PF Feature Checking Approach to Welsh P-stranding

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1. Introduction

Welsh traditionally disallows preposition-stranding (hereafter P-stranding). There are two varieties in Modern Welsh: Literary Welsh and Colloquial Welsh. Literary Welsh disallows P-stranding, however, as Willis (2000: 557) points out, P-stranding is observed in Colloquial Welsh.

The aim of this paper is to provide an account on this syntactic difference between the two varieties, based on the notion of PF feature checking proposed by Ackema and Neeleman (2004). My claim is that if PF feature checking takes place between a P head and its DP complement, the DP will be unable to move out of the complement position. This means that P-stranding is impossible. If PF feature checking does not hold between a P head and its complement, P-stranding is possible.

2. Prepositional wh-constructions in Welsh

Welsh prepositions inflect with personal pronouns if a preposition has a morphological paradigm, as shown in (1).

(1) Table 1: Morphological paradigm of Welsh prepositions

<table>
<thead>
<tr>
<th>bare form</th>
<th>am ‘about, for’</th>
<th>ar ‘on’</th>
<th>efo ‘with’</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st person singular</td>
<td>amdana(f)i</td>
<td>arna(f)i</td>
<td>efo fi</td>
</tr>
<tr>
<td>2nd person singular</td>
<td>amdanat ti</td>
<td>arnat ti</td>
<td>efo ti</td>
</tr>
<tr>
<td>3rd person masculine singular</td>
<td>amdano fe/fo</td>
<td>arno fe/fo</td>
<td>efo fo</td>
</tr>
<tr>
<td>3rd person feminine singular</td>
<td>amdani hi</td>
<td>arni hi</td>
<td>efo hi</td>
</tr>
<tr>
<td>1st person plural</td>
<td>amdanon ni</td>
<td>arnon ni</td>
<td>efo ni</td>
</tr>
<tr>
<td>2nd person plural</td>
<td>amdanoch chi</td>
<td>arnoch chi</td>
<td>efo chi</td>
</tr>
<tr>
<td>3rd person plural</td>
<td>amdanyn nhw</td>
<td>arnyn nhw</td>
<td>efo nhw</td>
</tr>
</tbody>
</table>

(King 2003)

1 The pronoun fe ‘he’ is mainly used in the South, and fo is in the North.
We will first look at *w*-constructions in Literary Welsh. Prepositional relatives require a resumptive pronoun. This is illustrated in (2). The complementizer *y(r)* is used in Literary Welsh.

(2) y dy n y siarades i amdano {fo/pro} 
the man C talk.PAST.1S I about.3MS he
‘the man I talked about (him)’

Willis (2000: 532) assumes that a resumptive pronoun is licensed by the rich agreement of preposition (see McCloskey and Hale 1984 for an earlier account on Irish). If a preposition agrees with its complement, even if there is no overt pronoun, it is assumed that there is a null pronoun *pro*. (3) is an example of relative clauses with a non-inflectable preposition. An overt pronoun is obligatory with non-inflectable prepositions in Literary Welsh.

(3) y ddynes y ces i ginio efo hi 
the woman C get.PAST.1S I lunch with she 
‘the woman I had lunch with (her)’

Prepositional *w*-questions require pied-piping of an entire PP, as illustrated in (4) and (5). Note that a bare form of prepositions is used in pied-piping.

(4) Am beth y siaradest ti? 
about what C talk.PAST.2S you 
‘What did you talk about?’

(5) Efo pwy y cest ti ginio?
with who C get.PAST.2S you lunch 
‘Who did you have lunch with?’

In Colloquial Welsh, on the other hand, P-stranding without agreement on a preposition is widely observed in both relative clauses and *w*-questions, as shown in (6)-(9). The use of the complementizer *y(r)* is rare in Colloquial Welsh, but a zero marker Ø triggers soft mutation on the following verb (Willis 2000: 551).

(6) y dyn Ø wnes i siarad am t 
the man C do. PAST.1S I talk.INF about 
cf. (2)
‘the man I talked about’

(7)  y ddynes ø ges i ginio efo t
the woman C get.PAST.1S I lunch with
‘the woman I had lunch with’

(8) Be’i ø wnest ti siarad am t_i?
what C do. PAST.2S you talk.INF about
‘What did you talk about?’

(9)  Pwyi ø gest ti ginio efo t_i?
who C get.PAST.2S you lunch with
‘Who did you have lunch with?’

We cannot assume a null pronoun in (6)-(9) above, since P shows no agreement with its complement. That is, Colloquial Welsh allows a trace left by movement in a complement position of preposition.

From the above data, we can draw the following generalizations.

(10) Generalizations on prepositional *wh*-constructions in Welsh:

a. Literary Welsh: P is followed by its pronominal complement
   (i.e. a resumptive pronoun in relatives, a *wh*-expression in interrogatives)

b. Colloquial Welsh: P is followed by a trace left by movement

3. **PF feature checking (Ackema and Neeleman: 2004)**

Ackema and Neeleman (2004) claim that PF feature checking takes place in the mapping from syntax to an initial prosodic phrasing which is determined by alignment conditions that associate boundaries of syntactic constituents and phonological phrases. Selkirk (1986) points out that the right edges of a syntactic phrase (XP) correspond to the right edges of a prosodic phrase (indicated by ϕ) in a head-initial language.\(^2\)

(11) Selkirk’s right alignment rule:

\[
\text{Align} \langle \text{right edge, XP} \rangle, \langle \text{right edge, } \phi \rangle \quad (\text{Ackema & Neeleman 2004: 186})
\]

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\(^2\) In contrast, in the head-final language such as in Japanese, the left edges of a syntactic XP correspond to the right edges of a prosodic phrase (see Selkirk and Tateishi 1991).

(i) a. \{Mary-no tomodachi-ga\} \{John-ni\} \{syashin-wo miseta\}
   Mary-GEN friend-NOM John-DAT picture-ACC show.PAST
   ‘Mary’s friend showed pictures to John.

b. \{Mary-no tomodachi-ga\} \{John-ni\} \{syashin-wo miseta\}
This is illustrated in English example (12). The right edge of XP arguably corresponds to right edge of prosodic phrase:

(12)  a. [[A friend [of Mary’s]] [showed [some pictures] [to John]]]
     b. {A friend of Mary’s} {showed some pictures} {to John}

(Ackema & Neeleman 2004: 186)

Welsh is a head-initial language, so the right alignment rule in (11) applies.

(13)  a. [Mi wnaeth [ffrind Mary] [ddangos [lluniau] [i John]]]

      PRT do.PAST.3S friend Mary  show  pictures to John

      ‘Mary’s friend showed pictures to John.’

     b. {Mi wnaeth ffrind Mary} {ddangos lluniau} {i John}

Ackema and Neeleman (2004) also claim that PF checking identifies the features to be checked with identical features in the same prosodic domain. The PF checking is implemented via feature identification as in the following general format (A and B are categories, F1, F2 and F3 are features, and braces indicate prosodic domains):

(14)  {[A (F1) (F2) (F3)..] [B (F1) (F2) (F3)..]}  \rightarrow  

      {[A (F1_i) (F2_j) (F3_k)..] [B (F1_i) (F2_j) (F3_k)..]}

(Ackema & Neeleman 2004: 235)

This feature identification is illustrated in Germanic Complementizer-agreement. A complementizer agrees with an immediately following subject in some Germanic languages. West Flemish example is given in (15).

(15)  a. dan   ik   werken   b. dan   gie   werkt   c. da    {ze / Valère} werkt

      that.1S I work.1S     that.2S you work.2S     that.3S she / Valerie work.3S

     d. dan   wunder   werken     e. da    gunder   werkt

      that.1P we work.1P     that.2P you.P work.2P

     f. dan    {zunder / Pol} en  Valère   werken

      that.3P they / Paul and Valerie work.3P  (Ackema & Neeleman 2004: 236)
They assume the following feature identification rule for Germanic complementizer agreement.

(16) Germanic complementizer agreement:

\[
\{ [C (Prt) (Add) (Plr) \cdots ] [D (Prt) (Add) (Plr) \cdots ] \} \rightarrow \\
\{ [C (Prt_i) (Add_j) (Plr_k) \cdots ] [D (Prt_i) (Add_j) (Plr_k) \cdots ] \}
\]

(Ackema & Neeleman 2004: 241)

Ackema and Neeleman (2004) further argue that their PF checking hypothesis offers new insights into Complementizer-trace effect. In English, the complementizer *that* is obligatorily absent when a subject *wh*-expression is extracted out of CP, as illustrated in (17) below. The complementizer *that* is optional when an object *wh*-expression is extracted, as in (18).

(17) a. Who_i do you think t_i will question Seamus first?

b. * Who_i do you think that t_i will question Seamus first?

(18) Who_i do you think (that) Ciaran will question t_i first? (Carnie 2007: 20)

Ackema and Neeleman claim the following syntactic condition for cyclic movement:

(19) a. Only the head of a phase is accessible to phase-external operations.

b. A specifier can be made accessible by agreeing with the head.

(Ackema & Neeleman 2004: 251)

They also assume that it is not possible to move an XP from a position that allows checking against a head H to another position in which XP and H enter into a spec-head checking relation. (20) below expresses this condition:

(20) Let \( \alpha_i \) and \( \alpha_{i+1} \) be links of the same chain, such that \( \alpha_i \) c-commands \( \alpha_{i+1} \).

If agreement checking involves \( \alpha_i \) and \( \beta \), then \( \alpha_{i+1} \) cannot be in a configuration that would allow agreement checking between it and \( \beta \).

(Ackema & Neeleman 2004: 251)

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3 The features [Prt], [Add] and [Plr] stand for participant (in speech act), addressee and plural, respectively.
They claim that (20) must hold at PF since agreement checking can be conditioned by prosodic as well as syntactic domains.

In case of the subject extraction, the syntactic requirement in (19) conflicts with the PF requirement in (20). This is because the base position of a subject wh-expression is in a possible PF checking position with the preceding C, although English C shows no morphological agreement unlike West Flemish. In (21) below, C and the wh-expression within IP are in the same prosodic domain. When C is absent as in (22), an extraction of the subject wh-expression is available. When a phrase intervenes between C and the subject as in (23), this phrase breaks the PF checking relation. Therefore, that-trace effect disappears.

(21)  
   a. WH <F1 F2>, ...
   b. WH <F1 F2>, ...
   c. * Who, do you think that, for all intents and purposes, t_i has sold out completely?

(22)  
   a. WH <F1 F2>, ...
   b. WH <F1 F2>, ...
   c. Who, do you think that, for all intents and purposes, t_i has sold out completely?

(23)  
   a. WH <F1 F2>, ...
   b. WH <F1 F2>, ...
   c. Who, do you think that, for all intents and purposes, t_i has sold out completely?

(Ackema & Neeleman 2004)

In summary, the element whose features are checked by a preceding head in the same prosodic domain cannot be extracted.

4. Analysis

Making use of the idea of PF feature checking, we now turn to analysis of Welsh wh-constructions to account for the generalization (10). We first look at prepositional relatives. I adopt McCloskey’s (2002) proposal on Irish that the movement structure makes use of operation Move, whereas the resumptive structure makes use of the operation Merge to fill Spec-CP. McClsokey assumes that different complementizers in Irish have different feature make-up.

(24)  
   a. C associated with the binding of a trace bears Op-feature and EPP-feature
   b. C associated with the binding of a pronoun bears only EPP-feature
In the movement structure, Spec-CP is filled by Move of a null operator *pro* bearing the *Op*-feature, whereas it is filled by the insertion of *pro* from the lexicon (Merge) in the resumptive structure. This is schematized in (25) below.

\[
\text{(25) a. Movement} \\
\begin{array}{c}
\text{CP} \\
\text{pro} \\
\text{C'} \\
\text{C} \\
\text{TP} \\
\end{array}
\begin{array}{c}
[+EPP] \\
[+Op] \\
\ldots t_i \ldots \\
\end{array}
\begin{array}{c}
\text{b. Resumptive} \\
\begin{array}{c}
\text{CP} \\
\text{pro} \\
\text{C'} \\
\text{C} \\
\text{TP} \\
\end{array}
\begin{array}{c}
[+EPP] \\
\ldots RP \ldots \\
\end{array}
\end{array}
\]

We now consider the Welsh case. (26a) shows a syntactic structure of prepositional relative of (2) above in Literary Welsh, and (26b) shows a syntactic structure of (6) in Colloquial Welsh.

\[
\text{(26) a. } [[[\text{DP y dyn]} \ [\text{CP pro}] C_{[EPP]} y \ [\text{TP siarad}]_{-}\text{es} \ [\text{VP}]_{[\text{DP i}] t_i} \ [\text{PP P}_{[\text{AGR}]} \text{ amdano} \ [\text{[DP fo/pro]]}]]] \\
\text{the man} \quad \text{talk.PAST.1S} \quad \text{I} \quad \text{about.3SM} \quad \text{he} \\
\text{b. } [[[\text{DP y dyn]} \ [\text{CP pro}] C_{[EPP]} \emptyset \ [\text{TP wnes}] \ [\text{VP}]_{[\text{DP i}] \text{ siarad} \ [\text{PP P[ ]} \text{am} \ [\text{DP t_i}]\text{]]}]]] \\
\text{the man} \quad \text{do.PAST.1S} \quad \text{I} \text{talk.INF} \quad \text{about}
\]

I assume that the crucial difference between the two varieties is that a P head in literary Welsh possesses AGR(eement)-features on person, number and gender, but colloquial Welsh does not. This contrast is realized in inflectional morphology on a preposition. The prosodic structures of (26) are shown in (27) below.

\[
\text{(27) a. } \{y \text{ dyn}\} \{y \text{ siarades i}\} \{\text{amdano (fo)}\} \\
\text{b. } \{y \text{ dyn}\} \{\text{wnes i}\} \{\text{siarad am t}\}
\]

In both cases, P and its complement are in the same prosodic domain. However, in Literary Welsh as in (26a) and (27a), PF feature checking takes place between P and its pronominal complement via the following feature identification.

\[
\text{(28) } \{\ldots [P \text{ (Per)} (\text{Num}) (\text{Gen})] [\text{DP (Per)} (\text{Num}) (\text{Gen})] \ldots \} \rightarrow \\
\{\ldots [P \text{ (Per}_i) (\text{Num}_i) (\text{Gen}_i)] [\text{DP (Per}_i) (\text{Num}_i) (\text{Gen}_i)] \ldots \}
\]
In Colloquial Welsh as in (26b) and (27b), on the other hand, PF feature checking does not hold due to the lack of AGR-features on P.

PF feature checking involves shift from syntactic bracketing to phonological bracketing. If AGR-features of complement of P are checked with its head in the same prosodic domain, the complement of P no longer moves to Spec-CP for syntactic feature checking. This is the situation in Literary Welsh. Therefore, the EPP requirement on a C head is satisfied by Merge of pro, that is, insertion from the lexicon. On the other hand, there is no PF feature checking in Colloquial Welsh, the EPP requirement is satisfied by Move of pro. Under this analysis, the choice between Move and Merge relies on the availability of PF feature checking between P and its complement.4

After application of checking rules, P and the following resumptive pronoun share the same AGR-features in Literary Welsh. Therefore, the pro-drop rule as in (29) may apply. As we saw in (2) above, an overt pronoun is possible after inflected P, so this rule is optional.

\[
(29) \quad \{ \ldots [P \text{ (Per}_i \text{)} (\text{Num}_j \text{)} (\text{Gen}_k \text{)})] [\text{DP} \text{ (Per}_i \text{)} (\text{Num}_j \text{)} (\text{Gen}_k \text{)})] \ldots \} \rightarrow \{ \ldots [P \text{ (Per}_i \text{)} (\text{Num}_j \text{)} (\text{Gen}_k \text{)})] [\_ \ldots ] \ldots \}
\]

In Colloquial Welsh, a trace left by movement is deleted at PF.

We now consider prepositional wh-questions where a whole PP is pied-piped in Literary Welsh whereas P-stranding is available in Colloquial Welsh. Syntactic structures of (4) in Literary Welsh and (8) in Colloquial Welsh are show in (30a) and (30b), respectively. The corresponding prosodic structures are shown in (31).

\[
(30) \quad \begin{array}{ll}
a. & \text{[CP [PP P}_{\text{AGR}] \text{ Am beth}]} \text{[EPP]} \text{ y [TP siarad}_{j} \text{-est [VP [DP ti] t} \text{j [PP ti]}}]\text{]}\text{]? \\
& \quad \text{about what talk.PAST.2S you} \\
& \text{b. [CP [DP Be’]} \text{]} \text{C}_{\text{EPP}]} \text{ ø [TP wnest [VP [DP ti] siarad [PP P]} \text{ am ti]}\text{]}\text{]}\text{]? \\
& \quad \text{what do. PAST.2S you talk.INF about} \\
\end{array}
\]

\[
(31) \quad \begin{array}{ll}
a. & \{\text{Am beth}\} \{\text{y siaradest ti ti}\} \\
b. & \{\text{Be’}\} \{\text{wnest ti}\} \{\text{siarad am ti}\}
\end{array}
\]

4 An advantage of this account is that a form of C is not directly relevant to the choice of Move or Merge. In Irish, the different Cs are realised fairly systematically. In Welsh, however, the direct mapping between a type of structures (movement and resumption) and a form of complementizers (aS and g(r)) does not hold (Willis 2000). Moreover, these complementizers are usually omitted in speech. Therefore, it is hard to decide which C bears what features.
An explanation for Colloquial Welsh in (30b) and (31b) is straightforward. PF feature checking does not hold due to the lack of AGR-features on P. As a consequence, Spec-CP is filled by Move of a *wh*-expression. In Literary Welsh, as in (30a) and (31a), a bare form of the preposition is used in the pied-piping structure. However, I continue to assume that P possesses AGR-features, despite of its appearance in a bare form. Borsley (2009) claims that Welsh *wh*-expressions are in fact non-pronominal in terms of morphological agreement. Welsh shows agreement with a pronominal element, but not with a full lexical DP. This is illustrated by subject-verb agreement. Finite verbs agree with following subjects if they are pronominal as in (32), but not with non-pronominal subjects as in (33).

(32)  a. Gwelod {e / hi} ddraig.
     see.PAST.3S he / she dragon
     ‘S/he saw a dragon.’
     b. Gwelon nhw ddraig.
     see.PAST.3P they dragon
     ‘They saw a dragon.’

(33)  a. Gwelod y {bachgen / bechgyn} ddraig.
     see.PAST.3S the boy boys dragon
     ‘The boy/boys saw a dragon.’
     b. * Gwelon y bechgyn ddraig.
     see.PAST.3P the boys dragon
     ‘The boys saw a dragon.’

(Borsley 2009: 227)

Similarly, there is no number agreement with *wh*-expressions, as illustrated below.

(34)  Pa ddyzion {welod / *welon} ddafad?
     which men see.PAST.3S see.PAST.3P sheep
     ‘Which men saw a sheep?’
     (Borsley 2009: 249)

(35)  Pwy (a) gafodd y wobr?
     who C get.PAST.3S the prize
     ‘Who got the prize?’
     (Borsley et al 2007: 106)

The above data show that Welsh agreement only occurs with personal pronouns. I therefore assume that PF feature checking takes place between P and the following *wh*-expression in Literary Welsh despite the appearance of preposition in a bare form. As a consequence, the
two elements in the checking relation move together to Spec-CP to check the EPP-feature. This movement operation does not break PF checking relation between P and its complement.

The above PF feature checking analysis can carry over to the cases of uninflectable prepositions. In relative clauses, a resumptive pronoun obligatorily follows uninflectable P in Literary Welsh as we saw in (3), whereas a trace follows P in Colloquial Welsh as in (7). Syntactic structures of these examples are shown below.

(36)  a. [\[DP y ddynes\] [CP pro C_{EPP} y [TP ces_j [VP [DP i] t_j ginio [PP P_{AGR} efo [DP hi]]]]]

    the woman get.PAST.1S I lunch with her

b. [\[DP y ddynes\] [CP pro\_i C_{EPP} \_ø [TP ges_j [VP [DP i] t_j ginio [PP P\_i efo [DP ti]]]]]

    the woman get.PAST.1S I lunch with

In Literary Welsh as in (36a), I continue to assume that P possesses AGR-features even though uninflectable Ps have no inflectional paradigm. If this is right, PF feature checking takes place between P and the pronoun in its complement position. As a consequence, Spec-CP is filled by Merge of pro to satisfy the EPP requirement. However, the pro-drop rule (29) above does not apply to uninflectable Ps. The unavailability of pro-drop rule is parallel to non-wh-environments. In (37), the pronoun hi ‘it/she’ may be dropped with inflected Ps. In (38), however, the uninflectable P â ‘with’ obligatorily takes the overt pronoun.

(37)  Dw i ’n cofio amdani (hi).

    be.PRES.1S I PROG remember about.3SF it

    ‘I remember it.’

(38)  Dw i ’n cytuno â *(hi).

    be.PRES.1S I PROG remember with.3SF it/she

    ‘I agree with (it/her)’

In Colloquial Welsh, PF feature checking does not hold due to the lack of AGR-features as shown in (36b). Therefore, P-stranding is possible.

In wh-questions, Literary Welsh requires pied-piping as in (39a), whereas Colloquial Welsh allows P-stranding as in (39b).

(39)  a. [CP [PP P_{AGR} Efo [DP pwy]], C_{EPP} y [TP ces_j [VP [DP ti] t_j ginio [PP ti]]]]?  

    with who         get.PAST.2S you lunch
Given the assumption that a P head in the literary variety bears AGR-features, the same argument used in inflectable prepositions above applies here. PF checking takes place between P and its complement in Literary Welsh, therefore, the two elements in the checking relation move together to Spec-CP. In Colloquial Welsh, as PF feature checking does not hold, a \textit{wh}-expression in the complement of P moves to Spec-CP on its own.

Moreover, the PF feature checking analysis straightforwardly accounts for the first conjunct agreement discussed in Borsley (2009). Welsh prepositions only agree with a first conjunct rather than a whole phrase, as illustrated in (40). The preposition \textit{ar} ‘on’ agrees with the adjacent pronoun \textit{i} ‘I’ as in (40a), but it cannot show agreement with a whole DP as in (40b). The occurrence of a bare preposition is also ungrammatical as in (40c).

(40) a. arnaf [i a Megan]  
\text{on.1S I and Megan}  
\text{‘on me and Megan’}  
\text{(Borsley 2009: 242)}

b. * arnon [i a Megan]  
\text{on.2P I and Megan}

c. * ar [i a Megan]  
\text{on.0 I and Megan}

d. arnon ni  
\text{on.2s we}  
\text{‘on us’}

A syntactic and prosodic phrase of the above coordination structures can be schematized as follows.

(41) a. [\text{PP P [DP [DP] a [DP]]}]

b. {P DP} {a DP}

Since a preposition and a first conjunct are in the same prosodic domain, the PF feature

\footnote{David Willis (p.c.) points out that a bare preposition is possible with the strong pronoun \textit{fI} ‘I’ colloquially.}
checking only applies to the first conjunct. This explains why agreement with the whole PP in (40b) and with the second conjunct in (40c) are ungrammatical.

5. Conclusions

In this paper, I argued that the availability of P-stranding relies on the availability of PF feature checking. P-stranding is available, if there is no PF checking relation between P and its complement. This is the situation in Colloquial Welsh where a P head does not possess AGR-features. In Literary Welsh, on the other hand, PF checking takes place between P and its DP complement. Therefore, that DP no longer moves from the complement position. In prepositional relatives, the EPP-feature on C is satisfied by Merge of the null operator pro into Spec-CP, whereas it is satisfied by Move of an entire PP in wh-questions.

References