Blinkered vision: Sources of opacity in inflectional paradigms

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1 Introduction

We provide evidence from Icelandic for the following hypothesis:

(1)   **The Marginal Detraction Hypothesis**: Marginal inflection classes tend to detract most strongly from the predictability of other inflection classes.

- What we mean by MARGINALITY: The fewer members an inflection class has, the more marginal it is.
- What we mean by PREDICTABILITY:

In earlier work (Finkel & Stump 2009), we proposed a general measure of paradigm predictability. The formal definition of this measure is given in (2) on the handout. Intuitively, paradigm predictability is the fraction of subsets of a paradigm's cells that suffice as predictors of all of its other cells (given a particular universe of contrasting paradigms)—i.e. the fraction of subsets of a paradigm's cells that constitute viable (though not necessarily optimal) principal-part sets for that paradigm.

2 Detraction from a paradigm's predictability

(3)

	Present	Past	Past participle	Sample lexemes	Paradigm predictability of a member of conjugation (3a) with the successive addition of conjugations (3b-d)
a.	-ɪ-	-æ-	-ʌ-	SING, SINK	1.000
b.	-ɪ-	-ʌ-	-ʌ-	CLING, STICK, DIG	0.500
c.	-ɪ-	-æ-	-æ-	SIT, SPIT	0.250
d.	-ʌ-	-æ-	-ʌ-	RUN	0.125

(4) { {}, {Present}, {Past}, {Past participle}, {Present, Past}, {Present, Past participle}, {Past, Past participle}, {Present, Past, Past participle} }

Do all conjugations detract from predictability in the same way? Or are some more likely to detract from the predictability of a universe of paradigms?

Our hypothesis is that marginal conjugations tend to detract from predictability more than nonmarginal ones.

Evidence from Icelandic supports this hypothesis.

3 Conjugation classes in Icelandic

An Icelandic verb typically has thirty synthetic forms in its paradigm:

TABLE 1. Synthetic paradigm of Icelandic BÍTA 'bite'

	Indicative		Subjunctive		Imperative
	Present	Past	Present	Past	
1sg	bít	beit	bíti	biti	
2sg	bítur	beist	bítir	bitir	bít
3sg	bítur	beit	bíti	biti	
1pl	bítum	bitum	bítum	bitum	bítum
2pl	bítið	bituð	bítið	bituð	bítið
3pl	bíta	bitu	bíti	bitu	

Infinitive:	bíta
1st participle:	bítandi
2nd participle:	bitið

Conjugations are of two broadly different types, as in other Germanic languages.

- Weak verbs form their past tense by means of a dental suffix;

- STRONG verbs instead form their past tense by means of ablaut.

(Some verbs—the PRETERITE PRESENT verbs—exhibit strong deponent forms in the present tense and weak forms in the past tense; we regard these as neither weak nor strong.)

Weak conjugations are of four main types, each of which exhibits various subtypes.

TABLE 2. Distinctions among the weak conjugations in Icelandic

	Infinitive	IndPres 1sg	IndPast 1sg	2nd participle	Example
V1	suffix *-ja*	--	*-di/-ði/-ti*	*-ið*	'confuse': *glepja, glep, glapti, glapið*[1]
V2	stemvowel front (*e/i/y/ý/ei/ey/æ*) suffix *-a*	-i	*-di/-ði/-ti*	*-t*	'dispute': *deila, deili, deildi, deilt*
V3	stemvowel back (*a/á/o/ó/ú*, also *ö/u/i*) suffix *-a*	-i	*-di/-ði/-ti*	*-að*	'dare': *þora, þori, þorði, þorað*
V4	suffix *-a*	-a	*-aði*	*-að*	'call': *kalla, kalla, kallaði, kallað*
1. The *e ~ a* alternation in the inflection is an effect of *i*-mutation, not an instance of the kind of ablaut characteristic of strong verbs.					
Source: Jörg 1989: 20.					

TABLE 3. Indicative present endings in the weak conjugations in Icelandic

Conjugation:	V1			V2		V3	V4
	postconsonantal	postvocalic	after *r*	postconsonantal	after *g/k*		
1sg	--	--	--	*-i*	*-i*	*-i*	*-a*
2sg	*-ur*	*-rð*	*-ð*	*-ir*	*-ir*	*-ir*	*-ar*
3sg	*-ur*	*-r*	--	*-ir*	*-ir*	*-ir*	*-ar*
1pl	*-jum*	*-jum*	*-jum*	*-um*	*-jum*	*-um*	*-um*
2pl	*-jið*	*-ið*	*-jið*	*-ið*	*-ið*	*-ið*	*-ið*
3pl	*-ja*	*-ja*	*-ja*	*-a*	*-ja*	*-a*	*-a*
Source: Jörg 1989: 20.							

Strong conjugations are of eight main types, each of which exhibits various subtypes.

TABLE 4. Distinctions in stem vocalism among the strong conjugations in Icelandic

		Infinitive	Past sg	Past pl	2nd Participle	Examples
S1	(a)	*-í-*	*-ei-*	*-i-*	*-i-*	'grasp': *grípa, greip, gripum, gripið*
	(b)				*-e-*	'wait': *bíða, beið, biðum, beðið*
S2	(a)	*-jó-*	*-au-*	*-u-*	*-o-*	'offer': *bjóða, bauð, buðum, boðið*
	(b)	*-jú-*				'fly': *fljúga, flaug, flugum, flogið*
	(c)	*-ú-*				'drink': *súpa, saup, supum, sopið*
S3	(a)	*-e- (-ja-/-já-)*	*-a-*	*-u-*	*-o-*	'escape': *sleppa, slapp, sluppum, sloppið*
	(b)	*-in- (-en-)*			*-u-*	'spin': *spinna, spann, spunnum, spunnið*
		(-yn-)	*(-ö-)*			'sing': *syngja, söng, sungum, sungið*
S4	(a)	*(-o-)*	*(-o-)*	*(-o-)*	*-o-*	'come': *koma, kom, komum, komið*
		-e-	*-a-*	*-á-*		'carry': *bera, bar, bárum, borið*
	(b)				*-u-*	'take': *nema, nam, námum, numið*
S5	(a)	*(-é-)*	*-a-/-á-*	*-á-*	*(-é-)*	'eat': *éta, át, átum, étið*
		-e-			*-e-*	'give': *gefa, gaf, gáfum, gefið*
	(b)	*-i-*				'ask': *biðja, bað, báðum, beðið*
S6	(a)	*-a- (e/á/o/ey/æ)*	*-ó-*	*-ó-*	*-a-*	'dig': *grafa, gróf, grófum, grafið*
	(b)				*(after g/k) -e-*	'drive': *aka, ók, ókum, ekið*
S7	(a)	*-ei-*	*-é-*	*-é-*	*-ei-*	'play': *leika, lék, lékum, leikið*
	(b)	*-au-*	*-jó-*	*-ju-*	*-au-*	'increase': *auka, jók, jukum, aukið*
	(c)	*-a-*	*-é-*	*-é-*	*-a-*	'fall': *falla, féll, féllum, fallið*
	(d)	*-á-*	*-é-*	*-é-*	*-á-*	'blow': *blása, blés, blésum, blásið*
R(edup.)	(a)	*-ó-*	*-er-*	*-er-*	*-ó-*	'grow': *gróa, greri, grerum, gróið*
	(b)	*-ú-*			*-ú-*	'turn': *snúa, sneri, snerum, snúið*

Source: Jörg 1989: 21.

TABLE 5. Indicative present endings in the strong conjugations in Icelandic

	postvocalic	after *r*	after *s*	after *ín/x*	postconsonantal
1sg	--	--	--	--	--
2sg	*-rð*	*-ð*	*-t*	--	*-ur*
3sg	*-r*	--	--	--	*-ur*
1pl	*-um*				
2pl	*-ið*				
3pl	*-a*				

Source: Jörg 1989: 22.

Drawing upon the analysis of the Icelandic conjugation system in Jörg 1989, we have investigated the predictability of the conjugations in Table 6.

TABLE 6. The 162 conjugations assumed in this study (based on Jörg 1989)

Conjugation	exemplar	gloss	Jörg*	Conjugation	exemplar	gloss	Jörg*	Conjugation	exemplar	gloss	Jörg*	Conjugation	exemplar	gloss	Jörg*
PretPres_1	*eiga*	'have to'	#150	S3irr_12	*snerta*	'concern'	#098	S7d_2	*blása*	'blow'	#137	V2irr_2	*breiða*	'spread'	#031
PretPres_2	*muna*	'remember'	#152	S4a_1	*bera*	'carry'	#099	S7d_3	*gráta*	'weep'	#139	V2irr_3	*byggja*	'build'	#032
PretPres_3	*kunna*	'know, be able'	#151	S4a_2	*stela*	'steal'	#100	S7irr_1	*heita*	'be named'	#140	V2irr_4	*kveikja*	'light'	#033
PretPres_4	*muna*	'remember'	#152	S4b_1	*nema*	'study'	#101	S7irr_2	*hanga*	'hang'	#141	V2irr_5	*benda*	'bend'	#034
PretPres_5	*vita*	'know'	#153	S4irr_1	*sofa*	'sleep'	#102	S7irr_3	*ganga*	'walk'	#142	V2irr_6	*elta*	'chase'	#035
PretPres_6	*vilja*	'want'	#154	S4irr_2	*koma*	'come'	#103	S7irr_4	*fá*	'get, may'	#143	V2irr_7	*slökkva*	'extinguish'	#036
PretPres_7	*þurfa*	'need'	#155	S4irr_3	*vefa*	'weave'	#104	S7irr_5	*hlaupa*	'run'	#144	V2irr_8	*sökkva*	'sink'	#037
PretPres_8	*munu*	'will'	#156	S4irr_4	*troða*	'trample'	#105	S7irr_6	*búa*	'reside'	#145	V2irr_9	*kaupa*	'buy'	#038
PretPres_9	*skulu*	'shall'	#157	S5_0	*vera*	'be'	#I.1	S7irr_7	*spýja*	'vomit'	#146	V2irr_10	*sækja*	'fetch'	#039
RIa_1	*gróa*	'grow'	#148	S5a_1	*gefa*	'give'	#106	S7irr_8	*ljá*	'lend'	#147	V2irr_11	*þykja*	'seem'	#040
RIb_1	*snúa*	'turn'	#149	S5a_2	*leka*	'leak'	#107	V1a_1	*glepja*	'confuse'	#001	V2irr_12	*yrkja*	'cultivate'	#041
S1a_1	*bíta*	'bite'	#070	S5a_3	*meta*	'rate'	#108	V1b_1	*flýja*	'flee'	#002	V2irr_13	*meina*	'mean'	#042
S1a_2	*grípa*	'grasp'	#069	S5b_1	*biðja*	'ask'	#109	V1c_1	*yrja*	'scrape'	#003	V2irr_14	*segja*	'say'	#043
S1b_1	*bíða*	'wait'	#071	S5b_2	*sitja*	'sit'	#110	V1irr_1	*spyrja*	'ask'	#016	V2irr_15	*þegja*	'be_silent'	#044
S1irr_1	*kvíða*	'be anxious'	#072	S5irr_1	*svimma*	'swim'	#115	V1irr_2	*dvelja*	'stay'	#004	V3_0	*hafa*	'have'	#I.2
S1irr_2	*gína*	'be open'	#073	S5irr_2	*éta*	'eat'	#111	V1irr_3	*leggja*	'lay'	#005	V3a_0	*aga*	'wet'	#I.4
S1irr_3	*rísa*	'rise'	#074	S5irr_3	*liggja*	'lie'	#112	V1irr_4	*kefja*	'dip'	#006	V3a_1	*þora*	'dare'	#045
S1irr_4	*hníga*	'fall'	#075	S5irr_4	*sjá*	'see'	#113	V1irr_5	*etja*	'egg on'	#007	V3a_2	*stara*	'stare'	#046
S1irr_5	*víkja*	'diverge'	#076	S5irr_5	*fregna*	'be told'	#114	V1irr_6	*vekja*	'awaken (tr)'	#008	V3b_1	*sá*	'sow'	#047
S2a_1	*bjóða*	'offer'	#077	S6a_1	*fara*	'leave, go'	#117	V1irr_7	*hrynja*	'collapse'	#009	V3c_1	*þola*	'bear'	#048
S2a_2	*brjóta*	'break'	#078	S6a_2	*grafa*	'dig'	#116	V1irr_8	*tyggja*	'chew'	#010	V3c_2	*loða*	'stick'	#049
S2b_1	*fljúga*	'fly'	#079	S6b_1	*aka*	'drive'	#118	V1irr_9	*hyggja*	'think'	#011	V3d_1	*vaka*	'be_awake'	#050
S2c_1	*súpa*	'drink'	#080	S6irr_1	*valda*	'cause'	#119	V1irr_10	*flytja*	'convey'	#012	V3d_2	*gapa*	'gape'	#051
S2irr_1	*kjósa*	'choose'	#081	S6irr_2	*vaða*	'ford'	#120	V1irr_11	*berja*	'beat'	#013	V3d_3	*brosa*	'smile'	#052
S3_0	*verða*	'become'	#I.3	S6irr_3	*vaxa*	'grow'	#121	V1irr_12	*bleðja*	'strip off leaves'	#014	V3irr_1	*þvo*	'wash'	#053
S3a_1	*sleppa*	'escape'	#082	S6irr_4	*draga*	'pull'	#122	V1irr_13	*bryðja*	'crunch'	#015	V3irr_2	*lafa*	'dangle'	#054
S3a_2	*bresta*	'burst'	#083	S6irr_5	*vega*	'weigh'	#123	V1irr_14	*þiggja*	'accept'	#017	V3irr_3	*horfa*	'look_at'	#055
S3a_3	*detta*	'fall'	#084	S6irr_6	*hefja*	'begin'	#124	V1irr_15	*frýja*	'challenge'	#018	V3irr_4	*hvolfa*	'capsize'	#056
S3b_1	*spinna*	'spin'	#085	S6irr_7	*sverja*	'swear'	#125	V1irr_16	*fela*	'hide'	#019	V3irr_5	*lifa*	'live'	#057
S3b_2	*vinna*	'work'	#086	S6irr_8	*deyja*	'die'	#126	V1irr_17	*selja*	'sell'	#020	V3irr_6	*góna*	'gape'	#058
S3irr_1	*bregða*	'move quickly'	#087	S6irr_9	*flá*	'skin'	#127	V1irr_18	*setja*	'set'	#021	V3irr_7	*sama*	'befit'	#059
S3irr_2	*gjalda*	'repay'	#088	S6irr_10	*hlæja*	'laugh'	#128	V1irr_19	*ske*	'happen'	#022	V3irr_8	*drúpa*	'droop'	#060
S3irr_3	*hverfa*	'vanish'	#089	S6irr_11	*höggva*	'hew'	#129	V1irr_20	*skilja*	'understand'	#023	V3irr_9	*flá*	'skin'	#061
S3irr_4	*svelta*	'starve'	#090	S6irr_12	*standa*	'stand'	#130	V1irr_21	*þreyja*	'yearn'	#024	V3irr_10	*ljá*	'lend'	#062
S3irr_5	*svelgja*	'gulp'	#091	S6irr_13	*fela*	'entrust'	#131	V1irr_22	*heyja*	'perform'	#025	V3irr_11	*ná*	'achieve'	#063
S3irr_6	*finna*	'find'	#092	S7a_1	*leika*	'play'	#132	V1irr_23	*tæja*	'rip'	#026	V3irr_12	*tjá*	'express'	#064
S3irr_7	*springa*	'burst'	#093	S7b_1	*auka*	'augment'	#133	V2a_1	*deila*	'dispute'	#027	V4a_1	*kalla*	'shout'	#065
S3irr_8	*hrinda*	'push'	#094	S7b_2	*ausa*	'scoop'	#134	V2b_1	*heyra*	'hear'	#028	V4b_1	*ætla*	'intend'	#066
S3irr_9	*vinda*	'wind'	#095	S7c_1	*falla*	'fall'	#135	V2c_1	*lýsa*	'light'	#029	V4b_2	*hlýja*	'warm'	#068
S3irr_10	*hrökkva*	'break'	#096	S7c_2	*halda*	'hold'	#136	V2irr_1	*hengja*	'hang'	#030	V4irr_1	*byrja*	'begin'	#067
S3irr_11	*syngja*	'sing'	#097	S7d_1	*ráða*	'advise'	#138								

*The numbers in this column identify the relevant paradigm classification in Jörg 1989.

4 Plats

We calculate predictability from a language's plat. A PLAT is a table of the form in (5), where MPS_1, …, MPS_m are m distinct morphosyntactic property sets, IC_1, …, IC_n are n distinct inflection classes, and for any morphosyntactic property set MPS_i ($1 \leq i \leq m$) and any inflection class IC_j ($1 \leq j \leq n$), $a_{j,i}$ is the exponence of MPS_i in IC_j. (Note that an EXPONENCE in our terms may subsume more than one exponent; for instance, *-o-d* is the exponence of past tense in paradigm of TELL.)

(5)

	MPS_1	…	MPS_m
IC_1	$\mathbf{a}_{1,1}$	…	$\mathbf{a}_{1,m}$
⋮	⋮		⋮
IC_n	$\mathbf{a}_{n,1}$	…	$\mathbf{a}_{n,m}$

The plat for Icelandic verbs is quite large, consisting of thirty columns (corresponding to the thirty cells in an Icelandic verb's synthetic paradigm) and 162 rows (corresponding to the 162 conjugations). The fragment of this plat in Table 7 gives a rough idea of what the whole plat looks like.

TABLE 7. A fragment of the plat for Icelandic verbs

CONJ	Inf	Impv2sg	Impv1pl	Impv2pl	1stPple	2ndPple
S1a_1	-í-a	-í-	-í-um	-í-ið	-í-andi	-i-ið
S1b_1	-í-a	-í-	-í-um	-í-ið	-í-andi	-e-ið
S2a_1	-jó-a	-jó-a	-jó-um	-jó-ið	-jó-andi	-o-ið
S2b_1	-jú-a	-jú-	-jú-um	-jú-ið	-jú-andi	-o-ið
S2c_1	-ú-a	-ú-	-ú-um	-ú-ið	-ú-andi	-o-ið
S3a_1	-e-a	-e-	-e-um	-e-ið	-e-andi	-o-ið
S3b_1	-i-a	-i-	-i-um	-i-ið	-i-andi	-u-ið
S4a_1	-e-a	-e-	-e-um	-e-ið	-e-andi	-o-ið
S4b_1	-e-a	-e-	-e-um	-e-ið	-e-andi	-u-ið
S5a_1	-e-a	-e-	-e-um	-e-ið	-e-andi	-e-ið
S5b_1	-i-ja	-i-	-i-jum	-i-jið	-i-jandi	-e-ið
S6a_1	-a-a	-a-	-ö-um	-a-ið	-a-andi	-a-ið
S6b_1	-a-a	-a-	-ö-um	-a-ið	-a-andi	-e-ið
S7a_1	-ei-a	-ei-	-ei-um	-ei-ið	-ei-andi	-ei-ið
S7b_1	-au-a	-au-	-au-um	-au-ið	-au-andi	-au-ið
S7c_1	-a-a	-a-	-ö-um	-a-ið	-a-andi	-a-ið
S7d_1	-á-a	-á-	-á-um	-á-ið	-á-andi	-á-ið

Our method in this research has been to calculate predictability in different fragments of the Icelandic verb plat and to compare the results. In general, the predictability of a given conjugation either remains constant or diminishes as it is calculated in progressively larger fragments of the full plat. Our choice of fragments has been based on two cross-cutting distinctions among Icelandic conjugations:

- the strong/weak distinction (see §3 above) and
- the inclusive/exclusive distinction.

In our terminology, an INCLUSIVE conjugation is one that includes more than one lexeme, and an EXCLUSIVE conjugation is one that only includes a single lexeme; thus, an exclusive conjugation is maximally marginal.

Table 8 distinguishes the Icelandic conjugations that are inclusive from those that are exclusive; we base this classification on the appendix of Jörg (1989), which classifies 1034 Icelandic verbs according to their conjugation.

We emphasize that a lexeme belonging to an exclusive conjugation is not necessarily infrequent in its use; indeed, the opposite is often true.

TABLE 8. Inclusive and exclusive conjugations in Icelandic

Inclusive				Exclusive			
Conjugation	members*	Conjugation	members*	Conjugation	members*	Conjugation	members*
PretPres_1	3	V1c_1	2	PretPres_2	1	S7a_1	1
PretPres_3	3	V1irr_1	2	PretPres_4	1	S7b_1	1
PretPres_7	2	V1irr_10	3	PretPres_5	1	S7b_2	1
RIa_1	2	V1irr_11	4	PretPres_6	1	S7c_1	1
RIb_1	2	V1irr_12	5	PretPres_8	1	S7d_1	1
S1a_1	6	V1irr_13	4	PretPres_9	1	S7d_2	1
S1a_2	14	V1irr_18	3	S1b_1	1	S7irr_1	1
S1irr_2	4	V1irr_2	14	S1irr_1	1	S7irr_2	1
S1irr_4	3	V1irr_20	2	S1irr_3	1	S7irr_3	1
S1irr_5	2	V1irr_3	2	S3_0	1	S7irr_5	1
S2a_1	4	V1irr_4	4	S3a_2	1	S7irr_7	1
S2a_2	12	V1irr_5	4	S3a_3	1	S7irr_8	1
S2b_1	13	V1irr_6	3	S3b_2	1	V1irr_14	1
S2c_1	2	V1irr_7	15	S3irr_11	1	V1irr_15	1
S2irr_1	5	V2a_1	60	S3irr_12	1	V1irr_16	1
S3a_1	5	V2b_1	29	S3irr_5	1	V1irr_17	1
S3b_1	3	V2c_1	60	S3irr_6	1	V1irr_19	1
S3irr_1	2	V2irr_1	10	S3irr_7	1	V1irr_21	1
S3irr_10	3	V2irr_10	2	S3irr_8	1	V1irr_22	1
S3irr_2	4	V2irr_2	28	S4a_2	1	V1irr_23	1
S3irr_3	5	V2irr_3	19	S4b_1	1	V1irr_8	1
S3irr_4	3	V2irr_4	17	S4irr_1	1	V1irr_9	1
S3irr_9	3	V2irr_5	14	S4irr_2	1	V2irr_11	1
S4a_1	3	V2irr_6	32	S4irr_3	1	V2irr_12	1
S4irr_4	2	V2irr_8	2	S5_0	1	V2irr_13	1
S5a_1	5	V3a_1	4	S5b_1	1	V2irr_14	1
S5a_2	2	V3a_2	5	S5b_2	1	V2irr_15	1
S5a_3	4	V3b_1	16	S5irr_1	1	V2irr_7	1
S5irr_2	2	V3c_1	5	S5irr_4	1	V2irr_9	1
S5irr_3	2	V3d_1	4	S5irr_5	1	V3_0	1
S6a_1	2	V3d_2	2	S6irr_1	1	V3a_0	1
S6a_2	6	V3irr_3	3	S6irr_10	1	V3c_2	1
S6b_1	4	V3irr_5	14	S6irr_11	1	V3d_3	1
S6irr_9	3	V3irr_6	2	S6irr_12	1	V3irr_1	1
S7c_2	2	V3irr_8	8	S6irr_13	1	V3irr_10	1
S7d_3	2	V4a_1	97	S6irr_2	1	V3irr_11	1
S7irr_4	2	V4b_1	282	S6irr_3	1	V3irr_12	1
S7irr_6	2	V4irr_1	5	S6irr_4	1	V3irr_2	1
V1a_1	7	78 in all	950 in all	S6irr_5	1	V3irr_4	1
V1b_1	8			S6irr_6	1	V3irr_7	1
				S6irr_7	1	V3irr_9	1
				S6irr_8	1	V4b_2	1
				84 in all	84 in all		

*Number of members listed in the appendix of Jörg 1989.

5 Predictability and inclusive vs exclusive conjugation classes

TABLE 9. Predictability of weak inclusive conjugations calculated in isolation
and in the context of all weak conjugations, all inclusive conjugations, and all conjugations

	Universe of paradigms			
	All verbs	Add *strong* inclusive verbs to weak inclusive	Add weak *exclusive* verbs to weak inclusive	Weak inclusive verbs alone
V1a_1	0.817	0.834	0.817	0.834
V1b_1	0.743	0.999	1.000	1.000
V1c_1	0.048	0.048	0.048	0.048
V1irr_1	0.179	0.179	0.179	0.179
V1irr_10	0.179	0.179	0.179	0.179
V1irr_11	0.330	0.330	0.333	0.333
V1irr_12	0.179	0.179	0.179	0.179
V1irr_13	0.179	0.179	0.179	0.179
V1irr_18	0.179	0.743	0.179	0.743
V1irr_2	0.006	0.006	0.006	0.006
V1irr_20	0.508	0.801	0.743	0.805
V1irr_3	0.992	0.996	0.992	0.996
V1irr_5	0.179	0.179	0.179	0.179
V1irr_6	0.115	0.453	0.115	0.464
V1irr_7	0.014	0.048	0.014	0.048
V2a_1	0.543	0.543	0.543	0.543
V2b_1	0.021	0.072	0.021	0.072
V2c_1	0.543	0.543	0.543	0.543
V2irr_1	0.543	0.543	0.543	0.543
V2irr_10	0.958	1.000	0.958	1.000
V2irr_2	0.179	0.179	0.179	0.179
V2irr_3	0.254	0.390	0.254	0.390
V2irr_4	0.543	0.543	0.543	0.543
V2irr_5	0.966	0.966	0.966	0.966
V2irr_6	0.895	0.895	0.895	0.895
V2irr_8	0.464	0.962	0.464	0.996
V3a_1	0.787	0.854	0.787	0.854
V3a_2	0.461	0.848	0.461	0.848
V3b_1	0.423	0.464	0.423	0.464
V3c_1	0.854	0.855	0.855	0.855
V3d_1	0.834	0.834	0.834	0.834
V3irr_5		0.167		0.167
V4a_1	0.966	0.966	0.966	0.966
V4b_1	0.179	0.179	0.179	0.179
V4irr_1	0.156	0.179	0.156	0.179
Average	0.448	0.518	0.462	0.520

	next-to-highest in its row		below next-to-highest in its row

TABLE 10. Predictability of strong inclusive conjugations calculated in isolation and in the context of all strong conjugations, all inclusive conjugations, and all conjugations

	Universe of paradigms			
	All verbs	Add *weak* inclusive verbs to strong inclusive	Add strong *exclusive* verbs to strong inclusive	Strong inclusive verbs alone
RIa_1	0.978	0.978	0.978	0.978
RIb_1	0.927	0.927	0.927	0.927
S1a_1	0.005	0.048	0.005	0.048
S1irr_2	0.048	0.333	0.048	0.333
S1irr_4	0.103	0.103	0.103	0.103
S1irr_5	0.666	0.666	0.666	0.666
S2a_1	0.179	0.179	0.179	0.179
S2a_2	0.048	0.048	0.048	0.048
S2b_1	0.922	0.922	0.922	0.922
S2c_1	0.844	0.844	0.844	0.844
S2irr_1	0.333	0.333	0.333	0.333
S3a_1	0.022	0.631	0.022	0.631
S3b_1	0.294	0.873	0.294	0.873
S3irr_1	0.999	1.000	0.999	1.000
S3irr_10	0.705	0.941	0.705	0.975
S3irr_2	0.949	0.949	0.949	0.949
S3irr_3	0.739	0.992	0.739	0.992
S3irr_9	0.420	0.895	0.420	0.895
S4a_1	0.326	0.406	0.327	0.406
S4irr_4	0.600	0.889	0.600	0.923
S5a_1	0.016	0.066	0.016	0.066
S5a_2	0.100	0.171	0.100	0.171
S5irr_2	0.944	0.962	0.949	1.000
S5irr_3	0.861	0.992	0.953	0.992
S6a_1	0.296	0.326	0.297	0.327
S6a_2	0.024	0.064	0.024	0.064
S6b_1	0.123	0.320	0.123	0.320
S6irr_9	0.752	0.848	0.752	0.848
S7c_2	0.333	0.848	0.333	0.848
S7d_3		0.992		0.992
S7irr_4	0.847	0.855	0.847	0.855
S7irr_6	0.978	0.999	0.978	0.999
Average	0.496	0.638	0.499	0.641

(A) Weak and strong verbs generally don't detract from each other's predictability, but weak verbs detract from the predictability of other weak verbs and strong verbs from that of other strong verbs.

Interestingly, though, this generalization is more valid for inclusive verbs than for exclusive ones.

TABLE 11. Predictability of weak exclusive conjugations calculated in isolation and in the context of all weak conjugations, all exclusive conjugations, and all conjugations

	Universe of paradigms			
	All verbs	Add *strong* exclusive verbs to weak exclusive	Add weak *inclusive* verbs to weak exclusive	Weak exclusive verbs alone
V1irr_14	0.895	0.987	1.000	1.000
V1irr_15	0.267	0.281	0.268	0.331
V1irr_16	0.543	0.697	0.666	0.837
V1irr_17	0.179	0.859	0.179	0.955
V1irr_19	0.976	0.977	0.997	0.998
V1irr_21	0.293	0.332	0.293	0.332
V1irr_22	0.901	0.901	0.975	0.975
V1irr_23	0.927	0.961	0.927	0.961
V1irr_8	0.370	0.834	0.437	0.962
V1irr_9	0.992	0.992	0.996	0.996
V2irr_11	0.959	0.966	0.959	0.966
V2irr_12	0.996	0.996	0.996	0.996
V2irr_13	0.521	0.548	0.521	0.548
V2irr_14	0.224	0.274	0.228	0.278
V2irr_15	0.320	0.320	0.320	0.320
V2irr_7	0.376	0.895	0.446	0.999
V2irr_9	0.966	0.966	1.000	1.000
V3_0	0.439	0.439	0.509	0.509
V3a_0	0.926	0.961	0.926	0.961
V3c_2	0.167	0.173	0.167	0.173
V3irr_1	0.918	0.985	0.918	0.992
V3irr_10	0.464	0.464	0.464	0.464
V3irr_11	0.460	0.460	0.460	0.460
V3irr_12	0.464	0.464	0.464	0.464
V3irr_2	0.074	0.188	0.074	0.233
V3irr_4		0.087		0.087
V3irr_7	0.463	0.463	0.463	0.463
V3irr_9	0.464	0.464	0.464	0.464
V4b_2	0.996	0.996	0.996	0.996
Average	0.591	0.653	0.611	0.680

TABLE 12. Predictability of strong exclusive conjugations calculated in isolation and in the context of all strong conjugations, all exclusive conjugations, and all conjugations

	Universe of paradigms			
	All verbs	Add *weak* exclusive verbs to strong exclusive	Add strong *inclusive* verbs to strong exclusive	Strong exclusive verbs alone
S1b_1	0.179	0.482	0.179	0.482
S1irr_1	0.464	0.482	0.464	0.482
S1irr_3	0.179	0.482	0.179	0.482
S3_0	0.686	0.686	0.686	0.686
S3a_2	0.179	0.179	0.179	0.179
S3a_3		0.032		0.032
S3b_2	0.412	0.872	0.412	0.872
S3irr_11	0.830	0.848	0.975	0.992
S3irr_12	0.453	0.453	0.464	0.464
S3irr_5	0.727	0.979	0.727	0.979
S3irr_6	0.983	0.983	0.987	1.000
S3irr_7	0.571	0.571	0.571	0.571
S3irr_8	0.312	0.572	0.312	0.572
S4a_2	0.019	0.098	0.019	0.098
S4b_1	0.178	0.179	0.178	0.179
S4irr_1	0.833	0.833	0.833	0.833
S4irr_2	0.663	0.841	0.663	0.841
S4irr_3	0.636	0.636	0.636	0.636
S5_0	0.892	0.909	0.892	0.909
S5b_1	0.954	0.959	0.954	0.959
S5irr_1	0.978	0.978	0.978	0.978
S5irr_4	0.973	0.974	0.973	0.974
S5irr_5	0.966	0.993	0.966	0.993
S6irr_1	1.000	1.000	1.000	1.000
S6irr_10	0.895	0.966	0.895	0.966
S6irr_11	0.722	0.891	0.722	0.995
S6irr_12	0.966	0.966	0.966	0.966
S6irr_13	0.133	0.133	0.171	0.171
S6irr_2	0.481	0.572	0.481	0.572
S6irr_3	0.767	0.798	0.767	0.798
S6irr_4	0.392	0.665	0.392	0.665
S6irr_5	0.569	0.691	0.569	0.691
S6irr_6	0.741	0.831	0.881	0.934
S6irr_7	0.982	0.982	0.982	0.982
S6irr_8	0.904	0.910	0.978	0.985
S7a_1	0.803	0.803	0.803	0.803
S7b_1	0.666	0.666	0.666	0.666
S7b_2	0.949	0.966	0.949	1.000
S7c_1	0.319	0.692	0.319	0.692
S7d_1	0.333	0.333	0.333	0.333
S7d_2	0.333	0.333	0.333	0.333
S7irr_1	0.796	0.796	0.797	0.797
S7irr_2	0.731	0.732	0.802	0.803
S7irr_3	0.848	0.855	0.848	0.855
S7irr_5	0.663	0.663	0.663	0.663
S7irr_7	0.742	0.999	0.998	0.999
S7irr_8	0.964	0.964	0.978	0.978
Average	0.647	0.707	0.663	0.720

(B)   Greater marginality correlates with a greater tendency for strong verbs and weak verbs to detract from each other's predictability.

(C)   Exclusive conjugations tend to be more predictable than their inclusive counterparts, and strong conjugations tend to be more predictable than their weak counterparts.

TABLE 13. Average predictability of different plat
fragments (from Tables 9-12)
[calculated in the context of all conjugations]

Inclusive conjugations		Exclusive conjugations	
Weak inclusive	Strong inclusive	Weak exclusive	Strong exclusive
0.448	0.496	0.591	0.647

(D) Exclusive conjugations detract from the predictability of inclusive conjugations more than inclusive conjugations detract from that of exclusive conjugations.

TABLE 14. How exclusive and inclusive conjugations detract from each other's predictability

	When exclusive conjugations are added to inclusive, their predictability decreases to	When inclusive conjugations are added to exclusive, their predictability decreases to
Weak conjugations	0.462 from 0.520 (11.2% decrease)	0.611 from 0.680 (10.1% decrease)
Strong conjugations	0.499 from 0.641 (22.2% decrease)	0.663 from 0.720 (7.9% decrease)

TABLE 15. How exclusive and inclusive conjugations detract from each other's predictability

a.

| | Predictability of X in the context of | | Difference |
	all inclusive conjugations	X's exclusive counterparts	
X = weak inclusive conjugations	0.518	0.462	11%
X = strong inclusive conjugations	0.638	0.499	22%

b.

| | Predictability of Y in the context of | | Difference |
	all exclusive conjugations	Y's inclusive counterparts	
Y = weak exclusive conjugations	0.653	0.611	6%
Y = strong exclusive conjugations	0.707	0.663	6%

6 Distillations

A DISTILLATION is a set of morphosyntactic property sets whose exponences exhibit the same pattern of sames and differents across all inflection classes. Thus, in the hypothetical plat in (6), the morphosyntactic property sets V and Z belong to a single distillation, since both conform to the patterns in (7).

(6)

	V	W	X	Y	Z
I	a	a	b	c	d
II	a	e	e	f	d
III	g	e	h	h	i
IV	j	k	h	l	l
V	m	m	n	l	o

(7) In columns V and Z in (6),
   a. II and I have the same exponence
   b. V, IV, III and II have distinct exponences

The exponences of morphosyntactic property sets belonging to the same distillation are interpredictable; thus, the predictability of the paradigms in a plat is enhanced to the extent that its morphosyntactic property sets are grouped into a small number of distillations.

7 Distillations and inclusive vs exclusive conjugations

Exclusive conjugations require more distillations than inclusive conjugations.

TABLE 15. Distillations required by weak inclusive and weak exclusive conjugations

Weak conjugations	
Exclusive conjugations require 15 distillations:	Inclusive conjugations require 11 distillations:
1 Inf 12 IndPres3pl	1 Inf 12 IndPres3pl
2 Impv2sg	2 Impv2sg
3 Impv1pl	3 Impv1pl 5 1stPple 10 IndPres1pl 22 SubjPres1pl
5 1stPple	
10 IndPres1pl 22 SubjPres1pl	
4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl
6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg
8 IndPres2sg 9 IndPres3sg	8 IndPres2sg 9 IndPres3sg
13 IndPast1sg 14 IndPast2sg 16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	13 IndPast1sg 14 IndPast2sg 15 IndPast3sg
15 IndPast3sg	16 IndPast1pl 18 IndPast3pl 17 IndPast2pl
25 SubjPast1sg 26 SubjPast2sg 28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg
27 SubjPast3sg	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl

TABLE 16. Distillations required by strong inclusive and strong exclusive conjugations

Strong conjugations	
Exclusive conjugations require 17 distillations:	Inclusive conjugations require 11 distillations:
1 Inf 12 IndPres3pl 3 Impv1pl 5 1stPple	1 Inf 12 IndPres3pl 3 Impv1pl 5 1stPple 10 IndPres1pl 22 SubjPres1pl
10 IndPres1pl 22 SubjPres1pl	
2 Impv2sg	2 Impv2sg
4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl
6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg
8 IndPres2sg 9 IndPres3sg	8 IndPres2sg 9 IndPres3sg
13 IndPast1sg 15 IndPast3sg	13 IndPast1sg 15 IndPast3sg
14 IndPast2sg	14 IndPast2sg
16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	16 IndPast1pl 18 IndPast3pl 17 IndPast2pl
25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg
28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl

TABLE 17. Distillations required by weak inclusive, inclusive, weak and all conjugations in Icelandic

All conjugations	Add weak *exclusive* conjugations to **weak inclusive**	Add *strong* inclusive conjugations to **weak inclusive**	**Weak inclusive conjugations**
21 distillations	17 distillations	13 distillations	11 distillations
1 Inf	1 Inf	1 Inf	1 Inf
12 IndPres3pl	12 IndPres3pl	12 IndPres3pl	12 IndPres3pl
2 Impv2sg	2 Impv2sg	2 Impv2sg	2 Impv2sg
3 Impv1pl 5 1stPple 10 IndPres1pl 22 SubjPres1pl	3 Impv1pl 5 1stPple 10 IndPres1pl 22 SubjPres1pl	3 Impv1pl 5 1stPple 10IndPres1pl 22 SubjPres1pl	3 Impv1pl 5 1stPple 10 IndPres1pl 22 SubjPres1pl
4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	4 Impv2pl 11 IndPres2pl 19 SubjPres2pl 20 SubjPres1sg 21 SubjPres3sg 23 SubjPres3pl 24 SubjPres2sg	4 Impv2pl 11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl
6 2ndPple	6 2ndPple	6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg	7 IndPres1sg	7 IndPres1sg
8 IndPres2sg 9 IndPres3sg	8 IndPres2sg 9 IndPres3sg	8 IndPres2sg 9 IndPres3sg	8 IndPres2sg 9 IndPres3sg
13 IndPast1sg 14 IndPast2sg 15 IndPast3sg	13 IndPast1sg 14 IndPast2sg 15 IndPast3sg	13 IndPast1sg 15 IndPast3sg 14 IndPast2sg	13 IndPast1sg 14 IndPast2sg 15 IndPast3sg
16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	16 IndPast1pl 18 IndPast3pl 17 IndPast2pl
25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg
28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl

TABLE 18. Distillations required by weak exclusive, weak, exclusive and all conjugations in Icelandic

All conjugations	Add *strong* exclusive conjugations to **weak exclusive**	Add weak *inclusive* conjugations to **weak exclusive**	**Weak exclusive conjugations**
21 distillations	21 distillations	17 distillations	15 distillations
1 Inf	1 Inf	1 Inf	1 Inf
2 Impv2sg	2 Impv2sg	2 Impv2sg	2 Impv2sg
3 Impv1pl	3 Impv1pl	3 Impv1pl	3 Impv1pl
4 Impv2pl	4 Impv2pl	4 Impv2pl	4 Impv2pl
5 1stPple	5 1stPple	5 1stPple	5 1stPple
6 2ndPple	6 2ndPple	6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg	7 IndPres1sg	7 IndPres1sg
8 IndPres2sg	8 IndPres2sg	8 IndPres2sg	8 IndPres2sg
9 IndPres3sg	9 IndPres3sg	9 IndPres3sg	9 IndPres3sg
10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl
11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	11 IndPres2pl 19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl
12 IndPres3pl	12 IndPres3pl	12 IndPres3pl	12 IndPres3pl
13 IndPast1sg 14 IndPast2sg 16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	13 IndPast1sg 14 IndPast2sg 16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	13 IndPast1sg 14 IndPast2sg 16 IndPast1pl 18 IndPast3pl 17 IndPast2pl	13 IndPast1sg 14 IndPast2sg 16 IndPast1pl 18 IndPast3pl 17 IndPast2pl
15 IndPast3sg	15 IndPast3sg	15 IndPast3sg	15 IndPast3sg
25 SubjPast1sg 26 SubjPast2sg 28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	25 SubjPast1sg 26 SubjPast2sg 28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	25 SubjPast1sg 26 SubjPast2sg 28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	25 SubjPast1sg 26 SubjPast2sg 28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl
27 SubjPast3sg	27 SubjPast3sg	27 SubjPast3sg	27 SubjPast3sg

TABLE 19. Distillations required by strong inclusive, inclusive, strong and all conjugations in Icelandic

All conjugations	Add strong *exclusive* conjugations to strong inclusive	Add *weak* inclusive conjugations to strong inclusive	Strong inclusive conjugations
21 distillations	18 distillations	13 distillations	11 distillations
1 Inf	1 Inf	1 Inf	1 Inf
12 IndPres3pl	12 IndPres3pl	12 IndPres3pl	12 IndPres3pl
3 Impv1pl	3 Impv1pl	3 Impv1pl	3 Impv1pl
5 1stPple	5 1stPple	5 1stPple	5 1stPple
10 IndPres1pl	10 IndPres1pl	10 IndPres1pl	10 IndPres1pl
22 SubjPres1pl	22 SubjPres1pl	22 SubjPres1pl	22 SubjPres1pl
2 Impv2sg	2 Impv2sg	2 Impv2sg	2 Impv2sg
4 Impv2pl	4 Impv2pl	4 Impv2pl	4 Impv2pl
11 IndPres2pl	11 IndPres2pl	11 IndPres2pl	11 IndPres2pl
19 SubjPres1sg	19 SubjPres1sg	19 SubjPres2pl	19 SubjPres1sg
20 SubjPres2sg	20 SubjPres2sg	20 SubjPres1sg	20 SubjPres2sg
21 SubjPres3sg	21 SubjPres3sg	21 SubjPres3sg	21 SubjPres3sg
23 SubjPres2pl	23 SubjPres2pl	23 SubjPres3pl	23 SubjPres2pl
24 SubjPres3pl	24 SubjPres3pl	24 SubjPres2sg	24 SubjPres3pl
6 2ndPple	6 2ndPple	6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg	7 IndPres1sg	7 IndPres1sg
8 IndPres2sg	8 IndPres2sg	8 IndPres2sg	8 IndPres2sg
9 IndPres3sg	9 IndPres3sg	9 IndPres3sg	9 IndPres3sg
13 IndPast1sg	13 IndPast1sg	13 IndPast1sg	13 IndPast1sg
15 IndPast3sg	15 IndPast3sg	15 IndPast3sg	15 IndPast3sg
14 IndPast2sg	14 IndPast2sg	14 IndPast2sg	14 IndPast2sg
16 IndPast1pl	16 IndPast1pl	16 IndPast1pl	16 IndPast1pl
18 IndPast3pl	18 IndPast3pl	18 IndPast3pl	18 IndPast3pl
17 IndPast2pl	17 IndPast2pl	17 IndPast2pl	17 IndPast2pl
25 SubjPast1sg	25 SubjPast1sg	25 SubjPast1sg	25 SubjPast1sg
26 SubjPast2sg	26 SubjPast2sg	26 SubjPast2sg	26 SubjPast2sg
27 SubjPast3sg	27 SubjPast3sg	27 SubjPast3sg	27 SubjPast3sg
28 SubjPast1pl	28 SubjPast1pl	28 SubjPast1pl	28 SubjPast1pl
29 SubjPast2pl	29 SubjPast2pl	29 SubjPast2pl	29 SubjPast2pl
30 SubjPast3pl	30 SubjPast3pl	30 SubjPast3pl	30 SubjPast3pl

TABLE 20. Distillations required strong exclusive, strong, exclusive and all conjugations in Icelandic

All conjugations	Add *weak* exclusive conjugations to **strong exclusive**	Add strong *inclusive* conjugations to **strong exclusive**	**Strong exclusive conjugations**
21 distillations	21 distillations	18 distillations	17 distillations
1 Inf	1 Inf	1 Inf	1 Inf
2 Impv2sg	2 Impv2sg	2 Impv2sg	2 Impv2sg
3 Impv1pl	3 Impv1pl	3 Impv1pl	3 Impv1pl
4 Impv2pl	4 Impv2pl	4 Impv2pl	4 Impv2pl
5 1stPple	5 1stPple	5 1stPple	5 1stPple
6 2ndPple	6 2ndPple	6 2ndPple	6 2ndPple
7 IndPres1sg	7 IndPres1sg	7 IndPres1sg	7 IndPres1sg
8 IndPres2sg	8 IndPres2sg	8 IndPres2sg	8 IndPres2sg
9 IndPres3sg	9 IndPres3sg	9 IndPres3sg	9 IndPres3sg
10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl	10 IndPres1pl 22 SubjPres1pl
11 IndPres2pl	11 IndPres2pl	11 IndPres2pl	11 IndPres2pl
19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl	19 SubjPres1sg 20 SubjPres2sg 21 SubjPres3sg 23 SubjPres2pl 24 SubjPres3pl
12 IndPres3pl	12 IndPres3pl	12 IndPres3pl	12 IndPres3pl
13 IndPast1sg 15 IndPast3sg	13 IndPast1sg 15 IndPast3sg	13 IndPast1sg 15 IndPast3sg	13 IndPast1sg 15 IndPast3sg
14 IndPast2sg	14 IndPast2sg	14 IndPast2sg	14 IndPast2sg
16 IndPast1pl 18 IndPast3pl	16 IndPast1pl 18 IndPast3pl	16 IndPast1pl 18 IndPast3pl	16 IndPast1pl 18 IndPast3pl
17 IndPast2pl	17 IndPast2pl	17 IndPast2pl	17 IndPast2pl
25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg	25 SubjPast1sg 26 SubjPast2sg 27 SubjPast3sg
28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl	28 SubjPast1pl 29 SubjPast2pl 30 SubjPast3pl

The exponences of morphosyntactic property sets belonging to the same distillation are interpredictable. Thus, exclusive conjugations detract from predictability because they separate morphosyntactic property sets into a larger number of distillations, diminishing interpredictability.

8 Discussion

(A) Weak and strong verbs generally don't detract from each other's predictability, but weak verbs detract from the predictability of other weak verbs and strong verbs from that of other strong verbs.

(B) Greater marginality correlates with a greater tendency for strong verbs and weak verbs to detract from each other's predictability.

(C) Exclusive conjugations tend to be more predictable than their inclusive counterparts, and strong conjugations tend to be more predictable than their weak counterparts.

(D) Exclusive conjugations detract from the predictability of inclusive conjugations more than inclusive conjugations detract from that of exclusive conjugations.

(1) **The Marginal Detraction Hypothesis**: Marginal inflection classes tend to detract most strongly from the predictability of other inflection classes. *This is because exclusive conjugations require more distillations.*

We would like to test the validity of this hypothesis for other languages.

If (1) is valid, then languages should exhibit a historical tension:

- innovations that minimize the number of distillations in a language enhance the predictability of that language's plat, and the number of distillations can be reduced by eliminating exclusive conjugations; but
- the persistence of exclusive conjugations is favored by the fact that they are inherently more predictable than inclusive conjugations.

A plausible hypothesis that we have yet to investigate is that token frequency is central to resolving this tension.

Why is there a correlation between marginality and detractiveness? Is it that detractive conjugations are disfavored by language learners, and therefore tend (a) not to acquire new members if not (b) to be eliminated analogically?