BOOK REVIEW
DEFECTIVE PARADIGMS: MISSING FORMS AND WHAT THEY TELL US

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REVIEW: BAERMAN, M., G. G. Corbett, & D. Brown (eds.). (2010) *Defective paradigms: missing forms and what they tell us*. Oxford University Press.

1. DEFECTIVITY AS LACK OF AN ALLOMORPH IN RHIZOTONIC AND NON-RHIZOTONIC INFLECTED FORMS

This book collects a number of papers on the topic of *defectiveness,* which can be defined as when the morphosyntactic space is not fully realized by the exponent space. An example with which BAERMAN & CORBETT (contributors to this volume henceforth in SMALLCAPS) begin in the introduction to the book is the Russian feminine noun *mečt*-á 'dream', which lacks a genitive plural form. This is presumably because the form is stressed on the desinence in all of its inflected forms, except the genitive plural, which <u>has no desinence.</u> (The authors, unfortunately, do not include stress in their transcriptions or discussion of this example). The generalization about this noun and a number of others in Russian that are defective in the genitive plural (most notably, *kochergá* 'poker', about which the author Zoshchenko wrote a well-known short story; Bailyn & Nevins (2008:262)) is that they seem to lack a rhizotonic allomorph. This is, in fact, a very well-chosen example with which to begin the book, as stressed-conditioned allomorphy (and in the special case at hand, a null, or absent allomorph) is a theme that runs through many of the contributions in this book, especially those on the Romance languages, viz. those by MAIDEN & O'NEILL, BOYÉ & CABREDO HOFHERR, and ANDERSON.

Consider, for example, the 1sg.indic of verbs such as *banir* 'to banish' in Portuguese, which is absent. Spanish and Portuguese are well-known for their 'defective' verbs: those which possess an infinitive, participle, and preterit forms, but a limited set of present tense forms. One such example is *abolir* 'to abolish', which, according to MAIDEN & O'NEILL, possesses the infinitive, the participles *abolido* and *abolindo*, the full set of preterit and future forms, but no present tense indicative except for the 1pl *abolimos,* and no present tense subjunctive forms whatsoever. (The same remarks hold for the verb

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falir 'to fail', listed as having this defective pattern in Cunha & Cintra 2013). A notable generalization about the 'missing' forms is that they are in a large part, 'rhizotonic', i.e. they would have stress on the root, rather than on an inflectional desinence. (Correspondingly, it may be for this reason that Italian and Catalan, which allow rhizotonic infinitives, seem to have no defective verbs).

Nonetheless, this generalization is not the whole story, as the would-be 1pl subjunctive form *abolamos* would bear stress on the penultimate syllable (and not the root), and thereby the correct generalization seems to be that the only 'effable' forms are those which overtly retain the theme vowel /i/ after the root. The preceding statement thus implicitly carries one of the generalizations at hand: defective verbs in Portuguese are all in the 3rd conjugation. (Maiden & O'Neill list the 2nd conjugation verb *precaver* 'to guard against' as partially defective, but with a different pattern).

In terms of a characterization of defective verbs, we can implement them in terms of the Distributed Morphology operation of Vocabulary Insertion, and state that verbs such as *abolir* have an incomplete list of vocabulary entries. More specifically, suppose that verbs, as open-class lexical items, are represented in the syntax by a root lacking phonological content, call it √abl43 (a notion adopted in Harley 2013). In Arregi & Nevins (2014), it was proposed that the arrangement of vocabulary entries would be as follows, for defective verbs such as *abolir* in Spanish and Portuguese:

√abl43 ↔ /abol/ in the environment: __ i

√abl43 ↔ no elsewhere item

Similarly, for Russian *mečt-a:*

√mcht99 ↔ /*mečt*/ in the environment: [-stress]

√mcht99 ↔ no elsewhere item

This implementation is in fact similar to the one proposed in Stump's chapter (p.204), where defectiveness is implemented in terms of restrictions on the content to form mapping: a certain set of forms allow this mapping, and others are simply blocked from it. In a similar manner, for the Surmiran Rumantsch case discussed in Anderson's chapter, the verb *dueir* 'should' (from Latin *de+habe:re*) has only non-rhizotonic allomorphs, and thus lacks the 1sg, 2sg, 3sg, 3pl, and present subjunctive forms. (Anderson notes that the defective forms are sometimes substituted by the semantically similar modal *stueir*.). The intution he provides is that, similarly to the Iberian cases, a morphologization of stress-conditioned vowel alternations has led to a set of rhizotonic and non-rhizotonic allomorphs. In a sense, phonologically-conditioned suppletive allomorphy can give way to defectiveness when there *is* no allomorph outside of the circumscribed environments.

Interestingly, Boyé & Cabredo Hofherr note that verbs such as French *clore* 'to close' seem to lack exactly the converse set of forms, namely the 1pl and 2pl. As such these verbs would be akin to the

Vallader Rumantsch dialect discussed in Anderson's paper, in which the verb *dueir* has <u>only</u> rhizotonic forms. Boyé & Cabredo Hofherr formalize their account in terms of speakers' knowledge of a paradigmatic 'stem space', a network of relations without any necessary grounding in morphosyntactic features, and thereby in a sense sharing much in common with the morphomic model of Maiden & O'Neill. These papers, along with Stump's, work within the intuition that defectiveness is a kind of syncretism, and that the forms that share a paradigm gap *are* syncretic, but simply syncretic for a null/ineffable allomorph.

There do seem to be cases of defectiveness which are comparable to the well-known paradox of "Buridan's Ass", in which a donkey theoretically starves to death deciding between two equally appealing (or equally unappealing) bales of hay. Boyé & Cabredo Hofherr discuss the case of plural forms of adjectives such as *nasal, palatal* in French; for such nouns, the plurals *nasals/palatals* (where the orthographic *s* is silent, and hence the singular and plural are identical) are unacceptable for technical jargon, but the irregular forms *nasaux, palataux* sound pretentious for unfamiliar words. (However, see Becker, Clemens & Nevins (2013) for evidence that French speakers readily extend this alternation to polysyllabic wug words, suggesting that lack of familiarity cannot be the whole story for these.) The intuition behind this line of explanation (also applied to the equal badness of *have strode/have stridden,* e.g. by Albright 2009) is that defectivity results when speakers are deadlocked in that *either* form sounds bad.

The general intuition shared by many papers in this volume (implicitly in Lukács, Rebrus & Törkenczy, and more explictly in Maiden & O'Neill) is that defective forms are those which not only lack specific allomorphs, but which seem to actively *resist* certain kinds of otherwise-available allomorphy. Focusing on the Iberian defective verbs, Maiden & O'Neill point out that 'defective verbs of learnèd origin never show any kind of allomorphy' (p.109) – not even where it might be expected, e.g. as mentioned above, in the preterit forms of Spanish *abolió* (not **abulió).* They note that many of the defective verbs in Spanish and Portuguese are not attested before the 16th century, and that features such as retention of the intervocalic /l/ in defective *demolir* 'to demolish' attest to this fact. This claim is empirically testable, and likely to be disconfirmed if wug tests show that speakers treat certain verbs as defective and others as non-defective even without indication of their neo-classical origins.

2. TOWARDS AN INTERFACE CHARACTERIZATION OF WHERE DEFECTIVE FORMS ARISE

Characterizing the set of verbs which show defectivity in Portuguese (as clearly, not all 3rd conjugation verbs are defective) has proved an elusive task for many grammarians. While some of them might be classified in terms of semantic restrictions (e.g. the putatively defective verb *latir* 'to bark' would sound odd or uncivilized in the 1sg), the fact that such forms are also defective in say, the 3rd person subjunctive rules out any appeal to semantics alone. In characterizing the set of defective verbs, an important caveat is also to make sure that speakers *know* the verbs at all; those which are so low-familiarity as to show uncertainty about any of the forms should be excluded from the first pass of arriving at a generalization.

One of the often tempting explanations is based on homophony avoidance, as the three defective verbs below would have a 1sg indicative and subjunctive identical to that of another, non-3rd conjugation, and high-familiarity verb. For example, consider three of the verbs listed as defective in Maiden & O'Neill: *polir* 'polish' has 1sg.ind *pulo,* 1sg.sbj *pula* (forms confusable with those of *pular* 'jump'); *parir* 'give birth': 1sg.ind *paro,* 1sg.sbj *para* (forms confusable with those of *parar* 'stop'); and *falir* 'fail': 1sg.ind *falo,* 1sg.sbj *fala* (has forms confusable with *falar* 'talk'). This, too, cannot be the whole story, as the set of 40 defective verbs compiled in the Aurélio dictionary and Cunha & Cintra's grammars contain many which do not submit to this explanation. Perhaps, indeed, we are relegated to a position no more intriguing than that of Maiden & O'Neill who state "The major domain of defectiveness (present subjunctive and 1sg present indicative) seems, and is, <u>irreducibly arbitrary</u> if one seeks a motivation outside the morphological system itself." Importantly, Maiden & O'Neill note that Spanish *abolir* is 'irregularly regular', in the sense that other mid-vowelled verbs in the third conjugation show allomorphy, e.g. Sp. *durmi*ó; thus, while the 3rd preterit form survives in Spanish, it is *aboli*ó, not Sp. **abuli*ó. (This generalization does not seem to hold for Portuguese, as the preterit of neither verb shows raising: *dormiu, aboliu*; similarly, the account is silent about verbs with no mid-vowel/high-vowel alternations such as *banir*, which would have no expected allomorph that it could 'irregularly regularize' to begin with.)

However, a phonological generalization has recently been proposed, at least for Portuguese. Postma (2013) noticed that of the 40 defective verbs listed in Aurélio and Cunha & Cintra, 35 (87%) have a coronal sonorant (n,l,r,ɲ) immediately following the stem-final vowel (e.g. *colorir, banir, polir*). In terms of the explanation Postma offers (which we consider to be independent of the empirical generalization itself, and henceforth focus only on the latter in the present paper), his idea is that deleted theme-vowel harmony (e.g. *dormir* (inf.)*, dormes* (2sg. ind) vs *durmo* (1sg ind)*, durmas* (2sg subjunctive; Harris 1974) competes with the coronal for positioning within the root. While we must refer the reader to Postma's work for the details of the proposal, the intuition is that the fact that defective verbs are defective precisely where the theme vowel /i/ cannot be overtly realized has an interaction with the presence of a coronal sonorant following the final root-vowel. (Note that this generalization does not hold over Spanish, as defectivity in Spanish verbs such as *balbucir* 'to stammer' involves the alternation with a velar augment of the type *conocer/conozco*, largely absent in Portuguese).

The question that Nevins, Damulakis & Freitas (in preparation) wished to examine is whether indeed, speakers internalize such a generalization? In fact, before doing such wug-experiments, we need to know what the actual list of defective verbs *is* for real speakers. For example, are *explodir* 'explode' and *latir* 'bark' really defective (and hence exceptions to Postma's generalization)? In order to conduct this study, we took all 40 defective verbs, removed those that doctoral students did not know the meanings of. This left 21 verbs. We asked participants to rate familiarity of each verb from 1-5 in a pretest and excluded those with a mean lower than 2.5. Participants (n=24) produced the finite 1pl and the 3sg subjunctive, and then rated their confidence in their own productions, following the procedure of Albright 2009, who used the measure of a speaker's confidence in his/her own production as a measure of defectiveness. Importantly, our study (unlike others, including Albright's) specifically focused on the defectiveness of 3sg subjunctive, in order to see how truly general the pattern was, and avoid the potential confound of 1sg semantic restrictions.

The results included a statistical comparison of the mean rating for the 1pl ind vs the 3sg sbj of each verb is submitted to a t-test, and showed that *latir* and *explodir* were not defective, i.e. not significantly different in their inflected 1pl ind vs 3sg sbj forms. By contrast, all of the forms that were defective have a coronal sonorant in the root, upholding Postma's generalization. Importantly, these defective verbs can have a mid vowel, a high vowel, or a low vowel in the root, thereby rendering the generalization about the nature of the consonant more predictive than about, say, having mid-vowels (an explanation often proposed in the literature). Now that we have found *which* the set of defective verbs in Portuguese actually are, in future work, we can examine whether the phonologically-based generalization is extended to novel verbs or not. Daland, Sims & Pierrehumbert (2007), conducting simulations with agent models, find that the Russian 1sg verbal gaps (of the famous type *pylesosit'* 'to vacuum-clean', which lacks a 1sg, arguably because speakers are unsure whether to apply palatalization or not) are generalized to stems ending in a dental consonant, suggesting that a phonological basis for defectivity is a natural direction.

Many of the papers in this volume explore a phonological basis for defectiveness. The paper by LÖWENADLER focuses on phonological conflicts in Swedish neuter adjectives, such as *pry:d* 'prudish', and the difficulty caused by affixation of the neuter ending –*t*. What LÖWENADLER shows is that the form *pry:dt*, with a cluster, would violate a phonotactic constraint against such clusters, that the form *pryt*, with vowel shortening (and vowel quality changes) as well as assimilation is also disliked, that *pry:t* violates a constraint on assimilation of the stem, and that *pry:d*, with no evidence of suffixation, fails to expone the neuter gender. His formalization of the phonotactic interactions that conspire against realizing the suffix, coupled with an appeal to morphotactic transparency (Dressler 1985) -- a precursor to constraints such as Realize-Morpheme – paint speakers into a corner when attempting to inflect such forms.

The paper by LUKÁCS, REBRUS & TÖRKENCZY focuses on stem allomorphy and its interaction with phonology in Hungarian. Inflected forms like *háml-hat* 'peel' are phonotactically illicit – the forms in question in fact all involve consonant clusters in the stem, where the second consonant is /l/ or /z/. A kind of conservatism in stem allomorphy bans *hámol-hat*, as that stem allomorph is not independently found (as it is for, say, *omol-hat* 'collapse' from /oml/, where the stem allomorph with the vowel between the cluster <u>is</u> independently found in *omol-nak*). The explanation thus grounds defectiveness in phonotactic constraints that have no repair, although of course the open question remains why the availability of allomorphs seems to be asymmetrically dependent on forms with –*nak* (a 3pl. indef suffix) instead of –*hat* (a modal suffix). Of particular interest is the authors' experimental methodology, in which they measured not only participants' preferences for these inflected forms, but their reaction times as well.

The chapter by KALNAČA & LOKMANE focuses on defectiveness in Latvian reflexive verbs such as *mazgašanas* 'to wash oneself', which has no instrumental case form. They present a mostly descriptive overview, stating (p.57) that the formal causes are not yet clear, and that these phenomena have not received much attention. Of some interest are the repair strategies, which include borrowing other forms of the paradigm. Given the current state of understanding, this case may submit to a phonological

or syntactic explanation; time will tell, and cross-modular research seems crucial. Similarly, Baerman & Corbett mention gaps such as the fact that Itelmen lacks present tense forms of the verb 'to be' outside of the 2sg and 3pl, but without more phonological information, it is hard to know whether this is arbitrary or not.

One of the other interfaces of morphology is syntax itself. Stump's chapter focuses extensively on defectiveness in the inflectional paradigm of the Vedic pronoun *ena* "whose interpretation is invariably anaphoric" (p.185). He then goes on to say "I conclude that Vedic *ena's* paradigm is defective, and that its defectiveness is irreducible – that it cannot plausibly be attributed to any independent principle of morphology, syntax, or semantics." However, the defectiveness on which he focuses on that very page is the lack of nominative forms, a fact which can be straightforwardly attributed to the *anaphor agreement effect*, a well-known ban on nominative anaphors established within syntactic theory (Rizzi 1990, Woolford 1999).

The chapter by Mithun is instructive, in that it points to the methodological issues involved in researching defectiveness, which is "potentially more difficult to discover than regularity, particularly in languages that lack lexicographic traditions" (p.125) and in the context of paradigm elicitation with native speakers of such languages. Her chapter discusses the intriguing example of ineffable kinship terms, such as Mohawk kinship combinations in which the grandparent is in the agent slot and the grandchild is in the patient slot, noting gaps for feminine indefinite referents. She also recounts the interesting anecdote of a Yup'ik speaker who suddenly realized in the course of elicitation that the noun *kaliqaq* 'paper' has a 2nd person dual possessed form, but no such 1st person dual form, although adds a cautionary note that it is important not to draw conclusions about defectiveness on the basis of responses from a single speaker of the language (p.147).

3. DEFECTIVENESS AND THE ORGANIZATION OF THE GRAMMAR

How, then, is defectivity best characterized, and what does it reveal about the way that various aspects of grammatical representation interact? Baerman & Corbett (p.2) say that "Defectiveness represents an unwanted intrusion of morphological idiosyncrasy into syntax". This statement seems to depend very much on what model one adopts. In Distributed Morphology or any late-realization model, the lack of a realization for the form that syntax generates is a matter *after* syntax, and not an intrusion, a statement entirely compatible with their characterization of defectiveness as occurring "when the form paradigm of some lexeme is smaller than its content paradigm" (p.11). Of course, under such a model, one would also have to disagree with them that illicit affix combinations (such as 1st and 2nd person affixes, representing [+participant] combinations of actor and patient; cf. Heath 1998, Georgi 2013) are to be included in the domain of defectiveness, as defectiveness is paradigmatic, not syntagmatic, and excluded affix combinations are largely the result of syntactic and postsyntactic constraints applying well before Vocabulary Insertion. In fact, Rezac's paper, focusing on clitic clusters in French, is the one that offers the clearest division of labor of what kinds of syntagmatic restrictions should be modeled in the syntax and which should be modeled in the morphology (presumably, postsyntactically). The diagnostics Rezac offer distinguish classic Person-Case Constraint effects (e.g. the *me lui* constraint of French), which have a syntactic repair (namely a vastly different syntactic structure) with consequences for syntax-semantics phenomena (e.g. binding and quantification) versus clitic clusters that have no repair at all, or ones whose repair involves cluster-internal morphological operations

such as deletion and replacement, with no effects on syntactic or semantic representations. In short, syntactic constraints have syntactic repairs, while morphological constraints have morphological repairs, and thereby progress can be made in understanding what causes 'missing' clitic combinations partly by seeing by what tactics they are avoided and what effects the avoidance strategies have on other parts of the grammar.

Boyé & Cabredo Hofherr suggest that defectivity is "inferred from the fact that other speakers seem to avoid the form", a conclusion that would be clearly overturned by wug tests in which speakers have no evidence one way or the other about whether others avoid the form. Similarly, Daland, Sims & Pierrehumbert (2007) claim that "Paradigmatic gaps also probably serve a sociolinguistic purpose, for example as markers of education". It seems hard to fathom how this would work directly, given that *not* saying something would be a sociolinguistic marker, unless they are referring to the repair strategies employed by educated speakers, or the stigma incurred by non-educated speakers who *fill* these gaps. Yet again, this seems like an area in which wug-tests could be of direct help in arbitrating between two such hypotheses. If defectiveness is grounded in morphosyntactic and phonological considerations stateable in terms of the kind of abstract rules that other phenomena in morphology routinely are (e.g. syncretism and neutralization, phonologically-conditioned allomorphy), then exemplarist and sociolinguistically-relevant lexical clouds should be exempt from any influence in wug-tests. Indeed, Rezac's voice is one of the clearest in this volume in recognizing that defectivity is part syntax, part phonology, and part morphology, and that this reflects many interacting modules of the grammar, each with their own potential specific well-formedness principles, that nonetheless must interface with those of other modules. Should experiments reveal therefore, that speakers do bear intuitions about defectivity for verbs they have never heard before based on such factors, a motivation for defectivity couched in terms of 'I'm supposed to know that *this specific verb* is defective, as a sign of prestige' would suffer direct defenestration.

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