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Breton Masculine Human Plurals, Locality, and Impoverishment

Jean-François Mondon

This article presents an apparent locality condition violation observed in Standard Breton masculine human plurals ending in -ou`. It proposes a unique impoverishment rule deleting a syntacticosemantic feature conditioned by a specified phonological exponent. Adopting a specific architectural view of lenition, it forces a rethinking of the precise timing of various postsyntactic processes, including certain types of impoverishment rules as well as Agree-Copy in dissociated Agr nodes. It also lends support to the independent claims that syntacticosemantic features are not overridden during Spell-Out and that Vocabulary Insertion applies to a linearized structure, not a hierarchical one.

Keywords: Breton, locality, Distributed Morphology, impoverishment, dissociated morphemes, Vocabulary Insertion

Since Distributed Morphology was first proposed (Halle and Marantz 1993), its proponents have sought to refine its precision. Restricting the various modules of the postsyntactic component to obey locality conditions has proven to be an effective means of narrowing the range of possible grammars, thus affording the theory more predictive precision (Embick 2010, 2013). It is therefore imperative to explore data that appear to run contrary to locality conditions and determine whether they too can be brought into line using Distributed Morphology’s full arsenal.

Standard Breton (Hemon 1975, Kervella 1947/76, Press 1986, 2012, Trépos 2009) nicely illustrates an apparent case of a locality condition violation. Following a presentation of the facts in section 1, in section 2 I outline the structure of the postsyntactic component that I assume as a starting point, and I articulate the theory of mutation that I will adopt. In section 3, I set out a solution to the Breton data, offering a novel type of impoverishment rule that renders the seemingly nonlocal data local. Specifically, I propose that impoverishment rules can contain phonological exponents in their structural descriptions. Additionally, I claim that Agree-Copy of dissociated terminals occurs later in the postsyntactic component than Agree-Copy of nondissociated terminals. Both proposals, the expansion of impoverishment rules and the late application of Agree-Copy to dissociated terminals, force a revision of the order of the postsyntactic modules presented in section 2. The proposal also offers support for the theory that syntacticosemantic features are not jettisoned the moment an exponent is inserted into a terminal node; rather, they remain for the duration of Vocabulary Insertion at the very least. In addition, the data strengthen the claim

I would like to thank two anonymous reviewers whose many enlightening comments and suggestions compelled me to reframe the fundamental proposal and argumentation of the article, much to its improvement. Sections 5 and 6, among other emendations and expansions throughout, derive directly from their feedback. I would also like to thank Joe Eska for his feedback on a very early draft of this article. Finally, I thank the audience at the 16th Celtic Conference in Bangor, Wales, in July 2019 and in particular one member whose question compelled me to write section 4.

Abbreviations used are f = feminine, h = human, m = masculine, pl = plural, prt = particle, refl = reflexive, sg = singular.
that Vocabulary Insertion applies to a linearized structure and not a hierarchical one. In sections 4 and 5, I discuss two possible alternatives, which struggle to account for the data. In section 6, I offer some thoughts on other types of hypothetical impoverishment rules that follow as a result of this analysis, and in section 7 I summarize the results.

1 Breton Facts

1.1 Lenition of Animate Plurals

Breton, like the other modern Celtic languages, possesses a variety of consonantal mutations that convert the initial consonant of a word following specific lexical items. The most frequent such mutation in Breton is lenition, whose effects are given in (1) (note that in general $c’h = [x]$ word-finally and $[h]$ elsewhere; Press 2012:431).

\[(1) \text{Lenition effects in Breton}\]
\[
p \rightarrow b \quad b \rightarrow v \quad m \rightarrow v
\]
\[
t \rightarrow d \quad d \rightarrow z
\]
\[
k \rightarrow g \quad g \rightarrow c’h
\]
\[
gw \rightarrow w
\]

Lenition occurs on a word, the target, when it immediately follows specific lexical items, the triggers. The lexical items that serve as triggers for lenition are given in (2), with some examples in table 1 from Kervella 1947/76:85–86.

\[(2) \text{Lenition triggers in Breton (Hemon 1975:7)}\]
\[
a \text{ (verbal particle)} \quad \text{hanter ‘half’}
\]
\[
a ‘from’ \quad \text{holl ‘all, whole’}
\]
\[
aba ‘since’ \quad \text{na (subordinate negative particle)}
\]
\[
da ‘to’ \quad \text{ne (main clause negative particle)}
\]
\[
da ‘your’ (sg.) \quad \text{pa ‘when, if’}
\]
\[
daou ‘two’ (m.) \quad \text{pe ‘or’}
\]
\[
dindan ‘under’ \quad \text{pe ‘which’}
\]
\[
div ‘two’ (f.) \quad \text{ra (optative particle)}
\]
\[
diwar ‘above’ \quad \text{re ‘too’}
\]
\[
dre ‘through’ \quad \text{re ‘those, these’}
\]
\[
e ‘her, his, its’ \quad \text{seul ‘as much, more’}
\]
\[
eme ‘she/he said’ \quad \text{tra ‘while’}
\]
\[
endra ‘while, during’ \quad \text{war ‘on’}
\]
\[
en em (reflexive particles)
\]
\[
en ur (gerund particles)
\]
\[
ez (verbal particle)
\]

The indefinite article ur and the definite article ar are also lenition triggers. Both have two phonologically conditioned allomorphs: un/an and ul/al. The former occur before words begin-
ning in a vowel, h-, or a coronal (n, d, t); the latter only before l-initial words. Unlike the triggers in (2), which target any following word, the articles target only a subset of nouns. Specifically, they target only feminine singular nouns (3) and masculine human plurals (4). Since the indefinite article cannot appear before plural nouns, all the examples in (3) and (4) and all subsequent examples involve only the definite article.

(3) *Lenition of feminine singular nouns after the definite article* (Trépos 2009:50–51)

a. pluenn ‘feather’ ar bluenn ‘the feather’

b. taol ‘table’ an daol ‘the table’

c. kador ‘chair’ ar gador ‘the chair’

d. bag ‘boat’ ar vag ‘the boat’

e. geotenn ‘grass’ ar c’heotenn ‘the grass’

f. gwech ‘time’ ar wech ‘the time’

g. micher ‘job’ ar vicher ‘the job’

(4) *Lenition of masculine human plural nouns after the definite article* (Trépos 2009:53)

a. paotr ‘boy’ paotr-ed boy-pl ar baotred ‘the boys’

b. toer ‘roofer’ toer-ien roofer-pl an doerien ‘the roofers’

c. kemener ‘tailor’ kemener-ien tailor-pl ar gemenerien ‘the tailors’

d. beleg ‘priest’ bele-ien1 priest-pl ar veleien ‘the priests’

e. gov ‘blacksmith’ gov-ed blacksmith-pl ar c’hoved ‘the blacksmiths’

f. gwaz ‘servant’ gwaz-ed servant-pl ar wazed ‘the servants’

g. martolod ‘sailor’ martolod-ed sailor-pl ar vartoloded ‘the sailors’

No examples with d-initial words are given because such words are immune from lenition after the articles, most likely because of the homorganicity and shared voicing of the -n of the article and the d- of the following noun. Observe the feminine singular *delienn* and the masculine human plural *diaouled* in (5).

---

1 The final /g/ of the root is lost before the plural ending -ien, a general morphophonological rule for words ending in -g, such as *gouizieg* ‘scholar, expert’ and *gouizie-ien* ‘scholar-pl, expert-pl’ (Hemon 1975:22, Press 1986:68).
(5) **No lenition of d- after the definite article**

a. delienn ‘leaf’ an dialenn ‘the leaf’
b. diaoul-ed devil-pl an diaouled ‘the devils’

The masculine human plurals in (4) should be contrasted with the following masculine nonhuman plurals, which are not lenited after the definite article:

(6) **Nonlenition of masculine nonhuman plural nouns after the definite article**

a. pennad ‘article’ pennad-où article-pl an pennadoù ‘the articles’
b. ti ‘house’ ti-er house-pl an tier ‘the houses’
c. biz ‘finger’ biz-ied finger-pl an bizied ‘the fingers’
d. goulenn ‘question’ goulenn-où question-pl an goulennou ‘the questions’
e. mor ‘sea’ mor-iou sea-pl an moriou ‘the seas’

That animacy is not the critical feature determining whether a masculine plural noun does or does not lenite after the definite article is shown by the list of animal names in (7). They are masculine plural animates, the first two formed with the suffix -ed and the third via umlaut, but they do not lenite.

(7) **Masculine plurals of animal names**

a. broc’h ‘badger’ broc’h-ed badger-pl an broc’hed ‘the badgers’
b. tourc’h ‘boar’ tourc’h-ed boar-pl an tourc’hed ‘the boars’
c. porc’hell ‘piglet’ perc’hell piglet-pl an perc’hell ‘the piglets’

It is the quality of being a masculine human plural that renders a noun a target for lenition as in (4). Therefore, I will indicate such nouns with the features [+masculine, +human, +plural].

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2 Masculine nonhuman plurals in *k-* behave differently.

(i) karr ‘car’ kirr-i car-pl an c’hirri ‘the cars’

(ii) kloc’h ‘clock’ kle-ier clock-pl an c’hleier ‘the clocks’

Like other masculine nonhuman plurals, they do not undergo lenition, which would result in *ar girri and *ar gleier, respectively. They do not, however, remain in their radical form as all other masculine nonhuman plurals do: *ar kirri and *ar kleier. Instead, they undergo what has traditionally been termed **spirantization**, converting *k-* to *c’h-.*

This unique behavior of *k-* is not confined to masculine nonhuman plurals after the definite article; it also occurs in three other environments in Breton (Hemon 1975:8, Kervella 1947/76:96–97).

(iii) **Plurals after the definite article, except masculine plurals designating humans**

a. kemenez ‘stewardess’ kemenez-ed stewardess-pl an c’hemenez-ed ‘the stewardesses’

b. kér ‘village’ kér-iou village-pl an c’hérioù ‘the villages’

(iv) **Masculine singulars, both human and nonhuman, after the definite and indefinite articles**

a. kemener ‘tailor’ kemener-er ‘the tailor’ ur c’hemener ‘a tailor’

b. karr ‘car’ c’harr ‘the car’ ur c’harr ‘a car’

(v) **After hor ‘our’**

a. hor c’héř ‘our village’

b. hor c’héř-iou ‘our village-pl.’

3 I use a binary feature system with [+h(uman)] for humanness (see Deal 2016), [+−m(asculine)] for gender, and [+−p( plural)] for number. The precise formulation and names of these features are tangential to the arguments being made. The proposal could readily be reformulated using different features, whether monovalent or bivalent.
Not all masculine human plurals undergo lenition following the article, however. Masculine human nouns that take the plural ending -ou` [u] do not lenite.\(^4\) This is a small class with at least five certain members (Hemon 1975:15, Kervella 1947/76:87, 98, Press 1986:45, 2012:437, Trépos 2009:54).

\(^{(8)}\) Nonlenition of masculine human plural nouns ending in -ou` after the definite article\(^5\)

- a. maer ‘mayor’ maer-iou` mayor-PL ar maeriou` ‘the mayors’
- b. mestr ‘master, boss’ mestr-ou` boss-PL ar mestr-iou` ‘the bosses’
- c. pried ‘husband’ pried-ou` husband-PL ar pried-ou` ‘the husbands’
- d. tad ‘father’ tad-ou` father-PL an tadou` ‘the fathers’
- e. test ‘witness’ test-ou` witness-PL an testou` ‘the witnesses’

In addition to this list, Kervella (1947/76:206) mentions that two nouns, diaoul ‘devil’ and doue ‘god’, have plurals in -ou` alongside their normal plurals in -ed (see table 2). He states without elaboration that “the latter forms are especially used when these nouns are taken as inanimate” (my translation).\(^6\) Since lenition does not affect words beginning in d- after the definite article, these two words tell us nothing about whether they are targets for lenition following the definite article. They do, however, pattern like the other masculine human plurals in -ou` with respect to following adjectives, as will be seen in section 1.2.

*Mestr* ‘master, boss’ has two synonymous plurals (Kervella 1946/76:206, Trépos 1982:36): mestr-ou` and the more common mistr-i. Since /m/ is susceptible to lenition, this pair nicely illustrates how the specific plural ending seems to determine whether or not a masculine human plural is a target for lenition.

### Table 2

<table>
<thead>
<tr>
<th>Normal plural</th>
<th>“Inanimate” plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>diaoul ‘devil’</td>
<td>diaoul-ed</td>
</tr>
<tr>
<td>doue ‘god’</td>
<td>doue-ed</td>
</tr>
</tbody>
</table>

\(^{4}\) This ending appears as -iou` largely after vowels and the consonants l, r, n, and z, though there are exceptions and variation (Press 2012:444). Its appearance following such sounds mimics pairings of other plural endings such as -en and -ien, as well as -er and -ier. The appearance of this -i- could result from a morphophonological rule of insertion, or it could be part of the underlying form of the ending that is deleted in certain phonological contexts. The precise formulation is immaterial to the discussion at hand since it is clear that the -i- is not a separate morpheme.

\(^{5}\) This is the complete list of masculine animate plurals in -ou` given in the grammars written by Press (1986:67) and Trépos (2009:54, 99) and can thus be taken as standard and most consistent across dialects. Trépos (1982:35–37) expands this list with dialectal forms attested alongside other plural formations. These nouns are breureg ‘brother-in-law’, den ‘man, husband’, enotr ‘uncle’, eskob ‘bishop’, gwaz ‘husband’, kenderv ‘cousin’, mab ‘boy’, mevel ‘servant’, pab ‘pope’, roue ‘king’, sant ‘saint’, tonton ‘uncle’, and compounds of tad ‘father’ such as lez-tad ‘father-in-law’. See Trépos 1982:35–37 for dialectal limitations on these plurals in -ou`. I limit the discussion to the words in (8) since they seem to be largely standard across dialects. For a discussion of Breton dialects, which are traditionally divided into four groups (Gwenedeg, Kerneveg, Leoneg, and Tregerieg), see Press 2012:429–430 and Jackson 1967:16ff. For attestations of this closed class of masculine human plurals in -ou` in earlier stages of Breton, see Hemon 1984:31.

\(^{6}\) “Ar stummou` diwezhan˜-man˜ a vez implijet dreist-holl pa vezont kemeret evel anvioù-traou¨.”
(9) **Lenition of mistrī following the definite article**

a. ar **vistr-i** er vro-mañ
   the master-PL in the land-this
   ‘the masters in this land’
   (letter cited in Wmffre 2007:179)

b. ar **vistr-i** -skol laık
   the master-PL school lay
   ‘the lay schoolteachers’
   (6 January 1883 edition of *Feiz ha Breiz*)

(10) **Nonlenition of mestrōù following the definite article**

a. eus ar **mestr-où**
   from the master-PL
   ‘from the masters’
   (Bible translation: John 7:48)

b. ar **mestr-où** hag ar mestrez-ed -skol
   the master-PL and the mistress-PL school
   ‘the male and the female schoolteachers’
   (Anjela Duval)

1.2 Lenition of Attributive Adjectives

An adjective that follows the noun—the unmarked position in the language—is targeted for lenition following a feminine singular noun or a masculine human plural noun. This is illustrated by the lenition of *mat* ‘good’ to *vat* in (11).

(11) **Lenition of adjective following a masculine human plural**

a. breur mat breud-eur breudeur vat
   brother good brother-PL brothers good
   ‘good brother’ ‘brothers’ ‘good brothers’
   (Hemon 1975:10)

b. paotr mat paotr-ed paotred vat
   boy good boy-PL boys good
   ‘good boy’ ‘boys’ ‘good boys’
   (Press 2012:438)

Human nouns with plurals in -ou, however, once again break the pattern. They do not mutate a following adjective (Kervella 1947/76:98). As shown in (12), *gwirion* ‘true, truthful’ and *mat* ‘good’ do not lenite to *wirion* and *vat* following such nouns.

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7 https://www.anjela.org/oberenn/ur-pennad-kaoz-diwar-benn-ar-yezhou/?lang=hz
8 Adjectives are morphologically invariable, making no distinction between singular and plural. Note that the stem allomorphy in the root ‘brother’ between singular breur and plural breud- is unpredictable, though it does reflect natural phonetic changes in the historical development of Breton. The /d/ of the plural stem was lost from the singular, as shown by its reflex (z) in Middle Breton breuzr and by its presence in the Welsh cognate brawd (Trépos 2009:93).
Nonlenition of adjective following a masculine human plural in -ou`

a. test gwirion test-ou` testou` gwirion *testou` wirion
   witness truthful witness-PL witnesses truthful
   ‘truthful witness’ ‘witnesses’ ‘truthful witnesses’

b. mestr mat mestr-ou` mestoù` mat *mestoù` vat
   master good master-PL masters good
   ‘good master’ ‘masters’ ‘good masters’

Adjectives following the alternate plural forms diaoul-ou` ‘devil-PL’ and doue-ou` ‘god-PL’ (table 2) likewise do not lenite, as shown in (13). Here, the adjective kozh ‘old’ does not undergo lenition to gozh.

Nonmutation of adjectives after diaoul-ou` and doue-ou`

a. e-lec’h ma’z a an diaoulou` kozh da gac’hat
   where that.PRT goes the devil.PL old to shit
   (part of a proverb)⁹
   ‘where the old devils go to shit’

b. relijon griz an doueou` kozh
   religion crude the god.PL old
   ‘the crude religion of the old gods’
   (Jean Roudot)¹⁰

Contrast the mutation of an adjective following the more common plurals diaoul-ed and doue-ed in (14). Here, the adjectives gwirion ‘true, truthful’ and mat ‘good’ appear in their lenited forms wirion and vat.

Mutation of adjectives after diaoul-ed and doue-ed

a. an diaouled wirion n’int ked evid lavared an hano santel-se.
   the devil.PL true NEG-be.3PL not for speak the name holy-that
   ‘The true devils are not able to speak that holy name.’
   (Riou 1976:35)

b. an doueed vat gant ar gompezenn¹¹
   the god.PL good with the plain
   ‘the good gods with the plain’

2 Locality Condition Violation

The Breton facts present a clear instance of a locality condition violation. The plural ending -ou` seems to shield masculine human plurals from being targets of lenition following the definite

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⁹ http://www.kervarker.org/br/proverbs_04_cd.html
¹¹ http://www.daskor.bzh/le-garrec-toussaint-hollvelen-22?language=en. It should be noted that lenition of postnominal adjectives does not occur in all phonetic environments. When following a noun ending in an obstruent, an adjective beginning in a voiceless stop does not lenite: for example, doueéd kozh ‘the old gods’ with nonlenition of kozh ‘old’ (Press 1986:46). While this seems general across dialects, in other environments there are differences, not all of which are clear. Kervella (1947/76:91), for instance, states that an adjective beginning in d- is unlenited after a noun ending
article. Before I present a synchronic solution, it is crucial to outline both the general architecture of the postsyntactic component that I assume and the theory of mutations that I adopt.

### 2.1 Structure of the Postsyntax

Since its original instantiation in Halle and Marantz 1993, Distributed Morphology has developed and evolved as all facets of its arsenal of postsyntactic processes have been refined and deepened. As with any theory, competing views on specific points have been advanced. To be clear about my starting point, therefore, I note that I base my account of the derivational ordering of postsyntactic processes on that put forth by Arregi and Nevins (2012) in their thorough morphological dissection of Basque finite auxiliaries. (15) summarizes their proposal, listing the six modules of the postsyntax and the general operations that occur in each.

(15) **Ordering of postsyntactic processes** (Arregi and Nevins 2012:3–6)

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Postsyntax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merge and Move</td>
<td>Exponence Conversion</td>
</tr>
<tr>
<td>Agree-Link: Establishment of a connection between a goal and a probe</td>
<td>Agree-Copy: Copying of $\phi$-features from goal to probe</td>
</tr>
<tr>
<td>Postsyntax</td>
<td>Fission: Splitting of a terminal node into two separate nodes, the features of the original node being split between the two nodes</td>
</tr>
<tr>
<td>Feature Markedness</td>
<td>Impoverishment: Deletion of specific features from a terminal</td>
</tr>
<tr>
<td>Obliteration: Deletion of a terminal</td>
<td>Obliteration: Deletion of a terminal</td>
</tr>
<tr>
<td>Morphological Concord</td>
<td>Insertion of features that are particular to morphology, such as conjugation class features</td>
</tr>
<tr>
<td>Linearization</td>
<td>Linear Operations</td>
</tr>
<tr>
<td>Vocabulary Insertion</td>
<td>Reordering of particular terminals according to modular well-formedness conditions</td>
</tr>
</tbody>
</table>

in a coronal in Tregerieg but is generally lenited in Leoneg and Kerneveg. Variation in other contexts—particularly adjectives in voiced stops following obstruents—seems likely, as a simple Google search turned up results for both lenited paotred vihan 'little boys' and unlenited paotred bihan. A thorough examination of the dialectal differences and the phonological limitations of postnominal adjectival lenition is certainly a desideratum.
In what follows, I claim that the Breton data presented in this article offer two refinements to this model. First, impoverishment rules (IRs) should be expanded to be able to reference specific exponents in their structural descriptions. Such IRs then by necessity must occur during the Vocabulary Insertion (VI) module, since only then are exponents introduced into the derivation. Second, I claim that dissociated Agr terminals, and dissociated terminals in general, do not undergo Agree-Copy during Exponence Conversion; instead, they undergo it during the VI module at the moment their terminal is targeted for Spell-Out.

2.2 Allomorphy of Triggers

Breit (2019) lays out a thorough analysis of Welsh mutations that can readily be adapted to the Breton facts. Developing and greatly enriching Lieber’s (1983, 1987) work, Breit proposes that floating melodic material at the right edge of a given trigger is incorporated into a following target. He overcomes the difficulty of determining how to unite a single mutation process that displays seemingly disparate phonological effects by assuming that each trigger has multiple allomorphs that are conditioned by the phonological onset of the target. Like Breton lenition as presented in (1), Welsh lenition affects consonants differently: for instance, voiceless stops become voiced stops, while voiced stops become voiced fricatives. The second singular possessive adjective dy is a lenition trigger in Welsh; its leniting effects are illustrated in (16).

(16) Lenition effects in Welsh

a. Voiceless stops > Voiced stops
   pêl /peːl/ ‘ball’ dy bêl /də beːl/ ‘your ball’
   tan /taːn/ ‘fire’ dy dan /də daːn/ ‘your father’
   ci /kiː/ ‘dog’ dy gi /də giː/ ‘your dog’

b. Voiced stops > Voiced fricatives
   barn /barn/ ‘opinion’ dy farn /də varn/ ‘your opinion’
   drw /drɔ/ ‘water’ dy ddwr /də dɔr/ ‘your water’
   gafr /gavr/ ‘goat’ dy avr /də avr/ ‘your goat’

c. /m/ > /v/
   marchog /ˈmɑɾtʃɔɡ/ ‘horseman’ dy farchog /də ˈfaɾtʃɔɡ/ ‘your horseman’

d. Voiceless liquids > Voiced liquids
   llwrw /ˈlʌrʊw/ ‘track’ dy llrw /də ˈlɔɾʊw/ ‘your track’
   rhafl /rʰa:tʃəf/ ‘rope’ dy raff /də ræf/ ‘your rope’

Nouns starting with any other consonant or with a vowel do not undergo any type of mutation following dy.

(17) No mutation after Welsh dy
   fflat /fłat/ ‘flat’ dy fflat /də flat/ ‘your flat’
   afon /ˈaːvɔn/ ‘river’ dy afon /də ˈavɔn/ ‘your river’

To account for these differing phonological effects on voiceless and voiced consonants, Breit (2019:179–184) sets up suppletive allomorphs for dy, which he labels syntacticosemantically as
[D, 2, –pl, gen]. Three of dy’s four allomorphs contain a floating feature (H, L, or H and L simultaneously\(^{12}\)), while the default elsewhere allomorph has no associated floating feature.

(18) Allomorphs of the Welsh lenition trigger dy ‘your.sg’
   a. [D, 2, –pl, gen] ↔ /dɔ L/ / ___ voiceless stops
   b. [D, 2, –pl, gen] ↔ /dɔ L/ / ___ voiceless liquids
   c. [D, 2, –pl, gen] ↔ /dɔ H, L/ / ___ voiced stops & /m/
   d. [D, 2, –pl, gen] ↔ /dɔ/

[D = determiner, 2 = 2nd person, pl = plural, gen = genitive]

This approach is readily translatable into Breton. I propose the following simplified allomorphs of the Breton definite article ar, in which ar is the spell-out of D, and \(^{1}\) and \(^{0}\) are the spell-outs of a dissociated Agr node that I term Agr\(^{D}\). Since the precise phonological formulation is tangential to this article, I shy away from specifying the exact makeup of the floating features associated with Agr\(^{D}\), in favor of simply using a cover \(^{L}\) to represent those allomorphs of the article that trigger lenition and \(^{0}\) for the allomorph that does not trigger lenition. The reason for my not treating \(ar^{L}\) as a single exponent occupying a single terminal will become apparent in section 3, but for the moment note that separating the locus of ar from \(^{1}\) affords a clear explanation for the facts that ar is constant in all realizations of the definite article and that a suppletive situation does not exist in which, say, \(ar^{L}\) occurs before masculine human plurals while hypothetical \(ba^{L}\) occurs before feminine singulars and hypothetical uc’h occurs elsewhere.

(19) Allomorphs of the Breton definite article
    D \(\leftrightarrow ar\)
    Agr\(^{D}\), [+h, +m, +pl] \(\leftrightarrow ^{L}\)
    Agr\(^{D}\), [+f, –pl] \(\leftrightarrow ^{L}\)
    Agr\(^{D}\) \(\leftrightarrow ^{0}\)

Whether the two \(^{L}\)’s can be combined somehow, I leave as an open question for a full-fledged analysis of the definite article in Breton. Also, as is the case with Welsh dy, there will be a variety of allomorphs of Agr\(^{D}\) that trigger lenition—for instance, at least one used when voiceless stops follow and one used when voiced stops and /m/ follow. The precise formulation does not affect the argumentation here since all that is required is that there are at least two definite articles: one, \(ar^{L}\), that causes lenition and is linked to masculine human plurals, and one, \(ar^{0}\), the default, that does not cause lenition. Additionally, I leave it aside here whether the two allomorphs of ar (i.e., al and an) are best derived from ar via a readjustment rule or some other morphophonological rule or are listed as separate Vocabulary entries that compete with ar for Spell-Out in D.

\(^{12}\) Breit employs Government Phonology (Kaye, Lowenstamm, and Vergnaud 1985) in which \(^{L}\) indicates voicing, \(^{L}\) nasality, and \(^{H}\) frication (Breit 2019:46). His theory is not contingent upon adoption of this approach; it is compatible with any current phonological framework. For clarity, I simplify Breit’s description of the targets by specifying them descriptively and not via phonological features. For his original proposal, see Breit 2019:184.
2.3 Nonlocal Condition

The crux of the matter is that the lenition trigger $^L$ in $\text{Agr}^D$ is somehow curtailed from being selected during Spell-Out because of the presence of a morpheme, -$\text{ou}$, that is not local to it, the two being linearly separated by the nominal root. In this situation, the default spell-out of $\text{Agr}^D$, $^0$, is selected instead: $ar^{^0}\text{pried-ou}$ ‘the husband.m’. To see this clearly, first consider a case where lenition works without a hitch: $ar\ \text{baotred}$ ‘the boys’. Following head movement of the root node through the category-defining head n and the head Num, the resulting structure before Spell-Out is as in (20).

\[(20) \text{Structure of DP at end of syntax: ar baotred ‘the boys’} \]

The structure is linearized from the most deeply embedded node outward (see Bobaljik 2000, Adger, Béjar, and Harbour 2003, Gribanova and Harizanov 2017). In anticipation of the discussion in section 3, I follow Embick (2000, 2015:100–109) and Gribanova and Harizanov (2017) in assuming that syntactico-semantic features are not deleted from a terminal concomitantly with the insertion of an exponent. As I will show, the Breton data offer strong evidence for this view, as against Bobaljik’s (2000) view that an exponent cannot be conditioned by an inner syntactico-semantic feature since features are assumed to be deleted from a terminal when an exponent is inserted. After passing through the Linearization module (see section 2.1), the tree in (20) enters the Vocabulary Insertion module, which runs as follows:

---

13 It is important to note that the ultimate proposal of this article is compatible with theories of head movement that locate it in the syntax proper (Nunes 2004, Roberts 2010) as well as those that locate it postsyntactically but before VI (Chomsky 2000, 2001, Harizanov 2019, Harizanov and Gribanova 2019). The analysis in this article simply requires that head movement occur before the postsyntactic VI module. See Dékény 2018 for an excellent overview of various approaches to head movement.
(21) **Vocabulary Insertion of ar baotred**

\[
(D: \text{definite}) - (\text{Agr } D: \text{m, h, pl}) - [\sqrt{\text{BOY}} - (n: +m, +h) - (\text{Num: +pl})]
\]

\[
(D: \text{definite}) - (\text{Agr } D: \text{m, h, pl}) - [\text{paotr} - (n: +m, +h) - (\text{Num: +pl})]
\]

\[
(D: \text{definite}) - (\text{Agr } D: \text{m, h, pl}) - [\text{paotr} - (\emptyset +m, +h) - (\text{Num: +pl})]
\]

\[
(\text{ar} \text{ definite}) - (\text{Agr } D: \text{m, h, pl}) - [\text{paotr} - (\emptyset +m, +h) - (\text{ed +pl})]
\]

\[
(\text{ar} \text{ definite}) - (\text{L } m, h, \text{ pl}) - [\text{paotr} - (\emptyset +m, +h) - (\text{ed +pl})]
\]

\[
[a_{\text{L}} (\text{definite, m, h, pl}) - [\text{paotred (m, h, pl})]
\]

**Lenition**

\[
[a_{\text{L}} - [\text{paotred}]}
\]

**Output**

ar baotred

Contrast this derivation with that of *ar priedoù* ‘the husbands’. Prior to Spell-Out, the structure is isomorphic to that of *ar baotred* ‘the boys’.

(22) **Structure of DP at end of syntax: ar priedoù ‘the husbands’**

```
| DP |
|----|---|
| D  | NumP |
|    | D   | Num | nP  |
|    |     |     | n   | nj |
|    |     |     | \sqrt{\text{HUSBAND}} | [+m, +h] |
| [+m, +h, +pl] | n   | Num | [+]l |
```

Linearization and Spell-Out should operate the same way they do in (21) and output the incorrect *ar briedou*. Somehow, though, AgrD must lose its [+human] value so that it can be spelled out as $^0$ and not $^1$. AgrD must be able to see the phonetic substance -ou since this exponent appears to be the culprit behind the failure of [+human] to be present in masculine human plurals like priedou to begin with. Regardless of whether locality is defined linearly (Embick and Marantz 2008, Embick 2010, 2013) or hierarchically (Bobaljik 2012, Bobaljik and Harley 2017, Choi and Harley 2019), a locality condition violation cannot be avoided in this instance. If locality is defined linearly, the definite article cannot see across the root to the ending -ou. If it is defined hierarchically, on the other hand, the definite article could see the phonological spell-out of the Num head since no other phrase intervenes between it and AgrD. However, as I will show in section 4, the interaction of -ou and the diminutive suffix -ig renders such a solution untenable.
3 An Impoverishment Rule Solution

3.1 Nouns and Lenition

The allomorphs of the definite article proposed in section 2.2 are repeated in (23).

(23) Allomorphs of the Breton definite article

\[
\begin{align*}
D & \leftrightarrow ar \\
Agr^D, [+h, +m, +pl] & \leftrightarrow L \\
Agr^D, [+f, -pl] & \leftrightarrow L \\
Agr^D & \leftrightarrow \emptyset
\end{align*}
\]

So that the Breton facts can be accounted for, \(ar^\emptyset\)—and not \(ar^L\)—must be selected in the case of masculine human nouns in -ou`. I propose the following IR:

(24) Breton impoverishment rule

\[ [+h] \rightarrow \emptyset / \_\_\_ -ou` - [+pl] \]

This states that the feature [+human] is deleted in the immediate vicinity of the plural ending -ou`. This rule is strictly local in that the target [+human] in n is linearly adjacent to the trigger -ou`, the spell-out of Num. Adopting this rule, however, requires modifying our understanding of IRs. Since they were conceived (Bonet 1991, Halle 1997, Noyer 1997, 1998), they have been assumed to feed VI (see also Arregi and Nevins 2012:esp. chap. 5). This is natural enough since IRs have been defined as rules that delete one or more syntacticosemantic features conditioned by the presence of other syntacticosemantic features.\(^{14}\) The rule proposed here, however, is not conditioned by the syntacticosemantic feature that occupies the head Num before the exponent -ou` is inserted, namely, [+pl]; rather, it is conditioned by the phonological exponent -ou` itself, which is the spell-out of that head. As a result, the rule proposed here needs to occur intertwined with VI. I propose, therefore, that the conditioning environment for IRs be extended to allow phonological substance. I propose that IRs whose conditioning environment is phonological apply the moment this phonological trigger is adjacent to the syntacticosemantic target.\(^{15}\)

(25) Phonologically conditioned impoverishment rules

An impoverishment rule that is conditioned by a specific phonological exponent applies the moment the exponent is spelled out and is local to the target.

An issue remains, however. The deletion of [+human] from n does not explain why \(Agr^D\) also lacks [+human]. I follow Arregi and Nevins (2012:80ff.) in differentiating between Agree-Link, which occurs in the syntax, and Agree-Copy, which occurs in the postsyntactic component (see section 2.1). The former links D with the heads it c-commands and from which it will

\(^{14}\) An interesting development of this comes from Watanabe (2013), who posits an impoverishment rule in Fula that deletes the feature [–hearer] from the feature matrix of the subject in relative clause tenses when it is predictable from the rest of the feature specification. I thank a reviewer for this reference.

\(^{15}\) This is similar to some views of traditional IRs that apply the moment the syntacticosemantic trigger is local to the requisite syntacticosemantic target. A nice instance of this is presented by Božič (2020), who shows how fusion feeds impoverishment in the dual/plural in Slovenian. I thank a reviewer for this reference.
ultimately attain $\phi$-features, namely, $n$ and Num. The actual copying of the relevant features occurs after syntax. Arregi and Nevins propose that Agree-Copy applies during the first postsyntactic module, which they term *Exponence Conversion*. Adopting this order to the Breton case would be problematic since it would entail that Agree-Copy precedes impoverishment, in which case the feature [+human] should be copied to $Agr^D$ and only subsequently deleted from $n$ by the rule in (24).

A way out of this dilemma is to assume that dissociated Agr nodes (Embick 1997, Embick and Noyer 2007:305–310), as opposed to nondissociated nodes such as D, undergo Agree-Copy only during VI—not before, as do the nodes inherited from the syntax. More specifically, I propose that dissociated nodes undergo Agree-Copy the moment their terminal is targeted for Spell-Out.

(26) *Agree-Copy of dissociated terminals*

Dissociated terminals acquire their features via Agree-Copy the moment their terminal is targeted for Spell-Out.

It is important to observe that in the structure of the postsyntax adopted here from Arregi and Nevins 2012 (see (15)), VI occurs after Linearization, which converts “hierarchical relations into a total order of linear precedence” (Arregi and Nevins 2012:10). If Agree-Copy of dissociated morphemes occurs during VI, then according to this model it must apply to linearized structures and not hierarchical ones. If the constituent makeup of morphological words (MWds) is kept intact (Embick and Noyer 2001), as represented by brackets in the derivations in (21) and in those to follow, linear locality can be obeyed while a representation of the morphological structure of words is maintained. Specifically, $Agr^D$ can only see an MWd that it is linearly adjacent to. This makes the prediction that if $Agr^D$ is not linearly adjacent to a noun, it should be unable to acquire $\phi$-features and thus must select the default exponent $\emptyset$. As I will show in section 3.2, there is some evidence for this from prenominal adjectives.

It is worth wondering whether Agree-Copy of dissociated nodes is preceded by a separate Agree-Link process, as is the case with nondissociated nodes, in which Agree-Link occurs during the syntax proper but Agree-Copy occurs in the postsyntax—specifically, in the Exponence Conversion module (see (15)). If so, then it would be possible to adapt Norris’s (2014:156ff.) algorithm for copying features to Agr nodes by equating it with Agree-Link. Since this algorithm applies on a hierarchical structure, it needs to occur before the Linearization module. The best option is to house it in the Morphological Concord module, precisely when features specific to the morphology are inserted. Norris’s system then links up agreeing heads but does not actually copy the features between those heads; this is done via Agree-Copy in the VI module, as proposed in (26).

The derivation of *ar priedoù* ‘the husbands’ in the VI module runs as follows:

(27) *Vocabulary Insertion of ar priedoù ‘the husbands’*

\[
\begin{align*}
(D: \text{definite}) - (Agr^D) & \rightarrow [\sqrt{\text{HUSBAND}} - (n: +m, +h) - (\text{Num: +pl})] \\
(D: \text{definite}) - (Agr^D) & \rightarrow [\text{pried} - (n: +m, +h) - (\text{Num: +pl})] \\
(D: \text{definite}) - (Agr^D) & \rightarrow [\text{pried} - (\emptyset +m, +h) - (\text{Num: +pl})] \\
(D: \text{definite}) - (Agr^D) & \rightarrow [\text{pried} - (\emptyset +m, +h) - (-\text{ou} +\text{pl})]
\end{align*}
\]
As mentioned in section 2.3, this derivation lends support to the claim that syntacticosemantic features are not deleted from a terminal concomitantly with insertion of an exponent (Embick 2000, 2015:100–109, Gribanova and Harizanov 2017). It is essential that syntacticosemantic features remain after an exponent is inserted into a terminal node since [+human] is targeted by an IR in a node that has already acquired its phonetic exponent. The Breton facts could potentially be squared with Bobaljik’s (2000) view that syntacticosemantic features are deleted during Spell-Out by assuming that branching nodes are labeled in the morphology as in the syntax and that the features of the branching nodes, which reflect the features of their daughters, are not deleted during VI; only the features of terminal nodes are deleted (Adger, Béjar, and Harbour 2003: 114). Adopting this approach would require reformulating the structure of the postsyntax in (15): specifically, since VI would apply to hierarchical structure, Linearization would need to occur subsequently. As discussed at the end of the next section, however, nonlenition on prenominal adjectives can very easily be accounted for under an approach in which VI applies to a linearized structure.

3.2 Adjectives and Lenition

Since it is the failure of [+human] to appear on AgrD that is most directly responsible for the failure of lenition to occur in (27), one might wish to set up an IR to target this terminal node instead of n. However, an analysis of postnominal adjectives shows that [+human] is in fact deleted from n. Recall that adjectives following masculine human plurals are lenited, with the exception of adjectives following masculine human plurals in -ou`.

(28) Adjectives following masculine human plurals
   a. With lenition
      paotr mat paotr-ed paotred vat
      boy good boy-pl. boys good
      ‘good boy’ ‘boys’ ‘good boys’
   b. Without lenition
      mestr mat mestr-ou` mestroù mat *mestroù vat
      master good master-pl. masters good
      ‘good master’ ‘masters’ ‘good masters’
The adjective following *paotred* lenites whether or not a definite article is present, *ar baotred vat* ‘the good boys’. This entails that the lenition of a postnominal adjective is tied to the lenition triggered by the definite article via their sole common link: the noun. It is this common link, n, from which the feature [+human] is deleted via an IR. I follow Breit (2019:203) in treating adjectives as adjuncts to an extended projection of nP, with n subsequently raising to Num across intervening adjectives. Following this head movement of n to Num, the syntactic structure of *breudeur vat* ‘good brothers’ exiting the syntax is shown in (29).

(29) Postnominal adjectival structure exiting syntax: breudeur vat ‘good brothers’

The head a develops a dissociated morpheme Agr^A^, which appears during the Morphological Concord module of the postsyntax (see (15)).

(30) Appearance of Agr^A^
As was the case with AgrD, I propose that Agree-Copy of AgrA occurs during the VI module. Specifically, as Spell-Out applies from the most deeply embedded structure outward, Spell-Out of the complex head Num will occur before both Agree-Copy and Spell-Out of AgrA. Parallel to what I proposed for AgrD above, Agree-Copy provides features to AgrA only when Spell-Out reaches this head. Since this process occurs after Linearization, per the model in (15), AgrA can only see the MWd adjacent to it. \(^{17}\) Equipped with valued features, AgrA is then realized via the same Vocabulary list used to realize AgrD in (21).

\[
\begin{align*}
(31) \text{Spell-out of AgrA} \\
\text{AgrA, } [+h, +m, +pl] & \leftrightarrow L \\
\text{AgrA, } [+f, -pl] & \leftrightarrow L \\
\text{AgrA} & \leftrightarrow \emptyset
\end{align*}
\]

In the phrase paotred vat ‘good boys’, [+human] is not subject to the IR in (24). Therefore, [+human] will be present on AgrA via Agree-Copy, resulting in the selection of the Vocabulary item L as its spell-out, which results in lenition of the adjective mat to vat. The post-Linearization derivation runs as follows:

\[
\begin{align*}
(32) \text{Spell-out of paotred vat ‘good boys’} \\
\sqrt{\text{BOY}} - (n: +m, +h) - (\text{Num: +pl}) & \text{[(a – AgrA – } \sqrt{\text{GOOD}})] \\
\text{paotr} - (n: +m, +h) - (\text{Num: +pl}) & \text{[(a – AgrA – } \sqrt{\text{GOOD}})] \\
\text{paotr – (0 +m, +h) – (Num: +pl))} & \text{[(a – AgrA – } \sqrt{\text{GOOD}})] \\
\text{paotr – (0 +m, +h) – (ed +pl)]} & \text{[(a – AgrA – } \sqrt{\text{GOOD}})] \\
\text{Impoverishment} & \text{not applicable} \\
\text{Agree-Copy} & \text{[paotr – (0 +m, +h) – (ed +pl)] [()}_{l}^{} - \text{AgrA: } +m, +h, +pl) – \sqrt{\text{GOOD}}] \\
\text{[paotr – (0 +m, +h) – (ed +pl)]} & \text{[()}_{l}^{} - \text{AgrA: } +m, +h, +pl) – \sqrt{\text{GOOD}}] \\
\text{[paotr – (0 +m, +h) – (ed +pl)]} & \text{[()}_{l}^{} - \text{AgrA: } +m, +h, +pl) – mat] \\
\text{[paotred – (+m, +h, +pl)]} & \text{[()}_{l}^{} - \text{mat} (+m, +h, +pl)] \\
\text{Lenition} & \text{paotred vat} \\
\text{Output} & \text{paotred vat}
\end{align*}
\]

\(^{17}\) It might be possible to link the interleaving of Spell-Out and Agree-Copy on Agr with cyclic domains. Following Marantz (2001, 2007), Embick (2010:38) treats little-a as a category-defining head that introduces its own cyclic domain. It is possible, then, that dissociated nodes acquire their features only at the start of their phase. In the case at hand, Agree-Copy would acquire feature values only after impoverishment and Spell-Out have applied to the earlier domain defined by n. While this phase approach could work to account for AgrA, it could only account for AgrD if D is spelled out in a phase separate from n (against this idea, see Bošković 2014; though contrast Bošković 2016:52, where it is claimed that in the structure [DP [XP X [SP N K]]], “[M]erger of N with K triggers spell-out of K” and “Merger of D triggers spell-out of NP”). Linking Agree-Copy with phasal Spell-Out would offer a natural account for the fact that the Breton Agr nodes undergo Agree-Copy when they do. I thank a reviewer for this idea.
Contrast this derivation with that of *mestrou mat* ‘good masters’, which is subject to impoverishment of the feature [+human]. Since this feature is deleted, it does not appear on AgrA via Agree-Copy. AgrA, devoid of [+human], is unable to select anything but the default Vocabulary entry in (31).

(33) *Spell-out of mestrou mat* ‘good masters’

$\sqrt{\text{MASTER}} - (n: +m, +h) - (\text{Num: } +\text{pl})$  
$[a - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (n: +m, +h) - (\text{Num: } +\text{pl})]$  
$[a - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m, +h) - (\text{Num: } +\text{pl})]$  
$[a - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m, +h) - (\text{ou` } +\text{pl})]$  
$[a - \text{Agr}^A - \sqrt{\text{GOOD}}]$  

*Impoverishment*

$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[a - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[\emptyset - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[\emptyset - \text{Agr}^A - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (+m, +\text{pl})]$  
$[\text{mat } (+m, +\text{pl})]$  

*Agree-Copy*

$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[\emptyset - \text{Agr}^A: +m, +\text{pl}) - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[(\emptyset - 0 +m, +\text{pl}) - \sqrt{\text{GOOD}}]$  
$[\text{mestr} - (\emptyset +m) - (\text{ou` } +\text{pl})]$  
$[(\emptyset - 0 +m, +\text{pl}) - \text{mat}]$  
$[\text{mestred} - (+m, +\text{pl})]$  
$[\text{mat } (+m, +\text{pl})]$  

*Lenition*

not applicable

*Output*

mestrou mat

One benefit of this model is that by having Agr\(D\) and Agr\(A\) access the same Vocabulary list, it accounts for the fact that masculine human plural nouns and feminine singular nouns are both targets for lenition following the definite article and triggers of lenition, at least epiphenomenally, for following adjectives.

One could argue that the IR in (24) could be replaced with two independent deletions of [+human]: one for Agr\(D\) and one for Agr\(A\) when -ou` is in Num. The main stumbling block with such an approach, though, is that it misses the generalization that [+human] fails to appear on both Agr\(D\) and Agr\(A\) for the same reason: the loss of [+human] from n.

Some support for the claim that Agree-Copy of dissociated features occurs over a linearized structure comes from situations where a word intervenes between the article and a noun. While words do not usually intervene between articles and nouns in Breton, comparatives, superlatives, numerals, and a closed set of adjectives do (Kervella 1947/76:87–88, Stump 1988:460). It is noteworthy that neither the noun nor the adjective mutates, even if the noun otherwise would, were it adjacent to the article.\(^{18}\) *Merc’h* ‘girl’ illustrates nicely. Being feminine singular, it mutates.

\(^{18}\) A very few numerals and adjectives do cause their own mutations. For instance, *daou* ‘two.m’ and *div* ‘two.f’ cause lenition, while *tri* ‘three.m’ and *teir* ‘three.f’ cause spirantization. The situation is dialectally complex for other adjectives, particularly *gwir* ‘true’, of which Press (2012:449) writes, “[W]hen it causes lenition, or lenites itself, is a complex issue.”
following the article (34b) and causes lenition on the following adjective *mat* ‘good’ (34c–d).

With a preceding adjective, however, neither it nor the adjective lenites, as illustrated in (34e) with the superlative *bravañ* ‘finest’.

(34) *(Non)lenition of adjectives*

a. merc’h ‘girl’

b. ar verc’h ‘the girl’

c. ar verc’h vat ‘the good girl’

d. merc’h vat ‘good girl’

e. ar bravañ merc’h ‘the finest girl’

(Kervella 1947/76:88)

This pattern naturally follows if Agree-Copy of AgrD works off of a linearized structure during the VI module. Not being linearly adjacent to the MWd of which n is a part, it cannot acquire n’s features and selects the default exponent from (23), θ. One might expect AgrA to still acquire the features [+feminine, +singular] and thus select the lenited exponent L from (31) since it is linearly adjacent to n. This does not appear to be the case, however. This can readily be accounted for by allowing AgrA in Breton to acquire features from a noun to its left during Agree-Copy, as in the singular ar verc’h vat in (34c), but not from a noun to its right as in *ar bravañ merc’h* in (34e).

4 Treating -ou` as [–human]

An alternative to the analysis proposed above is to treat -ou` as inherently [–human]. Since the MWd of which AgrD is a constituent is hierarchically closer to Num, not being separated from it by any of the other heads that D e-commands, it could be claimed that AgrD acquires its value for [human] from Num rather than from n. If this were so, in the case of -ou` AgrD would never see the value of [human] on the more distant n; it would instead take the [–human] of -ou`, which is closer. Valued as [–human], D-AgrD would then select *ar*-θ during VI and lenition would not occur.

This is not dissimilar to the case of German diminutives. The diminutive endings -lein and -chen are inherently neuter. Regardless of the gender of the noun to which they attach, the resulting diminutive is always neuter, as indicated by their selecting the definite article *das*. See Durrell 1997:477 for the pattern, and note that umlautable vowels are umlauted.

(35) *German diminutives*

<table>
<thead>
<tr>
<th>Gender</th>
<th>Feminine</th>
<th>Masculine</th>
<th>Neuter</th>
</tr>
</thead>
<tbody>
<tr>
<td>die Karte ‘the card’</td>
<td>der Bruder ‘the brother’</td>
<td>das Auge ‘the eye’</td>
<td></td>
</tr>
<tr>
<td>das Kärlichen ‘the little card’</td>
<td>das Brüderlein ‘the little brother’</td>
<td>das Äuglein ‘the little eye’</td>
<td></td>
</tr>
</tbody>
</table>

Damaging to the view that Breton -ou` is inherently [–human], however, is *bugaligoù* ‘little children’, a diminutive built from the normal plural *bugale*. Note that the ending -e is elided in hiatus before the diminutive -ig.
Regardless of the best way to handle double plurals architecturally (see Kramer 2016, Wiltschko 2008), it is clear that in bugaligoù the plural ending -ou` is separated from the root by at least the diminutive suffix -ig-. The IR in (24) cannot apply, since -ou` is no longer immediately adjacent to the head n, which bears the feature [+human]. As a result, neither lenition of the noun after the definite article nor lenition of a following adjective should be impeded. This is precisely what is attested. In the example in (37), both the noun and the adjective lenite.19

(37) *Occurrence of lenition with masculine human diminutives in -ou`*

ardugaligou glanv
the little children sick
‘the sick little children’

(Bulletin de l’Union régionaliste bretonne 1904:178)

If -ou` were inherently [+human], AgrD would acquire this feature during Agree-Copy and be spelled out with the nonleniting default 0. This is not the case, however.

* Tudigoù ‘little people’ makes the same point. *Tud ‘people’ is a suppletive plural of *den (m) ‘man, person’. When it is separated from -ou` via the diminutive suffix -ig-, lenition is not prevented from occurring: for example, *an dudigou simpl ‘the simple people’ (HBL 1818).20

5 Lexical Plurals and n vs. Num

Plurality in Breton is rather complex, and various aspects of it have formed the centerpiece of several studies. Anderson (1986) deems it significant that Breton plural forms can be pluralized, resulting in double plurals (see table 3). The simple plurals are formed via umlaut, a nonproductive plural formation; the double plurals add a plural suffix, -ed or -(i)ou`, to the umlauted plurals. Anderson maintains that the umlauted plurals are actually collectives and not inherently specified as [+plural]. For this reason, a separate plural morpheme can be added to them, resulting in the double plurals listed in the table.

19 Interestingly, a double plural form, bugaleou`, derived from bugal-e-ou`, is attested in a Middle Breton text and it too shows both lenition following the article and lenition of a following adjective: d’ar vugaleou baour ‘to the poor children’ (cf. paour ‘poor’) (Ernault 1895:335). Whether this double plural form survives into dialects of Modern Breton (it is cited in Stump 1990:114) is unclear. Steve Hewitt (pers. comm.) indicates that he has never heard it in the dialect he is most familiar with (Kerne Uhel).

The example in (37) comes from https://books.google.com/books?id=M1wtAAAAYAAJ&pg=RA2-PA177&lpg=RA2-PA177&dq=ar+vugaligou&source=b1&ots=Bt_6YkKOSu&sig=ACfU3U2sviR1T8e5LrdkS1a_jZhUnrnw&hl=en&sa=X&ved=2ahUKEwjxpxMH2207jAhXQTd8KHchGC04Q6AEwDXoECAcQAQ#v=onepage&q=ar%20vugaligou&f=false.

20 Why lenition does not also occur in following adjectives as in *an dudigou paour ‘the poor little people’* (p. 223 of the 21 August 1875 edition of Feiz ha Breiz) is problematic, though this nominal phrase is problematic for any theory. *Tud itself is problematic since a dependent noun can be either mutated or not, as in tud Breizh vs. tud Vreizh ‘people of Brittany’ (Press 1986:47).
Stump (1989, 1990) argues against Anderson’s claim, maintaining that the collectives are in fact plurals. He comes to this conclusion because these nouns function as plural with respect to agreement—as, for example, in (38) where int ‘they are’ refers back to the collective bili ‘gravel’.

(38) Collectives taking plural verb agreement

$\text{NEG be.3SG not good the gravel-that too small be.3 PL}$

‘That gravel is no good; it is [lit. they are] too small.’

(Stump 1989:264)

Stump also points out that plurals of all types—not just plurals formed via nonproductive processes like umlaut—can serve as the input to derivational processes; see (39)–(40). The word-internal changes of the plural suffixes -ou` and -ed to -aou- and -et- are regular morphophonological processes.

(39) Breton plurals in derived verbs (Stump 1990:107–108)

a. darn  
darn-où  
darn-aou-iñ

part  
part-pl  
part-pl-V

‘part’  ‘parts’  ‘to distribute’

b. evn  
evn-ed  
evn-et-a

bird  
bird-pl  
bird-pl-V

‘bird’  ‘birds’  ‘to hunt for birds’

(40) Breton plurals in agentive nouns (Stump 1990:113)

a. aval  
aval-où  
aval-aou-er

apple  
apple-pl  
apple-pl-N

‘apple’  ‘apples’  ‘apple-hunter’

b. merc’h  
merc’h-ed  
merc’h-et-aer

girl  
girl-pl  
girl-pl-N

‘girl’  ‘girls’  ‘womanizer’
Acquaviva (2008:234–265) unites the two approaches by maintaining that collectives do exist in Breton but that they are not a morphological class since there is no specific morphological entity that corresponds to collective meaning (p. 263). He illustrates this via singulative formation. The singulative ending -enn or the singulative prefixes penn and loan are affixed only to collectives. Therefore, by seeing what they attach to we can isolate a class of collective nouns in Breton. Surprisingly, however, unlike many languages Breton has no defining morphological entity that is the mark of collectives. Rather, the class is only delimited semantically (see table 4). Collectives can be monomorphemic—neither built from a singular noun nor in a suppletive relationship with a singular noun (e.g., stered ‘stars’, per ‘pears’). They can also be monomorphemic yet in a suppletive relationship with a singular noun (kezeg ‘horses’). Finally, they can bear plural morphology, whether that be ablaut (deñved ‘sheep’) or an actual suffix (brin-i ‘crow-PL’, loer-ou` ‘sock-PL’).

Nothing in the morphology indicates that the collectives in table 4 are to be interpreted as collectives. This is particularly striking in the last two forms listed, which contain plural suffixes. When attached to other nouns, these same suffixes yield plurals with noncollective meanings: for example, iniz-i ‘island-PL’ from enez ‘island’ and park-ou` ‘field-PL’, both of which are countable, unlike collectives. Such data, among others, lead Acquaviva to conclude that all plural exponents “may in principle have a lexeme-forming function” (2008:265). Syntactically, therefore, Acquaviva maintains that Breton plural exponents can appear in both n and Num (for this structure, see Acquaviva 2006 on Goidelic). Lexical plurals, such as collectives and forms that can undergo further derivation (as in (39)–(40)), house their plural morphology in n. On the other hand, the outer endings in double plurals (see table 3) and endings that do not add any unpredictable, nuanced meanings conditioned by the root (e.g., iniz-i ‘island-PL’ and park-ou` ‘field-PL’) are located in Num. Acquaviva claims, therefore, that Breton is unique in that the same ending occurs sometimes in n as a stem-forming morpheme and sometimes in Num as a grammatical ending.

This potential bifurcation of the same endings in Breton between n and Num does not offer a way around the issue of nonlocality in masculine human plurals in -ou`, however. Whether or not lenition occurs is contingent on the form of AgrD that is selected during VI. Changing the location of the terminal where what has traditionally been viewed as the plural morpheme is realized does not affect the agreement relation between AgrD and the syntacticosemantic features.

Table 4
Singulative morphemes derived from collectives with different morphological shapes (Acquaviva 2008:258, Trépos 1982:235–243)

<table>
<thead>
<tr>
<th>Singular</th>
<th>Collective</th>
<th>Singulative</th>
</tr>
</thead>
<tbody>
<tr>
<td>per ‘pears’</td>
<td>stered ‘stars’</td>
<td>per-enn stered-enn</td>
</tr>
<tr>
<td>marc’h ‘horse’</td>
<td>kezeg</td>
<td>penn-kezeg / loan kezeg</td>
</tr>
<tr>
<td>daññad ‘sheep’</td>
<td>deñved</td>
<td>penn-deñved / deñved-enn</td>
</tr>
<tr>
<td>bran ‘crow’</td>
<td>brin-i</td>
<td>brin-i-enn</td>
</tr>
<tr>
<td>loer ‘sock’</td>
<td>loer-ou`</td>
<td>loer-ou-enn</td>
</tr>
</tbody>
</table>
present in the extended projection of the root, and in fact it causes uncomfortable ad hoc solutions. If [+plural] is to be housed in n only when it is lexically determined, as seen by its creating a form with unpredictable semantics, then the -où of pried-où ‘husband-pl.’ and the other masculine human plurals does not fit the bill. The semantics of these forms are straightforwardly predictable and they are not collectives. Contrast this with bot-où ‘shoe-pl.’, which does have an unpredictable dual reference, referring to a pair of shoes and not a group of shoes as would be expected. Adopting Acquaviva’s model, the -où of bot-où must occupy n and not Num, while the -où of pried-où must occupy Num.

The only way left to maintain a structural difference between masculine human plurals in -où and in other endings (e.g., the -ed of paotred ‘boy-pl.’), then, is to assume that the latter house their ending in n and not in Num like the former. The problem here, of course, is that there is no justifiable reason to house the -ed of paotred in n. As with the -où in pried-où, the semantics of the -ed in paotred are completely predictable and do not have any unique lexically conditioned tinges.

Using this approach to account for the lenition issues on masculine human plurals in -où faces one final problem: namely, the form ar vugaligou ‘the little children’ discussed in section 4. Its ending -où must be located in Num since it follows the diminutive -ig-, which itself follows n. However, as just stated, the -où in pried-où must also be in Num. As both instances of -où are in Num, they should elicit the same spell-out of AgrD, which is not the case.

6 Expansion of Impoverishment Rules

The rule in (24) is an IR that refers to the spell-out of a specific exponent. Accounting for the existence of such a rule by allowing it to be located in the VI module of the postsyntax (15) raises a question: what variations of such a rule might be expected? A natural extension would be an IR whose structural description is a phonological feature or features and not a specific exponent. For example, imagine Pseudo-Breton, in which plural endings with a [+human] initial segment, not just the ending -où [u], trigger deletion of the feature [+human] in n.

(41) Hypothetical impoverishment rule conditioned by a phonological feature

[+human] → θ / _ _ _ - # [+high] – [+plural]

This rule would be triggered by the ending -ien in addition to -où, resulting in deletion of [+human] from n and the subsequent failure of AgrD to acquire [+human] via Agree-Copy. As a result, the nonleniting exponent of AgrD would be selected and Pseudo-Breton *an toerien ‘roofers’ would be the output (contrast actual Breton an doerien). The rule in (41) would fail to be triggered by -ed, and ar baotred (< paotred), the actual Breton form, would result.

At first glance, (41) bears some similarity to one type of morphophonological rule laid out by Embick and Shwayder (2018) (see also Embick 2013). Following VI but before phonology, they posit three types of interactions based on whether the target and trigger are morphologically or phonologically defined, as in table 5. The fourth possibility, a rule with a phonological trigger and a phonological target, is under the purview of the phonology proper.
The third rule type is similar to the IR rule in (41) in that its trigger is phonological and its target morphological. Embick and Shwayder (2018) illustrate this type with the present tense of some Spanish verbs. When under stress (the trigger), the vowels of certain unpredictable roots (the target) undergo diphthongization. Contrast (42a), with diphthongization, and (42b), without.

(42) Phonologically triggered diphthongization in certain Spanish roots
   a. pensá’r ‘to think’ pensá´mos ‘we think’ piénso ‘I think’
   b. tensá’r ‘to tighten’ tensá´mos ‘we tighten’ ténsos ‘I tighten’

Whatever the precise formulation of the rule accounting for piénso, it will display one striking difference from the Breton phonologically triggered IR. The latter targets a syntacticosemantic feature, while the former targets morphemes that have already been spelled out. This differing behavior follows naturally from the module in which both types of rules exist. The IR in (24) and the hypothetical IR in (41) apply during VI, while the Spanish morphophonological rule applies after VI. As a result, only the former can alter syntacticosemantic features; the latter cannot. This is in keeping with the proposal that an IR is “a rule that deletes a feature in a particular context” (Embick 2015:140). Whether or not a rule comparable to (41) actually exists in some language, I leave as an open question.

7 Conclusion

In this article, I have discussed an apparent instance of a locality condition violation in Breton, in which lenition seems to be prevented from occurring because the target ends in a specific plural exponent, -ou`. This exponent is not adjacent to the trigger, the definite article ar. Adopting a Distributed Morphology framework, I proposed an IR deleting the syntacticosemantic feature [+human] in the immediate vicinity of -ou`. As a result of this rule, [+human] fails to occur on AgrD via Agree-Copy and AgrD subsequently selects the nonleniting floating feature 0 and not 1, thus accounting for the failure of lenition. The loss of the feature [+human] from masculine human plurals in -ou` also accounts for the nonlenition of following adjectives. The IR proposed here is unique to the literature in that the structural description is an exponent and not a syntacticosemantic feature. I have proposed that such IRs occur by necessity during VI, not prior to it as is the case with traditional IRs, which reference only syntacticosemantic features. Additionally, I claim that Agree-Copy of dissociated nodes occurs during VI precisely when the terminal is targeted for Spell-Out. Finally, this analysis offers some support to both the idea that syntacticosemantic features are not overridden during Spell-Out and the idea that VI applies to a linearized structure.
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