adv	4
k1s adv	4
nmod__relc pof__cn	4
rt pof	4
lwg__vaux adv	4
jjmod lwg__rp	4
adv lwg__vaux	4
k7t k3	4
lwg__psp rbmod__relc	4
rsym nmod__emph	4
k7p r6-k1	4
ras-neg vmod	4
lwg__vaux.cont k2s	4
rs r6-k2	4
lwg__vaux k7a	4
rt nmod	4
rh nmod	4
nmod__emph lwg__rp	4
ccof nmod__k1inv	4

k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4
r6-k1 mod	4
lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4
k7 adv	4
lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux.cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4
ccof rsp	4

rsym k2u	4
nmod__emph ccof	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4
ccof k1u	4
k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__k1inv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__k1inv k3	3
ccof mod__wq	3
pof__redup k7p	3
k2g vmod	3
main nmod__k1inv	3
fragof k5	3
rbmod__relc adv	3
ras-k2 nmod__adj	3
nmod__k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3
nmod__adj pof__redup	3

ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod__relc	3
ras-k2 pof__cn	3
k2s r6-k2	3
k7a pof__cn	3
r6 ras-k2	3
pof__cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3
vmod rs	3
rh vmod	3
lwg__rp ras-k2	3
nmod__adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof__cn adv	3
k1u rsym	3
rt nmod__relc	3
rs k4a	3
rsym k1u	3
lwg__vaux_cont lwg__rp	3
k4a lwg__rp	3
lwg__psp k7u	3
adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3
vmod k3	3

k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux_cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3
k7t k2s	3
k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__k1inv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3
mod k5	3
pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux_cont r6-k2	3
nmod__adj k7u	3
k4 k3	3
k5 vmod	3

pof_cn ras-pof	2
rd k1	2
pof_redup nmod_relc	2
nmod_relc lwg_neg	2
ccof jjmod_intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod_emph lwg_psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg_psp	2
mod k2p	2
k7 r6-k2	2
r6-k2 nmod	2
nmod_emph k4a	2
k2g pof	2
pof_redup vmod	2
nmod_k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2
k7 ras-k1	2
psp_cl pof	2
nmod_k2inv lwg_rp	2
k7t rsp	2
lwg_vaux_cont mod	2
r6-k2 lwg_rp	2
rsym ras-k7	2
rt lwg_neg	2
nmod_k1inv k1s	2
nmod_relc ras-k1	2
psp_cl k7	2
lwg_vaux_cont adv	2
nmod_adj nmod_k1inv	2
nmod_relc mod	2
k4 jjmod_intf	2

adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof_redup r6-k2	2
pof k4a	2
nmod_adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof_redup k4	2
ras-k4 pof_cn	2
rd lwg_neg	2
lwg_neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod_wq ccof	2
k5 nmod_k1inv	2
nmod_k1inv rt	2
rt rt	2
mod_wq rh	2
mod_wq r6-k2	2
rsym k7pu	2
k2p nmod_k2inv	2
jjmod_intf vmod	2
k1u ccof	2
adv jjmod	2
nmod_k1inv jjmod	2
nmod_k1inv k4a	2
ccof r6v	2
r6v lwg_rp	2
nmod_emph vmod	2
adv rs	2
pof_cn ras-k7p	2
ras-k7p lwg_psp	2
fragof rt	2
k2p rh	2
k7a lwg_vaux	2

k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof__cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg__rp nmod__k2inv	2
fragof k7p	2
pof mod	2
pof__redup rt	2
ccof rbmod__relc	2
r6-k2 k7t	2
nmod__k2inv k7t	2
nmod__adj k7tu	2
k4a main	2
k7a nmod__adj	2
k7 nmod__k1inv	2
fragof k3	2
main jjmod__intf	2
jjmod k7	2
rs rd	2
k4a nmod	2
lwg__neg pof__cn	2
k4 k5	2
nmod__relc k1s	2
nmod__relc lwg__psp	2
mod__wq k7p	2
pof mod__wq	2
ccof ras-k7p	2
k1u nmod__adj	2
pof k2p	2
nmod__k1inv k1u	2
ras-neg adv	2
k2g rsym	2
lwg__rp pof__redup	2



rd pof	2
nmod__adj main	2
k2s nmod	2
sent-adv rh	2
pof__cn rad	2
lwg__neg r6-k1	2
k1 k2s	2
main lwg__psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg__psp k4u	2
k4u lwg__psp	2
k1s jjmod	2
nmod__k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg__psp	2
ras-neg k2p	2
nmod__k2inv r6-k2	2
nmod__k1inv r6-k1	2
rh ras-k1	2
r6 nmod__k1inv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2
enm pof__cn	2
lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1
k4 lwg__neg	1

k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__k1inv lwg__neg	1
sent-adv k2p	1
jjmod k2	1
k2u k7	1
mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1
psp__cl mod	1
k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg__psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod__adj	1
rd k2	1
nmod__k2inv rh	1

k2 r6v	1
pof__redup adv	1
r6-k1 lwg__rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod__adj	1
lwg__vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod__wq	1
k4a r6-k1	1
k4a rsym	1
ras-neg pof	1
k2u nmod__adj	1
k7a r6-k2	1
k7t rs	1
pof__cn k7pu	1
k4a k1u	1
k1u lwg__rp	1
pof__cn r6v	1
rd lwg__rp	1
adv fragof	1
mod rs	1
jjmod k7t	1
rh r6v	1
rs jjmod__intf	1
rh mod__wq	1
vmod k7a	1
mod__wq r6-k1	1
lwg__neg k1s	1
k3 r6-k2	1
nmod__relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym _	1
_ nmod__adj	1

rs nmod__emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod__emph pof	1
k5 lwg__rp	1
pof__redup mod	1
rh nmod__k1inv	1
rad nmod__adj	1
fragof lwg__psp	1
main mod__wq	1
rt mod	1
mod r6v	1
k7 rh	1
r6v rsym	1
lwg__neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod__k1inv	1
nmod__relc sent-adv	1
rd nmod__k1inv	1
r6v pof__cn	1
fragof k7a	1
lwg__psp k3u	1
k3u lwg__psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg__rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod__k2inv	1
nmod nmod__relc	1
pof jk1	1

rh jjmod__intf	1
k7p k1u	1
k2 k7tu	1
psp__cl k2	1
k4a rh	1
pof__cn ras__k7	1
ras__k7 lwg__psp	1
ccof ras__k7	1
ras__k7 ccof	1
rsp lwg__rp	1
k7a k7p	1
rh lwg__neg	1
pof k1u	1
rsym rbmod	1
nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux.cont k4a	1
nmod__emph mod	1
pk1 k2	1
jjmod k2g	1
r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__klinv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__klinv	1
rsym ras-k4	1
mod__wq vmod	1

vmod k2g	1
lwg__vaux_cont rbmod__relc	1
rbmod__relc nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__relc	1
jjmod__relc lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1
mod__wq rsym	1
k4 k2p	1
nmod__relc nmod	1
pof pof__redup	1
nmod__relc k5	1
nmod ras-k2	1
k1u jjmod__intf	1
pof k3	1
ccof k7u	1
k7u ccof	1
mod k2g	1
lwg__vaux_cont k5	1
k2 k2u	1
nmod__adj mk1	1
mk1 lwg__psp	1
adv ras-neg	1
r6 main	1
rd jjmod__intf	1
nmod__k1inv k2u	1
lwg__vaux_cont k3	1
ras-k2 k2	1
rd adv	1
ras-k2 main	1
rd lwg__vaux	1
r6v k2	1
r6-k2 k5	1
nmod__k2inv k3	1
k3 rt	1

rsym lwg__vaux	1
r6-k1 adv	1
r6-k2 sent-adv	1
nmod__k1inv ras-k1	1
lwg__psp ras-k4	1
pof k2g	1
k4 ras-k2	1
k1s nmod	1
pof__redup k1s	1
nmod r6v	1
k4 nmod__k1inv	1
nmod__adj pk1	1
jk1 k2	1
rs nmod__k1inv	1
rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1
lwg__rp sent-adv	1
rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1
nmod__k2inv mod	1

k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__rele	1
r6-k1 jjmod__intf	1
lwg__vaux.cont jjmod	1
rbmod__rele pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1
rsym ras-k7p	1
k7a r6	1
nmod__k1inv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod__k1inv	1
nmod__k1inv main	1
lwg__psp ras-k4a	1
ras-k4a lwg__psp	1
r6-k1 ras-k2	1
k2 nmod__emph	1
sent-adv vmod	1
rt vmod	1
pof__redup jjmod	1
nmod__adj ras-r6-k2	1
nmod__adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1
pk1 pof__cn	1



pof_redup k2s	1
lwg_vaux_cont fragof	1
r6 rs	1
fragof nmod_pofinv	1
lwg_vaux_cont ras-neg	1
k3 lwg_neg	1
lwg_psp undef	1
undef pof_cn	1
pof_redup nmod_k2inv	1
nmod rd	1
k1u pof_cn	1
ras-k1 nmod_klinv	1
k3 k2p	1
pof_cn ras-k7	1
k4a r6-k2	1
mod k2u	1
k2u lwg_rp	1
nmod_adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod_relc	1
k4 rs	1
nmod nmod_k2inv	1
pof fragof	1
k3 nmod	1
lwg_vaux_cont rt	1
rt k7	1
r6 lwg_neg	1
fragof rh	1
main pk1	1
pk1 nmod_adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg_rp	1
rsp k7p	1
rsp r6	1
jjmod nmod_klinv	1
nmod_adj ras-k4	1
lwg_vaux_cont k4	1
nmod_pofinv lwg_psp	1

k7t nmod\_\_emph

1

Table 8: 3-Grams (UD) and their frequencies

**3.3.3 4-grams, UD**

<i>tags</i>	<i>count</i>
r6 lwg__psp	13184
lwg__psp nmod__adj	9513
lwg__psp lwg__psp	7827
k7 lwg__psp	7713
lwg__psp pof	6378
k1 lwg__psp	6117
main lwg__vaux	5621
ccof lwg__vaux	5270
lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
lwg__vaux_cont rsym	4122
lwg__psp r6	3936
lwg__psp k2	3931
k7t lwg__psp	3894
k7p lwg__psp	3781
pof main	3597
rsym k1	3573
k2 lwg__psp	3322
pof ccof	3311
rsym nmod__adj	3275
main rsym	3152
nmod__adj k1	3109
rsym pof__cn	2885
pof__cn k1	2881
lwg__psp main	2805
main k2	2764
lwg__psp k7	2587
nmod__adj r6	2548
lwg__psp ccof	2538
pof__cn r6	2493
nmod__adj k2	2406

ccof lwg--psp	2294
pof__cn ccof	2260
nmod__adj nmod__adj	2258
nmod__adj pof__cn	2198
nmod__adj k7	2157
r6-k2 lwg--psp	2057
k1 main	1968
rt lwg--psp	1882
k1 nmod__adj	1874
lwg--psp nmod	1868
nmod__adj k7t	1754
k4 lwg--psp	1733
rsym r6	1708
lwg--psp lwg--rp	1705
nmod pof__cn	1661
k2 pof	1583
lwg--psp k7t	1428
k1 ccof	1373
rsym ccof	1323
k2 ccof	1282
lwg--neg ccof	1218
nmod lwg--psp	1157
rsym main	1112
k5 lwg--psp	1102
k1 r6	1089
k2 nmod__adj	1070
lwg--psp k7p	1062
k1s main	1047
pof__cn k2	1036
k2 k1	998
nmod__adj k7p	956
nmod__adj ccof	953
lwg--psp mod	952
k2 main	943
k1s ccof	941
lwg--psp vmod	910
pof__cn rsym	909
rsym k7t	887
ccof r6	871
ccof k1	862
pof__cn k7	817

nmod__adj nmod	804
vmod lwg__psp	803
k1 pof	802
k2 r6	800
k1 pof__cn	786
k1 k1s	782
pof vmod	780
lwg__rp nmod__adj	764
rh lwg__psp	759
rsym k7	748
lwg__psp nmod__klinv	737
mod nmod__adj	732
vmod lwg__vaux	722
lwg__vaux_cont lwg__vaux_cont	709
k2 pof__cn	694
nmod__adj pof	690
k7a lwg__psp	678
lwg__psp k1s	677
lwg__psp r6-k2	666
rsym k7p	646
pof lwg__neg	645
lwg__psp k4	640
ccof k2	631
ras-k1 lwg__psp	620
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nmod rsp	6
vmod rd	6
pof__cn k2g	6
nmod__emph pof__cn	6
k7 lwg__neg	6
ras-pof lwg__psp	5
pof__redup nmod	5
k4 main	5
nmod rs	5
k7 rt	5
k2 sent-adv	5
k7t ras-k1	5
pof__redup pof__cn	5
nmod__emph k2	5
main k3	5
fragof main	5
sent-adv k4	5
mod__wq nmod__adj	5
fragof jjmod	5
fragof adv	5
r6-k1 pof__cn	5
k1 ras-k2	5
rt k7p	5
vmod nmod__k2inv	5
vmod rh	5
adv k4	5
adv r6-k1	5
rsym lwg__neg	5
rt lwg__rp	5
rd r6	5
ras-neg lwg__neg	5
nmod__k2inv k7a	5
k7t rh	5
rsym jjmod__intf	5
k2g ccof	5
nmod__adj k2g	5

rs jjmod	5
rs mod__wq	5
mod__wq r6	5
k7pu lwg__psp	5
k5 k2	5
vmod jjmod__intf	5
k2s adv	5
lwg__rp k4a	5
pof__redup k7t	5
rd main	5
fragof r6-k2	5
lwg__vaux jjmod__intf	5
pof rd	5
rd nmod__adj	5
k2s pof__cn	5
k3 pof__cn	5
r6-k1 rsym	5
adv k5	5
k7t nmod__k2inv	5
k4 k7p	5
mod rsp	5
sent-adv k2	5
k4a pof__cn	5
k4 lwg__rp	5
k3 mod	5
k2 ras-neg	5
nmod r6-k1	5
nmod__emph nmod__adj	5
fragof k4	5
lwg__rp rd	5
lwg__rp rh	5
k2s rt	4
pof__redup lwg__rp	4
k2p lwg__rp	4
ccof ras-neg	4
ras-neg ccof	4
k2p adv	4
k1s adv	4
nmod__relc pof__cn	4
rt pof	4
lwg__vaux adv	4

jjmod lwg__rp	4
adv lwg__vaux	4
k7t k3	4
lwg__psp rbmod__relc	4
rsym nmod__emph	4
k7p r6-k1	4
ras-neg vmod	4
lwg__vaux.cont k2s	4
rs r6-k2	4
lwg__vaux k7a	4
rt nmod	4
rh nmod	4
nmod__emph lwg__rp	4
ccof nmod__k1inv	4
k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4
r6-k1 mod	4
lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4
k7 adv	4

lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux.cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4
ccof rsp	4
rsym k2u	4
nmod__emph ccof	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4
ccof k1u	4
k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__k1inv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__k1inv k3	3
ccof mod__wq	3
pof__redup k7p	3
k2g vmod	3

main nmod_k1inv	3
fragof k5	3
rbmod_relc adv	3
ras-k2 nmod_adj	3
nmod_k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3
nmod_adj pof_redup	3
ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod_relc	3
ras-k2 pof_cn	3
k2s r6-k2	3
k7a pof_cn	3
r6 ras-k2	3
pof_cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3
vmod rs	3
rh vmod	3
lwg_rp ras-k2	3
nmod_adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof_cn adv	3
k1u rsym	3
rt nmod_relc	3
rs k4a	3
rsym k1u	3
lwg_vaux_cont lwg_rp	3
k4a lwg_rp	3
lwg_psp k7u	3

adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3
vmod k3	3
k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux.cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3
k7t k2s	3
k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__klinv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3
mod k5	3

pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux.cont r6-k2	3
nmod__adj k7u	3
k4 k3	3
k5 vmod	3
pof__cn ras-pof	2
rd k1	2
pof__redup nmod__relc	2
nmod__relc lwg__neg	2
ccof jjmod__intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod__emph lwg__psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg__psp	2
mod k2p	2
k7 r6-k2	2
r6-k2 nmod	2
nmod__emph k4a	2
k2g pof	2
pof__redup vmod	2
nmod__k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2
k7 ras-k1	2

psp__cl pof	2
nmod__k2inv lwg__rp	2
k7t rsp	2
lwg__vaux.cont mod	2
r6-k2 lwg__rp	2
rsym ras-k7	2
rt lwg__neg	2
nmod__klinv k1s	2
nmod__relc ras-k1	2
psp__cl k7	2
lwg__vaux.cont adv	2
nmod__adj nmod__klinv	2
nmod__relc mod	2
k4 jjmod__intf	2
adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof__redup r6-k2	2
pof k4a	2
nmod__adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof__redup k4	2
ras-k4 pof__cn	2
rd lwg__neg	2
lwg__neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod__wq ccof	2
k5 nmod__klinv	2
nmod__klinv rt	2
rt rt	2
mod__wq rh	2
mod__wq r6-k2	2
rsym k7pu	2
k2p nmod__k2inv	2



jjmod__intf vmod	2
k1u ccof	2
adv jjmod	2
nmod__k1inv jjmod	2
nmod__k1inv k4a	2
ccof r6v	2
r6v lwg__rp	2
nmod__emph vmod	2
adv rs	2
pof__cn ras-k7p	2
ras-k7p lwg__psp	2
fragof rt	2
k2p rh	2
k7a lwg__vaux	2
k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof__cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg__rp nmod__k2inv	2
fragof k7p	2
pof mod	2
pof__redup rt	2
ccof rbmod__relc	2
r6-k2 k7t	2
nmod__k2inv k7t	2
nmod__adj k7tu	2
k4a main	2
k7a nmod__adj	2
k7 nmod__k1inv	2
fragof k3	2
main jjmod__intf	2
jjmod k7	2
rs rd	2

k4a nmod	2
lwg_neg pof_cn	2
k4 k5	2
nmod_relc k1s	2
nmod_relc lwg_psp	2
mod_wq k7p	2
pof mod_wq	2
ccof ras-k7p	2
k1u nmod_adj	2
pof k2p	2
nmod_klinv k1u	2
ras-neg adv	2
k2g rsym	2
lwg_rp pof_redup	2
rd pof	2
nmod_adj main	2
k2s nmod	2
sent-adv rh	2
pof_cn rad	2
lwg_neg r6-k1	2
k1 k2s	2
main lwg_psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg_psp k4u	2
k4u lwg_psp	2
k1s jjmod	2
nmod_k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg_psp	2
ras-neg k2p	2
nmod_k2inv r6-k2	2
nmod_klinv r6-k1	2
rh ras-k1	2
r6 nmod_klinv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2
enm pof_cn	2

lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1
k4 lwg__neg	1
k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__klinv lwg__neg	1
sent-adv k2p	1
jjmod k2	1
k2u k7	1
mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1
psp__cl mod	1

k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg__psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod__adj	1
rd k2	1
nmod__k2inv rh	1
k2 r6v	1
pof__redup adv	1
r6-k1 lwg__rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod__adj	1
lwg__vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod__wq	1
k4a r6-k1	1
k4a rsym	1
ras-neg pof	1
k2u nmod__adj	1
k7a r6-k2	1
k7t rs	1
pof__cn k7pu	1
k4a k1u	1
k1u lwg__rp	1
pof__cn r6v	1
rd lwg__rp	1
adv fragof	1
mod rs	1
jjmod k7t	1

rh r6v	1
rs jjmod__intf	1
rh mod__wq	1
vmod k7a	1
mod__wq r6-k1	1
lwg__neg k1s	1
k3 r6-k2	1
nmod__relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym _	1
_ nmod__adj	1
rs nmod__emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod__emph pof	1
k5 lwg__rp	1
pof__redup mod	1
rh nmod__k1inv	1
rad nmod__adj	1
fragof lwg__psp	1
main mod__wq	1
rt mod	1
mod r6v	1
k7 rh	1
r6v rsym	1
lwg__neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod__k1inv	1
nmod__relc sent-adv	1
rd nmod__k1inv	1
r6v pof__cn	1
fragof k7a	1

lwg__psp k3u	1
k3u lwg__psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg__rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod__k2inv	1
nmod nmod__relc	1
pof jk1	1
rh jjmod__intf	1
k7p k1u	1
k2 k7tu	1
psp__cl k2	1
k4a rh	1
pof__cn ras__k7	1
ras__k7 lwg__psp	1
ccof ras__k7	1
ras__k7 ccof	1
rsp lwg__rp	1
k7a k7p	1
rh lwg__neg	1
pof k1u	1
rsym rbmod	1
nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux_cont k4a	1
nmod__emph mod	1
pk1 k2	1
jjmod k2g	1

r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__k1inv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__k1inv	1
rsym ras-k4	1
mod__wq vmod	1
vmod k2g	1
lwg__vaux.cont rbmod__relc	1
rbmod__relc nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__relc	1
jjmod__relc lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1
mod__wq rsym	1
k4 k2p	1
nmod__relc nmod	1
pof pof__redup	1
nmod__relc k5	1
nmod ras-k2	1
k1u jjmod__intf	1
pof k3	1
ccof k7u	1
k7u ccof	1
mod k2g	1
lwg__vaux.cont k5	1
k2 k2u	1
nmod__adj mk1	1

mk1 lwg__psp	1
adv ras-neg	1
r6 main	1
rd jjmod__intf	1
nmod__k1inv k2u	1
lwg__vaux_cont k3	1
ras-k2 k2	1
rd adv	1
ras-k2 main	1
rd lwg__vaux	1
r6v k2	1
r6-k2 k5	1
nmod__k2inv k3	1
k3 rt	1
rsym lwg__vaux	1
r6-k1 adv	1
r6-k2 sent-adv	1
nmod__k1inv ras-k1	1
lwg__psp ras-k4	1
pof k2g	1
k4 ras-k2	1
k1s nmod	1
pof__redup k1s	1
nmod r6v	1
k4 nmod__k1inv	1
nmod__adj pk1	1
jk1 k2	1
rs nmod__k1inv	1
rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1
lwg__rp sent-adv	1



rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1
nmod__k2inv mod	1
k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__relc	1
r6-k1 jjmod__intf	1
lwg__vaux.cont jjmod	1
rbmod__relc pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1
rsym ras-k7p	1
k7a r6	1
nmod__klinv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod__klinv	1
nmod__klinv main	1
lwg__psp ras-k4a	1
ras-k4a lwg__psp	1
r6-k1 ras-k2	1

k2 nmod__emph	1
sent-adv vmod	1
rt vmod	1
pof__redup jjmod	1
nmod__adj ras-r6-k2	1
nmod__adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1
pk1 pof__cn	1
pof__redup k2s	1
lwg__vaux_cont fragof	1
r6 rs	1
fragof nmod__pofinv	1
lwg__vaux_cont ras-neg	1
k3 lwg__neg	1
lwg__psp undef	1
undef pof__cn	1
pof__redup nmod__k2inv	1
nmod rd	1
k1u pof__cn	1
ras-k1 nmod__k1inv	1
k3 k2p	1
pof__cn ras-k7	1
k4a r6-k2	1
mod k2u	1
k2u lwg__rp	1
nmod__adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod__relc	1
k4 rs	1
nmod nmod__k2inv	1
pof fragof	1
k3 nmod	1
lwg__vaux_cont rt	1

rt k7	1
r6 lwg__neg	1
fragof rh	1
main pk1	1
pk1 nmod__adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg__rp	1
rsp k7p	1
rsp r6	1
jjmod nmod__klinv	1
nmod__adj ras-k4	1
lwg__vaux_cont k4	1
nmod__pofinv lwg__psp	1
k7t nmod__emph	1

Table 9: 4-Grams (UD) and their frequencies

### 3.3.4 2-grams, AnnCorra

<i>tags</i>	<i>count</i>
r6 lwg__psp	13184
lwg__psp nmod__adj	9513
lwg__psp lwg__psp	7827
k7 lwg__psp	7713
lwg__psp pof	6378
k1 lwg__psp	6117
main lwg__vaux	5621
ccof lwg__vaux	5270
lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
lwg__vaux_cont rsym	4122
lwg__psp r6	3936
lwg__psp k2	3931
k7t lwg__psp	3894
k7p lwg__psp	3781
pof main	3597
rsym k1	3573

k2 lwg__psp	3322
pof ccof	3311
rsym nmod__adj	3275
main rsym	3152
nmod__adj k1	3109
rsym pof__cn	2885
pof__cn k1	2881
lwg__psp main	2805
main k2	2764
lwg__psp k7	2587
nmod__adj r6	2548
lwg__psp ccof	2538
pof__cn r6	2493
nmod__adj k2	2406
ccof lwg__psp	2294
pof__cn ccof	2260
nmod__adj nmod__adj	2258
nmod__adj pof__cn	2198
nmod__adj k7	2157
r6-k2 lwg__psp	2057
k1 main	1968
rt lwg__psp	1882
k1 nmod__adj	1874
lwg__psp nmod	1868
nmod__adj k7t	1754
k4 lwg__psp	1733
rsym r6	1708
lwg__psp lwg__rp	1705
nmod pof__cn	1661
k2 pof	1583
lwg__psp k7t	1428
k1 ccof	1373
rsym ccof	1323
k2 ccof	1282
lwg__neg ccof	1218
nmod lwg__psp	1157
rsym main	1112
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lwg__vaux k2s	6
nmod jjmod__intf	6
k7t nmod__relc	6
lwg__neg lwg__rp	6
k1s nmod__klinv	6
nmod__klinv nmod	6
nmod adv	6
k2 k7a	6
ras-k2 ccof	6
k7p nmod__relc	6
lwg__psp fragof	6
fragof nmod__klinv	6
k2 rd	6
rs rh	6
vmod jjmod	6
rh r6-k1	6
k2p nmod__relc	6
adv pof__redup	6
nmod__klinv vmod	6
rh main	6
lwg__rp nmod__klinv	6
adv k2s	6
lwg__vaux nmod__klinv	6
rd pof__cn	6

pof ras-neg	6
lwg__neg rt	6
k2 rsp	6
k4 r6-k2	6
k7p jjmod	6
r6-k2 mod	6
ccof k2g	6
k2 k1s	6
mod ras-neg	6
jjmod__intf k2s	6
nmod__k2inv k1	6
nmod k2p	6
k4a k7	6
lwg__vaux.cont sent-adv	6
k4 k7t	6
lwg__rp jjmod__intf	6
lwg__rp rsp	6
nmod__relc lwg__rp	6
k7p rt	6
nmod rsp	6
vmod rd	6
pof__cn k2g	6
nmod__emph pof__cn	6
k7 lwg__neg	6
ras-pof lwg__psp	5
pof__redup nmod	5
k4 main	5
nmod rs	5
k7 rt	5
k2 sent-adv	5
k7t ras-k1	5
pof__redup pof__cn	5
nmod__emph k2	5
main k3	5
fragof main	5
sent-adv k4	5
mod__wq nmod__adj	5
fragof jjmod	5
fragof adv	5
r6-k1 pof__cn	5
k1 ras-k2	5

rt k7p	5
vmod nmod__k2inv	5
vmod rh	5
adv k4	5
adv r6-k1	5
rsym lwg__neg	5
rt lwg__rp	5
rd r6	5
ras-neg lwg__neg	5
nmod__k2inv k7a	5
k7t rh	5
rsym jjmod__intf	5
k2g ccof	5
nmod__adj k2g	5
rs jjmod	5
rs mod__wq	5
mod__wq r6	5
k7pu lwg__psp	5
k5 k2	5
vmod jjmod__intf	5
k2s adv	5
lwg__rp k4a	5
pof__redup k7t	5
rd main	5
fragof r6-k2	5
lwg__vaux jjmod__intf	5
pof rd	5
rd nmod__adj	5
k2s pof__cn	5
k3 pof__cn	5
r6-k1 rsym	5
adv k5	5
k7t nmod__k2inv	5
k4 k7p	5
mod rsp	5
sent-adv k2	5
k4a pof__cn	5
k4 lwg__rp	5
k3 mod	5
k2 ras-neg	5
nmod r6-k1	5

nmod__emph nmod__adj	5
fragof k4	5
lwg__rp rd	5
lwg__rp rh	5
k2s rt	4
pof__redup lwg__rp	4
k2p lwg__rp	4
ccof ras-neg	4
ras-neg ccof	4
k2p adv	4
k1s adv	4
nmod__relc pof__cn	4
rt pof	4
lwg__vaux adv	4
jjmod lwg__rp	4
adv lwg__vaux	4
k7t k3	4
lwg__psp rbmod__relc	4
rsym nmod__emph	4
k7p r6-k1	4
ras-neg vmod	4
lwg__vaux.cont k2s	4
rs r6-k2	4
lwg__vaux k7a	4
rt nmod	4
rh nmod	4
nmod__emph lwg__rp	4
ccof nmod__k1inv	4
k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4

r6-k1 mod	4
lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4
k7 adv	4
lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux_cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4
ccof rsp	4
rsym k2u	4
nmod__emph ccof	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4

ccof k1u	4
k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__k1inv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__k1inv k3	3
ccof mod__wq	3
pof__redup k7p	3
k2g vmod	3
main nmod__k1inv	3
fragof k5	3
rbmod__relc adv	3
ras-k2 nmod__adj	3
nmod__k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3
nmod__adj pof__redup	3
ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod__relc	3
ras-k2 pof__cn	3
k2s r6-k2	3
k7a pof__cn	3
r6 ras-k2	3
pof__cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3

vmod rs	3
rh vmod	3
lwg__rp ras-k2	3
nmod__adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof__cn adv	3
k1u rsym	3
rt nmod__relc	3
rs k4a	3
rsym k1u	3
lwg__vaux.cont lwg__rp	3
k4a lwg__rp	3
lwg__psp k7u	3
adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3
vmod k3	3
k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux.cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3

k7t k2s	3
k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__klinv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3
mod k5	3
pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux_cont r6-k2	3
nmod__adj k7u	3
k4 k3	3
k5 vmod	3
pof__cn ras-pof	2
rd k1	2
pof__redup nmod__relc	2
nmod__relc lwg__neg	2
ccof jjmod__intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod__emph lwg__psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg__psp	2
mod k2p	2



k7 r6-k2	2
r6-k2 nmod	2
nmod__emph k4a	2
k2g pof	2
pof__redup vmod	2
nmod__k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2
k7 ras-k1	2
psp__cl pof	2
nmod__k2inv lwg__rp	2
k7t rsp	2
lwg__vaux.cont mod	2
r6-k2 lwg__rp	2
rsym ras-k7	2
rt lwg__neg	2
nmod__k1inv k1s	2
nmod__relc ras-k1	2
psp__cl k7	2
lwg__vaux.cont adv	2
nmod__adj nmod__k1inv	2
nmod__relc mod	2
k4 jjmod__intf	2
adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof__redup r6-k2	2
pof k4a	2
nmod__adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof__redup k4	2
ras-k4 pof__cn	2

rd lwg_neg	2
lwg_neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod_wq ccof	2
k5 nmod_k1inv	2
nmod_k1inv rt	2
rt rt	2
mod_wq rh	2
mod_wq r6-k2	2
rsym k7pu	2
k2p nmod_k2inv	2
jjmod_intf vmod	2
k1u ccof	2
adv jjmod	2
nmod_k1inv jjmod	2
nmod_k1inv k4a	2
ccof r6v	2
r6v lwg_rp	2
nmod_emph vmod	2
adv rs	2
pof_cn ras-k7p	2
ras-k7p lwg_psp	2
fragof rt	2
k2p rh	2
k7a lwg_vaux	2
k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof_cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg_rp nmod_k2inv	2

fragof k7p	2
pof mod	2
pof_redup rt	2
ccof rbmod_relc	2
r6-k2 k7t	2
nmod_k2inv k7t	2
nmod_adj k7tu	2
k4a main	2
k7a nmod_adj	2
k7 nmod_k1inv	2
fragof k3	2
main jjmod_intf	2
jjmod k7	2
rs rd	2
k4a nmod	2
lwg_neg pof_cn	2
k4 k5	2
nmod_relc k1s	2
nmod_relc lwg_psp	2
mod_wq k7p	2
pof mod_wq	2
ccof ras-k7p	2
k1u nmod_adj	2
pof k2p	2
nmod_k1inv k1u	2
ras-neg adv	2
k2g rsym	2
lwg_rp pof_redup	2
rd pof	2
nmod_adj main	2
k2s nmod	2
sent-adv rh	2
pof_cn rad	2
lwg_neg r6-k1	2
k1 k2s	2
main lwg_psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg_psp k4u	2

k4u lwg__psp	2
k1s jjmod	2
nmod__k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg__psp	2
ras-neg k2p	2
nmod__k2inv r6-k2	2
nmod__k1inv r6-k1	2
rh ras-k1	2
r6 nmod__k1inv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2
enm pof__cn	2
lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1
k4 lwg__neg	1
k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__k1inv lwg__neg	1
sent-adv k2p	1
jjmod k2	1

k2u k7	1
mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1
psp__cl mod	1
k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg__psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod__adj	1
rd k2	1
nmod__k2inv rh	1
k2 r6v	1
pof__redup adv	1
r6-k1 lwg__rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod__adj	1
lwg__vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod__wq	1

k4a r6-k1	1
k4a rsym	1
ras-neg pof	1
k2u nmod__adj	1
k7a r6-k2	1
k7t rs	1
pof__cn k7pu	1
k4a k1u	1
k1u lwg__rp	1
pof__cn r6v	1
rd lwg__rp	1
adv fragof	1
mod rs	1
jjmod k7t	1
rh r6v	1
rs jjmod__intf	1
rh mod__wq	1
vmod k7a	1
mod__wq r6-k1	1
lwg__neg k1s	1
k3 r6-k2	1
nmod__relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym _	1
_ nmod__adj	1
rs nmod__emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod__emph pof	1
k5 lwg__rp	1
pof__redup mod	1
rh nmod__k1inv	1
rad nmod__adj	1
fragof lwg__psp	1
main mod__wq	1
rt mod	1
mod r6v	1

k7 rh	1
r6v rsym	1
lwg_neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod_k1inv	1
nmod_relc sent-adv	1
rd nmod_k1inv	1
r6v pof_cn	1
fragof k7a	1
lwg_psp k3u	1
k3u lwg_psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg_rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod_k2inv	1
nmod nmod_relc	1
pof jk1	1
rh jjmod_intf	1
k7p k1u	1
k2 k7tu	1
psp_cl k2	1
k4a rh	1
pof_cn ras_k7	1
ras_k7 lwg_psp	1
ccof ras_k7	1
ras_k7 ccof	1
rsp lwg_rp	1
k7a k7p	1
rh lwg_neg	1
pof k1u	1

rsym rbmod	1
nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux.cont k4a	1
nmod__emph mod	1
pk1 k2	1
jjmod k2g	1
r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__k1inv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__k1inv	1
rsym ras-k4	1
mod__wq vmod	1
vmod k2g	1
lwg__vaux.cont rbmod__relc	1
rbmod__relc nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__relc	1
jjmod__relc lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1



mod_wq_rsym	1
k4_k2p	1
nmod_relc_nmod	1
pof_pof_redup	1
nmod_relc_k5	1
nmod_ras-k2	1
k1u_jjmod_intf	1
pof_k3	1
ccof_k7u	1
k7u_ccof	1
mod_k2g	1
lwg_vaux_cont_k5	1
k2_k2u	1
nmod_adj_mk1	1
mk1_lwg_psp	1
adv_ras-neg	1
r6_main	1
rd_jjmod_intf	1
nmod_k1inv_k2u	1
lwg_vaux_cont_k3	1
ras-k2_k2	1
rd_adv	1
ras-k2_main	1
rd_lwg_vaux	1
r6v_k2	1
r6-k2_k5	1
nmod_k2inv_k3	1
k3_rt	1
rsym_lwg_vaux	1
r6-k1_adv	1
r6-k2_sent-adv	1
nmod_k1inv_ras-k1	1
lwg_psp_ras-k4	1
pof_k2g	1
k4_ras-k2	1
k1s_nmod	1
pof_redup_k1s	1
nmod_r6v	1
k4_nmod_k1inv	1
nmod_adj_pk1	1
jk1_k2	1

rs nmod__k1inv	1
rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1
lwg__rp sent-adv	1
rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1
nmod__k2inv mod	1
k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__relc	1
r6-k1 jjmod__intf	1
lwg__vaux_cont jjmod	1
rbmod__relc pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1

rsym ras-k7p	1
k7a r6	1
nmod_klinv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod_klinv	1
nmod_klinv main	1
lwg_psp ras-k4a	1
ras-k4a lwg_psp	1
r6-k1 ras-k2	1
k2 nmod_emph	1
sent-adv vmod	1
rt vmod	1
pof_redup jjmod	1
nmod_adj ras-r6-k2	1
nmod_adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1
pk1 pof_cn	1
pof_redup k2s	1
lwg_vaux_cont fragof	1
r6 rs	1
fragof nmod_pofinv	1
lwg_vaux_cont ras-neg	1
k3 lwg_neg	1
lwg_psp undef	1
undef pof_cn	1
pof_redup nmod_k2inv	1
nmod rd	1
k1u pof_cn	1
ras-k1 nmod_klinv	1
k3 k2p	1

pof_cn ras-k7	1
k4a r6-k2	1
mod k2u	1
k2u lwg_rp	1
nmod_adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod_relc	1
k4 rs	1
nmod nmod_k2inv	1
pof fragof	1
k3 nmod	1
lwg_vaux_cont rt	1
rt k7	1
r6 lwg_neg	1
fragof rh	1
main pk1	1
pk1 nmod_adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg_rp	1
rsp k7p	1
rsp r6	1
jjmod nmod_klinv	1
nmod_adj ras-k4	1
lwg_vaux_cont k4	1
nmod_pofinv lwg_psp	1
k7t nmod_emph	1

Table 10: 2-Grams (AnnCorra) and their frequencies

### 3.3.5 3-grams, AnnCorra

<i>tags</i>	<i>count</i>
r6 lwg_psp	13184
lwg_psp nmod_adj	9513
lwg_psp lwg_psp	7827
k7 lwg_psp	7713
lwg_psp pof	6378
k1 lwg_psp	6117
main lwg_vaux	5621

ccof lwg__vaux	5270
lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
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rt rsym	8
k3 nmod__adj	8
pof ras-k1	8
k2p k7	8
k7p r6-k2	8
nmod__relc k7p	8
lwg__psp sent-adv	8
nmod rt	8
r6 jjmod__intf	8
k7 k7t	8
k2p pof	8
ras-k7 lwg__psp	8
ras-k1 rsym	7
k2s k7	7
jjmod nmod__adj	7
rs rt	7
k7p lwg__neg	7
rsym nmod__k2inv	7
rsym k2s	7

k7t rt	7
main k2p	7
nmod k3	7
rbmod__relc rsym	7
nmod__k1inv lwg__rp	7
k7p k7	7
k4 k7	7
adv rh	7
lwg__vaux r6-k1	7
r6-k2 k1	7
k5 r6	7
r6 jjmod	7
ccof k2u	7
pof k7a	7
lwg__vaux.cont lwg__psp	7
ras-k1 r6	7
lwg__rp k2s	7
rd ccof	7
main ras-k1	7
fragof k7t	7
vmod ras-k1	7
sent-adv ccof	7
r6 k4a	7
mod rh	7
k2s lwg__vaux	7
nmod__relc r6	7
rs lwg__psp	7
k7 k7p	7
lwg__vaux k3	7
k7 k1s	6
rsp nmod__adj	6
lwg__vaux k2s	6
nmod jjmod__intf	6
k7t nmod__relc	6
lwg__neg lwg__rp	6
k1s nmod__k1inv	6
nmod__k1inv nmod	6
nmod adv	6
k2 k7a	6
ras-k2 ccof	6
k7p nmod__relc	6

lwg__psp fragof	6
fragof nmod__klinv	6
k2 rd	6
rs rh	6
vmod jjmod	6
rh r6-k1	6
k2p nmod__relc	6
adv pof__redup	6
nmod__klinv vmod	6
rh main	6
lwg__rp nmod__klinv	6
adv k2s	6
lwg__vaux nmod__klinv	6
rd pof__cn	6
pof ras-neg	6
lwg__neg rt	6
k2 rsp	6
k4 r6-k2	6
k7p jjmod	6
r6-k2 mod	6
ccof k2g	6
k2 k1s	6
mod ras-neg	6
jjmod__intf k2s	6
nmod__k2inv k1	6
nmod k2p	6
k4a k7	6
lwg__vaux_cont sent-adv	6
k4 k7t	6
lwg__rp jjmod__intf	6
lwg__rp rsp	6
nmod__relc lwg__rp	6
k7p rt	6
nmod rsp	6
vmod rd	6
pof__cn k2g	6
nmod__emph pof__cn	6
k7 lwg__neg	6
ras-pof lwg__psp	5
pof__redup nmod	5
k4 main	5

nmod rs	5
k7 rt	5
k2 sent-adv	5
k7t ras-k1	5
pof_redup pof_cn	5
nmod_emph k2	5
main k3	5
fragof main	5
sent-adv k4	5
mod_wq nmod_adj	5
fragof jjmod	5
fragof adv	5
r6-k1 pof_cn	5
k1 ras-k2	5
rt k7p	5
vmod nmod_k2inv	5
vmod rh	5
adv k4	5
adv r6-k1	5
rsym lwg_neg	5
rt lwg_rp	5
rd r6	5
ras-neg lwg_neg	5
nmod_k2inv k7a	5
k7t rh	5
rsym jjmod_intf	5
k2g ccof	5
nmod_adj k2g	5
rs jjmod	5
rs mod_wq	5
mod_wq r6	5
k7pu lwg_psp	5
k5 k2	5
vmod jjmod_intf	5
k2s adv	5
lwg_rp k4a	5
pof_redup k7t	5
rd main	5
fragof r6-k2	5
lwg_vaux jjmod_intf	5
pof rd	5

rd nmod_adj	5
k2s pof_cn	5
k3 pof_cn	5
r6-k1 rsym	5
adv k5	5
k7t nmod_k2inv	5
k4 k7p	5
mod rsp	5
sent-adv k2	5
k4a pof_cn	5
k4 lwg_rp	5
k3 mod	5
k2 ras-neg	5
nmod r6-k1	5
nmod_emph nmod_adj	5
fragof k4	5
lwg_rp rd	5
lwg_rp rh	5
k2s rt	4
pof_redup lwg_rp	4
k2p lwg_rp	4
ccof ras-neg	4
ras-neg ccof	4
k2p adv	4
k1s adv	4
nmod_relc pof_cn	4
rt pof	4
lwg_vaux adv	4
jjmod lwg_rp	4
adv lwg_vaux	4
k7t k3	4
lwg_psp rbmod_relc	4
rsym nmod_emph	4
k7p r6-k1	4
ras-neg vmod	4
lwg_vaux_cont k2s	4
rs r6-k2	4
lwg_vaux k7a	4
rt nmod	4
rh nmod	4
nmod_emph lwg_rp	4

ccof nmod__k1inv	4
k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4
r6-k1 mod	4
lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4
k7 adv	4
lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux.cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4

cconf rsp	4
rsym k2u	4
nmod__emph cconf	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4
cconf k1u	4
k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__k1inv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__k1inv k3	3
cconf mod__wq	3
pof__redup k7p	3
k2g vmod	3
main nmod__k1inv	3
fragof k5	3
rbmod__relc adv	3
ras-k2 nmod__adj	3
nmod__k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3

nmod__adj pof__redup	3
ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod__relc	3
ras-k2 pof__cn	3
k2s r6-k2	3
k7a pof__cn	3
r6 ras-k2	3
pof__cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3
vmod rs	3
rh vmod	3
lwg__rp ras-k2	3
nmod__adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof__cn adv	3
k1u rsym	3
rt nmod__relc	3
rs k4a	3
rsym k1u	3
lwg__vaux_cont lwg__rp	3
k4a lwg__rp	3
lwg__psp k7u	3
adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3



vmod k3	3
k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux.cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3
k7t k2s	3
k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__klinv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3
mod k5	3
pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux.cont r6-k2	3
nmod__adj k7u	3
k4 k3	3

k5 vmod	3
pof__cn ras-pof	2
rd k1	2
pof__redup nmod__relc	2
nmod__relc lwg__neg	2
ccof jjmod__intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod__emph lwg__psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg__psp	2
mod k2p	2
k7 r6-k2	2
r6-k2 nmod	2
nmod__emph k4a	2
k2g pof	2
pof__redup vmod	2
nmod__k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2
k7 ras-k1	2
psp__cl pof	2
nmod__k2inv lwg__rp	2
k7t rsp	2
lwg__vaux.cont mod	2
r6-k2 lwg__rp	2
rsym ras-k7	2
rt lwg__neg	2
nmod__klinv k1s	2
nmod__relc ras-k1	2
psp__cl k7	2
lwg__vaux.cont adv	2
nmod__adj nmod__klinv	2
nmod__relc mod	2

k4 jjmod__intf	2
adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof__redup r6-k2	2
pof k4a	2
nmod__adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof__redup k4	2
ras-k4 pof__cn	2
rd lwg__neg	2
lwg__neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod__wq ccof	2
k5 nmod__k1inv	2
nmod__k1inv rt	2
rt rt	2
mod__wq rh	2
mod__wq r6-k2	2
rsym k7pu	2
k2p nmod__k2inv	2
jjmod__intf vmod	2
k1u ccof	2
adv jjmod	2
nmod__k1inv jjmod	2
nmod__k1inv k4a	2
ccof r6v	2
r6v lwg__rp	2
nmod__emph vmod	2
adv rs	2
pof__cn ras-k7p	2
ras-k7p lwg__psp	2
fragof rt	2
k2p rh	2

k7a lwg__vaux	2
k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof__cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg__rp nmod__k2inv	2
fragof k7p	2
pof mod	2
pof__redup rt	2
ccof rbmod__relc	2
r6-k2 k7t	2
nmod__k2inv k7t	2
nmod__adj k7tu	2
k4a main	2
k7a nmod__adj	2
k7 nmod__k1inv	2
fragof k3	2
main jjmod__intf	2
jjmod k7	2
rs rd	2
k4a nmod	2
lwg__neg pof__cn	2
k4 k5	2
nmod__relc k1s	2
nmod__relc lwg__psp	2
mod__wq k7p	2
pof mod__wq	2
ccof ras-k7p	2
k1u nmod__adj	2
pof k2p	2
nmod__k1inv k1u	2
ras-neg adv	2
k2g rsym	2

lwg__rp pof__redup	2
rd pof	2
nmod__adj main	2
k2s nmod	2
sent-adv rh	2
pof__cn rad	2
lwg__neg r6-k1	2
k1 k2s	2
main lwg__psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg__psp k4u	2
k4u lwg__psp	2
k1s jjmod	2
nmod__k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg__psp	2
ras-neg k2p	2
nmod__k2inv r6-k2	2
nmod__k1inv r6-k1	2
rh ras-k1	2
r6 nmod__k1inv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2
enm pof__cn	2
lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1

k4 lwg__neg	1
k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__k1inv lwg__neg	1
sent-adv k2p	1
jjmod k2	1
k2u k7	1
mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1
psp__cl mod	1
k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg__psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod__adj	1
rd k2	1

nmod_k2inv rh	1
k2 r6v	1
pof_redup adv	1
r6-k1 lwg_rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod_adj	1
lwg_vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod_wq	1
k4a r6-k1	1
k4a rsym	1
ras-neg pof	1
k2u nmod_adj	1
k7a r6-k2	1
k7t rs	1
pof_cn k7pu	1
k4a k1u	1
k1u lwg_rp	1
pof_cn r6v	1
rd lwg_rp	1
adv fragof	1
mod rs	1
jjmod k7t	1
rh r6v	1
rs jjmod_intf	1
rh mod_wq	1
vmod k7a	1
mod_wq r6-k1	1
lwg_neg k1s	1
k3 r6-k2	1
nmod_relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym _	1

_ nmod__adj	1
rs nmod__emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod__emph pof	1
k5 lwg__rp	1
pof__redup mod	1
rh nmod__k1inv	1
rad nmod__adj	1
fragof lwg__psp	1
main mod__wq	1
rt mod	1
mod r6v	1
k7 rh	1
r6v rsym	1
lwg__neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod__k1inv	1
nmod__relc sent-adv	1
rd nmod__k1inv	1
r6v pof__cn	1
fragof k7a	1
lwg__psp k3u	1
k3u lwg__psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg__rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod__k2inv	1
nmod nmod__relc	1



pof jk1	1
rh jjmod__intf	1
k7p k1u	1
k2 k7tu	1
psp__cl k2	1
k4a rh	1
pof__cn ras__k7	1
ras__k7 lwg__psp	1
ccof ras__k7	1
ras__k7 ccof	1
rsp lwg__rp	1
k7a k7p	1
rh lwg__neg	1
pof k1u	1
rsym rbmod	1
nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux_cont k4a	1
nmod__emph mod	1
pk1 k2	1
jjmod k2g	1
r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__k1inv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__k1inv	1
rsym ras-k4	1

mod__wq vmod	1
vmod k2g	1
lwg__vaux_cont rbmod__relc	1
rbmod__relc nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__relc	1
jjmod__relc lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1
mod__wq rsym	1
k4 k2p	1
nmod__relc nmod	1
pof pof__redup	1
nmod__relc k5	1
nmod ras-k2	1
k1u jjmod__intf	1
pof k3	1
ccof k7u	1
k7u ccof	1
mod k2g	1
lwg__vaux_cont k5	1
k2 k2u	1
nmod__adj mk1	1
mk1 lwg__psp	1
adv ras-neg	1
r6 main	1
rd jjmod__intf	1
nmod__k1inv k2u	1
lwg__vaux_cont k3	1
ras-k2 k2	1
rd adv	1
ras-k2 main	1
rd lwg__vaux	1
r6v k2	1
r6-k2 k5	1
nmod__k2inv k3	1

k3 rt	1
rsym lwg__vaux	1
r6-k1 adv	1
r6-k2 sent-adv	1
nmod__k1inv ras-k1	1
lwg__psp ras-k4	1
pof k2g	1
k4 ras-k2	1
k1s nmod	1
pof__redup k1s	1
nmod r6v	1
k4 nmod__k1inv	1
nmod__adj pk1	1
jk1 k2	1
rs nmod__k1inv	1
rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1
lwg__rp sent-adv	1
rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1

nmod__k2inv mod	1
k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__relc	1
r6-k1 jjmod__intf	1
lwg__vaux_cont jjmod	1
rbmod__relc pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1
rsym ras-k7p	1
k7a r6	1
nmod__klinv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod__klinv	1
nmod__klinv main	1
lwg__psp ras-k4a	1
ras-k4a lwg__psp	1
r6-k1 ras-k2	1
k2 nmod__emph	1
sent-adv vmod	1
rt vmod	1
pof__redup jjmod	1
nmod__adj ras-r6-k2	1
nmod__adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1

pk1 pof__cn	1
pof__redup k2s	1
lwg__vaux.cont fragof	1
r6 rs	1
fragof nmod__pofinv	1
lwg__vaux.cont ras-neg	1
k3 lwg__neg	1
lwg__psp undef	1
undef pof__cn	1
pof__redup nmod__k2inv	1
nmod rd	1
k1u pof__cn	1
ras-k1 nmod__klinv	1
k3 k2p	1
pof__cn ras-k7	1
k4a r6-k2	1
mod k2u	1
k2u lwg__rp	1
nmod__adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod__relc	1
k4 rs	1
nmod nmod__k2inv	1
pof fragof	1
k3 nmod	1
lwg__vaux.cont rt	1
rt k7	1
r6 lwg__neg	1
fragof rh	1
main pk1	1
pk1 nmod__adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg__rp	1
rsp k7p	1
rsp r6	1
jjmod nmod__klinv	1
nmod__adj ras-k4	1
lwg__vaux.cont k4	1

nmod__pofinv lwg__psp	1
k7t nmod__emph	1

Table 11: 3-Grams (AnnCorra) and their frequencies

### 3.3.6 4-grams, AnnCorra

<i>tags</i>	<i>count</i>
r6 lwg__psp	13184
lwg__psp nmod__adj	9513
lwg__psp lwg__psp	7827
k7 lwg__psp	7713
lwg__psp pof	6378
k1 lwg__psp	6117
main lwg__vaux	5621
ccof lwg__vaux	5270
lwg__vaux rsym	5160
lwg__vaux lwg__vaux_cont	5008
lwg__psp k1	4555
pof__cn pof__cn	4427
ccof rsym	4361
lwg__psp pof__cn	4126
lwg__vaux_cont rsym	4122
lwg__psp r6	3936
lwg__psp k2	3931
k7t lwg__psp	3894
k7p lwg__psp	3781
pof main	3597
rsym k1	3573
k2 lwg__psp	3322
pof ccof	3311
rsym nmod__adj	3275
main rsym	3152
nmod__adj k1	3109
rsym pof__cn	2885
pof__cn k1	2881
lwg__psp main	2805
main k2	2764
lwg__psp k7	2587
nmod__adj r6	2548
lwg__psp ccof	2538
pof__cn r6	2493

nmod__adj k2	2406
ccof lwg__psp	2294
pof__cn ccof	2260
nmod__adj nmod__adj	2258
nmod__adj pof__cn	2198
nmod__adj k7	2157
r6-k2 lwg__psp	2057
k1 main	1968
rt lwg__psp	1882
k1 nmod__adj	1874
lwg__psp nmod	1868
nmod__adj k7t	1754
k4 lwg__psp	1733
rsym r6	1708
lwg__psp lwg__rp	1705
nmod pof__cn	1661
k2 pof	1583
lwg__psp k7t	1428
k1 ccof	1373
rsym ccof	1323
k2 ccof	1282
lwg__neg ccof	1218
nmod lwg__psp	1157
rsym main	1112
k5 lwg__psp	1102
k1 r6	1089
k2 nmod__adj	1070
lwg__psp k7p	1062
k1s main	1047
pof__cn k2	1036
k2 k1	998
nmod__adj k7p	956
nmod__adj ccof	953
lwg__psp mod	952
k2 main	943
k1s ccof	941
lwg__psp vmod	910
pof__cn rsym	909
rsym k7t	887
ccof r6	871
ccof k1	862

pof__cn k7	817
nmod__adj nmod	804
vmod lwg__psp	803
k1 pof	802
k2 r6	800
k1 pof__cn	786
k1 k1s	782
pof vmod	780
lwg__rp nmod__adj	764
rh lwg__psp	759
rsym k7	748
lwg__psp nmod__klinv	737
mod nmod__adj	732
vmod lwg__vaux	722
lwg__vaux_cont lwg__vaux_cont	709
k2 pof__cn	694
nmod__adj pof	690
k7a lwg__psp	678
lwg__psp k1s	677
lwg__psp r6-k2	666
rsym k7p	646
pof lwg__neg	645
lwg__psp k4	640
ccof k2	631
ras-k1 lwg__psp	620
pof__cn nmod__adj	618
pof__cn k7p	608
k1 lwg__rp	599
nmod__relc lwg__vaux	598
ccof ccof	589
lwg__psp adv	579
ccof main	579
lwg__vaux k2	576
k2 vmod	565
jjmod lwg__psp	555
lwg__psp rt	552
ccof nmod	538
nmod ccof	537
lwg__rp pof	514
pof__cn k7t	507
pof__cn nmod	506



adv lwg__psp	506
main rs	497
r6 nmod__adj	487
pof r6	484
k3 lwg__psp	461
nmod__adj r6-k2	458
lwg__vaux main	453
nmod nmod__adj	453
k1 k2	450
pof rt	442
nmod__adj k1s	442
rsym k2	436
main k1	422
main nmod__adj	420
k7t nmod__adj	420
k1 k7t	416
lwg__vaux lwg__psp	415
lwg__neg main	413
r6-k1 lwg__psp	412
nmod__adj adv	411
nmod__k1inv lwg__vaux	409
r6 ccof	403
r6 k2	402
k1 lwg__neg	401
ccof k7	397
pof__cn k4	384
nmod__adj rsym	377
nmod__adj mod	375
lwg__rp main	348
pof nmod__relc	342
nmod__adj k4	337
lwg__rp k1	329
lwg__rp ccof	329
rsym vmod	322
k7t k1	319
k1 k7	317
vmod nmod__adj	316
rsym nmod	312
rsym sent-adv	300
k2 k7	298
lwg__vaux ccof	296

k2 lwg__rp	294
rs rsym	293
k1 adv	292
r6 k1	291
pof r6-k2	289
rsym rh	281
k1 k7p	280
jjmod nmod	279
r6 pof__cn	277
ccof nmod__adj	273
lwg__psp k5	272
rs k1	271
lwg__rp r6	269
k2 lwg__neg	269
lwg__vaux k1	266
mod k1	259
k2 k7t	258
rd lwg__psp	254
lwg__psp rsym	253
nmod__relc rsym	249
k4a lwg__psp	248
lwg__psp nmod__k2inv	246
nmod__adj jjmod	242
nmod rsym	241
k7t r6	241
nmod__adj rt	240
rsym rs	239
rsym k7a	239
lwg__vaux nmod__adj	237
adv pof	237
rs nmod__adj	236
r6 k7	235
k2 rt	234
lwg__psp jjmod	233
pof k7	233
rsym fragof	232
ccof rs	232
main r6	230
nmod__adj k5	228
k1 vmod	226
k7t pof__cn	223

nmod r6	220
ccof k7p	220
lwg__rp k2	215
lwg__vaux.cont k2	215
lwg__psp rh	214
pof k7t	213
jjmod__intf nmod__adj	212
ccof pof__cn	211
vmod k1	209
vmod ccof	209
mod rsym	209
k2 k2	208
ccof lwg__rp	208
lwg__vaux rs	208
nmod__k2inv lwg__vaux	207
nmod k1	205
rsym lwg__psp	205
r6 r6	204
nmod__adj lwg__rp	204
k1s lwg__neg	200
pof__cn r6-k2	197
pof nmod	192
nmod__adj rh	191
k7t lwg__rp	187
rsym pof__redup	185
lwg__vaux pof__cn	185
lwg__rp pof__cn	181
k2 k7p	181
pof__cn k5	181
r6 rsym	179
vmod r6	176
k7p ccof	176
lwg__psp lwg__neg	176
k7 ccof	174
lwg__rp k1s	173
lwg__vaux.cont ccof	171
k7 nmod__adj	171
main pof__cn	170
k1 mod	170
nmod__klinv nmod__adj	168
pof nmod__klinv	168

adv ccof	167
pof k2	167
lwg__psp k3	167
rs pof__cn	166
pof__cn k7a	164
k1 rsym	161
adv lwg__rp	161
rsym pof	158
ccof vmod	157
lwg__psp jjmod__intf	156
lwg__rp lwg__psp	156
ras-k2 lwg__psp	154
k2 r6-k2	154
pof__cn jjmod	154
r6-k2 pof	153
lwg__vaux.cont main	153
lwg__vaux r6	153
main k7t	153
lwg__psp k2s	152
lwg__psp k2p	152
rsym adv	151
lwg__psp ras-k1	151
lwg__psp nmod__relc	147
mod k2	146
k2 rsym	145
k2 adv	144
lwg__psp r6-k1	141
k2 nmod	140
vmod k2	139
vmod pof__cn	138
rsp lwg__psp	138
rsym k5	138
adv nmod__adj	136
rsym rsym	135
lwg__vaux.cont rs	133
mod lwg__rp	133
nmod__adj ras-k1	133
ccof pof	131
pof__cn ras-k1	131
mod r6	131
k7t pof	128

vmod pof	126
rs r6	126
ccof k4	125
lwg__rp mod	125
pof lwg__rp	124
vmod lwg__rp	123
nmod__adj vmod	123
k7p nmod__adj	123
nmod__adj k7a	122
k2p main	121
rsym k4	121
r6 lwg__vaux	118
k2 nmod__relc	118
k1 nmod__relc	118
rsym rt	117
nmod__adj r6-k1	117
k2s main	116
nmod__adj k3	114
pof__cn rt	114
rsym mod	112
k1 k4	112
ccof k7t	108
ccof k1s	107
ccof rh	106
ccof rt	106
adv main	106
vmod main	105
k1 nmod	105
pof k1	104
lwg__rp k7	104
ccof r6-k2	104
k1 k1	101
mod pof	101
k7 pof__cn	101
k1 jjmod__intf	100
nmod lwg__vaux	100
sent-adv lwg__psp	99
r6 nmod	98
k7t k7p	97
nmod__klinv r6	96
lwg__psp k7a	96

k1 r6-k2	95
lwg__vaux k7	95
k1s nmod__relc	95
pof__cn vmod	95
nmod k2	94
k1 k5	94
k7t k2	93
lwg__psp k4a	92
k7 r6	91
pof__cn pof	90
main k7	90
mod mod	90
rh nmod__adj	88
k2 k4	88
k1 rt	88
nmod__klinv k7	86
rsym jjmod	85
lwg__vaux k7t	84
main k7p	84
nmod k7	84
adv r6	84
pof rh	83
k2p ccof	83
lwg__rp k7p	81
rsym r6-k2	80
pof__cn k1s	80
k7t ccof	79
nmod__adj k2s	79
rh k1	79
k2s ccof	79
nmod__klinv pof__cn	78
k1u lwg__psp	78
k4 nmod__adj	75
lwg__rp lwg__neg	75
adv k1	74
lwg__psp rd	74
k7 lwg__vaux	73
jjmod__intf k1s	73
k7p pof__cn	72
pof nmod__adj	72
nmod__klinv k1	71

k1 k2p	69
r6 k7p	69
k7t k7t	69
pof_.cn k3	69
lwg_.rp k7t	68
ccof ras-k1	68
adv k2	67
rsym k4a	66
k2 nmod_.k1inv	65
k2 rh	64
mod ccof	64
nmod_.adj rd	62
k2p lwg_.psp	62
nmod_.adj sent-adv	61
lwg_.neg nmod_.relc	60
k7t main	60
nmod k7p	59
main ccof	59
k2 lwg_.vaux	59
sent-adv nmod_.adj	58
main rh	57
rsym lwg_.rp	56
k4 pof_.cn	55
k7t k7	54
vmod k7	54
nmod_.relc k7t	54
ccof adv	53
k2 mod	53
mod k7	52
rsym ras-k1	51
rs k7p	51
rh r6	51
k2s pof	51
k4 ccof	51
pof pof_.cn	51
k7p main	51
k1 rh	50
vmod rsym	50
adv rsym	50
pof_.cn rd	50
k1s lwg_.rp	50

k1 ras-k1	49
adv pof_cn	49
lwg__psp ras-k2	49
k7p lwg__rp	49
k7p r6	48
k7 k1	48
nmod__k1inv k2	48
lwg__psp rs	48
pof nmod__k2inv	48
pof_cn k4a	48
k1s lwg__psp	47
k7p k1	47
mod nmod	47
k7 rsym	47
nmod nmod	47
lwg__neg k2	46
k2 k5	46
rh lwg__vaux	46
sent-adv pof_cn	46
k7t mod	46
ccof k5	46
ras-neg lwg__psp	46
r6-k1 pof	46
lwg__psp rsp	45
mod pof_cn	45
lwg__rp r6-k2	45
vmod mod	45
r6-k2 lwg__vaux	44
ccof jjmod	44
r6 r6-k2	43
rs k7t	43
fragof nmod__adj	42
nmod mod	42
vmod k7p	42
main adv	41
k1s pof	41
rt ccof	40
k1 jjmod	40
nmod__adj k4a	40
sent-adv k1	40
lwg__rp adv	40



k2 k2s	40
rs k7	40
k2 k4a	39
sent-adv rsym	39
lwg__psp mod__wq	39
r6-k2 nmod__adj	39
ccof lwg__neg	38
rsym k3	38
ccof r6-k1	38
lwg__vaux vmod	38
mod k1s	38
adv k7	37
k7t lwg__vaux	37
lwg__vaux rh	37
rh pof__cn	37
ccof mod	37
ccof k4a	36
k4a nmod__adj	36
lwg__rp vmod	36
rs ccof	36
adv k1s	36
pof__cn k2p	36
nmod lwg__rp	35
k7 main	35
k7p pof	34
pof__cn rh	34
k4a k1	34
nmod k4	34
lwg__vaux_cont k1	34
k7 pof	34
rsym k1s	33
k4 r6	33
lwg__neg lwg__vaux	33
adv lwg__neg	33
mod r6-k2	33
nmod pof	33
nmod__adj ras-k2	32
lwg__rp nmod	32
pof__cn r6-k1	32
lwg__vaux pof	32
nmod__klinv lwg__psp	32

pof__cn k2s	32
pof__cn rs	32
vmod k4	31
adv k7p	31
lwg__neg rh	31
rsym rd	31
lwg__rp k4	31
k4 rsym	31
k7t nmod	31
nmod__k2inv nmod__adj	31
lwg__rp lwg__vaux	30
lwg__vaux_cont k7t	30
ccof k3	30
r6 k5	30
k7t adv	30
k4 k2	30
main pof	30
sent-adv r6	30
main k4	30
k1 lwg__vaux	30
fragof pof	30
jjmod k1s	30
k2 jjmod	30
pof adv	29
adv vmod	29
lwg__vaux_cont k7	29
pof__redup nmod__adj	29
fragof pof__cn	29
k2u lwg__psp	29
rh ccof	29
r6 k4	29
nmod__adj rbmod	29
rbmod adv	29
k2 r6-k1	29
k1s rsym	28
rs k2	28
lwg__vaux k7p	28
k7p rsym	28
vmod vmod	28
r6-k2 ccof	28
jjmod ccof	28

k7t nmod__k1inv	28
k7 lwg__rp	27
r6 rt	27
rt nmod__adj	27
main vmod	27
nmod__k1inv rh	27
vmod nmod__k1inv	27
k7 k2	27
k7p vmod	26
main lwg__rp	26
vmod lwg__neg	26
lwg__neg vmod	26
vmod k2p	26
k7t k4	26
pof r6-k1	26
rsym r6-k1	26
lwg__vaux k4	26
k2p nmod__k1inv	26
r6 mod	26
lwg__neg r6-k2	26
rh k7	26
rs adv	25
vmod r6-k2	25
vmod k7t	25
k2p vmod	24
r6 k1s	24
nmod__relc k1	24
lwg__vaux lwg__rp	24
jjmod rsym	24
main mod	24
k7p k2	24
ras-k1 pof__cn	24
r6 lwg__rp	24
nmod__adj k1u	24
rh k2	24
nmod__k1inv k7t	24
nmod__k1inv ccof	24
rsym k2p	24
r6-k2 rsym	24
k7p k7t	23
nmod__adj rsp	23

k4 pof	23
lwg__vaux r6-k2	23
nmod r6-k2	23
k7t r6-k2	23
k7 mod	23
k2s vmod	23
nmod__relc k2	22
fragof nmod	22
nmod k7t	22
adv r6-k2	22
k5 ccof	22
lwg__neg r6	22
lwg__rp rt	22
ccof rd	22
pof__redup r6	21
k7t vmod	21
r6-k1 nmod__adj	21
k1 nmod__k1inv	21
fragof ccof	21
r6 ras-k1	21
mod fragof	21
k1 rsp	21
lwg__rp rsym	21
r6v lwg__psp	21
k1 k3	21
r6 rh	21
lwg__vaux nmod__relc	20
ccof k2s	20
lwg__psp k1u	20
nmod k5	20
rs vmod	20
ccof nmod__relc	20
k7t rsym	20
rs lwg__vaux	19
lwg__neg k7	19
k1s k1	19
lwg__vaux_cont rh	19
main rt	19
k7p nmod	19
vmod adv	19
k4 k1	19

sent-adv k7p	19
r6 pof	19
pof_redup k2	19
pof_redup lwg_psp	19
k1s r6	19
mod jjmod	19
pof_cn ras-k2	19
sent-adv lwg_rp	18
nmod k7a	18
rs k4	18
k1s k2	18
adv mod	18
pof rsym	18
pof lwg_psp	18
lwg_rp k2p	18
k2s nmod_relc	17
nmod_adj jjmod_intf	17
k2p rt	17
k7t k2p	17
lwg_rp k5	17
k7 nmod	17
mod k4	17
mod adv	17
main nmod	17
rh k7p	17
nmod vmod	17
pof jjmod	17
k2s r6	17
k1s vmod	17
ras-k1 nmod_adj	17
fragof r6	17
rsym rsp	17
pof_redup k1	16
vmod nmod	16
k3 ccof	16
fragof k7	16
nmod_k2inv r6	16
ras-k1 ccof	16
k1 nmod_emph	16
k2s lwg_psp	16
jjmod_intf pof	15

cconf k2p	15
nmod__k2inv k2	15
nmod__relc nmod__adj	15
k2 ras-k1	15
nmod__adj k2p	15
rh k4	15
rt lwg__vaux	15
lwg__rp lwg__rp	15
rt main	15
nmod__k1inv r6-k2	15
k7t k5	15
lwg__vaux mod	15
lwg__vaux_cont nmod__adj	15
lwg__psp nmod__pofinv	15
k7t k1s	15
lwg__rp r6-k1	15
k4a pof	14
k2 rs	14
rt pof__cn	14
lwg__vaux nmod	14
cconf ras-k2	14
lwg__psp nmod__emph	14
rs mod	14
pof rbmod__relc	14
main k5	14
pof k5	14
k2p lwg__neg	14
k7p k4	14
nmod__k2inv pof__cn	14
rh rsym	14
main jjmod	14
r6 k3	14
k4a cconf	14
adv nmod__k1inv	14
k2p r6	14
vmod nmod__relc	14
vmod k1s	14
vmod k5	14
main k1s	13
k4a mod	13
lwg__psp k2g	13

nmod__relc k7	13
lwg__rp nmod__relc	13
nmod ras-k1	13
k7t jjmod	13
nmod__k2inv k7	13
rt k2p	13
rbmod__relc lwg__vaux	13
k1 k1u	13
k7 vmod	13
lwg__rp ras-neg	13
lwg__vaux.cont vmod	13
nmod__adj lwg__psp	13
fragof k2	13
k2 jjmod__intf	13
lwg__rp jjmod	13
sent-adv k7t	13
k1 rs	13
fragof k1	13
mod__wq k1	13
pof__cn rsp	13
main lwg__neg	13
mod k7p	13
rt r6	12
k7p nmod__k1inv	12
lwg__neg rsym	12
main r6-k2	12
k1s nmod__adj	12
rsym nmod__k1inv	12
fragof mod	12
rh lwg__rp	12
lwg__vaux k1s	12
pof__cn k1u	12
pof k7p	12
k2 k3	12
pof__redup pof	12
rs nmod	12
vmod rt	12
mod r6-k1	12
nmod__adj rs	12
jjmod pof__cn	12
jjmod pof	12

r6-k1 ccof	12
lwg__psp k2u	12
k7p adv	12
main k2s	12
nmod__k1inv k4	11
k2 nmod__k2inv	11
k2 ras-k2	11
adv nmod	11
r6 adv	11
main sent-adv	11
pof__redup ccof	11
sent-adv k7	11
lwg__vaux_cont r6	11
pof__redup main	11
pof ras-k2	11
pof k4	11
k7a rsym	11
k7 k7	11
k1s pof__cn	11
rh pof	11
r6 k7t	11
k7 nmod__relc	11
r6 k2p	11
nmod__k1inv k7a	11
pof__redup k7	11
k5 nmod__adj	11
k2p nmod	11
k1 r6-k1	11
r6-k2 r6	11
jjmod__intf lwg__rp	11
k7 k4	11
k2s lwg__neg	11
lwg__rp rs	11
k2s k1	10
k4a r6	10
main k4a	10
r6-k2 pof__cn	10
mod__wq adv	10
mod__wq pof	10
lwg__vaux rt	10
lwg__vaux_cont pof__cn	10



k7p k7p	10
jjmod__intf nmod	10
pof rs	10
lwg__vaux.cont nmod__relc	10
k2 k2p	10
k2p r6-k2	10
k2p k2	10
rsym ras-k2	10
k1 mod__wq	10
adv k2p	10
k4 nmod	10
nmod__k2inv ccof	10
ccof k7a	10
k7u lwg__psp	10
k1 k4a	10
adv rt	10
nmod jjmod	10
pof k1s	10
mod k2s	10
nmod__pofinv lwg__vaux	10
k7t r6-k1	10
k2s rsym	10
main k7a	10
mod k7t	9
jjmod__intf ccof	9
r6 k2s	9
k2g lwg__psp	9
k7t jjmod__intf	9
rt nmod__klinv	9
k1 rd	9
nmod__klinv mod	9
k7p mod	9
k2p k7t	9
rh k4a	9
lwg__psp ras-neg	9
mod vmod	9
fragof rsym	9
nmod__adj r6v	9
mod__wq k2	9
k7t lwg__neg	9
ras-k1 pof	9

vmod k4a	9
rh k7t	9
ccof fragof	9
main r6-k1	9
k2g main	9
k5 pof__cn	9
lwg__vaux k5	9
nmod__adj ras-neg	9
r6 r6-k1	8
k1s rs	8
k7t k4a	8
nmod k1s	8
rsym nmod__relc	8
r6 rd	8
lwg__vaux k4a	8
rs lwg__rp	8
lwg__rp k3	8
nmod__klinv k5	8
k2p k1	8
pof__cn k2u	8
lwg__neg rs	8
rs pof	8
rh mod	8
nmod__klinv k7p	8
k2s nmod__adj	8
k1s rh	8
adv k7t	8
jk1 lwg__psp	8
k5 rsym	8
mod ras-k1	8
rs ras-k1	8
lwg__rp ras-k1	8
k2s lwg__rp	8
pof__redup lwg__vaux	8
k4 mod	8
r6 vmod	8
rt rsym	8
k3 nmod__adj	8
pof ras-k1	8
k2p k7	8
k7p r6-k2	8

nmod__relc k7p	8
lwg__psp sent-adv	8
nmod rt	8
r6 jjmod__intf	8
k7 k7t	8
k2p pof	8
ras-k7 lwg__psp	8
ras-k1 rsym	7
k2s k7	7
jjmod nmod__adj	7
rs rt	7
k7p lwg__neg	7
rsym nmod__k2inv	7
rsym k2s	7
k7t rt	7
main k2p	7
nmod k3	7
rbmod__relc rsym	7
nmod__klinv lwg__rp	7
k7p k7	7
k4 k7	7
adv rh	7
lwg__vaux r6-k1	7
r6-k2 k1	7
k5 r6	7
r6 jjmod	7
ccof k2u	7
pof k7a	7
lwg__vaux_cont lwg__psp	7
ras-k1 r6	7
lwg__rp k2s	7
rd ccof	7
main ras-k1	7
fragof k7t	7
vmod ras-k1	7
sent-adv ccof	7
r6 k4a	7
mod rh	7
k2s lwg__vaux	7
nmod__relc r6	7
rs lwg__psp	7

k7 k7p	7
lwg__vaux k3	7
k7 k1s	6
rsp nmod__adj	6
lwg__vaux k2s	6
nmod jjmod__intf	6
k7t nmod__relc	6
lwg__neg lwg__rp	6
k1s nmod__klinv	6
nmod__klinv nmod	6
nmod adv	6
k2 k7a	6
ras-k2 ccof	6
k7p nmod__relc	6
lwg__psp fragof	6
fragof nmod__klinv	6
k2 rd	6
rs rh	6
vmod jjmod	6
rh r6-k1	6
k2p nmod__relc	6
adv pof__redup	6
nmod__klinv vmod	6
rh main	6
lwg__rp nmod__klinv	6
adv k2s	6
lwg__vaux nmod__klinv	6
rd pof__cn	6
pof ras-neg	6
lwg__neg rt	6
k2 rsp	6
k4 r6-k2	6
k7p jjmod	6
r6-k2 mod	6
ccof k2g	6
k2 k1s	6
mod ras-neg	6
jjmod__intf k2s	6
nmod__k2inv k1	6
nmod k2p	6
k4a k7	6

lwg__vaux_cont sent-adv	6
k4 k7t	6
lwg__rp jjmod__intf	6
lwg__rp rsp	6
nmod__relc lwg__rp	6
k7p rt	6
nmod rsp	6
vmod rd	6
pof__cn k2g	6
nmod__emph pof__cn	6
k7 lwg__neg	6
ras-pof lwg__psp	5
pof__redup nmod	5
k4 main	5
nmod rs	5
k7 rt	5
k2 sent-adv	5
k7t ras-k1	5
pof__redup pof__cn	5
nmod__emph k2	5
main k3	5
fragof main	5
sent-adv k4	5
mod__wq nmod__adj	5
fragof jjmod	5
fragof adv	5
r6-k1 pof__cn	5
k1 ras-k2	5
rt k7p	5
vmod nmod__k2inv	5
vmod rh	5
adv k4	5
adv r6-k1	5
rsym lwg__neg	5
rt lwg__rp	5
rd r6	5
ras-neg lwg__neg	5
nmod__k2inv k7a	5
k7t rh	5
rsym jjmod__intf	5
k2g ccof	5

nmod__adj k2g	5
rs jjmod	5
rs mod__wq	5
mod__wq r6	5
k7pu lwg__psp	5
k5 k2	5
vmod jjmod__intf	5
k2s adv	5
lwg__rp k4a	5
pof__redup k7t	5
rd main	5
fragof r6-k2	5
lwg__vaux jjmod__intf	5
pof rd	5
rd nmod__adj	5
k2s pof__cn	5
k3 pof__cn	5
r6-k1 rsym	5
adv k5	5
k7t nmod__k2inv	5
k4 k7p	5
mod rsp	5
sent-adv k2	5
k4a pof__cn	5
k4 lwg__rp	5
k3 mod	5
k2 ras-neg	5
nmod r6-k1	5
nmod__emph nmod__adj	5
fragof k4	5
lwg__rp rd	5
lwg__rp rh	5
k2s rt	4
pof__redup lwg__rp	4
k2p lwg__rp	4
ccof ras-neg	4
ras-neg ccof	4
k2p adv	4
k1s adv	4
nmod__relc pof__cn	4
rt pof	4

lwg__vaux adv	4
jjmod lwg__rp	4
adv lwg__vaux	4
k7t k3	4
lwg__psp rbmod__relc	4
rsym nmod__emph	4
k7p r6-k1	4
ras-neg vmod	4
lwg__vaux.cont k2s	4
rs r6-k2	4
lwg__vaux k7a	4
rt nmod	4
rh nmod	4
nmod__emph lwg__rp	4
ccof nmod__k1inv	4
k2p pof__cn	4
ccof psp__cl	4
sent-adv jjmod	4
k1s lwg__vaux	4
nmod__emph r6	4
jjmod__intf adv	4
k7 k5	4
pof__cn ras-neg	4
rsym k7u	4
mod rd	4
nmod nmod__k1inv	4
jjmod lwg__vaux	4
rh jjmod	4
r6-k1 mod	4
lwg__vaux rd	4
k2s k2	4
nmod__pofinv r6	4
k4 r6-k1	4
nmod__relc rs	4
k4a k7p	4
k7t rd	4
k7 r6-k1	4
rs main	4
nmod rh	4
mod__wq k7	4
rs k5	4

k7 adv	4
lwg__neg k2s	4
k2u ccof	4
adv ras-k1	4
lwg__vaux.cont nmod	4
k1s k7	4
k7a ccof	4
lwg__vaux jjmod	4
k1 nmod__k2inv	4
k7p nmod__k2inv	4
mod k3	4
ras-neg lwg__rp	4
mod rt	4
k7 jjmod__intf	4
ccof rsp	4
rsym k2u	4
nmod__emph ccof	4
k3 rsym	4
adv adv	4
k1s r6-k2	4
lwg__vaux ras-k1	4
rt k2	4
lwg__psp pk1	4
k1 r6v	4
nmod__emph k1	4
k7 k4a	4
nmod k4a	4
lwg__psp jk1	4
ccof k1u	4
k4a vmod	3
fragof k1s	3
k1 k7a	3
k1 rbmod__relc	3
rbmod__relc sent-adv	3
nmod__klinv pof	3
r6-k2 adv	3
k2 rbmod__relc	3
k4 rt	3
nmod__klinv k3	3
ccof mod__wq	3
pof__redup k7p	3



k2g vmod	3
main nmod__k1inv	3
fragof k5	3
rbmod__relc adv	3
ras-k2 nmod__adj	3
nmod__k2inv k5	3
jjmod k2s	3
rt k7t	3
r6-k2 k2	3
vmod ras-k2	3
k2g r6-k2	3
rsym rad	3
pof pof	3
k4 jjmod	3
nmod__adj pof__redup	3
ras-k7 ccof	3
k1s mod	3
main rd	3
k4 nmod__relc	3
ras-k2 pof__cn	3
k2s r6-k2	3
k7a pof__cn	3
r6 ras-k2	3
pof__cn fragof	3
ccof ras-k4	3
k4 adv	3
k7p ras-k1	3
k4a adv	3
vmod rs	3
rh vmod	3
lwg__rp ras-k2	3
nmod__adj k2u	3
jjmod mod	3
ccof sent-adv	3
pof__cn adv	3
k1u rsym	3
rt nmod__relc	3
rs k4a	3
rsym k1u	3
lwg__vaux_cont lwg__rp	3
k4a lwg__rp	3

lwg__psp k7u	3
adv mod__wq	3
k7p k1s	3
nmod__k2inv vmod	3
adv nmod__relc	3
lwg__vaux nmod__k2inv	3
nmod__k2inv lwg__psp	3
rad rsym	3
lwg__rp k1u	3
pof__redup k3	3
ccof ras-k7	3
k4 lwg__vaux	3
rsym r6v	3
k3 k4	3
vmod k3	3
k3 r6	3
rt jjmod	3
nmod__relc main	3
lwg__neg k1	3
ras-k2 r6	3
k1s k2p	3
r6-k1 lwg__vaux	3
r6 mod__wq	3
nmod__relc rh	3
lwg__vaux_cont k7p	3
k4a k2	3
pof__redup k5	3
lwg__neg nmod	3
k7t k2s	3
k7tu lwg__psp	3
k2 mod__wq	3
rsym psp__cl	3
pof nmod__emph	3
lwg__vaux sent-adv	3
r6 k7a	3
nmod__klinv rsym	3
k2s rh	3
rsp pof__cn	3
k1 ras-neg	3
mod k1u	3
mod__wq pof__cn	3

mod k5	3
pk1 lwg__psp	3
vmod rsp	3
ras-k4 lwg__psp	3
k1 k2u	3
rs k2p	3
ras-k7p ccof	3
lwg__vaux k2p	3
mod main	3
lwg__psp r6v	3
nmod__adj ras-k7	3
lwg__vaux.cont r6-k2	3
nmod__adj k7u	3
k4 k3	3
k5 vmod	3
pof__cn ras-pof	2
rd k1	2
pof__redup nmod__relc	2
nmod__relc lwg__neg	2
ccof jjmod__intf	2
rh rh	2
k4 vmod	2
k4a k5	2
nmod__emph lwg__psp	2
rh r6-k2	2
vmod r6-k1	2
ras-r6 lwg__psp	2
mod k2p	2
k7 r6-k2	2
r6-k2 nmod	2
nmod__emph k4a	2
k2g pof	2
pof__redup vmod	2
nmod__k2inv rt	2
rh k5	2
vmod k2s	2
rsp ccof	2
k7p k5	2
k1 sent-adv	2
rad k1	2
rh k7a	2

k7 ras-k1	2
psp__cl pof	2
nmod__k2inv lwg__rp	2
k7t rsp	2
lwg__vaux.cont mod	2
r6-k2 lwg__rp	2
rsym ras-k7	2
rt lwg__neg	2
nmod__k1inv k1s	2
nmod__relc ras-k1	2
psp__cl k7	2
lwg__vaux.cont adv	2
nmod__adj nmod__k1inv	2
nmod__relc mod	2
k4 jjmod__intf	2
adv k4a	2
sent-adv k4a	2
k1s k7t	2
pof__redup r6-k2	2
pof k4a	2
nmod__adj fragof	2
r6 ras-neg	2
sent-adv ras-k1	2
rs r6-k1	2
jjmod jjmod	2
rsym ras-neg	2
pof__redup k4	2
ras-k4 pof__cn	2
rd lwg__neg	2
lwg__neg k7t	2
ras-k1 nmod	2
k3 main	2
k5 nmod	2
k5 k1s	2
mod__wq ccof	2
k5 nmod__k1inv	2
nmod__k1inv rt	2
rt rt	2
mod__wq rh	2
mod__wq r6-k2	2
rsym k7pu	2

k2p nmod__k2inv	2
jjmod__intf vmod	2
k1u ccof	2
adv jjmod	2
nmod__k1inv jjmod	2
nmod__k1inv k4a	2
ccof r6v	2
r6v lwg__rp	2
nmod__emph vmod	2
adv rs	2
pof__cn ras-k7p	2
ras-k7p lwg__psp	2
fragof rt	2
k2p rh	2
k7a lwg__vaux	2
k5 k1	2
rh adv	2
k2 k2g	2
k5 k7	2
k7p ras-neg	2
rbmod vmod	2
k2u pof__cn	2
fragof vmod	2
pof k2s	2
r6-k1 nmod	2
rt adv	2
sent-adv nmod	2
lwg__rp nmod__k2inv	2
fragof k7p	2
pof mod	2
pof__redup rt	2
ccof rbmod__relc	2
r6-k2 k7t	2
nmod__k2inv k7t	2
nmod__adj k7tu	2
k4a main	2
k7a nmod__adj	2
k7 nmod__k1inv	2
fragof k3	2
main jjmod__intf	2
jjmod k7	2

rs rd	2
k4a nmod	2
lwg_neg pof_cn	2
k4 k5	2
nmod_relc k1s	2
nmod_relc lwg_psp	2
mod_wq k7p	2
pof mod_wq	2
ccof ras-k7p	2
k1u nmod_adj	2
pof k2p	2
nmod_klinv k1u	2
ras-neg adv	2
k2g rsym	2
lwg_rp pof_redup	2
rd pof	2
nmod_adj main	2
k2s nmod	2
sent-adv rh	2
pof_cn rad	2
lwg_neg r6-k1	2
k1 k2s	2
main lwg_psp	2
main ras-k2	2
k1 fragof	2
k2u rsym	2
r6-k1 r6	2
lwg_psp k4u	2
k4u lwg_psp	2
k1s jjmod	2
nmod_k2inv ras-k1	2
rd vmod	2
ras-r6-k2 lwg_psp	2
ras-neg k2p	2
nmod_k2inv r6-k2	2
nmod_klinv r6-k1	2
rh ras-k1	2
r6 nmod_klinv	2
r6-k1 k7t	2
rh rt	2
k3 k7p	2

enm pof__cn	2
lwg__psp ras-k7	2
k7p ras-pof	1
fragof k2s	1
vmod pof__redup	1
lwg__psp pof__redup	1
r6 k2g	1
k2g nmod__relc	1
k3 k7	1
sent-adv pof	1
rsp lwg__vaux	1
sent-adv mod	1
jjmod__intf k2	1
nmod mod__wq	1
k4 lwg__neg	1
k3 vmod	1
k4a nmod__emph	1
pof rbmod	1
rbmod lwg__vaux	1
nmod__adj ras-r6	1
lwg__psp rtu	1
rtu lwg__psp	1
mod ras-k2	1
nmod__k2inv pof	1
mod jk1	1
nmod__k1inv lwg__neg	1
sent-adv k2p	1
jjmod k2	1
k2u k7	1
mod__wq k1s	1
k7p r6v	1
r6-k1 k2	1
rt rd	1
k2s k1s	1
k7t pof__redup	1
ras-k1 mod	1
jjmod__intf r6	1
k3 k2	1
vmod vmod__adv	1
vmod__adv pof__cn	1
r6 psp__cl	1

psp_cl mod	1
k2 k1u	1
k1 jk1	1
jk1 r6	1
k7 jjmod	1
nmod _	1
_ r6	1
r6 _	1
_ lwg_psp	1
k2p k1u	1
k1s k7p	1
ras-k4 r6	1
k2g nmod_adj	1
rd k2	1
nmod_k2inv rh	1
k2 r6v	1
pof_redup adv	1
r6-k1 lwg_rp	1
k3 r6-k1	1
k7t rbmod	1
rbmod nmod_adj	1
lwg_vaux k2g	1
jjmod k4	1
main fragof	1
k2 _	1
_ k2	1
r6-k2 k7	1
k5 mod_wq	1
k4a r6-k1	1
k4a rsym	1
ras-neg pof	1
k2u nmod_adj	1
k7a r6-k2	1
k7t rs	1
pof_cn k7pu	1
k4a k1u	1
k1u lwg_rp	1
pof_cn r6v	1
rd lwg_rp	1
adv fragof	1
mod rs	1



jjmod k7t	1
rh r6v	1
rs jjmod_intf	1
rh mod_wq	1
vmod k7a	1
mod_wq r6-k1	1
lwg_neg k1s	1
k3 r6-k2	1
nmod_relc k2s	1
rs ras-neg	1
ccof k7pu	1
k7pu ccof	1
ccof rad	1
rsym _	1
_ nmod_adj	1
rs nmod_emph	1
adv k3	1
rsp nmod	1
r6 fragof	1
nmod_emph pof	1
k5 lwg_rp	1
pof_redup mod	1
rh nmod_k1inv	1
rad nmod_adj	1
fragof lwg_psp	1
main mod_wq	1
rt mod	1
mod r6v	1
k7 rh	1
r6v rsym	1
lwg_neg jjmod	1
k2 pk1	1
pk1 jk1	1
jjmod k7p	1
ccof ras-r6	1
ras-r6 ccof	1
k2p mod	1
k2g nmod_k1inv	1
nmod_relc sent-adv	1
rd nmod_k1inv	1
r6v pof_cn	1

fragof k7a	1
lwg__psp k3u	1
k3u lwg__psp	1
pof sent-adv	1
rh k3	1
sent-adv ras-k2	1
k2g rt	1
main rsp	1
k3 lwg__rp	1
k7p ras-k2	1
k1u k1s	1
rd k7	1
adv nmod__k2inv	1
nmod nmod__relc	1
pof jk1	1
rh jjmod__intf	1
k7p k1u	1
k2 k7tu	1
psp__cl k2	1
k4a rh	1
pof__cn ras__k7	1
ras__k7 lwg__psp	1
ccof ras__k7	1
ras__k7 ccof	1
rsp lwg__rp	1
k7a k7p	1
rh lwg__neg	1
pof k1u	1
rsym rbmod	1
nmod__k2inv k7p	1
psp__cl nmod__adj	1
jjmod vmod	1
k7 k2p	1
rt r6-k2	1
r6 jk1	1
k3 pof	1
ccof nmod__emph	1
k1s k5	1
lwg__vaux.cont k4a	1
nmod__emph mod	1
pk1 k2	1

jjmod k2g	1
r6-k2 r6-k2	1
r6 nmod__emph	1
k1 ras-pof	1
k2 rbmod	1
pof__cn pk1	1
pof__cn jk1	1
rs ras-k2	1
mod__wq lwg__rp	1
nmod__k1inv rd	1
k2s k7t	1
nmod__k2inv k1u	1
k2s nmod__k1inv	1
rsym ras-k4	1
mod__wq vmod	1
vmod k2g	1
lwg__vaux_cont rbmod__relc	1
rbmod__relc nmod__adj	1
ccof ras-pof	1
ras-pof ccof	1
k2 jjmod__relc	1
jjmod__relc lwg__vaux	1
nmod__pofinv nmod__adj	1
jjmod r6	1
k5 mod	1
k7p k2p	1
k2p rsym	1
k2s nmod__k2inv	1
mod__wq rsym	1
k4 k2p	1
nmod__relc nmod	1
pof pof__redup	1
nmod__relc k5	1
nmod ras-k2	1
k1u jjmod__intf	1
pof k3	1
ccof k7u	1
k7u ccof	1
mod k2g	1
lwg__vaux_cont k5	1
k2 k2u	1

nmod__adj mk1	1
mk1 lwg__psp	1
adv ras-neg	1
r6 main	1
rd jjmod__intf	1
nmod__k1inv k2u	1
lwg__vaux_cont k3	1
ras-k2 k2	1
rd adv	1
ras-k2 main	1
rd lwg__vaux	1
r6v k2	1
r6-k2 k5	1
nmod__k2inv k3	1
k3 rt	1
rsym lwg__vaux	1
r6-k1 adv	1
r6-k2 sent-adv	1
nmod__k1inv ras-k1	1
lwg__psp ras-k4	1
pof k2g	1
k4 ras-k2	1
k1s nmod	1
pof__redup k1s	1
nmod r6v	1
k4 nmod__k1inv	1
nmod__adj pk1	1
jk1 k2	1
rs nmod__k1inv	1
rs nmod__k2inv	1
jjmod__intf k1	1
k5 main	1
nmod__emph main	1
nmod__emph k4	1
rh rsp	1
k1u k7p	1
sent-adv r6-k2	1
pof__cn ras-r6-k2	1
rh k2s	1
nmod__relc ccof	1
psp__cl k1	1

lwg__rp sent-adv	1
rh sent-adv	1
rs k3	1
nmod__emph ras-k1	1
lwg__vaux lwg__neg	1
main nmod__k2inv	1
lwg__psp ras-rt	1
ras-rt lwg__psp	1
r6-k2 ras-k2	1
k5 pof	1
nmod__k2inv k4	1
rsp k2p	1
k7 rsp	1
mod k7a	1
nmod__k2inv mod	1
k3 k7t	1
lwg__neg nmod__adj	1
nmod__adj rbmod__rele	1
r6-k1 jjmod__intf	1
lwg__vaux.cont jjmod	1
rbmod__rele pof__cn	1
r6v mod	1
k4a k3	1
lwg__rp fragof	1
r6 pof__redup	1
rd r6-k2	1
pof__cn ras-r6	1
k1u k7	1
rsym ras-k7p	1
k7a r6	1
nmod__klinv adv	1
k2s mod	1
r6-k1 k7	1
ras-k1 rt	1
k5 rt	1
k2g k2	1
k7 k3	1
k4a nmod__klinv	1
nmod__klinv main	1
lwg__psp ras-k4a	1
ras-k4a lwg__psp	1

r6-k1 ras-k2	1
k2 nmod__emph	1
sent-adv vmod	1
rt vmod	1
pof__redup jjmod	1
nmod__adj ras-r6-k2	1
nmod__adj ras-pof	1
mod k4a	1
nmod k2s	1
adv rd	1
adv ras-k2	1
rsym enm	1
main enm	1
pk1 r6	1
pk1 pof__cn	1
pof__redup k2s	1
lwg__vaux_cont fragof	1
r6 rs	1
fragof nmod__pofinv	1
lwg__vaux_cont ras-neg	1
k3 lwg__neg	1
lwg__psp undef	1
undef pof__cn	1
pof__redup nmod__k2inv	1
nmod rd	1
k1u pof__cn	1
ras-k1 nmod__k1inv	1
k3 k2p	1
pof__cn ras-k7	1
k4a r6-k2	1
mod k2u	1
k2u lwg__rp	1
nmod__adj k7pu	1
main k1u	1
r6 k7pu	1
k3 k1	1
rd nmod__relc	1
k4 rs	1
nmod nmod__k2inv	1
pof fragof	1
k3 nmod	1

lwg__vaux_cont rt	1
rt k7	1
r6 lwg__neg	1
fragof rh	1
main pk1	1
pk1 nmod__adj	1
rs rsp	1
rs sent-adv	1
ras-k1 lwg__rp	1
rsp k7p	1
rsp r6	1
jjmod nmod__klinv	1
nmod__adj ras-k4	1
lwg__vaux_cont k4	1
nmod__pofinv lwg__psp	1
k7t nmod__emph	1

Table 12: 4-Grams (AnnCorra) and their frequencies

## 4 Error Analysis for automatic tagging

We have a detailed report of the automatic tagging done for assignment 4, where we trained a CRF model on tagged hindi data and attempted to predict results for an unseen test set.

Features	Weighted Precision	Weighted Recall	Weighted F1
all (baseline)	0.830	0.840	0.830
all but POS	0.798	0.807	0.795
all but chunkType	0.821	0.831	0.830
all but chunkId	0.812	0.821	0.811
all but chunkId, POS	0.785	0.781	0.768
only POS	0.660	0.685	0.656
only POS, Chunk, voice	0.737	0.735	0.719
all but Chunk, voice	0.793	0.805	0.791
all+word but Chunk, voice	0.820	0.833	0.824
all+word	0.853	0.862	0.855

This analysis was done on dev data for quicker runthrough of the experiment. On replicating the final experimental setup (all+word) on training data, we obtained a 2 percent improvement in performance, with the F-Score going to **0.879 weighted average**.

### 4.1 Comparison against UD Data

On Running the experiment with UD Data instead, another 2 percent improvement in performance was seen, with a **0.893 weighted average** this time around. However, we can put this down to a more broad tagging in UD allowing more room for error.

## 4.2 Example analysis

For purposes of error analysis, I went through examples of sentences in the test set where *less than 60%* of the predicted tags were correct. There are **14** such sentences, and we attempt to analyse 10 of these.

### 1. jo bijalI bacegI vaha grida ko mila jAegI

bijalI —correct: k2 ,incorrect: k1  
 bacegI —correct: nmod\_relc ,incorrect: main  
 grida —correct: k4 ,incorrect: k2  
 mila —correct: main ,incorrect: ccof

Incorrect marking of k1, k2

Incorrectly marking relative clause nmod as main. Also main and ccof, as a consequence

Incorrectly marking k2, k4

### 2. inameM 119 mahilAez Ora 28 nAbAliga We

inameM —correct: k1 ,incorrect: k7  
 mahilAez —correct: ccof ,incorrect: k1  
 Ora —correct: k1s ,incorrect: main  
 nAbAliga —correct: ccof ,incorrect: k1

Incorrect marking of k1,k7. Subject and spatio temporal

Clause mixup. ccof marked as k1, and k1s marked as main

### 3. uniyANA se rAMSI waWA gOMdAra gAMva waka ATa kimI waWA isake paScAwa 10 kimI KadZI caDZAI pAra kara maxamaheSvara ke xarSana howe hEM

uniyANA —correct: rsp ,incorrect: k5  
 rAMSI —correct: ccof ,incorrect: k1  
 waWA —correct: nmod ,incorrect: main  
 gAMva —correct: ccof ,incorrect: k7p  
 kimI —correct: ccof ,incorrect: k1s  
 waWA —correct: k2 ,incorrect: ccof  
 isake —correct: nmod ,incorrect: k7t  
 kimI —correct: nmod ,incorrect: k1  
 caDZAI —correct: ccof ,incorrect: k2  
 maxamaheSvara —correct: r6-k1 ,incorrect: r6

Clause mixup. ccof marked as k7p and k1s and k2

Clause mixup. nmod marked as main

Clause mixup. nmods marked as k1, k7t

### 4. xasa ko yaha baniyAkuMda \_NULL\_ waWA 11 maI ko wuMganAWa pahuzcegI Ora kapAta Kola xie jAeMgeM

xasa —correct: k7t ,incorrect: k2  
 yaha —correct: k1 ,incorrect: k2  
 baniyAkuMda —correct: k2p ,incorrect: k1  
 waWA —correct: ccof ,incorrect: k1  
 wuMganAWa —correct: k2p ,incorrect: k1  
 Ora —correct: main ,incorrect: ccof  
 kapAta —correct: k2 ,incorrect: k1

Incorrect marking of k1, k2

Clause mixup. ccof, k1



Clause mixup. main, ccof

5. **isameM ikvitI , dAkaGara meM jamA Ora enaesasI meM niveSa sAmila hEM**

ikvitI —correct: ccof ,incorrect: k2  
 dAkaGara —correct: nmod ,incorrect: k7  
 jamA —correct: ccof ,incorrect: pof  
 Ora —correct: k1 ,incorrect: main  
 enaesasI —correct: nmod ,incorrect: k7p  
 niveSa —correct: ccof ,incorrect: k1

Clause mixup.

6. **kvirio Jukakara aBivAxana karanA va namaskAra karanA BI jAnawA hE**

aBivAxana —correct: pof ,incorrect: k1  
 karanA —correct: ccof ,incorrect: k2  
 va —correct: k2 ,incorrect: r6  
 namaskAra —correct: pof ,incorrect: ccof  
 karanA —correct: ccof ,incorrect: k1

Clause mixup

7. **sUcanAez kama xo**

sUcanAez —correct: k2 ,incorrect: k1  
 kama —correct: vmod ,incorrect: k1s

Incorrect marking of k1, k2

Incorrect marking of vmod, k1s

8. **yaha praSAsana Ora Ayoga xonoM ke lie cunOwI hE**

yaha —correct: k1 ,incorrect: k2  
 praSAsana —correct: ccof ,incorrect: k1  
 Ora —correct: rs ,incorrect: main  
 Ayoga —correct: ccof ,incorrect: k1  
 cunOwI —correct: k1s ,incorrect: pof

Clause mixup

9. **isake calawe usakA ceharA va galA sUja gayA**

isake —correct: vmod ,incorrect: rh  
 ceharA —correct: ccof ,incorrect: k1s  
 va —correct: k2 ,incorrect: main  
 galA —correct: ccof ,incorrect: k2

Clause mixup

10. **pAsavAna ne KemA baxalA Ora BAjapA CodZa rAjaxa meM A gae**

KemA —correct: k2 ,incorrect: k1  
 baxalA —correct: ccof ,incorrect: main  
 Ora —correct: main ,incorrect: k2

BAjapA —correct: k2 ,incorrect: k1  
rAjaxa —correct: k7 ,incorrect: k7p

Clause mixup

### Summary:

The errors can be classed into two types:

1. **Clause mixups:** Cause the majority of incorrect tagging. Incorrectly identifying which clause is the central bulk of the sentence creates issues, and most mistags stem from this.
2. **k1-k2-k4 mixups:** The tagger is unable to identify which word occupies which role. This is a much smaller phenomenon however, usually occuring alongwith clause mixups

## 5 Discussion

### 5.1 Comparison of UD and AnnCorra

### 5.2 Need for new tags

#### 5.2.1 Intra-Chunk

propose any new intra-chunk tags you can think of with examples

#### 5.2.2 Inter-Chunk

propose any new inter-chunk tags you can think of with examples.