Explaining licensing mismatches in Welsh

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Explaining licensing mismatches in Welsh

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Plan of talk

- Licensing mismatches in Welsh
- What it means to be a head
- Abstract prominence
- Against headless feet
- Conclusion

Vowel system: North Welsh

- The monophthongs (diphthongs are quietly ignored)

<table>
<thead>
<tr>
<th>Height</th>
<th>Front</th>
<th>Central</th>
<th>Back</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>iː</td>
<td>i(ː)</td>
<td>u:</td>
</tr>
<tr>
<td></td>
<td>i</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>Mid</td>
<td>eː</td>
<td>oː</td>
<td></td>
</tr>
<tr>
<td></td>
<td>e</td>
<td>o</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>a</td>
<td>aː</td>
<td></td>
</tr>
</tbody>
</table>

Lax: tense = short: long

Also paradigmatically:

(1) a. [ˈtɔːn] ‘tune’
    b. [ˈtɔːnə] ‘tunes’

The Welsh data

Basic data

Penultimate stress

Stress I

- Most stresses are penultimate if possible

(2) a. [ˈtɔːn] ‘tune’
    b. [ˈməɾið] ‘mountain’
    c. [məˈnɔðið] ‘mountains’

- Final stress is semi-exceptional:
  - Stressed suffixes:

(3) a. [ɡwɔˈkai] ‘to empty’ ([ˈɡwɔːɡ] ‘empty’)
    b. [kəmˈrɨɡ] ‘Welsh language’ ([ˈkəmrɨ] ‘Wales’)

- Unstressable prefixes/proclitics:

(4) a. [əmˈlɑːð] ‘tire oneself’ ([ən+blɑːɪn] ‘in front’)
Stress II

Exceptional antepenultimate stress in borrowings, which revert to the native pattern when affixed (Thomas 1996, p. 789):

(5)  a. [ˈtɛlɛfon] ‘phone’
    b. [tɛlɛˈfoːna] ‘phones’

Vowel mutation

Some instances of [i] surface as [ə] in non-final positions

(6)  a. (i) [ˈdɪn] ‘man’
     (ii) [ˈdənjɔn] ‘men’
     (iii) [dəˈnoldeb] ‘humanity’
     (b. (i) [ˈmænɪð] ‘mountain’
      (ii) [mænəðoðɪð] ‘mountains’

So do most instances of [u]:

(7)  a. (i) [ˈtrʊm] ‘heavy’
     (ii) [ˈtrəməχ] ‘heavier’
     (b. (i) [ˈpatrʊm] ‘pattern’
      (ii) [patˈrəma] ‘patterns’

Some background

Most analyses suppose it is a centralization rule, so something like the following:

<table>
<thead>
<tr>
<th>Rule</th>
<th>/truːm-aχ/</th>
<th>/dyn/</th>
<th>/dyn-jɔn/</th>
<th>/pʊr-ɔ/</th>
</tr>
</thead>
<tbody>
<tr>
<td>[+rd] lowering</td>
<td>/trəm-aχ/</td>
<td></td>
<td>/dənjɔn/</td>
<td></td>
</tr>
<tr>
<td>Centralization</td>
<td></td>
<td>/din/</td>
<td>/pɪɾɔ/</td>
<td></td>
</tr>
</tbody>
</table>

This works

On the other hand, this is simply the last 500 years of Welsh historical phonology
The length contrast

- There is a length contrast for vowels in stressed syllables:
  - North Welsh: ultima (= monosyllables)
  - South Welsh: ultima and penultima

- Examples from South Welsh:
  (9) a. (i) [ˈdɨ:n] 'man'
       (ii) [ˈɡwɨn] 'white'
  b. (i) [ˈaːraɬ] 'other'
       (ii) [ˈkareɡ] 'stone'

- In North Welsh, penultima only allow short vowels:
  (10) a. [ˈaraɬ] 'other'
       b. [ˈkaraɡ] 'stone'

The distribution of length

- Where length is possible, it is truly contrastive only in a small set of contexts
- Otherwise, it is largely predictable depending on the following segment (with some variation)

<table>
<thead>
<tr>
<th>Length distribution</th>
<th>Following segments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long</td>
<td>/b d ɡ v ɬ θ χ/</td>
</tr>
<tr>
<td>Short</td>
<td>/p t k/ + clusters</td>
</tr>
<tr>
<td>Contrast</td>
<td>/m n n r/</td>
</tr>
<tr>
<td>Long in ultima,</td>
<td>/ɬ s/ (SW only)</td>
</tr>
<tr>
<td>short in penultima</td>
<td></td>
</tr>
</tbody>
</table>

- Exhaustive study in Awbery (1984)

Informal analysis

- Vowel length is driven by minimum binarity and constrained by maximum binarity: stressed vowels must lengthen if they can
- Mix of coerced and distinctive weight (Morén 2001)
  - Predictable length: coerced weight (no analysis offered here for reasons of focus)
  - Unpredictable length: underlying (non-)moraicity
- South Welsh: moraic binarity
- North Welsh: syllabic binarity, coda becomes important if a bisyllabic foot is unavailable
- Binarity is commonly assumed as a property of heads
- E.g. MAIN-TO-WEIGHT (Bye & de Lacy 2008)

So why is all this important?

- **Penultima** show head-like properties in that they tend to binarity
- **Ultima** show head-like properties in that they resist vowel reduction and/or are loci for augmentation
- Where is the head of the word in Welsh?
- Proposed answer:
  - The head is (normally) on the penultimate syllable
  - Being a head means being binary
  - Ultima bear prominence, which is a feature
  - Final-syllable effects are feature co-occurrence effects
Head seeks dependent

- Proposal (not really new): being head means being a possible locus for head-dependent asymmetries
- Asymmetries have to do with licensing more structure:
  - Branching (Dresher & van der Hulst 1998); also “visibility”
  - Licensing features/elements, as in GP/DP (Harris 1997; Cyran 2010, you name it)
- In our case, it’s branching: a head foot has to be binary, leading to lengthening or weight-by-position effects

Prominence is a feature

- The concept of prominence is in principle separate from the concept of a head
- Though they coincide in many languages
- Attachment of features to prosodic nodes is nothing new:
  - Many approaches to vowel harmony
  - Tones, especially in Element Theory with the H and L
  - Laryngeal features: Kehrein & Golston (2004)
- Prediction: pure prominence-related effects are like feature co-occurrence effects

Final-syllable effects again

- Looks a lot like vowel reduction in non-final syllables

\[(\text{i}) \begin{array}{c}
\text{\textquoteleft \text{din}} \\
\text{\textquoteleft \text{dən\textquoteleft jən}} \\
\text{\textquoteleft \text{trəm}} \\
\text{\textquoteleft \text{trəm\textquoteleft χ}}
\end{array} \quad \text{\textquoteleft \text{man}} \\
\text{\textquoteleft \text{men}} \\
\text{\textquoteleft \text{heavy}} \\
\text{\textquoteleft \text{heavier}}
\]

- I abstract from a lot of the detail here: see Hannahs (2007) for the nitty-gritty
- \(^*\text{u}, \text{ }^*\text{i} \rightarrow \text{ə} \) in non-final syllables is a historical process all right (Jackson 1953)
- But is it a good reason to postulate the same relationship in the modern phonology?
- Most of the literature says yes
For underlying [ə]

- Hannahs (2007): [ə] is not a reduced vowel in any meaningful sense:
  - Freely appears in stressed syllables
  - Freely appears in syllables of various complexity
  - No tendency for [ə] to function as a default vowel

- Analysis:
  - Non-alternating [i] is just /i/
  - Alternating [ɪ] is in fact an underlying [ə]

<table>
<thead>
<tr>
<th>manəð</th>
<th>*[ə]-FINALO</th>
<th>IDENT-IO(vowel feature)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>mənəð</td>
<td>*!</td>
</tr>
<tr>
<td>b.</td>
<td>eE manɪð</td>
<td>*</td>
</tr>
<tr>
<td>c.</td>
<td>mɪnɪð</td>
<td>**!</td>
</tr>
</tbody>
</table>

Issues around underlying /ə/

- For fairness' sake…
  - The schwa is slightly deficient: cannot be long, cannot appear in hiatus
    (Awbery 1984; Thomas 1996)

- However, I agree with Hannahs' insight: /ə/ as the underlying vowel makes sense

- Further evidence: in a small area in SW Wales (NE Pemb., SW Cards.), the constraint *[ə]-FINALO is inactive or less active, giving forms like ['bər] 'short' (Awbery 1984, 1986; Wmffre 2003), which doesn't really make sense in a vowel-reduction theory of [ə]

- Further parallel: in many dialects, a similar restriction against final-syllable /e/ is in force (Awbery 1984)

- But can we make the constraint less descriptive?

- Also: the /u ~ ə/ alternation probably should not be dealt with in this way, and is a bona fide reduction process

Pitch prominence

- A different solution is proposed by Bosch (1996)
- She assumes the penult bears rhythmic prominence…
- …while the final syllable bears pitch prominence
- Pitch prominence licenses more contrasts
- This seems to make phonetic sense:
  - Extensive pitch movement on the final syllable is a well-known (or at least widely-cited) feature of Welsh (for an overview, see Ball & Williams 2001)
  - Also Welsh English (Walters 2003)

- The information comes mainly from non-instrumental dialect descriptions
- Final high pitch may be used by speakers as a cue to accent location…
- But its appearance is far from categorical
- It is in fact confined to certain pragmatically defined contexts
- For more detailed descriptions, see Thomas (1967); Rhys (1984); Williams (1999); Ball & Williams (2001)

- Also Walters (2003) describes it as just one possibility among many for Welsh English
Licensing mismatches

Prominence in Welsh

Pitch prominence is not word-final prominence

- The schwa alternations are quite categorical
  - For most lexical items, they are obligatory
  - A few cases described as being in “free variation” (don’t ask)
  - But still the high pitch is nowhere near being so obligatory
- High pitch might be more of a phrase-boundary tone than something word-related
- In particular, Rhys (1984) describes it as stretching across unstressed syllables to the right edge (image from Rhys 1984, p. 142)

Summary: Welsh

- The penultimate syllable is the locus of binarity-related restrictions ⇒ head foot
- The final syllable is the locus of featural restrictions ⇒ abstract feature drives markedness phenomena
  - /a/-raising: feature co-occurrence drives a faithfulness violation
  - /u/-lowering: feature co-occurrence creates an exception from across-the-board lowering
- These data show that both syllables can lay claim to being singled out by the phonology
- So there must be two ways to single out prosodic constituents

Prominence is abstract

- Not all pitch-prominent syllables demonstrate the “correct” schwa alternations
- Nor is pitch prominence an obligatory factor in the schwa alternations
- To my knowledge, nobody has conclusively demonstrated that word-final high tones are not one (or both) of
  - Phrase boundary tone
  - Non-phonological spill-over due to peak delay (cf. Myers 2000)
- This last possibility is intriguing given the often short duration of “stressed” vowels (Williams 1999)
- It appears that whatever drives the schwa alternations in the final syllable, it is abstract, not something so easily read off the phonetics
- Prominence is a feature

Why divorce?

- Not a new idea at all
- Though normally prominence is represented by the grid: cf. Hyde (2001); Vaysman (2008)
- Arguably this is a necessary evil in parallel OT
- Serial theories allow a large class of headship–stress mismatches, via readjustment and/or tier conflation
- Without recourse to these devices, OT arguably cannot avoid a representational approach
Headless feet

- A well-known type of mismatch is where iterative footing is necessary to derive stress placement, but there is no surface evidence for the non-head feet
- Cairene Arabic (see Hayes 1995 for references)
- Given the lack (?) of other head-dependent asymmetries, this can be represented by headless feet

(12) a. (ʔin)(kása)(ra) ‘it got broken’
   b. mu(dar)(rísi)(t) ‘teacher (f., construct state)’

- This works if there is no evidence for head-dependent asymmetries that have nothing to do with stress

Feet with unstressed heads I

- A different type of mismatch is found when feet are necessary to derive main stress placement (like in CA), there is no secondary stress, but there are other asymmetries
- Several cases recently discussed by Buckley (2009)

(13) Kashaya

ʔah(qoˈlaː)(madaː)(dadu) ‘to get longer and longer’

- Just one stress, but unstressed heads undergo iambic lengthening
- Classic branching asymmetry (Dresher & van der Hulst 1998)

Feet with unstressed heads II

- In other cases we find head-dependent asymmetries in licensing
- Latvian (Buckley 2009 citing Kariņš 1996): initial non-iterative stress, but variable vowel deletion and segment duration confirm footing
- McCarthy (2008) proposes right-aligned trochees to explain Havlík’s Law in Common Slavic (every other yer vowel deletes), yet there is zero evidence for iterative stress
- In extreme cases, there is no (main) stress at all, but with plenty of other evidence for footing, as in Kera (Pearce 2006): intensity, duration, tone spreading and vowel harmony all converge on the same foot structure

Head-stress mismatches

- Both previous types of mismatches can be accommodated if either stress or head status is “invisible”
  - The CA type of data is explained by recourse to headless feet
  - The Kashaya/Kera type of data can be explained by assuming non-trivial phonetic implementation of headship
- The important prediction is the possibility of a complete mismatch, where headship and prominence can be disentangled
- I propose that Welsh is exactly a case of this type
- The Welsh data show that different phonological representations are needed
More cases

- One candidate is Roman Italian (Garvin 1989; Krämer 2009)
- Stress retraction counterbleeds *raddoppiamento*

\[(ˈsa)(ra g)ˈɡrande]\ 'will be big'

- Stress is retracted due to *CLASH*  
  If stress is feature-like, *CLASH* is just another guise of OCP  
- The position of the head does not shift, so the binarity requirement persists  
- The foot is not “headless”, and there is no need for OO-MAX, contra Krämer (2009)  
- For more potential cases, see Vaysman (2008)

Conclusions

- Headship is about asymmetries  
- Prominence is about markedness and faithfulness, and more specifically about features  
- These need to be represented separately in the phonology  
- Many if not most languages show perfect alignment, but this is not the only option

Diolch yn fawr!

References


References II

References III


References V


