


10 Interactions Between Defectiveness and Syncretism

GREGORY STUMP

1. Introduction

A theory of inflection defines the principles by which language users infer the form and meaning of the words realizing a language's lexemes. The phenomenon of defectiveness poses an important challenge for any such theory: that of accounting for the non-existence of certain words whose form and meaning would seem to be predicted by a language's inflectional morphology. One way to address this challenge would be to pursue the hypothesis that all instances of defectiveness actually involve words whose existence is excluded by independently motivated principles; this is, in effect, the hypothesis that there is no true defectiveness.

Certainly there are apparent instances of defectiveness that can be dismissed by reference to independent principles. For instance, the French verb *falloir* 'be necessary' lacks first and second person as well as plural forms because its sole argument is invariably a propositional complement and its subject is therefore invariably the third-person singular masculine expletive pronoun *il*; similarly, the fact that the verb *traitre* 'milk' lacks simple past indicative and imperfect subjunctive forms might be explained by claiming that this verb lacks the special stem on which these two tense/mood combinations are built (compare the verb *faire* 'do', whose simple past indicative and imperfect subjunctive forms are built on the special stem *fa-*, which lacks any counterpart in the paradigm of *traitre*; see Boyé and Hofherr (this volume) for relevant discussion).

But although some instances of defectiveness can be reduced to independent phenomena, it is clear that not all can: that is, at least some patterns of defectiveness must be directly specified by rules in a language's morphology, as Baerman and Corbett (2006) have observed. An important kind of evidence in favour of this conclusion is the fact that patterns of defectiveness may interact with a language's patterns of syncretism in more than one way;
my claim here is that these alternative interactions afford an important insight into the ways in which irreducible patterns of definiteness may be specified.

In §2, I discuss the various possible interactions between definiteness and syncretism. In §3, I show that each of these varied sorts of interaction is attested in early Indic declensional morphology. In §4, I propose a formal account of these various interactions in a realizational theory of morphology.1

2. Interactions of Definiteness with Syncretism

In instances of syncretism, distinct cells in a lexeme’s paradigm have the same inflectional realization. Consider, for instance, the hypothetical paradigm in Table 1; here, A, B, C, D, and E represent distinct morphosyntactic properties, so that the six cells in this paradigm realize the six morphosyntactic property sets {A, D}, {B, D}, {C, D}, {A, E}, {B, E}, and {C, E}. This paradigm exhibits syncretism because the property sets {A, D} and {B, E} are identical in their realization as v. In such a paradigm, I shall refer to a set of cells that are identical in their realization as a DOMAIN OF SYNCRETISM.

In instances of definiteness, certain morphosyntactic property sets are left unrealized in a paradigm in which they are nevertheless available for realization. For instance, the hypothetical paradigm in Table 2 is defective because three of the morphosyntactic property sets available for realization—those containing the property E—go unrealized. In such a paradigm, I shall refer to the set of cells that are unrealized as a DOMAIN OF DEFINITIVENESS.

Table 1. A hypothetical pattern of syncretism

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>v</td>
<td>w</td>
<td>x</td>
</tr>
<tr>
<td>E</td>
<td>y</td>
<td>v</td>
<td>z</td>
</tr>
</tbody>
</table>

Domain of syncretism: {A, D}, {B, E}

Table 2. A hypothetical pattern of definiteness

<table>
<thead>
<tr>
<th></th>
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<td>v</td>
<td>z</td>
</tr>
</tbody>
</table>

Domain of definiteness: {A, E}, {B, E}, {C, E}

In some paradigms, definiteness and syncretism compete with one another, in the sense that the same cell is a candidate both for definiteness and for syncretic realization. In such instances, there are various possible interactions between definiteness and syncretism. I regard these three such interactions as canonical, in the sense that they obviously contrast with one another and can serve as a simple point of reference for the analysis of more complex interactions.2 These three canonical interactions are described in (1) and are represented schematically in Table 3.

(1) Three canonical interactions between definiteness and syncretism

a. Where P1, P2 are paradigms belonging to the same inflection class:
DEFINITIVENESS OVERRIDES SYNCRETISM in P2 if two cells belonging to a domain of syncretism in P1 correspond to two cells in P2, one of which is defective (where cell C1 in P1 corresponds to cell C2 in P2, if and only if C1 and C2 realize the same morphosyntactic property set). Thus, suppose that P1 and P2 are the respective paradigms in Tables 1 and 3(a): in that case, cell {B, E} belongs to a domain of syncretism in P1, but the corresponding cell in P2 belongs to a domain of definiteness; definiteness therefore overrides syncretism in P2.

b. SYNCRETISM OVERRIDES DEFINITIVENESS in a paradigm P if P contains a morphosyntactically coherent set S of cells having two complementary subsets S+ and S− such that (i) the cells in S+ are defective and (ii) there is a domain of syncretism to which all of the cells in S− belong. Thus, in Table 3(b), the set of cells associated with property E (i.e., the morphosyntactically coherent set \{(A, E), (B, E), (C, E)\}) has the two complementary subsets \{(A, E), (C, E)\} and \{(B, E)\}, the first of which contains defective cells and the second of which contains a cell belonging to a domain of syncretism. Syncretism therefore overrides definiteness in the paradigm represented in Table 3(b).

c. Where P1, P2 are paradigms belonging to the same inflection class: SYNCRETISM DETERMINES A DOMAIN OF DEFINITIVENESS in P2 if the cells constituting a domain of definiteness in P2 correspond to the cells constituting a domain of syncretism in P1. Thus, suppose that P1 and P2 are the respective paradigms in Tables 1 and 3(c): in that case, just as cells \{(A, D)\} and \{(B, E)\} constitute a domain of syncretism in P1, the corresponding cells likewise constitute a domain of definiteness in P2. Syncretism therefore determines a domain of definiteness in P2.

Table 3. Three canonical interactions between definiteness and syncretism

(a) Definiteness overrides syncretism

<table>
<thead>
<tr>
<th></th>
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<th>B</th>
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<tbody>
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<td>w</td>
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</tr>
<tr>
<td>E</td>
<td>y</td>
<td>v</td>
<td>z</td>
</tr>
</tbody>
</table>

(b) Syncretism overrides definiteness

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
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<tbody>
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<td>y</td>
<td>v</td>
<td>z</td>
</tr>
</tbody>
</table>

(c) Syncretism determines a domain of definiteness

<table>
<thead>
<tr>
<th></th>
<th>A</th>
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<th>C</th>
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</thead>
<tbody>
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<td>w</td>
<td>x</td>
</tr>
<tr>
<td>E</td>
<td>y</td>
<td>v</td>
<td>z</td>
</tr>
</tbody>
</table>

1 I thank the participants at the British Academy’s definiteness conference, and particularly the editors of this volume, for their helpful comments. In addition, I thank Steven Collins, Margaret Cone, James Gair and Ole Pind for helpful insights on the Pii šanaphēke enēthi pronoun Na, whose properties I investigated as part of this research but do not discuss in detail here.

2 See Corbett 2005 for discussion of the canonical approach in linguistic typology.
3. Interactions Between Defectiveness and Syneresis in Early Indic Declensional Paradigms

In this discussion, I draw upon evidence from several stages of early Indic: from Vedic, the earliest form of attested Sanskrit (§3.1); from post-Vedic Sanskrit (§3.2); from Classical Sanskrit (§3.3); and from the Prākrits (§3.4).

3.1. The pronoun ena in Vedic: defectiveness overrides and is overridden by syneresis

Consider first the inflection of the third person anaphoric clitic pronoun ena in Vedic, in which defectiveness overrides and is overridden by syneresis.

In Vedic, several pronouns participate in a pattern of inflection for case, number and gender which I shall here call the DEFAULT PRONOMINAL DECLENSION. The formal peculiarities of this declension are exemplified by the paradigm of the relative pronoun ya in Table 4.

As this table shows, ya inflects for seven cases, three numbers and three genders. The resulting paradigm embodies nine patterns of syneresis. These patterns vary in their breadth in the Sanskrit declensional system. Some are patterns exhibited by all declensional paradigms:

(i) each nominative dual form is identical to the accusative dual form for the same gender;

(ii) the instrumental, dative, and ablative of all three genders are alike in the dual; and

(iii) the genitive and locative of all three genders are alike in the dual.

One is exhibited by all non-pronominal declensional paradigms, in addition to that of ya:

(iv) each dative plural form is identical to the ablative plural form for the same gender.

One is exhibited by all feminine declensional paradigms:

(v) the feminine ablative singular form is identical to the feminine genitive singular form.

One is exhibited by all neuter declensional paradigms:

(vi) in each number, the neuter nominative form is identical to the neuter accusative form.

The remainder are restricted to a subset of the declension classes exhibiting the relevant morphosyntactic contrasts:

(vii) in both the singular and the plural, each oblique masculine form is identical to the neuter form for the same case;

(viii) neuter and feminine direct-case forms are alike in the dual; and

(ix) the feminine nominative plural form is identical to the feminine accusative plural form.

Among the third person pronouns in Vedic is the highly defective pronoun ena, whose forms are unaccented (hence clitic) and whose interpretation is invariably anaphoric, never deictic. Its inventory of forms is given in Table 5.
The defectiveness of this paradigm is not the effect of any independent principle. First, one cannot plausibly say that ENA lacks certain forms because it lacks the stem on which those forms are based. All of the forms in Table 5 conform to the default pronominal declension exemplified by the relative pronoun in Table 4, and paradigms conforming to this declension are in general built on a single stem in a (e.g. ya-); thus, the forms missing from Table 5 would all presumably arise from the same stem ena- as the forms present in Table 5. For this reason, the defectiveness of Vedic ENA cannot be likened to that of French TRAIRE ‘milk’ (§1).

Second, there is no independent syntactic or semantic reason why the shaded cells in Table 5 should go unrealized. Consider first the absence of nominative forms from Table 5. It has been suggested to me that this is a principled consequence of ENA’s clitic status, perhaps in conjunction with the fact that Vedic is a pro-drop language. But one cannot in fact say that clitic pronouns always lack nominative forms in Vedic: for instance, the clitic pronoun TVA ‘one, many a one’ has nominative forms (Macdonell 1910: §396), as does ENA itself in post-Vedic Sanskrit (see §3.2 below).

Consider now the absence of oblique forms other than the instrumental singular and the genitive/locative dual in Table 5. It would be very difficult to contend that the incidence of these forms is excluded by some independent syntactic or semantic principle, particularly in view of the fact that synonymous forms are not excluded from the paradigm of the demonstrative pronoun IDAM ‘this’. This latter pronoun can be used descriptively or anaphorically, and as Table 6 shows, its paradigm is built upon two pronominal stems: i- (in direct-case forms other than the masculine nominative singular) and a- (in all remaining forms, some of which involve regular sandhi modifications of a to e or ò); the forms based on a- are enclosed within dark borders in Table 6. The oblique forms, all based on a-, have unaccented (clitic) counterparts whose interpretation (like that of ENA) is invariably anaphoric: in view of the fact that these clitics are prosodically, syntactically, and semantically like the forms of ENA, it is unclear how one could attribute the gaps in the oblique cells of ENA’s paradigm to a syntactic or semantic principle without wrongly predicting gaps in the corresponding parts of IDAM’s inventory of clitic forms.

Table 6. Paradigm of Vedic IDAM ‘this’ (Whitney 1889: §§501f; Macdonell 1910: §393)

<table>
<thead>
<tr>
<th></th>
<th>Single</th>
<th>Dual</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>ayám</td>
<td>idám</td>
<td>iám</td>
</tr>
<tr>
<td>Accusative</td>
<td>imá̄</td>
<td>idám</td>
<td>iám</td>
</tr>
<tr>
<td>Instrumental</td>
<td>ená</td>
<td>ayá</td>
<td>ābyáś</td>
</tr>
<tr>
<td>Dative</td>
<td>asám</td>
<td>asyá</td>
<td>ābyáś</td>
</tr>
<tr>
<td>Abative</td>
<td>asmát</td>
<td>asyás</td>
<td>ābyáś</td>
</tr>
<tr>
<td>Genitive</td>
<td>ayá</td>
<td>ayós</td>
<td>āsám</td>
</tr>
<tr>
<td>Locative</td>
<td>asmín</td>
<td>asyá̄m</td>
<td>āsám</td>
</tr>
</tbody>
</table>

Given that the paradigm of ENA and the clitic inventory of IDAM each supply forms that the other lacks, one might try to argue that the forms of ENA are nothing other than suppletive members of IDAM’s clitic inventory. But in Vedic, the paradigm of ENA and IDAM’s clitic inventory are not merely complementary (Whitney 1889: §§501f; Macdonell 1910: §393). For example, ená (IDAM’s masculine/neuter instrumental singular clitic) and enena (ENA’s masculine/neuter instrumental singular form) clearly contrast, as the examples in (2) (both from the Taïtirîya Brāhmaṇa) show.

(2) a. étám | te | stómaṁ | tujījata | vipraḥ

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominative</td>
<td>ayám</td>
<td>idám</td>
<td>iám</td>
<td>imá, iám</td>
<td>imé</td>
<td>iám</td>
<td>imá, iám</td>
<td>imé</td>
<td>iám</td>
</tr>
<tr>
<td>Accusative</td>
<td>imá̄</td>
<td>idám</td>
<td>iám</td>
<td>imá, iám</td>
<td>imé</td>
<td>iám</td>
<td>imá, iám</td>
<td>imé</td>
<td>iám</td>
</tr>
<tr>
<td>Instrumental</td>
<td>ená</td>
<td>ayá</td>
<td>ābyáś</td>
<td>ābyáś</td>
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</tr>
<tr>
<td>Dative</td>
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<td>asyá</td>
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<td>ābyáś</td>
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</tr>
<tr>
<td>Genitive</td>
<td>ayá</td>
<td>ayós</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
</tr>
<tr>
<td>Locative</td>
<td>asmín</td>
<td>asyá̄m</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
<td>āsám</td>
</tr>
</tbody>
</table>

O you of powerful nature, I, a singer, have made for you this hymn, as a skillful craftsman (makes) a chariot;

<table>
<thead>
<tr>
<th>Noun</th>
<th>Case</th>
<th>Gender</th>
<th>Number</th>
<th>Case</th>
<th>Gender</th>
<th>Number</th>
<th>Case</th>
<th>Gender</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>sūvarvaḥ</td>
<td>apá</td>
<td>ená</td>
<td>jajayema.</td>
<td>celestial:</td>
<td>waters:</td>
<td>it (= the hymn):</td>
<td>win, obtain:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FEM.ACC.PL</td>
<td>FEM.ACC.PL</td>
<td>MASC.INS.SG</td>
<td>MASC.PRS.OPT.ACT</td>
<td>if indeed, O god Agni, you accept (it) gladly, may we obtain by it the celestial waters.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
b. bharadvaja yat te caturtham ayur dadyam
Bharadvaja: if thee: fourth: life: give:
MASC.VOC.SG DAT.SG NEUT.ACC.SG NEUT.ACC.SG 1SG.PRS.OPT.ACT
kim enema kurya?
what: it [= the life] do:
NEUT.ACC.SG NEUT.INS.SG 2SG.PRS.OPT.ACT
O Bharadvaja, if I gave you a fourth life, what would you do with it?
(Taittiriya Brähmana 3.10.11.45)

Moreover, ENA is, in very rare cases, accent, in which case it contrasts with an
corrected form of IDAM; in the Vedic verse in (3), for instance, the feminine
accusative singular form of ENA appears with accent (and in pada-initial
position, from which clitics are excluded); here it contrasts with IDAM's femi-
nine accusative singular form imam, which would have been metrically admissible
in the same position. One therefore cannot maintain that the forms in
Tables 5 and 6 all actually realize a single lexeme. (This situation changes,
however, in post-Vedic Sanskrit, as I show in §3.2.)

(3) imas ta indra prashayo ghradam
these: thee: Indra: spotted: ghee:
FEM.NOM.PL DAT.SG MASC.VOC.SG FEM.NOM.PL NEUT.ACC.SG
duhata iširam
yield: milk.mixture:
3PL.PRS.IND.MID FEM.ACC.SG
enam rtasya pipyusha:
this [= milk mixture] sacred.custom: swollen:
FEM.ACC.SG NEUT.GEN.SG PRF.ACT.PTCP, FEM.NOM.PL
To you, O Indra, these spotted cows, swollen, yield ghee (and) the milky mixture,
this thing of sacred custom.
(Rgveda 8.6.19

In view of these facts, I conclude that in Vedic, ENA's paradigm is defective,
and that its defectiveness is irreducible—that it cannot be plausibly attributed
to any independent principle of morphology, syntax, or semantics. The Vedic
paradigm of ENA therefore presents two canonical interactions between
defectiveness and syncretism. The first of these is that of defectiveness over-
riding syncretism (as in (1a)): in the default pronominal declension, the
nominative and the accusative are ordinarily syncretized in each of the five
instances in (4) (as in Table 4); but in the paradigm of ENA, the domain of
nominative defectiveness cuts across the domain of syncretism in all five of these
instances.

(4) Nominative/accusative syncretism in the default pronominal declension in Vedic:
   a. neut nom sg = neut acc sg
   b. masc nom du = masc acc du

The second of these canonical interactions is that of syncretism overriding
defectiveness (as in (1b)): among all the genitive cells in Table 5, the only
over realizations are syncretic forms; similarly for the locative cells. I will
consider the theoretical significance of these facts in §4.

3.2. A follow-up on the pronoun ENA in post-Vedic Sanskrit

Before considering an example of the third canonical interaction between
defectiveness and syncretism, I must say a word or two about the subsequent
development of the pronoun ENA in post-Vedic texts. In post-Vedic Sanskrit,
the lexeme ENA exhibits a slightly wider range of syntactic uses: certain
accusative forms in the paradigm of ENA begin exhibiting nominative uses as
well, in accordance with the patterns of syncretism in (4) (Wackernagel and
Debrunner 1930: 523f). In particular, the neuter accusative singular form enat
also begins to be used in the nominative, as in (5) and (6).

(5) Brähmapa svāheta, tad enat prāṇāti.
holy.power: = svāhā + iti thus it: please:
NEUT.DAT.SG hail! DIRECT NEUT.ACC.SG 3SG.PRS.IND.ACT
DISCOURSE MARKER
'To the holy power hail' (he says); thus he delights it [= the holy power].
tad enat pritam kṣatrād gopāyati.
thus it: pleased: lordly.power: guard:
NEUT.NOM.SG NEUT.NOM.SG NEUT.ABL.SG 3SG.PRS.IND.ACT
Thus, delighted, it guards (him) from the lordly power.
(Aitareya Brähmana 7.22.4; cf. Keith 1920: 74, 311)

(6) yā vai sā mūrtir ajāyata annam
REL.PRON. indeed that: form: be.born: food:
FEM.NOM.SG FEM.NOM.SG FEM.NOM.SG 3SG.IMPRF.MID NEUT.NOM.SG
vai tat.
indeed that:
NEUT.NOM.SG
The form that was born was indeed food.
tad enat śṛṣṭam pariṅ-ayajitmaṃ.
then it: created: directed.away.escape.DESID:
NEUT.NOM.SG NEUT.NOM.SG 3SG.IMPRF.ACT
It [= the food], when created, sought to go away
(Aitareya Āranyaka 2.4.3; cf. Keith 1909: 229)
The masculine accusative dual form *enau* also takes on nominative uses, as in (7) and (8).

(7) athaiau dadhi-madhu samaśnuto
    = atha + enau
    souř.milk-honey: obtain:
    then they: MASC.NOM.DU NEUT.ACC.SG 3DU.PRS.IND.ACT

Then those two [bride and groom] obtain sour milk and honey

yad vā havisyaṁ syāt.
REL.PRON. or fit.for.sacrifice: be:
NEUT.NOM.SG NEUT.NOM.SG 3SG.OPT.ACT

or whatever might be suitable for sacrifice.
(Mānavaṅghyāsūtra 1.12.5; cf. Dresden 1941: 63)

(8) tasmād enau prathamau śasyete svargyau
    therefore they: first: recite: heavenly
    MASC.NOM.DU MASC.NOM.DU 3DU.PRS.IND.PASS MASC.NOM.DU

Therefore these two are recited first as being heavenly.
(Kauṭiṭaki-Brāhmaṇa 22.1.21; Keith 1920: 74, 467)

Thus, in post-Vedic Sanskrit, definitiveness no longer overrides nominative/accusative syncretism in the neuter singular and the masculine dual; that is, nominative definitiveness in the paradigm of *ena* is overridden by two instances of nominative/accusative syncretism, as in Table 7.

<table>
<thead>
<tr>
<th>Table 7. Forms of the pronoun <em>ena</em> 'he/she/it' in post-Vedic Sanskrit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
</tr>
<tr>
<td>nominative</td>
</tr>
<tr>
<td>accusative</td>
</tr>
<tr>
<td>instrumental</td>
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<tr>
<td>dative</td>
</tr>
<tr>
<td>ablative</td>
</tr>
<tr>
<td>genitive</td>
</tr>
<tr>
<td>locative</td>
</tr>
</tbody>
</table>

(3) Syncretism with the cell immediately below is overridden

It is unclear, however, why this override of nominative definitiveness by nominative/accusative syncretism is limited to the two instances in (4a,b) (i.e. to the neuter singular and the masculine dual), and why it isn’t extended to the remaining instances in (4c–e) (i.e. to the neuter/feminine dual, the neuter plural, and the feminine plural).

In addition to these post-Vedic changes in the paradigm of *ena*, the demonstrative pronoun *idām* undergoes changes of its own (Burrow 1965: 276) which have the effect of integrating *ena’s* paradigm into its inventory of clitic forms. Recall that the forms in *idām’s* paradigm are based on the pronominal stems *i-*, and that it is the oblique forms based on *a*- that serve (unaccented) as *idām’s* clitic forms. In post-Vedic Sanskrit, the paradigm of *idām* is slightly different; cf. Table 8. Three of the forms in this paradigm are based neither on *i-* nor on *a-*, but on the stem *ana-*, these are the instrumental singular forms anēna and anāyā and the genitive/locative dual form anāyō; these correspond to the Vedic forms enā, ayā and ayōs. (Exceptionally, anāyā does show up twice in the Rgveda, but is the only form of *ana-* observable in the Saṃhitās; Macdonell 1916: 168.) Despite this difference in *idām’s* post-Vedic paradigm, it is still the forms based on *a-* that determine the membership of *idām’s* inventory of clitic forms; as a consequence, *idām’s* post-Vedic clitic inventory has gaps in the instrumental singular and the genitive/locative dual. For this reason, every cell that is realized in the post-Vedic paradigm of *ena* (Table 7) corresponds to a gap in *idām’s* post-Vedic inventory of clitic forms, so that the paradigm of *ena* can be integrated into this inventory as an instance of what Juge (1999) calls non-overlapping suppletion. This, indeed, is how Pāṇini portrays it (Aṣṭādhyāyī 2.4.34; cf. Katre 1987: 165).

| Table 8. Paradigm of post-Vedic *idām* ‘this’ (Whitney 1889: §§501) |
|------------------------|-----------------|-----------------|-----------------|-----------------|
| **Singular** | **Dual** | **Plural** |
| nominative | ayām | idām | iyām | imāṅ | iṁe | ime |
| accusative | imāṁ | idāṁ | iyāṁ | abhyāṁ | ebhīs | ebhīs |
| instrumental | anāṇa | anāyā | anāyā | anāyā | anāyā | anāyā |
| dative | āsmaṁ | āsma | āsma | āsma | āsma | āsma |
| ablative | āsma | āsma | āsma | āsma | āsma | āsma |
| genitive | ayā | ayās | ayās | ayās | ayās | ayās |
| locative | āsma | āsma | āsma | āsma | āsma | āsma |

3.3. Defective neuter an-stems in Classical Sanskrit: syncretism determines a domain of definiteness

Consider now the inflection of the neuter noun *yakṣa* ‘liver’ in Classical Sanskrit. As the paradigm in Table 9 shows, this noun is defective, lacking nominative, vocative, and accusative forms in all three numbers. *Yakṣa* is sometimes said to have a heteroclitic paradigm, because traditionally, these gaps are filled by the corresponding forms of the synonymous noun *yakṛt*; *yakṛt* does, however, have a full paradigm of its own, as in Table 10. This sort of relationship, in which definitiveness is compensated for by borrowing
from an independent paradigm, exists with a number of other neuter nouns belonging to the an-stem declension, including those in (9) (Whitney 1889: §432).

| Table 9. The paradigm of the neuter noun YAKAN 'liver' in Classical Sanskrit |
|----------------------------------------|------------------|------------------|------------------|
|   | NOM | VOC | ACC |
|   | singular | dual | plural |
|   | yaknā | yaknā | yaknā |
|   | yaknē | yaknē | yaknē |
|   | yaksas | yaksas | yaksas |
|   | yaksos | yaksos | yaksos |

| Table 10. The paradigm of the neuter noun YAKRT 'liver' in Classical Sanskrit |
|----------------------------------------|------------------|------------------|------------------|
|   | NOM | VOC | ACC |
|   | singular | dual | plural |
|   | yakrt | yakrt | yakrt |
|   | yakrti | yakrti | yakrti |
|   | yakrtas | yakrtas | yakrtas |
|   | yakrti | yakrti | yakrti |

(9) ASAN 'blood' (nominative, vocative, and accusative forms supplied by the full paradigm of ASAN)

| ŚAKAN 'ordure' (... by the full paradigm of ŚAKRT)
| ASAN 'mouth' (... by the full paradigm of ŚYA)
| UDAN 'water' (... by the full paradigm of UDANK)
| DOŠAN 'forearm' (... by the full paradigm of DOS)
| YOŠAN 'broth' (... by the full paradigm of YOŠA)

There is no independent phonological, morphological, syntactic or semantic motivation for the absence of the direct-case forms from YAKAN'S paradigm; that is, this is apparently an instance in which the morphology of the language must simply stipulate the absence of these forms.

The defectiveness in this example is sensitive to a regular pattern of syncretism in most neuter declensions: in this pattern, the nominative, the vocative, and the accusative are realized identically; this same pattern appears in the singular, the dual, and the plural. Thus, the domain of defectiveness in Table 9 subsumes nine cells that would ordinarily constitute the three domains of nominative/vocative/accusative syncretism exemplified in Table 11. For this reason, the paradigm in Table 9 exemplifies the third canonical interaction of defectiveness with syncretism, in which syncretism determines a domain of defectiveness as in (1c).

3.4. The pronoun 网约 in Prākrit: a complex interaction between defectiveness and syncretism

In Middle Indic, the pronoun ENA becomes more defective than ever: thus, in the Māhārāṣṭrī, Śāuraseni, and Māgadhī Prākrits, its use becomes restricted to a single accusative singular form eqam for all three genders (Pischel 1981: §431).

But alongside the pronoun ENA, the Prākrits exhibit a distinct pronoun ना which, like ENA, is enclitic in form and anaphoric in interpretation. Though defective, the paradigm of ना realizes a wider range of case/number/gender combinations than that of ENA. In the twelfth century Prākrit grammar of Hemacandra, ना is assigned the paradigm of forms in Table 12. (Here and henceforth, cited Prākrit forms are from the Māhārāṣṭrī Prākrit.)

| Table 11. The paradigm of the neuter noun NĀMAN 'name' in Classical Sanskrit |
|----------------------------------------|------------------|------------------|------------------|
|   | NOM | VOC | ACC |
|   | singular | dual | plural |
|   | Nāman | Nāman | Nāman |
|   | Nāmani | Nāmani | Nāmani |

| Table 12. Forms of the Prākrit pronoun ना 'he/she/it' according to Hemacandra III.70.77 (Pischel 1877-80, vol. 1: 87ff.; 1981: §431) |
|----------------------------------------|------------------|------------------|
|   | NOM | ACC | INS |
|   | masculine | neuter | feminine |
|   | masculine | neuter | feminine |
|   | nā | ne | nē |
|   | nē | nē | nē |

Notes:

4. Note that the nominative, vocative, and accusative forms in the paradigm of NĀMAN are built on three different stems (the zero grade stem (proverbially Nāman, elsewhere NĀMA-), the normal grade stem NĀMAN-, and the lengthened grade stem NĀMAYA-), two of which appear in other cases as well. Thus, the defective cells in the paradigm of YAKAN cannot be attributed to the absence of a particular stem from its stem inventory.

©: Syncretism with the cell immediately below is overridden.
4. A Theoretical Conception of Interactions Between Defectiveness and Syncretism

In this section, I present an independently motivated theoretical framework in which interactions between defectiveness and syncretism can be insightfully represented. I present the details of this framework in §4.1–3. These include a systematic distinction between content paradigms and form paradigms (§4.1); formally defined notions of inflectional category instantiation, morphosyntactic property specification, and what I call the encompass relation (§4.2); and the crucial notions of paradigm function and paradigm linkage from Stump (2001, 2002, 2006) and Stewart and Stump (2007) (§4.3). In §4.4, I analyse the early Indic facts in the context of this framework.

4.1. Content paradigms and form paradigms

Following Stump (2002) and Stewart and Stump (2007), I assume that a language’s inflectional morphology is defined by reference to two types of paradigm: content paradigms and form paradigms. A CONTENT PARADIGM is a set of pairs of the form (L, σ), where L is a lexeme and σ is a set of morphosyntactic properties with which L may be associated in syntactic structure. In particular, the content paradigm of a lexeme L is the set containing every pairing of L with a morphosyntactic property set with which it may be syntactically associated. Each such pairing is called a CONTENT CELL. A content paradigm expresses the range of syntactic uses to which a lexeme may be put.

A FORM PARADIGM is a set of pairs of the form (R, σ), where R is a lexeme’s root form and σ is a set of morphosyntactic properties for which R may inflect. In particular, the form paradigm of a root R is the set containing every pairing of R with a morphosyntactic property set for which R may inflect. Each such pairing is called a FORM CELL. A form paradigm expresses the range of inflectional realizations to which a root may give rise.

One might expect that the content cells in the content paradigm of a lexeme L will stand in a one-to-one correspondence to the form cells in the form paradigm of L’s root form. Very often, however, this is not the case. Consider, for instance, the relative pronoun lexeme ya in Vedic (Table 4). As a member of the default pronominal declension in Vedic, this lexeme can be syntactically associated with any combination of a gender (masculine, neuter, or feminine) with a non-vocative case (nominative, accusative, instrumental, dative, ablative, genitive, or locative) and a number (singular, dual, or plural). There are sixty-three such combinations; these are given in Table 13. Thus, the content paradigm of ya has sixty-three cells, each consisting of the pairing of ya with one of the morphosyntactic property sets in Table 13.
While the content paradigm of ya has sixty-three content cells, its root ya has many fewer distinct realizations, as Table 4 shows. This suggests that the form paradigm of ya includes some form cells in which morphosyntactic property sets stand in a disjunctive relation. For instance, given that the form yat realizes both of the morphosyntactic property sets in (11), one might assume that yat realizes the form cell in (12), whose morphosyntactic property specification is a disjunction of the two property sets in (11). I shall henceforth refer to form cells containing disjunctive property specifications (such as (12)) as syncretic form cells. If each instance of syncretism in the inflection of yat is assumed to involve a syncretic form cell, then ya’s form paradigm has only thirty cells: each cell is the pairing of the root ya with one of the thirty morphosyntactic property specifications in Table 14 (where I abbreviate gender-case-number specifications like \{g:neut, c:acc, n:sg\} as \{m-acc-s\}, etc.).

(11) a. \{g:neut, c:nom, n:sg\}
    b. \{g:neut, c:acc, n:sg\}

(12) \{ya, \{g:neut, c:nom, n:sg\} \lor \{g:neut, c:acc, n:sg\}\}

Thus, the sixty-three content cells defined for ya by the morphosyntactic property sets in Table 13 do not stand in a one-to-one correspondence to the thirty form cells defined for ya by the morphosyntactic property specifications in Table 14. Here and in general, each domain of syncretism in a
4.3. Paradigm functions and rules of paradigm linkage

Each of the cells in the content paradigm of *ya* and each of the cells in the form paradigm of *ya* has an inflected form of the root *ya* as its realization. The relation between a cell and its realization may be schematically represented by means of a paradigm function (a function PF that applies to a given cell to yield its realization); that is, the realization of the content cell *(L, τ)* may be schematically represented as PF(*(L, τ)*), and that of the form cell *(R, σ)* may be schematically represented as PF(*(R, σ)*). Under this assumption, the way in which a cell's realization is defined depends upon whether the cell in question is a content cell or a form cell.

In general, the realization PF(*(R, σ)*) of a form cell *(R, σ)* is defined as the result of applying a particular sequence of realization rules. Consider, for instance, the inflection of the Sanskrit root *aśva* 'horse': the accusative singular cell in the form paradigm of this root is *(18)*, and the realization of this cell is *aśvar*. PF(*aśva*, *(g:masc, c:acc, n:sg)*) is therefore defined as the result of applying a particular rule to *aśva*; this is a rule realizing the properties 'accusative' and 'singular' through the suffixation of -m. Of course, such realization needn't be defined piecemeal (with specific reference to particular roots and particular morphosyntactic property sets), but can ordinarily be specified by definitions generalizing over whole classes of roots and whole classes of morphosyntactic property sets; see Stump 2001 for extensive discussion of such generalized definitions.

*(18)* *(aśva, *(g:masc, c:acc, n:sg)*)

The realization of a content cell may be equated with that of a particular form cell; a rule specifying this sort of equation is a rule of paradigm linkage. For instance, the realization of the content cell *(aśva, *(g:masc, c:acc, n:sg)*) is that of the form cell *(18)*; that is, PF(*(aśva, *(g:masc, c:acc, n:sg)*)*) = PF(*aśva*, *(g:masc, c:acc, n:sg)*). Where the realization of a content cell *(L, τ)* is equated in this way with that of a form cell *(R, σ)*, I will call this form cell the FORM CORRESPONDENT of *(L, τ)*.

Often, a content cell and its form correspondent share the same morphosyntactic property specification. This fact is captured by the very general, default rule of paradigm linkage in *(19)*.

*(19)* Universal default rule of paradigm linkage: Where R is L's root, PF(*(L, σ)*) = PF(*(R, σ)*).

While the generalization expressed by *(19)* might appear to be trivial, it is not, because it is sometimes overridden by more specific rules of paradigm linkage. As Stump (2002) and Stewart and Stump (2007) show, there is a variety of ways in which *(19)* might be overridden. In instances of dependency, a content
cell's morphosyntactic property set contrasts with that of its form correspondent: schematically, $\text{PF}(L, \sigma_1') = \text{PF}(R_1, \sigma_1)$, where $\sigma_1'$ doesn't encompass $\sigma$. In instances of heteroclist, different cells in a lexeme's content paradigm have form correspondents in different form paradigms: schematically, $\text{PF}(L, \sigma_1') = \text{PF}(R_1, \sigma_1')$ but $\text{PF}(L, \sigma_2) = \text{PF}(R_2, \sigma_2)$, where $R_1 \neq R_2$ and $\sigma_1 \neq \sigma_2$. Instances of suppletion involve this same sort of relation between the cells in a content paradigm and cells in two or more form paradigms. These special patterns of paradigm linkage are schematically represented in Figures 1 and 2.

Figure 1. Deponency

![Deponency Diagram]

Syncretism is a third phenomenon involving overrides of the default rule of paradigm linkage in (19). In instances of syncretism, distinct cells in a lexeme's content paradigm share the same form correspondent: schematically, $\text{PF}(L, \sigma_1) = \text{PF}(L, \sigma_2) = \text{PF}(R, \sigma_2)$, where $\sigma_1 \neq \sigma_2$ and $\sigma_2$ encompasses both $\sigma_1$ and $\sigma_2$; this pattern of paradigm linkage is represented in Figure 3.

An example of a rule of paradigm linkage that induces syncretism in this way is the Sanskrit rule of paradigm linkage in (20):

$^6$ In instances of suppletion, the roots of the form paradigms differ in form, but may nevertheless belong to the same inflection class; in instances of heteroclist, the roots of the form paradigms belong to different inflection classes, but may be identical in form. Nothing, of course, excludes the possibility of heterochlitic suppletion.
(20) Sanskrit rule of paradigm linkage:
Where
(a) lexeme L belongs to category C,
(b) the root R of L belongs to inflection class I,
(c) the morphosyntactic property specification \( \tau \) is appropriate to C,
(d) the morphosyntactic property specification \( \sigma \) is appropriate to I, and
(e) PF)((L, \( \tau \)) is definable\(^7\) as PF((R, \( \sigma \))):

\[
\text{PF}(L, \tau) = \text{PF}(R, \sigma) \text{ if and only if } \sigma \text{ encompasses } \tau.
\]

(19) and (20) make the same predictions when \( \sigma = \tau \); but when \( \sigma \neq \tau \), (20) overrides (19). Thus, consider the Sanskrit lexeme \( VA \), whose content paradigm is based on the morphosyntactic property specifications in Table 13 and whose root \( ya \) has a form paradigm based on the morphosyntactic property specifications in Table 14 and the realizations in Table 4: according to (20) (and contrary to (19)), the realization of the content cells in (21a) and (22a) (whose property specifications are simple) equals the realization of the form cells in (21b) and (22b) (whose property specifications are disjunctive). These two form cells have disjunctive property sets because each has a realization that synchronizes two simple property sets.

(21) a. \( (VA, \{\text{G:neut, C:nom, N:sg}\}) \)
b. \( (ya, \{\text{G:neut, C:nom, N:sg}\} \lor \{\text{G:neut, C:acc, N:sg}\}) \)

(22) a. \( (VA, \{\text{G:masc, C:abl, N:sg}\}) \)
b. \( (ya, \{\text{G:masc, C:abl, N:sg}\} \lor \{\text{G:neut, C:abl, N:sg}\}) \)

In this conception of inflectional morphology, syncretism is enforced by a rule of paradigm linkage that limits a content cell to a form correspondent whose morphosyntactic property specification is disjunctive. Moreover, syncretism is directly represented both in the structure of form paradigms and in the property specifications of syncretic form cells. For instance, the form paradigm of \( ya \) in Table 4 has only four dual cells because of the extensive syncretism among its dual forms; in addition, the disjunctive property specifications in these dual form cells explicitly identify them as syncretic. Thus, in this theory, syncretism is a characteristic of form paradigms but not of content paradigms.

Logically, defectiveness could be stipulated either within a content paradigm or within a form paradigm. This is exactly what I shall argue: that the different ways in which defectiveness interacts with syncretism follow from the fact that defectiveness may be stipulated in a content paradigm, where there is never any syncretism, or in a form paradigm (where there may be syncretism). I develop this idea concretely in the following section, where I propose a formal account of the observed interactions of defectiveness and syncretism in early Indic.

4.4. A formal analysis of interactions between defectiveness and syncretism in Paradigm Function Morphology

Once a distinction is assumed between content paradigms and form paradigms, the question arises whether patterns of defectiveness are defined with respect to content paradigms or with respect to form paradigms. The answer, I argue, is that both sorts of definition are necessary.

Where a content cell \((L, \tau)\) and its form correspondent \((R, \sigma)\) have a realization, I will say that \( \text{PF}(L, \tau) \) is definable as \( \text{PF}(R, \sigma) \). Given a lexeme \( L \) with root \( R \), whether \( \text{PF}(L, \tau) \) is definable as \( \text{PF}(R, \sigma) \) may depend on the value of \( \sigma \), that of \( \tau \), or those of both \( \sigma \) and \( \tau \). In other words, defectiveness may be associated with content cells, with form cells, or with both. Because domains of syncretism are represented in form cells, domains of defectiveness that are sensitive to domains of syncretism are most easily defined with reference to form cells. By contrast, domains of defectiveness that are insensitive to domains of syncretism are often most easily defined with reference to content cells.

I assume that in those instances in which it is irreducible, defectiveness is enforced by a stipulated restriction on the realization of a content cell and its form correspondent. My claim here is that there is more than one way in which a domain of defectiveness may be defined, and that the different types of interaction between defectiveness and syncretism stem from these different types of definition. In particular, I propose the following theoretical characterization of the three canonical interactions between defectiveness and syncretism:

(23) Canonical interactions between defectiveness and syncretism

a. **Defectiveness overrides syncretism** when the domain of defectiveness is defined as excluding one or more content cells.
b. **Syncretism overrides defectiveness** when the domain of defectiveness is defined as excluding one or more syncretic form cells.
c. **Syncretism determines a domain of defectiveness** when the domain of defectiveness is defined as including one or more syncretic form cells.

Consider again the inflection of Vedic pronouns. A pronominal lexeme has a content paradigm whose cells should, by default, correspond to the property sets in Table 13; similarly, the form paradigm of a pronominal root should, in the default case, have cells corresponding to the morphosyntactic property specifications in Table 14. The Sanskrit rule of paradigm linkage in (20) entails that if \( L \) is a pronominal lexeme with root \( R \), then for each morphosyntactic
property specification \( \tau \) in Table 13 and each morphosyntactic property specification \( \sigma \) in Table 14. \( \text{PF}(L, \tau) = \text{PF}(R, \sigma) \) if and only if \( \tau \) encompasses \( \tau \). But this equation is subject to the precondition (20e) that \( \text{PF}(L, \tau) \) be definable as \( \text{PF}(R, \sigma) \).

Ordinarily, there will be no special restrictions on the definability of \( \text{PF}(L, \tau) \) as \( \text{PF}(R, \sigma) \), but in the special case in which \( L = \text{ena} \) (so that \( R = \text{ena} \)), stipulation (24) restricts the values of \( \tau \) and \( \sigma \) for which \( \text{PF}(L, \tau) \) is definable as \( \text{PF}(R, \sigma) \). According to (24), \( \text{PF}(\text{ena}, \tau) \) is undefinable as \( \text{PF}(\text{ena}, \sigma) \) unless: (a) \( \text{ena}, \tau \) is an accusative content cell; (b) \( \text{ena}, \tau \) is an instrumental singular content cell; or (c) \( \text{ena}, \sigma \) is the form cell encompassing the genitive dual.\(^8\)

(24) Defectiveness of \( \text{ena} \) in Vedic

Where \( \sigma \) encompasses \( \tau \), \( \text{PF}(\text{ena}, \tau) \) is definable as \( \text{PF}(\text{ena}, \sigma) \) only if

(a) \( \tau \) encompasses \{g:ace\},
(b) \( \tau \) encompasses \{g:masc, n:nom\}, or
(c) \( \sigma \) encompasses \{g:gen, n:du\}.

Because \( \tau \) doesn't encompass \{g:nom\} in instances (a) and (b) and \( \sigma \) doesn't encompass \{c:nom\} in instance (c), nominative content cells are inevitably relegated to the domain of defectiveness; that is, where \( \text{ena}, \tau \) is a nominative content cell, \( \text{PF}(\text{ena}, \tau) \) is not definable as \( \text{PF}(\text{ena}, \sigma) \), even if \( \text{ena}, \sigma \) happens to be a syncretic form cell. Thus, in accordance with (23a), nominative defectiveness canonically overrides nominative/accusative syncretism in the inflection of \( \text{ena} \) because (24) determines the domain of defectiveness as including nominative content cells.

In addition, (24) stipulates that the domain of defectiveness excludes the genitive dual form cell; this is the form cell having the syncretic property set in (25a). For this reason, \( \text{PF}(\text{ena}, \tau) \) is definable as \( \text{PF}(\text{ena}, \sigma) \) if \( \tau \) is any of the six property sets in (25b). Thus, in accordance with (23b), the syncretism of genitive with locative in the dual canonically overrides the defectiveness of locative cells in the inflection of \( \text{ena} \) because (24) defines the domain of defectiveness as excluding the syncretic form cell encompassing the genitive dual.

(25) a. \( \{g:gen-d\} \lor \{n:loc-d\} \lor \{n:gen-d\} \lor \{l:gen-d\} \lor \{l:loc-d\} \]

b. \( \{g:masc, c:gen, n:du\} \)

\( \{g:masc, c:loc, n:du\} \)

\( \{g:neut, c:gen, n:du\} \)

\( \{g:neut, c:loc, n:du\} \)

\(^8\) My reference to the genitive dual rather than to the locative dual in this definition is an arbitrary one. I make an analogously arbitrary choice of the nominative over the vocative and the accusative in definition (26).

Stipulation (24) defines the pattern of defectiveness represented in Tables 16 and 17, in which the domain of defectiveness is shaded and in which non-defective cells are labelled (a), (b), or (c) according to the clause of (24) that identifies them as non-defective. Non-defective cells that are unlabelled are non-defective by inference: if \( \sigma \) encompasses \( \tau \) and (24) identifies \( \tau \) as non-defective, then \( \sigma \) is non-defective; if \( \sigma \) encompasses \( \tau \) and (24) identifies \( \sigma \) as non-defective, then \( \tau \) is non-defective.

<table>
<thead>
<tr>
<th>Table 16. Content paradigm of Vedic ena</th>
<th>Table 17. Form paradigm of Vedic ena</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singular</td>
<td>Dual</td>
</tr>
<tr>
<td>m.</td>
<td>n.</td>
</tr>
<tr>
<td>Nom</td>
<td>(a)</td>
</tr>
<tr>
<td>Acc</td>
<td>(b)</td>
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<tr>
<td>Dat</td>
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<td>Abl</td>
<td>(c)</td>
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<tr>
<td>Gen</td>
<td>(c)</td>
</tr>
<tr>
<td>Loc</td>
<td>(c)</td>
</tr>
</tbody>
</table>

Now consider the case of Classical Sanskrit YAKAN 'liver'. Comparably to the situation with ena, a special stipulation here restricts the values of \( \tau \) and \( \sigma \) for which \( \text{PF}(\text{YAKAN}, \tau) \) is definable as \( \text{PF}(\text{yakan}, \sigma) \). According to (26), \( \text{PF}(\text{YAKAN}, \tau) \) is undefinable as \( \text{PF}(\text{yakan}, \sigma) \) if \( \text{yakan}, \sigma \) is a nominative form cell.

(26) Defectiveness of \( \text{YAKAN} \) in Classical Sanskrit

\[ \text{Where } \sigma \text{ encompasses } \tau, \text{PF}(\text{YAKAN}, \tau) \text{ is definable as } \text{PF}(\text{yakan}, \sigma) \text{ unless } \sigma \text{ encompasses } \{c:nom\}. \]

According to (26), the domain of defectiveness in YAKAN's paradigms includes all nominative form cells: there are three such cells (one singular, one dual, and one plural), each of which exhibits a nominative/vocative/accusative syncretism. Thus, in accordance with (23c), syncretism determines the domain of YAKAN's defectiveness because the domain of defectiveness is defined as including three syncretic form cells.

Stipulation (26) defines the pattern of defectiveness represented in Tables 18 and 19, in which the labelled cells are those that (26) explicitly identifies as defective. Shaded cells that are unlabelled are defective by inference: if \( \sigma \) encompasses \( \tau \) and (26) identifies \( \sigma \) as defective, then \( \tau \) is defective.
Consider finally the case of the Prākrit pronounal clitic na. Comparably to the situations with ena and yakṣa, a special stipulation here restricts the values of τ and σ for which PF((na, τ)) is definable as PF((na, σ)). According to (27), PF((na, τ)) is undefinable as PF((na, σ)) unless (a) (na, τ) is an instrumental content cell or (b) (na, τ) is an accusative content cell having a masculine form cell (na, σ) as its form correspondent.

(27) Defectiveness of na in Prākrit

Where σ encompasses τ, PF((na, τ)) is definable as PF((na, σ)) only if

(a) τ encompasses {cins} or
(b) τ encompasses {canov} and σ encompasses {gmasc}.

Note that clause (b) of this stipulation defines na's domain of defectiveness as excluding a certain sort of content cell having a certain sort of form correspondent. For this reason, the interaction between defectiveness and syncretism entailed by (27) is more complex than that entailed by (24) or (26): in particular, (27) defines a pattern of defectiveness that overrides the patterns of syncretism in (10a,b) (i.e. the patterns neuter nominative singular = neuter accusative singular and masculine nominative plural = masculine accusative plural) but is itself partially determined by the patterns of syncretism in (10c,d) (i.e. the patterns neuter nominative plural = neuter accusative plural and feminine nominative plural = feminine accusative plural).

Stipulation (27) defines the pattern of defectiveness represented in Tables 20 and 21, in which the labelled cells are those that (27a) and (27b) explicitly identify as non-defective. If σ encompasses τ and (27) identifies τ as non-defective, then σ is non-defective.

5. Conclusions and Issues for Future Research

The early Indic evidence presented here demonstrates that defectiveness and syncretism may interact in more than one way. In particular, I have identified three canonical kinds of interaction: defectiveness may override syncretism, syncretism may override defectiveness, and syncretism may determine a domain of defectiveness. More complex kinds of interaction also exist.

I have proposed a theoretical explanation of these facts; crucial to this explanation is the assumption that the definition of a language's morphology makes reference to two distinct sorts of paradigm: (i) content paradigms, which express the range of syntactic uses to which lexemes may be put, and (ii) form paradigms, which express the range of inflectional realizations to which a root may give rise. I have argued that syncretism is a property of form paradigms, but that defectiveness is a property of both content paradigms and form paradigms. In particular, I assume that a lexeme's inflection exhibits syncretism if two of its content cells have the same form correspondent, and that a lexeme's inflection exhibits defectiveness if the realization of one of its content cells is not definable as the realization of a form cell. These assumptions predict a range of possible interactions between defectiveness and syncretism, including the three canonical interactions exemplified by early Indic.

The evidence examined here raises important questions for future research. First, are there limits on the sorts of interactions that may exist between defectiveness and syncretism? One would suppose that issues of learnability would impose such limits; nevertheless, it is not clear what sort of evidence could allow such limits to be characterized in absolute terms. Perhaps the most that could be established is simply that one sort of interaction is more complex than another, in the sense that it is more difficult to
learn, and is therefore both less frequently observed across languages and less stable diachronically. As I have shown, the override of syncretism by defectiveness in the inflection of Vedic ena erodes in post-Vedic Sanskrit, developing in the direction of an override of defectiveness by syncretism. If this same trajectory is observable elsewhere and the reverse trajectory is not, then the override of syncretism by defectiveness should be seen as a more complex, less stable relation than the override of defectiveness by syncretism.

A related issue concerns the role of word frequency in determining interactions between defectiveness and syncretism. In Vedic, the defectiveness of ena's nominative cells overrides the five instances of nominative/accusative syncretism in (4). This state of affairs may have been tolerated because (i) the masculine accusative singular form enam is vastly more frequent in Vedic than all other accusative forms of ena combined (Table 22), and (ii) a pronoun's masculine accusative singular form does not participate in nominative/accusative syncretism. Because the masculine accusative singular form acts as the paradigm's focal member, it is as though the paradigm's less frequent, less focal members in some sense share in its basic insusceptibility to nominative/accusative syncretism.

Table 22. Accusative instances of ena in the Rigveda

<table>
<thead>
<tr>
<th></th>
<th>Instances</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Singular</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masc.</td>
<td>enam</td>
<td>76</td>
</tr>
<tr>
<td>Neut.</td>
<td>enat</td>
<td>0</td>
</tr>
<tr>
<td>Fem.</td>
<td>enām</td>
<td>3</td>
</tr>
<tr>
<td><strong>Dual</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masc.</td>
<td>enau</td>
<td>0</td>
</tr>
<tr>
<td>Neut.</td>
<td>ene</td>
<td>0</td>
</tr>
<tr>
<td>Fem.</td>
<td>ene</td>
<td>2</td>
</tr>
<tr>
<td><strong>Plural</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Masc.</td>
<td>enān</td>
<td>8</td>
</tr>
<tr>
<td>Neut.</td>
<td>enāni</td>
<td>0</td>
</tr>
<tr>
<td>Fem.</td>
<td>enās</td>
<td>9</td>
</tr>
</tbody>
</table>

Clarification and resolution of these issues will depend on careful scrutiny of a wider sampling of interactions between defectiveness and syncretism in a range of languages. This research will provide further motivation for the already well-established theoretical program devoted to explicating the central role that paradigms play in the definition of a language's morphology (Stump 2001, 2006; Baerman, Brown, and Corbett 2005; Blevins 2006; Finkel and Stump 2007, 2009).

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