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Near Synonymy in Morphological Structures: Why Catalans can abolish constitutions but Portuguese and Spanish speakers can't.

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This article examines the concept of defectivity in the verbal system of Spanish, Portuguese and Catalan. Building on previous studies on defective verbs in Spanish and Portuguese I investigate why there are no such defective verbs in Catalan. I conclude that the structure of the verbal paradigm in Catalan non-first conjugation verbs is radically different from that of the other languages; Catalan verbs constitute paradigms which correspond to regular patterns of inflection whereas Spanish and Portuguese display non-predictable types of root allomorphy which require all non-first conjugation verbs to have a memorised form for the rhizotonic forms of the verb. Theoretically, this type of defectivity poses problems for models of inflectional morphology and suggests that the patterns of frequent verbs can become general rules for all verbs of a particular conjugation.

Keywords: defectiveness, defectivity, morphomes, paradigms, Spanish/Portuguese/Catalan.

1 Introduction

The concept of near-synonymy has, understandably, been studied mostly within the domain of lexical semantics, in which most studies examine to what extent cross-linguistic lexemes constitute functional cognate elements. For example, in a contrastive study of the semantics of the continuants of the Latin SENTĪRE in Spanish, French and Italian, Enghels & Jansegers (2013) note how each individual verb has undergone semantic specializations differentiating the lexical cognates: in French the cognitive pole of the verb has been developed to render meanings which approximate to 'think', 'know', 'realise' (ibid:979),

whereas in Spanish it is often used with the meaning ‘be sorry’ and in Italian ‘hear’. In Spanish and Italian these meanings are claimed to be grammaticalised, which the authors define as an umbrella term which captures the notion that a particular usage emerges as being frequent, common and systematic – a reality for the language.

It is in this vein that I will analyse defective verbs in Portuguese and Spanish and compare them with the closely related Romance language Catalan, which has no defective verbs. All three languages have the same common ancestor, however, over time and due to a series of phonological and morphological changes, which will not be analysed here, the different languages have undergone morphological specializations differentiating the conjugational classes and principles of word formation therein. More specifically, I claim that for non -ar verbs, Portuguese and Spanish do not create the rhizotonic forms of the verb via knowledge of other forms of the verb or a common memorised root, but only produce these forms if they have been heard and committed to memory. Hence the presence of defective verbs in these languages: they are low frequency non –ar verbs whose rhizotonic forms have not been heard. This is in contrast to Catalan, which possesses no defective verbs since the cognate lexemes all belong to a sub-paradigm of the –ir conjugation whose rhizotonic forms are produced on the basis of knowledge of other forms.

2 What are defective verbs?

Simply stated, defective verbs are verbs that have a number of forms of their paradigm missing. There are different types of defectivity in languages (Sims 2006, 2016 for an overview) but in what follows I will examine only the type of verbal defectivity which cannot be explained due to the semantics of the verb. Thus, verbs which only possess 3sg or 3pl forms such as those verbs meaning ‘concern’ or ‘happen’ (atañer, concernir, suceder, acontecer, ocurrir) will not be analysed , nor will impersonal verbs which refer to meteorological phenomena such as the verbs ‘to rain’, ‘to snow’, ‘to hail’ in the different languages.

The Portuguese and Spanish verbs abolir 'abolish' are the best known examples of this type of defectivity for Ibero-Romance; these verbs, as illustrated in (1) for Portuguese and (2) in Spanish[1] supposedly do not possess any inflectional forms for the singular and 3pl of the present indicative and subjunctive. This situation is in stark contrast to Catalan, which does display a full paradigm for this verb. However, note that the Catalan verb displays the augment -eix in the majority of the forms which are defective in the other languages; this fact will be of crucial importance at a later stage.

(1) The Portuguese verb abolir

	present indicative	**present subjunctive**	**future**	**conditional**	**imperfect indicative**
1SG.	-	-	abolirei	aboliria	abolia
2SG.	-	-	abolirás	abolirias	abolias
3SG.	-	-	abolirá	aboliria	abolia
1PL.	abolimos	-	aboliremos	aboliríamos	abolíamos
2PL.	abolis	-	abolireis	aboliríeis	abolíeis
3PL.	-	-	abolirão	aboliriam	abolíam
	pluperfect indicative	**imperfect subjunctive**	**preterite**	**future subjunctive**	**inflected infinitive**
1SG.	abolira	abolisse	aboli	abolir	abolir
2SG.	aboliras	abolisse	aboliste	abolires	abolires
3SG.	abolira	abolisse	aboliu	abolir	abolir
1PL.	abolíramos	abolíssemos	abolimos	abolirmos	abolirmos
2PL.	abolíreis	abolísseis	abolistes	abolirdes	abolirdes
3PL.	aboliram	abolissem	aboliram	abolirem	abolirem
	imperative	**infinitive**	**gerund**	**participle**	
	- , aboli	abolir	abolindo	abolido, -da	

(2) The Spanish verb abolir

	present indicative	**present subjunctive**	**future**	**conditional**
1SG.	-	-	aboliré	aboliría

[1] Note that although the majority of grammars note that this verb is defective, and speakers are unsure as to how to conjugate this verb, the Real Academia Española in its new grammar, and on the online dictionary has decreed that that it is not defective, nor does it display any allomorphy. Specifically, they state Aunque tradicionalmente se ha considerado verbo defectivo, ya que solían usarse solo las formas cuya desinencia empieza por i, hoy se documentan, y se consideran válidas, el resto de las formas de la conjugación: «Se abole la pena de muerte» (VV. AA. Grupo [Esp. 2001]) (http://lema.rae.es/dpd/srv/search?key=abolir). This prescriptive view does not correspond to actual usage (see O'Neill 2009).

2SG.	-	-	abolirás	abolirías
3SG.	-	-	abolirá	aboliría
1PL.	abolimos	-	aboliremos	aboliríamos
2PL.	abolís	-	aboliréis	aboliríais
3PL.	-	-	abolirán	abolirían
	imperfect subjunctive	**imperfect subjunctive**	**preterite**	**imperfect indicative**
1SG.	aboliera	aboliese	abolí	abolía
2SG.	abolieras	aboliese	aboliste	abolías
3SG.	aboliera	aboliese	abolió	abolía
1PL.	aboliéramos	aboliésemos	abolimos	abolíamos
2PL.	abolierais	abolieseis	abolís	abolíais
3PL.	abolieran	aboliesen	abolieron	abolían
	imperative	**infinitive**	**gerund**	**participle**
	- , abolid	abolir	aboliendo	abolido, -da

(3) The Catalan verb abolir

	present indicative	**present subjunctive**	**future**	**conditional**
1SG.	aboleixo	aboleixi	aboliré	aboliria
2SG.	aboleixes	aboleixis	aboliràs	aboliries
3SG.	aboleix	aboleixi	abolirà	aboliria
1PL.	abolim	abolim	abolirem	aboliríem
2PL.	aboliu	aboliu	abolireu	aboliríeu
3PL.	aboleixen	aboleixin	aboliran	abolirien
	imperfect subjunctive	**imperfect indicative**	**synthetic preterite**	**periphrasitc preterite**
1SG.	abolís	abolia	abolí	vaig abolir
2SG.	abolissis	abolies	abolires	vas abolir
3SG.	abolís	abolia	abolí	va abolir
1PL.	abolíssem	abolíem	abolírem	vam abolir
2PL.	abolíssiu	abolíeu	abolíreu	vau abolir
3PL.	abolissen	abolian	aboliren	van abolir
	imperative	**infinitive**	**gerund**	**participle**
	aboleix, aboliu	abolir	abolint	abolit, abolida

This pattern of defectiveness for Portuguese (1) and Spanish (2) is attested in a number of verbs; for reasons that will be elaborated on at a later stage, this pattern will be termed the N&L-pattern. This pattern, as it name suggests, is actually the combination of two different

patterns: the N-pattern and the L-pattern[2]. The first (N) refers to the set of paradigm cells comprising all singular forms of the present indicative and subjunctive, the 3PL forms of the same tenses and in Spanish the 2SG imperative, and in Portuguese the imperatives for tu and vocês. The second pattern (L) refers to all persons of the present subjunctive in addition to the 1SG present indicative and, in Portuguese, the você/vocês forms which are traditionally considered to be syncretic with the 3RD person forms of the present subjunctive[3]. These different patterns are displayed below in (4) in which for the sake of simplicity the forms of the imperative have been omitted.

(4) Different patterns

	N-Pattern		L-Pattern		N&L-Pattern	
	PRS IND	PRS SUBJ	PRS IND	PRS SUBJ	PRS IND	PRS SUBJ
1SG.						
2SG.			*			
3SG.			*			
1PL.	*	*	*		*	
2PL.	*	*	*		*	
3PL.			*			

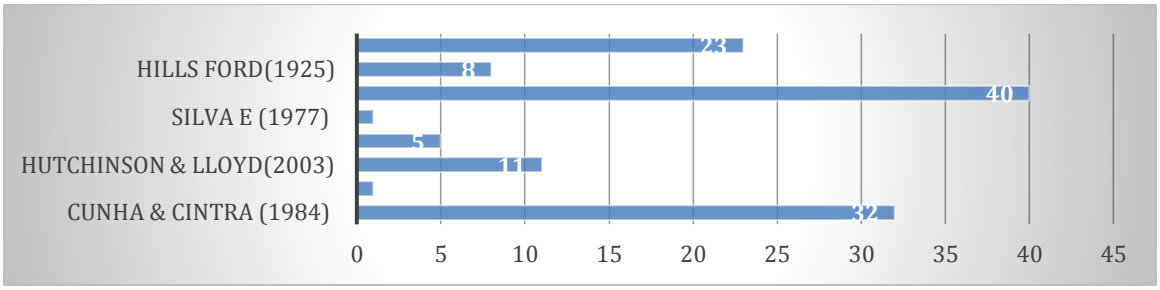
3 The defective verbs of Portuguese and Spanish

In relation to the defective verbs in Spanish Javier Elvira (1993:580) has noted what he has termed ‘las contradicciones y problemas que entraña el tratamiento de la defectividad en la gramática española’. In fact, this scholar has characterised the study of defectivity in Spanish as ‘uno de los capítulos más endebles, borrosos y escurridizos de nuestra gramática’ (Elvira 1993:580). The same is true for the study of defectivity in Portuguese. The reasons become apparent upon examination of the treatment of defectivity in the different grammars of Portuguese and Spanish, since there is no agreement between

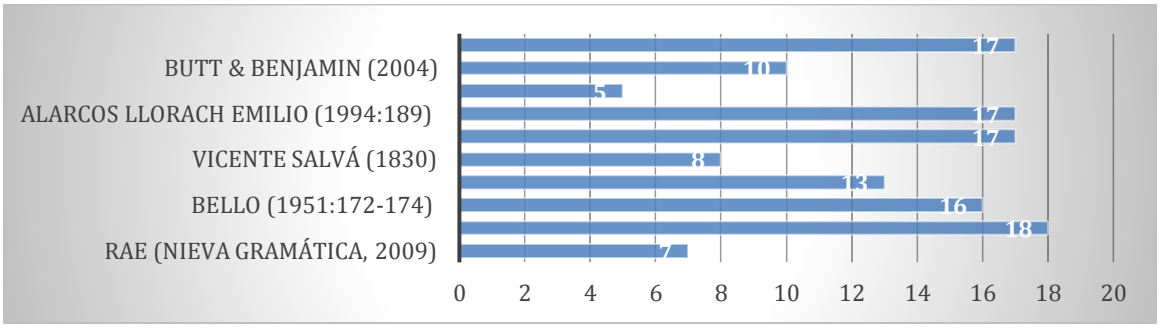
[2] These terms are purely arbitrary and are taken from Maiden (2004) who coined them in his discussion of historical developments in the Romance verb.
[3] In the spoken Portuguese of Brazil, the morphological forms of the 3SG present indicative can often correspond to the imperative forms with você.

scholars over (a) what the defective verbs in the language are and (b) what particular cells are defective. These points are illustrated in the tables below.

(5) Bar chart of the number of defective verbs according to different Portuguese grammars



(6) Bar chart of the number of defective verbs according to different Spanish grammars



(7) Different patterns of defectivity in the present indicative and subjunctive for different lexemes according to different Portuguese grammars.

	Cunha & Cintra (1984)		Perini (2002)		Dunn (1928)		Hills et. al. (1925)		Vázquez & Mendes		
											1sg
	aboles		aboles								2sg
abolir	abole		abole								3sg
	abolimos		abolimos		abolimos		abolimos		abolimos		1pl
	abolis		abolis		abolis		abolis		abolis		2pl
	abolem		abolem								3pl
			Not listed as defective				Not listed as defective				1sg
	demoles										2sg
demolir	demole										3sg
	demolimos				demolimos				demolimos		1pl
	demolis				demolis				demolis		2pl
	demolem										3pl
							Not listed as defective				1sg
	emerges		emerges						emerges		2sg
emergir	emerge		emerge						emerge		3sg
	emergimos		emergimos		emergimos				emergimos		1pl
	emergis		emergis		emergis				emergis		2pl
	emergem		emergem						emergem		3pl
			Not listed as defective				Not listed as defective				1sg
									precaves		2sg
precaver-									precave		3sg
	precavemo				precavemos				precavemos		1pl
	precaveis				precaveis				precaveis		2pl
									precavem		3pl

(8) Different patterns of defectivity for different lexemes according to different Spanish grammars.

	R.A.E.(Nueva)gramática		R.A.E. (diccionario)		Bello (1908)		Alcoba Santiago (1999)		Alarcos Llorach		
							only the adjective/participle *manido* and the infinitive *manir*		only the adjective/participle *manido* and the infinitive *manir*		1sg
											2sg
manir											3sg
	manimos		manimos		manimos						1pl
	manís		manís		manís						2pl
											3pl
	Not listed as defective		Not listed as defective		only the adjective/participle *denegrido* and the infinitive *denegrir*		only the adjective/participle *denegrido* and the infinitive *denegrir*		only the adjective/participle *denegrido* and the infinitive *denegrir*		1sg
											2sg
denegrir											3sg
											1pl
											2pl
											3pl
	only the adjective *colorido*						Not listed as defective		only the adjective/participle *descolorido* and the infinitive *descolorir*		1sg
											2sg
colorir											3sg
			colorimos		colorimos						1pl
			colorís		colorís						2pl
											3pl
	Not listed as defective										1sg
											2sg
abolir											3sg
			abolimos		abolimos		abolimos		abolimos		1pl
			abolís		abolís		abolís		abolís		2pl
											3pl

Such discrepancy invites one to pose the question whether defectivity in Spanish and Portuguese constitutes a psychological reality for speakers or is just an invention of grammarians. O'Neill (2009, forthcoming) carried out a number of statistical studies on Spanish and Portuguese corpora to answer this question (the combined total of the different corpora for Spanish was 206.5 million words, for Portuguese only one corpus of 180 million words was used). He identified that even though there was much disparity between different grammars all grammars were consistent in classing lexemes as defective either according to the N-pattern, the L-pattern and/or a combination of both forms. Additionally a number of grammars claimed that the supposed verbs were only used in the present participle adjectival form. Therefore, he created a statistical model, which could, from the overall frequency of a lexeme, predict the maximum and minimum values for the 3SG. present indicative and all the forms of the present subjunctive. The former value was used as a diagnostic of the N-pattern forms and the latter of the L-pattern forms. Additionally, the values for the 1PL. present indicative were calculated so as to check whether it was the case that a verb was not attested in the present tense, as opposed to it being defective in accordance with the different patterns. A list of possible defective verbs for each language was then checked against the corpora and the predictions of the statistical model (for full details of the statistical model see O'Neill 2009, forthcoming). The results are summarised below in (9) and the list of verbs defective according to the different patterns are given for Portuguese in (10) and for Spanish in (11).

(9) Summary of results from O'Neill (2009)

Portuguese	Spanish	
52	62	Number of alleged defective verbs
12	16	non extant / very infrequent
8	8	normal frequency
7	21	mainly occurred in past participle
10	10[4]	defective in N & L-pattern
12	3	defective in L-pattern

[4] Originally four verbs were considered to be defective according to the reduced N-pattern only: garantir, tullir, loar, incoar. The verb garantir was a special case whose variation depended on the variety of Spanish: Latin American vs. Peninsular. In Peninsular Spanish it only appeared as a past participle and once as an infinitive. The verb incoar could really have been considered as not defective, and tullir and loar were very close to being considered as defective according to the N&L pattern. For simplicity these examples have been excluded from the discussion.

(10) Defective verbs in Portuguese

Type		Verbs
Defective in the N&L-pattern	10	**abolir** 'abolish', **banir** 'banish', **colorir** 'colour', **demolir** 'demolish', **escapulir** 'slip off', **florir** 'flower', **polir** 'polish', **precaver-se**, 'be prepared/prepare against', **reaver** 'regain', **remir** 'redeem'.
Defective only in the L-pattern	12	**brandir '**brandish', **compelir** 'compel', **discernir** 'discern', e**mergir** 'emerge', **exaurir** 'drain', **extorquir** 'extort', **feder** 'stink', **fruir** 'enjoy', **gerir** 'digest', '**imergir** 'immerse', **retorquir** 'reply', **ungir** 'to anoint'

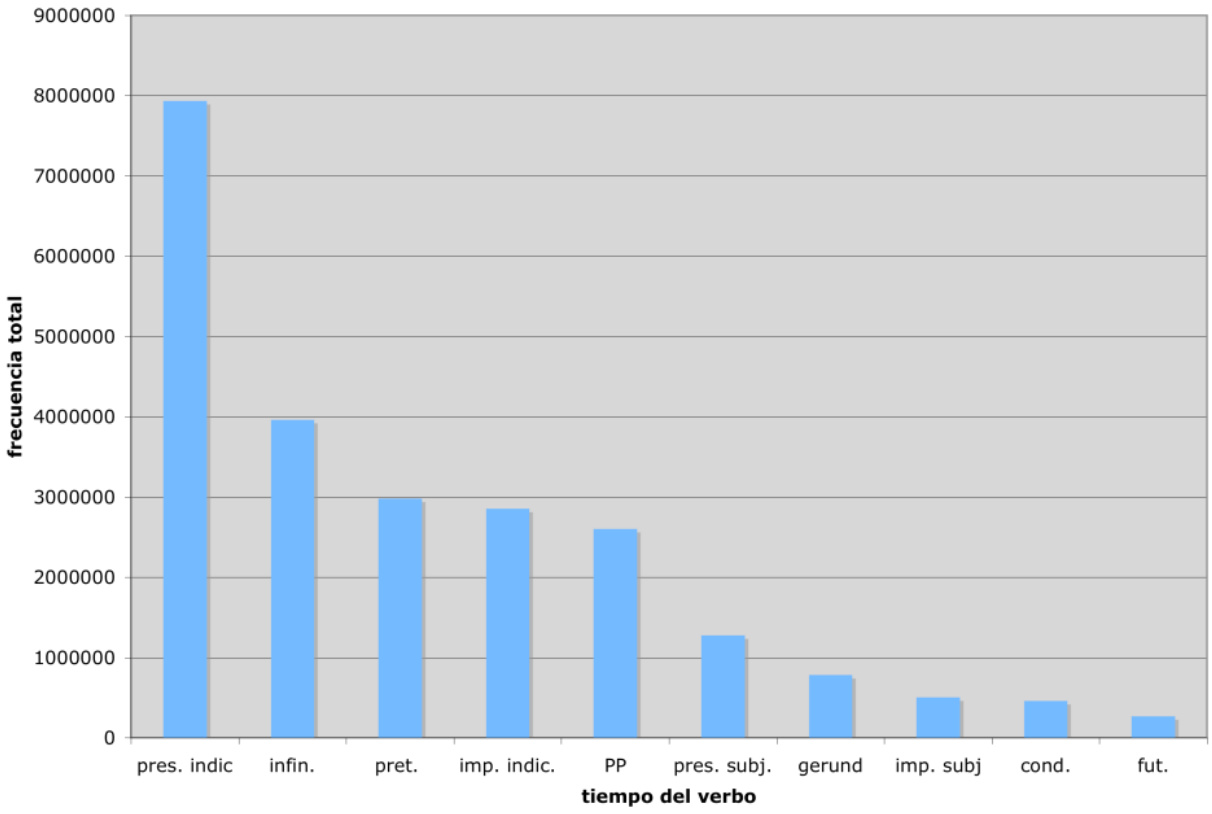
(11) Defective verbs in Spanish

Type		Verbs
Defective in the N&L-pattern	10	**abolir** 'abolish', **asir** 'grasp', **balbucir** 'babble', **bruñir** 'polish', **compungir** 'feel remorseful', **curtir** 'tan (leather)', **embutir** 'stuff', **precaver** 'provide against', **raer** 'scrape', **ungir** 'anoint'
Defective only in the L-pattern	3	**blandir** 'brandish', **estreñir** 'cause constipation', **erguir** 'erect'

We can therefore conclude that there are defective verbs in Portuguese and Spanish. Not only are the patterns of defectivity the same but the languages share some cognate defective verbs with the same patterns (abolir, precaver, blandir/brandir). Catalan, however, despite its geographic proximity and its historical relatedness does not possess any defective verbs, according to all dictionaries, grammars and intuitions of native speakers.

Before proceeding to a discussion of the various explanations for defective verbs in Portuguese and Spanish, it must be noted that the defective verbs in these languages all share the following properties: they are few in number, mostly limited to the –ir class of verbs, and most have a very low frequency. Despite the low frequency of the lexemes it is surprising that the 1SG. and 3SG. present indicative forms are defective since, as demonstrated by the bar chart in (12) of the total frequency of inflected forms for the Spanish CREA corpus, the present indicative is the most frequent form of the verb. Thus, if any inflected form of the verb was going to appear in the corpora, the prediction would be that it would be one of the most common forms of the most frequent tense, namely, 1SG. and 3SG. present indicative.

(12)



4 Explanations for defectiveness

The explanations for the defectivity in Spanish (Portuguese is not mentioned in the theoretical literature with the exception of O'Neill 2010) can be divided into three types detailed below:

- The defective forms simply sound bad or are avoided due to homonymic clash
- The defective forms are the result of grammatical uncertainty
- The defective forms are lexicalised

The first of these explanations is that of the Real Academia Española (RAE[5] 1854: 99) which makes the point that the possible diphthongised forms of the verb abolir: abuelo (1sg. pres. indic) y abuela (1sg. y 3sg. pres. subj.) are unacceptable because of the homophony with the identical forms meaning 'grandfather' and 'grandmother'. However, this argument is not valid for the following reasons: (a) the semantic and syntactic context is sufficient to disambiguate the different forms; (b) languages are replete with homonyms (e.g. in Spanish the word vino can mean 'wine' or the 3sg. Preterite of the verb venir 'to come'), (c) even if this argument were valid on the basis of recent studies on the avoidance of homonymic clashes, the argument only applies to two of the verbs which are defective for Spanish (abolir and blandir; the 1SG. present indicative and present subjunctive forms of this latter verb, blando, blanda, coincide with the adjectival forms meaning 'soft').

The second explanation, involving lexical uncertainty, has been put forth by Adam Albright in a series of articles (2003, 2006, 2009); the central idea is that gaps surface in low-frequency verbs when speakers are required to create a form and there is either conflicting data or insufficient data for speakers to know what morphophonological alternation the inflected form should have. In the specific case of Spanish, whilst for –ir verbs of the type cubrir 'to cover' the infinitive can only follow one model and give cubre, for abolir there is no model for the form abole, in which the root vowel remains unchanged as /o/ in the 3SG. present indicative, and there are only two verbs to copy for the alternation /o/ > [we], dormir - duerme and morir – muere. The result of the paucity of information is that the grammar opts to avoid the form.

The theoretical assumptions which underpin this hypothesis are that verb forms are created on the basis of morphophonologically similar forms and that defectivity occurs when this derivation require inference over data that are conflicting or scant.

This hypothesis suffers from a number of inadequacies (see O'Neill 2010, O'Neill 2009) but the most damaging one is that it cannot account for defective lexemes in which the defective forms are totally predictable. That is, the defective verbs which have root vowels /a u i/ have only one

[5] Real Academia Española, Comisión de Gramática. «Esbozo de una nueva gramática de la lengua española.» Madrid, Espasa, 1973.

model to follow; thus there is no conflicting evidence and plenty of verbs to imitate. However, these verbs are still defective. For ease of exposition I have listed these verbs again in (13).

(13)

Spanish	10/13	**asir** 'grasp', **bruñir** 'polish', **balbucir** 'babble', **blandir** 'brandish', **compungir** 'feel remorseful', **curtir** 'tan (leather)', **raer** 'scrape', **ungir** 'anoint', **embutir** 'stuff', **precaver** 'provide against'
Portuguese	9/22	**banir** 'banish', **brandir** 'brandish', **escapulir** 'get away from', **exaurir** 'drain', **falir** 'fail', **precaver**-se 'be on one's guard', **fruir** 'enjoy', **ungir** 'anoint'

The best overview of defectivity from a cross-linguistic perspective is to be found in Sims (2016), in which reference is made to the Spanish forms. The essence of the explanation offered in this monograph, and in previous publications by the same author (Daland et al. 2007; Sims 2007) is that learning an inflectional word form of a lexeme involves at least two tasks: (a) learning how to generate the appropriate phonological form of a lexeme (i.e. particular inflectional form), and (b) learning the probability that this inflectional and phonological form will be produced at all. The claim is therefore that the inflectional gaps that characterize inflectional forms are learnt.

This particular theory makes major assumptions regarding the nature of lexical storage and cognitive processes of word formation. The hypothesis is supported by experimental and statistical evidence for Russian and Greek but the main challenge to the theory of lexical gaps being learned is the fact that often defectiveness manifests itself in low-frequency verbs. Sims admits this problem and proposes that the defectivity in such lexemes is learned via analogy with more frequent forms with which they from a morphophonologically coherent group. Whilst such an explanation may suffice for the Russian data (however, see O'Neill (forthcoming(b)) for a critical overview) it cannot explain the Portuguese and Spanish data since these are all relatively low frequency verbs and, as is evident in (10) and (11), they do not form a morphophonologically coherent group, apart from most of the verbs belonging to the –ir class. However, only a very small percentage of this class of verbs are defective.

5 My proposal

In order to explain my proposal for the defective verbs of Portuguese and Spanish , it is necessary to analyse the different patterns of allomorphy in –er and –ir verbs in these languages, and to understand how this allomorphy is conditioned and the consequences of this conditioning for the morphological system of both languages.

5.1 Allomorphy in Portuguese and Spanish

Both Portuguese and Spanish display similar and differing patterns of allomorphy, in relation to the patterns that are relevant to defectiveness. Witness the L-pattern allomorphy for Portuguese[6] in (14) and for Spanish[7] in (15).

(14) The L-pattern allomorphy of the Portuguese verbs *ter* 'have', *ver* 'see', *fazer* 'do', *vir* 'come', *medir* 'measure', and *caber* 'fit'

	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	tenho	tenha	vejo	veja	faço	faça
2SG	tens	tenhas	vês	vejas	fazes	faças
3SG	tem	tenha	vê	veja	faz	faça
1PL	temos	tenhamos	vemos	vejamos	fazemos	façamos
2PL	tendes	tenhais	vedes	vejais	fazeis	façais
3PL	têm	tenham	vêem	vejam	fazem	façam
	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	venho	venha	caibo	caiba	meço	meça
2SG	vens	venhas	cabes	caibas	medes	meças
3SG	vem	venha	cabe	caiba	mede	meça
1PL	vimos	venhamos	cabemos	caibamos	medimos	meçamos
2PL	vindes	venhais	cabeis	caibais	medis	meçais
3PL	vêm	venham	cabem	caibam	medem	meçam

[6] There are approximately 15 verbal roots which display this alternation: medir, pedir, vir, caber, crer, ler, fazer, dizer, perder, pôr, trazer, valer, ver, ouvir.

[7] With the exception of the verb caber 'fit', all the L-pattern allomorphy in Spanish is characterised by a velar consonant. Modern Spanish contains approximately 155 verbal roots, excluding their derivatives, which display a voiceless velar allomorph in the L-pattern, and 11 verbal roots, again excluding derivatives, with a voiced velar allomorph. The latter are decir 'say', hacer 'do', salir 'go out', valer 'be worth', poner 'put', venir 'come', tener 'have', caer 'fall', traer 'bring', roer 'gnaw', oír 'hear'.

(15) The L-pattern allomorphy of the Spanish verbs *valer* 'be worth', *crecer* 'grow', *hacer* 'do', *caber* 'fit', *caer* 'fall', *salir* 'go out'.

	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	valgo	valga	crezco	crezca	hago	haga
2SG	vales	valgas	creces	crezcas	haces	hagas
3SG	vale	valga	crece	crezca	hace	haga
1PL	valemos	valgamos	crecemos	crezcamos	hacemos	hagamos
2PL	valéis	valgáis	crecéis	crezcáis	hacéis	hagáis
3PL	valen	valgan	crecen	crezcan	hacen	hagan
	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	quepo	quepa	caigo	caiga	salgo	salga
2SG	cabes	quepas	caes	caigas	sales	salgas
3SG	cabe	quepa	cae	caiga	sale	salga
1PL	cabemos	quepamos	caemos	caigamos	salimos	salgamos
2PL	cabéis	quepáis	caéis	caigáis	salís	salgáis
3PL	caben	quepan	caen	caigan	salen	salgan

The 'N-pattern' in both languages is characterised by vocalic alternations in the root vowel. In Portuguese, as illustrated in (16), the N-pattern is restricted to *–ar* verbs, in which it occurs with the great majority of verbs that have the graphs <e>[8] and <o>[9] as the root vowel. In Spanish[10] the N-pattern is the domain of diphthongisation and is not limited to any particular conjugation,

[8] The only exceptions to this rule, according to Cunha and Cintra (1994:414) are: verbs which contain the diphthong <ei> (e.g. cheirar 'smell'); verbs whose root-vowel is followed by a nasal consonant (e.g. remar 'row', ordenar 'put in order', empenhar 'to pawn'); verbs whose root vowel is followed by the palatal consonant [ʃ ʒ ʎ], with the exception of invejar 'envy', embrechar 'decorate with shells', frechar 'wound with an arrow', vexar 'to upset' (e.g. fechar 'close shut', desejar 'desire', aparelhar 'get ready'; the verb chegar 'arrive' and its derivatives.

[9] The only exceptions to this rule, according to Cunha and Cintra (1994:414-415) are: verbs which contain the diphthongs <oi>, <ou> (e.g. pernoitar 'spend the night', dourar 'gild'); verbs whose root vowel is followed by a nasal consonant (e.g. tomar 'take', leccionar 'teach', sonhar 'dream'); verbs ending in –oar (e.g. voar 'fly').

[10] According to Alcoba (1999:4971) there are 169 verbs which display a diphthong [je] in the N-pattern cells which alternates with the monophthong /e/ elsewhere, and 140 verbs in which the alternation is between the diphthong [we] and /o/. There are approximately 41 verbs which display a three-way alternation, [je] - /i/ - /e/ (sentir, mentir etc) or [we] - /u/ - /o/ (dormir and morir and their derivatives).

see (17). The N-pattern could also be considered to be relevant to alternating high-vowels[11] in –*ir* verbs; relevant examples are given in (18).

(16) A selection of Portuguese –*ar* verbs which display N-pattern allomorphy: *apegar* 'attach', *levar* 'carry', *nevar* 'snow', *jogar* 'play', *rogar* 'request', *lograr* 'achieve'.

	Indicative	Subjunctive	Indicative	Subjunctiv	Indicative	Subjunctive
1SG	ap[ɛ]go	ap[ɛ]gue	l[ɛ]vo	l[ɛ]ve	n[ɛ]vo	n[ɛ]ve
2SG	ap[ɛ]gas	ap[ɛ]gues	l[ɛ]vas	l[ɛ]ves	n[ɛ]vas	n[ɛ]ves
3SG	ap[ɛ]ga	ap[ɛ]gue	l[ɛ]va	l[ɛ]ve	n[ɛ]va	n[ɛ]ve
1PL	apegamos	apeguemos	levamos	levemos	nevamos	nevemos
2PL	apegais	apegueis	levais	leveis	nevais	neveis
3PL	ap[ɛ]gam	ap[ɛ]guem	l[ɛ]vam	l[ɛ]vem	n[ɛ]vam	n[ɛ]vem
	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	j[ɔ]go	j[ɔ]gue	r[ɔ]go	r[ɔ]gue	l[ɔ]gro	l[ɔ]gre
2SG	j[ɔ]gas	j[ɔ]gues	r[ɔ]gas	r[ɔ]gues	l[ɔ]gras	l[ɔ]gres
3SG	j[ɔ]ga	j[ɔ]gue	r[ɔ]ga	r[ɔ]gue	l[ɔ]gra	l[ɔ]gre
1PL	jogamos	joguemos	rogamos	roguemos	logramos	logremos
2PL	jogais	jogueis	rogais	rogueis	lograis	logreis
3PL	j[ɔ]gam	j[ɔ]guem	r[ɔ]gam	r[ɔ]guem	l[ɔ]gram	l[ɔ]grem

(17) A selection of Spanish verbs which display N-pattern allomorphy: *negar* 'refuse', *perder* 'loose', *poder* 'be able', *sentir* 'feel', *convertir* 'convert', *morir* 'die'.

	Indicative	Subjunctive	Indicative	Subjunctiv	Indicative	Subjunctive
1SG	niego	niegue	pierdo	pierda	puedo	pueda
2SG	niegas	niegues	pierdes	pierdas	puedes	puedas
3SG	niega	niegue	pierde	pierda	puede	pueda
1PL	negamos	neguemos	perdemos	perdamos	podemos	podamos
2PL	negáis	neguéis	perdéis	perdáis	podéis	podáis
3PL	niegan	nieguen	pierden	pierdan	pueden	puedan

[11] There are approximately 55 verbs of this type. Note that the high-vowel is also present in the 1PL and 2PL present subjunctive and therefore it could be concluded that there has been a merging of the two morphomes to create a N&L pattern whose verb forms all share a high vowel in the root. The psychological reality of this pattern, however, remains to be established, since it is a rule of Spanish that all -ir verbs which display a mid-vowel in the infinitive (with the exception of convergir 'converge') have a high-vowel in these cells even though in the N-pattern they can display diphthongs (sentir, mentir, convertirse, dormir, morir) or high vowels (servir, medir, pedir, etc.). Therefore, the formal syncretism of the root of the N-pattern and the 1PL & 2PL present subjunctive may be coincidental, in that speakers may not have grammaticalised this distributional regularity for the verbs in question. For simplicity I have omitted this pattern.

	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	siento	sienta	convierto	convierta	muero	muera
2SG	sientes	sientas	conviertes	conviertas	mueres	mueras
3SG	siente	sienta	convierte	convierta	muere	muera
1PL	sentimos	sintamos	convertimos	convirtamos	morimos	muramos
2PL	sentís	sintáis	convertís	convirtáis	morís	muráis
3PL	sienten	sientan	convierten	conviertan	mueren	mueran

(18) A selection of Spanish verbs which could possibly display N-pattern allomorphy with high-vowels in the N-pattern: *medir* 'measure'*, pedir* 'ask for'*, servir* 'serve.

	Indicative	Subjunctive	Indicative	Subjunctiv	Indicative	Subjunctive
1SG	mido	mida	pido	pida	sirvo	sirva
2SG	mides	midas	pides	pidas	sirves	sirvas
3SG	mide	mida	pide	pida	sirve	sirva
1PL	medimos	midamos	pedimos	pidamos	servimos	sirvamos[12]
2PL	medís	midáis	pedís	pidáis	servís	sirváis
3PL	miden	midan	piden	pidan	sirven	sirvan

In Portuguese the N-pattern can also interact with the L-pattern, effectively dominating it and reducing the N-pattern to the 2SG, 3SG, 3PL and relevant imperative forms and creating a new pattern, which I have termed the L>N-pattern (to be read, the L dominates the N-Pattern). This combination of the L-pattern and L>N-pattern is extremely prominent in the Portuguese verb; nearly all[13] *–er* and *–ir* verbs which display an orthographic mid-vowel as the root-vowel exhibit L>N-pattern allomorphy; in *–er* verbs, as illustrated in (19), the L-pattern cells display a high-mid vowel in the root which alternates with an open-mid vowel in the reduced N-pattern cells. In *–ir* verbs the root of the reduced N-pattern cells also displays an open-mid vowel, but the vowel in the L-pattern is a high vowel; witness the examples in (20). Spanish only has two verbs which display L>N-pattern allomorphy as displayed in (21).

(19) The Portuguese *-er* verbs *dever* 'owe', *mover* 'move', *beber* 'drink'.

[12] See footnote 11

[13] According to Cunha & Cintra (1994:416) the exceptions to this rule are: verbs whose root vowel is nasalized due to a following heterosyllabic consonant (encher 'fill up', romper 'break'); Brazilian Portuguese verbs whose root vowel is followed by a nasal consonant (temer 'fear', comer 'eat'); the verbs querer 'want' and poder 'be able'.

	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	d[e]vo	d[e]va	m[o]vo	m[o]va	b[e]bo	b[e]ba
2SG	d[ɛ]ves	d[e]vas	m[ɔ]ves	m[o]vas	b[ɛ]bes	b[e]bas
3SG	d[ɛ]ve	d[e]va	m[ɔ]ve	m[o]va	b[ɛ]be	b[e]ba
1PL	devemos	devamos	movemos	movamos	bebemos	bebamos
2PL	devis	devais	moveis	movais	bebeis	bebais
3PL	d[ɛ]vem	d[e]vam	m[ɔ]vem	m[o]vam	b[ɛ]bem	b[e]bam

(20) The Portuguese *–ir* verbs *servir* ‘serve’, *dormir* ‘sleep’, *vestir* ‘dress’.

	Indicative	Subjunctive	Indicative	Subjunctive	Indicative	Subjunctive
1SG	sirvo	sirva	durmo	durma	visto	vista
2SG	s[ɛ]rves	sirvas	d[ɔ]rmes	durmas	v[ɛ]stes	vistas
3SG	s[ɛ]rve	sirva	d[ɔ]rme	durma	v[ɛ]ste	vista
1PL	servimos	sirvamos	dormimos	durmamos	vestimos	vistamos
2PL	servis	sirvais	dormis	durmais	vestis	vistais
3PL	s[ɛ]rvem	sirvam	d[ɔ]rmem	durmam	v[ɛ]stem	vistam

(21) The Spanish verbs *tener* ‘have’ and *venir* ‘come’.

	Indicative	Subjunctive	Indicative	Subjunctive
1SG	tengo	tenga	vengo	venga
2SG	tienes	tengas	vienes	vengas
3SG	tiene	tenga	viene	venga
1PL	tenemos	tengamos	venimos	vengamos
2PL	tenéis	tengáis	venís	vengáis
3PL	tienen	tengan	vienen	vengan

The question of how this allomorphy is conditioned is controversial and depends crucially upon the theory of morphology adopted and the assumptions regarding the units of lexical storage and processes of word-formation. Within constructive theories of morphology (see Blevins 2006 for an overview) the usual assumption is that the stems or roots of words are stored in isolation to their inflectional endings, which correspond to some set of morphosyntactic properties. In such models, allomorphy is a matter of semantic or phonological conditioning, or for suppletive or near suppletive forms, it is usually conceded that the particular inflectional form is memorised

(e.g. the 1SG present indicative forms soy, doy, estoy, sé in Spanish). The allomorphy in the Portuguese and Spanish verbs described above poses challenges for explanations based on semantics since as argued extensively by Maiden (2001) and O'Neill (2015, 2011d) there is no exclusive semantic feature that can capture each individual pattern. Although there is, especially for Spanish, a consistent phonological generalisation available which corresponds to the patterning, i.e. the N-pattern forms are all rhizotonic and the L-pattern forms all contain a desinential non-front vowel, O'Neill (2011: 204-246, and forthcoming(b)) has advanced diachronic, synchronic, comparative and psycholinguistic evidence (Bybee and Pardo, 1981[14]) which prompts the conclusion that the correlation between the phonological environment and the allomorphy is a historical accident and in no way does the former determine the latter.

I argue that the allomorphy in these verbs is memorised and their distribution is predictable due to these patterns constituting an integral part of the way in which the verbal morphology is organised for Portuguese and Spanish. Such an explanation helps to explain the presence of defective verbs in these patterns: my claim is that the verbs are defective because they do not have a memorised verb form for these patterns, and the generalisation of the non –ar verbs in Portuguese and Spanish, due to the allomorphy described above, is not to form the inflectional forms of these patterns on the basis of other forms in the paradigm but to rely on stored, retrievable, memorised forms. Defective verbs are defective because they do not have these memorised forms. In order to elucidate these arguments, however, it is necessary to set out my assumptions regarding the processing and storage of morphologically complex words, which conform to those models of morphology which have been termed 'abstractive' (Blevins 2006).

[14] Subjects were presented with nonce verbs and asked to produce different inflectional forms. Regarding the production of velar forms there were two experimental conditions in which subjects were presented with the nonce forms from which it was clear that the nonce lexeme displayed the velar non-velar alternation. In the first experiment subjects were presented with the nonce forms in the 1sg and 3sg present indicative (e.g., the nonce verbs pale, palgo; rone, rongo; lece, lezco; fae, faigo) and were required to produce present subjunctive forms. In the second experiment subjects were presented with an infinitive and 1sg present indicative forms (palir, palgo; ronir, rongo; lecer, lezco: faer faigo) and asked to provide the 3sg present indicative form. For the present discussion, the important point about the results of these experiments is that there was no correlation between the production of a velar form and a back vowel; when a velar occurred it was before a back vowel in 48% of cases and before a front vowel in 52% of cases. These results are because, in the second experimental condition, the informants could generalise the velar root which was presented in the 1sg present indicative to the 3sg present indicative instead of using the non-velar allomorph of the infinitive. That is, upon hearing palir and palgo informants offered the 3sg present indicative form palgue as well as the expected form pale. Thus, the conclusion of Bybee and Pardo (1981) regarding the velar allomorphy in Spanish is that 'the alternation is morphologically conditioned and not phonologically conditioned'.

5.2 Abstractive models of morphology

Abstractive models of morphology (Baayen et al. 1997; Baayen et al. 2003; Bybee 2001; Blevins 2016, Skousen 1989; 1992; Eddington 2000; 2006) assume that the minimal meaningful unit is the word, and complex word forms are stored in their entirety in the lexicon and are connected to other words on the basis of formal and semantic relationships. This particular organisation 'provides generalisations and segmentation at various degrees of abstraction and generality whereby units such as morpheme, arise from the relations of identity and similarity that organise representation' (Bybee 2001:7). For example in abstractive models of morphology, the formative –mos in the Portuguese and Spanish word cantamos 'we sing', would not be stored in isolation to the root cant- and associated with the morphosyntactic features 1PL. Rather, given the frequency of the form cantamos, the word itself is most likely stored and the internal structure cant-a-mos, in which /a/ is the conjugation vowel and -mos associated with 1PL would be abstracted from comparisons with other verbs (tiramos, cortamos, pagamos, jogamos) which have the same structure and are also associated with 1PL meanings, and are likewise semantically and morphologically related to other verb forms displaying the same conjugation vowel (tirar, cortar, pagar, jogar).

In models of morphology in the post-Bloomfieldian tradition, abstractive theories are, at first sight, highly counterintuitive since they seem to advocate the mass storage of whole word-forms. In the context of highly inflected languages such as Portuguese and Spanish, this is highly redundant and falls short of what Bloomfield (1933:238) would term 'scientific compactness'. In the verbal morphology of these languages each lexeme has approximately between 45 and 57 individual forms respectively, the great majority of which are entirely predictable. Therefore, it would seem more economical, in terms of processing and storage, for morphologically complex words to be rule-generated along the lines of various constructive approaches (Ackema and Neeleman 2004; Anderson 1992; Aronoff 1976, 1994; Beard 1995; Matthews 1991; Scalise 1984; Stump 2001) or models which advocate dual processing (Clahsen 1999; Bybee (2001:29).

However Blevins (2016:79) has pointed out that theoretical compactness 'has no established relevance to language acquisition or use'. And that 'there is at present no evidence that the language faculty imposes memory demands that strain the storage capacity of the human brain, or that linguistic notions of "compactness" would be relevant to reducing this load'.

Moreover, abstract theories of morphology do **not** require all forms of a paradigm of a lexeme to be memorised, since within a conception of the lexicon as a complex network structure sensitive to frequency effects, mass storage of words that correspond to regular processes of inflection does not necessarily add complexity to the structure (Stemberger and MacWhinney (1986), Bybee (1999, 2010). Bybee (2001:29) exemplifies this point when she talks about whether the English word exaggerated, the past tense and participle form of the verb exaggerate, is stored in the lexicon. Specifically she states that: (Bybee 2001:29)

> 'since all of its parts overlap with existing items. . . it probably does not make much sense to ask if **exaggerated** is "in" the lexicon or not. It is there as a unit if it has been used, but the two portions of it overlap with other items and it has low token frequency, so it has little autonomy."

The idea here is that frequent items such as the 3SG preterite forms of Spanish cantar 'sing' and hablar 'speak', cant*ó* and habl*ó* respectively, are undoubtedly stored lexically, despite these being regular verbs, because of their token frequency. Moreover, given the relative frequency of such lexemes it is feasible to assume that even less frequent inflectional forms of their paradigm such as the 1PL present indicative, cantamos, hablamos, are lexically stored. Such forms would be connected to each other on the basis of their shared phonological material united with their common lexical meaning which holds over the whole word form. The networked connections between the stored forms of all -ar verbs would produce a situation whereby, for this class, there would be an inventory of lexically stored forms for most cells in the paradigm, regardless of the specific lexeme; this is because 'patterns of interpredictability permit the extrapolation of a larger system from a subset of forms' (Blevins 2016:227). This can be represented formally and abstractly as an exemplar paradigm, a network of forms which all display the same inflectional patterns.

Below in (22), I give an example of a formalised and simplified exemplar paradigm for –ar verbs of Spanish in which X is to be understood as the common lexical root of the verb.

(22) A reduced exemplar paradigm for Spanish –ar verbs.

	imperfect subjunctive	**imperfect subjunctive**	**preterite**	**imperfect indicative**
1SG.	Xara	Xáse	Xé	Xaba
2SG.	Xaras	Xáse	Xaste	Xabas
3SG.	Xara	Xáse	Xó	Xaba
1PL.	Xáramos	Xásemos	Xamos	Xábmos
2PL.	Xárais	Xáseis	Xasteis	Xábais
3PL.	Xaran	Xasen	Xaron	Xaban
	imperative	**infinitive**	**gerund**	**participle**
	Xa , Xad	Xar	Xando	Xado

The idea of the exemplar paradigm is to represent what Blevins (2016) calls 'interdependency of form variation (2016:225), expressed more simply by Matthews (1991:197) as the idea that 'one inflection tends to predict another'.

As elaborated upon in O'Neill (2014), each of the cells in the exemplar paradigm constitutes an abstraction over stored forms which represent nodes in the complex associative network; it must be remembered that all word forms are connected to each other and that these patterns have come about on the basis of a number of stored exemplars and formal patterns which emerge from these exemplars. In a robust network structure, such as that of -ar verbs, the whole storage of a word form of a lexeme which corresponds to just one node could imply that all the other word forms are, in a way, lexically stored, on account of their corresponding to one node in the network. This is due to the considerable type-frequency of this network, reflected in the strength of connections between forms. Thus, upon hearing an infrequent lexeme such as 3PL preterite form of the verb imputar 'impute', imputaron, even if the speaker has never heard or uttered this particular inflexional form of this verb, if they understand the lexemic meaning, then they necessarily have heard and lexically registered at least one form of this verb; therefore it forms part of the wider associative network, so they can automatically understand and produce any inflectional form of

this verb, e.g. the very infrequent 2PL imperfect subjunctive form of this lexeme, imputaseis. This capacity to produce all verb forms of a lexeme is not due to inflectional rules upon stored stems but due to the fact that all inflectional forms are, in a sense, present in the lexicon by association of the form imputaron with the network of inflectional patterning typical of verbs of the default -ar conjugation. Note however, that this concept of storage is not that a word form has been heard/uttered a significant number of times and thus possesses a strong memory trace (see also Bybee 2001) but is viewed in terms of membership in a complex network which has a significant type/token frequency and via which any single memorised word form of a lexeme indirectly presupposes that the other forms are also readily available.

An analogy which I find useful is that of a room adorned with numerous mirrors organised in a particular way whereby an image attached to one mirror is automatically present in all mirrors. The concept of lexical storage based on memory traces and having been heard a number of times, in this analogy, corresponds to the physical attached image. The reflections of the image in the other mirrors are akin to storage as part of a complex associative network; it is not the case that every mirror has an image attached to it but given the organisation of the mirrors, each mirror does contain an image of the primary image. The exemplar paradigm is an abstraction of this complex associative network and a shorthand means to represent it.

Within such a model, word production is a matter of either, retrieval of a stored form, or when there is no stored form present, exploitation of the implicational structure within an exemplar paradigm (see also Blevins 2006:237–238). It is my contention, however, that for –er and –ir verbs of Portuguese and Spanish the implicational structure is different than for –ar verbs, and specifically for the N&L-patterns, word production is always a matter of retrieval of a stored form and not realised on the basis of knowledge of other inflectional forms of the lexeme. I therefore argue that defective verbs are those verbs that do not possess stored forms for these patterns.

The –er and –ir conjugations, as described in 5.1, are characterised by a high proportion of allomorphy precisely in the N&L-patterns. Moreover, this allomorphy is not at all predictable by the phonological form of the verb outside the N&L patterns as attested by the tables in (24) and (23), in which I present the different types of allomorphy in the rhizotonic forms of present

indicative of the –ir verbs only for both Portuguese and Spanish in accordance with the root vowel.

(23) A selection of Portuguese –ir verbs classed in accordance with the root vowel and type of allomorphy in the 1SG present indicative (representative of the L-pattern) and 3SG present indicative (representative of the L>N-pattern).

Root vowel	**verb**	**gloss**	**1SG present indicative**	**type of allomorphy**	**3SG present indic**	**type of allomorphy**
<a>	sair	go out	saio	consonantal	sai	irregular desinence
	partir	leave	parto	none	parte	none
<e>	medir	measure	meço	consonantal	m[ɛ]de	vocalic
	servir	serve	sirvo	vocalic	s[ɛ]rve	vocalic
	submergir	submerge	submerjo	none	subm[ɛ]rge	vocalic
	agredir	assault	agrido	vocalic	agride	vocalic
<i>	frigir	fry	frijo	none	fr[ɛ]ges	vocalic
	permitir	permit	permito	none	permite	none
<o>/<ou>	ouvir	hear	ouço/oiço	consonantal	ouve	none
	dormir	sleep	durmo	vocalic	d[ɔ]rme	vocalic
<u>	cumprir	fulfill	cumpro	none	cumpre	none
	acudir	help	acudo	none	ac[ɔ]des	vocalic
	instruir	instruct	instruo	none	instrui	irregular desinence

(24) A selection of Spanish –ir verbs classed in accordance with the root vowel and type of allomorphy in the 1SG present indicative.

root vowel	**verb**	**gloss**	**1SG present indicative**	**type of allomorphy**
<a>	salir	go out	salgo	consonantal
	partir	leave	parto	none
<e>	sentir	feel	siento	vocalic
	servir	serve	sirvo	vocalic
	agredir	assault	agredo	none
<i>	vivir	live	vivo	none
<o>	oir	hear	oigo	consonantal
	dormir	sleep	duermo	vocalic

	podrir[15]	rot	pudro	vocalic
<u>	cumplir	fulfill	cumplo	none
	construir	build	construyo	consonantal

I contend that these allomorphs must be memorised. However, I do not propose that they are memorised as irregular roots or stems and indexed to occur in the different patterns but within an abstractive model of morphology in terms of exemplar paradigms, I claim that the consistent patterns of allomorphy exhibited across numerous lexemes in this conjugation have produced the situation whereby, the cells of the N-pattern in Spanish and the L-pattern and L>N-pattern in Portuguese are more cohesive and have a greater inter-predictability or diagnostic function with respect to the other cells[16]. These cells therefore form their own cohesive unit, whereby upon hearing and memorising the form in any of these cells, the other forms are automatically known. These structures have been termed morphomes by a number of authors (see O'Neill 2014, however, for a discussion of this term and different ways in which it has been used) and are to be understood here as a semantically heterogeneous collection of cells which display a very high degree of interpredicability, and whose grammatical reality can be verified historically (see Maiden 2004).

[15] This form is found in many varieties of Spanish and corresponds to the form pudrir in the standard language.

[16] My ideas about the mental representation of complex morphological systems have been guided by suggestions made in the various publications of Blevins (2006, 2016) and Bybee (2001). However, there is one important aspect in which my views diverge from those of the latter scholar: the importance given to correspondences of form alone. That is the realities of purely paradigmatic distributions of form inherent in the patterns described for Spanish and Portuguese. Bybee conceives of morphology as the union of semantic and phonological connections. These two types of associations do not have equal status however since the fundamental tenet of her lexical organisation of whole words is that form is subordinate to meaning. (Bybee 2001:117, 1985:118). Indeed, with reference to the vowel alternations of Spanish in (17) and (18)– (which are of different types but the paradigmatic pattern is the same across lexemes) whilst she does not absolutely reject the idea that lexical connections can be made on the basis of formal identity alone, she (Bybee 1985:131) states: 'In many cases, lexical connections among paradigms with similar alternations are not justified'. Bybee is indeed right when she notes (ibid) that consistent form in a semantically unmotivated set of paradigmatic cells, even over a number of lexemes, could be a mere coincidence, thus invalidating a justification lexical connections. However, a number of studies (Maiden 2001, 2004, 2009, O'Neill 2009, 2011a, 2011b, 2011c, Wheeler 2011) have provided a wealth of convincing diachronic evidence to suggest that patterns of regular distribution of identical form within the inflectional paradigm of the Romance Languages, which do not correspond to any coherent semantic or syntactic function, are psychologically real for speakers and constitute grammatical realities. The evidence which has been advanced for this argument has been of a diachronic nature, since there are a number of historical developments which presuppose the existence of such structures that can channel and condition morphological change.

It should be pointed out that N-pattern allomorphy is also attested in –ar verbs both in Portuguese and Spanish (see (16)&(17)). **CHANG** However, I contend that there is a qualitative difference between the morphomes in the –ar verbs and the non –ar verbs (for simplicity in the exposition, I shall only deal with –ir verbs). The verbs which display allomorphy in accordance with the different patterns in the –ir verbs are not only some of the most frequent verbs of that conjugation but the great majority of verbs of that conjugation display allomorphy; these patterns are reinforced for this class by both the token frequency of the individual forms and their type frequency for this class. The result, I contend, is that it has become conventionalized that –er and –ir verbs have a memorised form for the different morphomic patterns and that they stand outside the implicational structure for other inflectional forms of the conjugation. Simply stated, the L&N-pattern forms for all non –ar verbs are not formed on the basis of other forms of the lexeme but are memorised in their own right. Defective verbs, therefore, are simply verbs that do not possess a memorised form for the morphomic patterns.

Such a conclusion seems inherently counterintuitive when considering the numerous verbs with root vowels in /a/ /i/ and /u/ which do not display any type of allomorphy in the verbal paradigm. However, if frequency is accepted to be an important factor in the abstractive models of morphology which advocate mass storage of forms, then it is clear that the predominant model for the forms of the different morphomic patterns of –ir verbs is that they are not predictable on the basis of other forms of paradigm and must be memorised apart. It is my claim that this predominant model becomes **the** model of word formation for all non –ar verbs (for extensive support for this claim see O'Neill forthcoming(c)).

In this respect Catalan is different since it has two sub-paradigms for the present tense forms of –ir verbs. The first, traditionally termed conjugation IIIa, exemplified by the verb sentir 'feel', has rhizotonic stress and historically displayed vowel allomorphy in the N-Pattern cells. In the second sub-class of –ir verbs, traditionally termed conjugation IIIb and exemplified by servir 'serve' and also abolir in (3), the stress falls on the augment –eix which occurs after the root and is present for all verbs of this sub-paradigm. Therefore, whilst the Catalan verbs do display allomorphy in the rhizotonic forms of the present tense, unlike Portuguese and Spanish this allomorphy is always predictable on the basis of any other form of the verb.

(25) The Catalan verbs sentir ‘feel’ and servir ‘serve’

	Indicative	Subjunctive	Indicative	Subjunctive
1SG	sento	senti	serveixo	serveixi
2SG	sents	sentis	serveixes	serveixis
3SG	sent	senti	serveix	serveixi
1PL	sentim	sentim	servim	servim
2PL	sentiu	sentiu	serviu	serviu
3PL	senten	sentin	serveixen	serveixen

It is no coincidence, to my mind, that the Catalan lexemes cognate with the Portuguese and Spanish defective forms all belong to this IIIb conjugation, which display the augment –eix in the N-pattern cells. This is true both of the cognate forms, listed below in (26), of the Portuguese and Spanish defective verbs acknowledged in this article, and also the cognate forms, listed in (27), of the purported Spanish defective verbs which according to O’Neill (2009) are only mainly attested in the present participle form.

(26) List of Catalan cognates of the Portuguese and Spanish defective verbs.

abolir ‘abolish’, **acolorir** ‘colour’, **brunyir** ‘burnish/polish’, **compelir** ‘compel’, **compungir** ‘make remorseful’, **demolir** ‘demolish’, **discernir** ‘discern’, **embotir** ‘stuff’, **emergir** ‘emerge’, **extorquir** ‘demand/impose fines', **florir** ‘flower’, **fruir** ‘enjoy’, **garantir** ‘guarantee’, **polir** ‘polish’, **retorquir** ‘reply’, **submergir** ‘submerge’, **ungir** ‘anoint’.

(27) List of Catalan cognates of the alleged Spanish defective verbs, which in the corpora are mainly attested in the past participle form (O’Neill 2009).

aguerrir - aguerrido ‘battle-hardened’ **espaordir - espaordido** ‘frightened’, **empedernir - empedernido** ‘become hard’, **fallir - fallido** ‘failed’, **preterir - preterido** ‘passed over’

These verbs all have a full paradigm since, even if these verbs are extremely infrequent or, as is the case with the verbs in (27), are used mostly in the past participle form as adjectives, unlike Portuguese and Spanish, for the Catalan IIIb class, knowledge of inflected forms outside the N-pattern predicts the forms of the N-pattern. In term of an exemplar paradigm the relationship

between, for example, the infinitive and the N-pattern forms is Xir > Xeixo, Xeixes, Xeix, Xeixen (retorquir > retorqueixo, retorqueixes, retorqueix, retoriqueixen) As argued above, this level of interpredictability is not present in the most frequent verbs of the –ir class in Portuguese and Spanish. In this language, I have claimed that the generalisation is for the N&L pattern forms of all –ir verbs to be memorized, regardless of their 'regularity' and lack of allomorphy. Verbs are defective when they do not possess a memorized form.

6 Conclusion

This special collection of articles is on the concept of near synonymy. Within the domain of lexical semantics, near synonym, but not complete synonym (see Divjak 2010), can be considered to exist for different lexical items. Cross-linguistically, however, languages with a common origin tend to undergo semantic specializations differentiating their lexical cognates to produce the situation whereby the cognates can be at times similar and at other times radically different e,g, the continuants of the Latin verb SENTIRE; Spanish and Italian both have the meaning 'feel' but in Spanish an extremely frequent alternative meaning is 'to be sorry', and in Italian the verb is frequently used to mean 'to hear' (see Enghels & Jansegers (2013)).

I have used the phenomenon of defective verbs in Spanish, Portuguese and Catalan to show how languages with a common origin can develop in sometimes similar and, other times, very different ways with regards their morphology. Portuguese and Spanish verbal morphology is different in that they have different allomorphs which are distributed according to different patterns: N-pattern is prominent in Spanish whilst the L-pattern and the L>N-pattern is dominant in Portuguese. Nevertheless, in comparison with Catalan, Portuguese and Spanish are similar morphologically in that for –ir verbs, the morphological generalisation is that all lexemes must have a stored form for the different morphomic patterns, and these forms cannot be produced on the basis of knowledge of other inflectional forms, e.g. the infinitive or the participles. Subsequently, Portuguese and Spanish have defective verbs whilst Catalan does not. This seemingly trivial matter of having defective verbs actually reveals important aspects about the organisation of morphological paradigms and processes of word-formation in Portuguese,

Spanish and Catalan and has important implications for theoretical models of morphology (see O'Neill forthcoming(b) for an overview).

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