The limits of resumption in Welsh *wh*-dependencies

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1 INTRODUCTION

Colloquial Welsh has two strategies for forming *wh*-dependencies, a gap strategy, illustrated for relative clauses in (1), and a resumptive strategy, illustrated in (2).[1]

(1)   y   dyn   gafodd   **ø**   y   wobr
          the man   get.PAST.3S **ø** the prize
          'the man that ø got the prize'

(2)   y   bobl   werthodd   Ieuan y   ceffyl   iddyn **nhw**
          the people sell.PAST.3S Ieuan the   horse   to.3P   **them**
          'the people that Ieuan sold the horse to (them)'

In (1), there is no overt subject in the relative clause, and a gap is posited in subject position, post-verbal since Welsh is a VSO language. In (2), conversely, an overt pronoun *nhw* 'them' appears as the object of the preposition. The two strategies are broadly distributed in accordance with a standard accessibility hierarchy (Keenan and Comrie 1977, Tallerman 1990), with the gap strategy being used for subject relatives, and the resumptive strategy being used for relatives formed on two oblique positions, namely the object of a preposition or the possessor in a possessive noun phrase.

2 OBJECT *WH*-DEPENDENCIES

2.1 The problem

However, identifying the domain of application of each strategy is complicated by the fact that Welsh allows the resumptive pronoun (like ordinary pronouns) to be null in the presence of rich agreement. For instance, linguists normally identify (3) as an instance of the resumptive strategy, despite the fact that there appears to be a gap where the possessor would be (in post-nominal position, the normal position for possessors in Welsh).

(3)   y   dyn   welais   i   ei   chwaer   ***pro***
          the man   see.PAST.1S I   3MS sister   ***pro***
          'the man whose sister I saw (the man that I saw his sister)'

This example is analysed as resumptive by virtue of the possessor-agreement clitic *ei*, which, here as elsewhere, licenses a null possessor in post-nominal position. Example (4) illustrates the syntax of the possessor-agreement clitic in a non-relative environment, demonstrating that a possessor pronoun is optional in postverbal position.

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(4)   ei   chwaer (e)
       3MS   sister   him
       'his sister'

The interpretation of (3) as resumptive is supported by a syntactic alternation with the variant in (5), where the possessor resumptive pronoun is overt. A naturally occurring example is given in (6).[2]

(5)   y   dyn welais   i   **ei   chwaer   e**
       the man see.PAST.1S   I   3MS   sister   **him**
       'the man whose sister I saw (the man that I saw his sister)'

(6)   rhywun   na   alla   i ddim cofio   **'i   enw fo**   rwan   hyn
       someone NEG can.PRES.1S I NEG remember.INF 3MS   name him   now   this
       'someone whose name I can't remember right now (someone who I can't remember his name
            right now)'   (William Owen Roberts, *Y pla* 25)

Object relatives, however, present a problem. Those where the verb in the relative clause is in a synthetic form, such as *glywais* 'heard' in (7), uncontroversially use the gap strategy, an overt resumptive pronoun, such as *fe* 'it', being ungrammatical.[3]

(7)   y   ffrwydrad   glywais   i   **ø / *fe   wedyn**
       the explosion   hear.PAST.1S   I   **ø / it   next**
       'the explosion that I heard next'

However, those with an aspectual periphrasis formed using auxiliary 'be' with an aspectual particle, such as perfect *wedi,* and a nonfinite verb, as in (8), pose serious difficulties. These have generally been analysed as resumptive (Awbery 1977, Rouveret 2002), on the grounds that, as with the possessor relative in (3), they contain an agreement clitic (*ei* in (8)) that can license a null resumptive pronoun in postverbal object position. That is, the object is taken to be the same as a pronominal object in equivalent non-*wh* environments, as in (9).

(8)   y   car   mae   'r lladron wedi **ei   ddwyn   ?ø/?*pro***
       the car   be.PRES.3S the thieves PERF **3MS steal.INF ?ø/?*pro***
       'the car that the thieves have stolen'

(9)   Mae   'r lladron wedi **ei   ddwyn   (e).**
       be.PRES.3S   the thieves PERF **3MS steal.INF (it.MS)**
       'The thieves have stolen it.'

This analysis presents conceptual difficulties in that it forces us to posit a major structural difference between clauses containing a synthetic verb form and those containing an aspectual periphrasis, making clauses where the verb is contained in an aspectual periphrasis in some sense 'less accessible' than those where tense and aspect are expressed on the verb synthetically. This is the case irrespective of what view is taken of the relationship between the gap and the resumptive strategies. If the resumptive strategy is seen as a 'last resort' mechanism introduced when the gap strategy fails, then clauses like (8) must contain some structural complexity rendering the nonfinite verb phrase an island for movement. If, on the other hand, the two strategies are subject to independent constraints,

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[2]   The masculine third-person singular pronoun occurs variously as *e, fo* and *fe* in the examples that follow, the variation being due to a mixture of dialectal and phonological factors. The differences are not indicative of case, gender or of any other grammatically relevant feature.

[3]   Note the contrast here with Irish, which allows such relatives to be formed using either a gap or a resumptive pronoun. Resumptives are excluded in a significantly larger range of environments in Welsh as compared with Irish.

then complexity must be introduced to allow a resumptive pronoun in clauses like (8). Whatever constraint, such as Ouhalla's (1993) A´-Disjointness Requirement, prevents a resumptive pronoun from appearing in (7) is obviated by the extra structure found in (8). In short, if some object *wh*-dependencies involve gaps and some involve resumption, then some means must be found to make the verb phrase is a resumptive structure, such as (8), structurally more complex than the verb phrase in a gap structure, such as (7).

Such analyses have been proposed, for instance by suggesting that nonfinite verbs introduce a nominal projection into the clause (Rouveret 1994) (an extension of the traditional characterization of Welsh nonfinite verbs as 'verbnouns'), or by some other structural device (Manning 1996). However, this introduces an otherwise unmotivated complication into the grammar by positing two different types of direct object and two fundamentally different basic clause structures for Welsh.

A rather different way to resolve this problem is to argue that affirmative *wh*-dependencies formed on object positions in fact never involve a resumptive pronoun. All involve operator-variable dependencies where the variable position is a gap rather than a resumptive pronoun. Building on and synthesizing the evidence presented by Willis (2000) and by Borsley et al. (2007), the first part of this chapter will argue for such a position. I will then go on to integrate this conclusion into a more general analysis of Welsh *wh*-dependencies. Section 3 shows that Welsh manifests more extensive successive-cyclic effects than generally acknowledged, and suggests that ambiguous cases in embedded environments may in fact involve the gap strategy rather than resumption. Section 4 develops a formal analysis which accounts for the various successive-cyclic effects within a movement-based approach to the gap strategy and extends this analysis to cases where resumptive pronouns appear to have gap-like syntactic properties.

2.2 Absence of overt resumptive pronouns

The most obvious difficulty with a resumptive analysis of (8) is the fact that an overt resumptive is never permitted in object relatives, witness the ungrammaticality of (10).

(10) *y   car   mae   'r   lladron   wedi   **ei**   ddwyn   **e**
       the   car   be.PRES.3S the   thieves   PERF   **3MS** steal.INF **it**
       'the car that the thieves have stolen it'

As we saw in (9), there is variation between an overt and a null pronoun as the object of a periphrastic verbal construction in non-*wh* environments. Hence, if clauses such as (8) really were resumptive, we would have to stipulate that the resumptive pronoun is obligatorily null here, whereas an overt resumptive is a possibility elsewhere (cf. (5) and (6) above). In colloquial Welsh, overt postverbal object pronouns of the type illustrated in (9) carry no special emphasis, hence it is not possible to appeal to pragmatic factors to rule out (10). If, on the other hand, example (8) is not a resumptive structure, then the unavailability of a corresponding structure with an overt resumptive pronoun is not surprising.

2.3 Loss of agreement clitics in colloquial varieties

For many speakers of colloquial Welsh, preverbal and prenominal agreement clitics are optional. That is, alongside (11), where a preverbal agreement clitic doubles a postverbal pronoun, patterns such as (12) are found, where only the postverbal pronoun is present.

(11) Mae   Megan wedi ei   ddwyn   e.
      be.PRES.3S   Megan PERF 3MS   steal.INF   it.MS
      'Megan has stolen it.'

(12)   Mae   Megan wedi dwyn   e.
        be.PRES.3S   Megan PERF steal.INF it.MS
        'Megan has stolen it.'

Although null objects are licensed in the former case in (13), they are not licensed in the latter type of structure, as example (14) shows.

(13)   Mae   Megan wedi ei   ddwyn   *pro*.
        be.PRES.3S   Megan PERF 3MS   steal.INF *pro*
        'Megan has stolen it.'
(14)   *Mae   Megan wedi dwyn   *pro*.
        be.PRES.3S   Megan PERF steal.INF *pro*
        'Megan has stolen it.' (grammatical with an intransitive interpretation as 'Megan has stolen.')

If relatives formed on the object of periphrastic verbs were resumptive, then we would expect the innovation of the system illustrated in (12) and (14), which disallows null objects, to lead inevitably to the innovation of compulsory overt resumptive pronouns in object position. However, it does not. Speakers who allow (12) also allow relatives on the same pattern with no overt object in (15), and continue to disallow overt resumptive pronouns in (16), just as in the more conservative system:

(15)   y   car   mae 'r   lladron   wedi   dwyn   ø
        the car   is   the thieves   PERF   steal.INF   ø
        'the car that the thieves have stolen'
(16)   *y   car   mae 'r   lladron   wedi   dwyn   **e**
        the car   is   the thieves   PERF   steal.INF   **it**
        'the car that the thieves have stolen (it)'

2.4   Pied-piping in *wh*-contexts

As would be expected, the syntax of relative clauses and other *wh*-constructions is very similar in Welsh. However, there are some differences, one of which is the extent of pied-piping. Since Welsh has no relative pronouns for most positions, pied-piping of, say, a preposition plus a relative pronoun is not an option in relative clauses. However, Welsh does have interrogative *wh*-pronouns, such as *pwy* 'who'. In *wh*-questions, pied-piping is generally preferred in resumptive contexts with prepositional and possessive relatives. An example of pied-piping of a possessor phrase is given in (17).

(17)   **Car pwy** ddygodd   Megan?
        car who   steal.PAST.3S Megan
        'Whose car did Megan steal?'

Since pied-piping avoids the need for resumption, the preference for pied-piping in these varieties to some extent supports the view of resumption as a 'last-resort' mechanism, available only when a movement strategy has failed. The sentence in (18), with resumption and 'stranding' of the possessed noun, is degraded in comparison for many speakers, although the extent of the degradation varies considerably according to sociolinguistic factors that are not well understood.

(18)   *%??**Pwy**   ddygodd   Megan   **ei**   **gar**?
        who   steal.PAST.3S Megan   3MS   car
        'Whose car did Megan steal? (Who did Megan steal his car?)'

The evidence of (17) and (18) demonstrates that resumption is avoided where an alternative strategy is available. If relatives formed on the object of a periphrastic verb are resumptive, then the corresponding *wh*-questions should be degraded in the same was that (18) is degraded, and corresponding *wh*-questions with pied-piping should be available and preferred. However, this is not the case. The *wh*-question corresponding directly to (8) is the fully grammatical (19), with 'stranding' of the nonfinite verb.

(19)   Beth   mae   'r   lladron   wedi   **ei**   ddwyn?
        what   be.PRES.3S   the   thieves   PERF   **3MS**   steal.INF
        'What have the thieves stolen?'

In this case, it is in fact the pied-piping option that is degraded. Two possible pied-piped forms are shown in (20) and (22). The simplest pied-piped form would be that illustrated in (20), where the non-finited verb is pied-piped along with the interrogative *wh*-pronoun.

(20)   *__Dwyn__   **beth**   mae   'r   lladron   wedi?
        steal.INF   **what**   be.PRES.3S   the   thieves   PERF
        'What have the thieves stolen (Stolen what have the thieves?)'

Note that other aspects of the structure in (20) are well-formed. Stranding of the aspect particle *wedi* in clause-final position does not in and of itself lead to ungrammaticality. Such stranding is illustrated in the VP-ellipsis structure in (21), which is grammatical for younger speakers.

(21)   Dyw   M.   ddim wedi dwyn   y   car ond   mae   'r   lladron **wedi**.
        NEG.be.PRES.3S   M.   NEG PERF steal.INF the car but   be.PRES.3S   the   thieves **PERF**
        'Megan hasn't stolen the car but the thieves have.'

Nevertheless, even those speakers who accept (21) reject (20) categorically.
        Another conceivable pied-piping structure involves pied-piping of both the aspect particle and the non-finite verb. This pattern is illustrated in (22).

(22)   ??**Wedi**   **dwyn**   **beth**   mae   'r   lladron?
        PERF   **steal.INF**   **what**   be.PRES.3S   the   thieves
        'What have the thieves stolen? (Stolen what have the thieves?)'

This fares little better, and is clearly degraded with respect to (19). These patterns are the exact reverse of those found with possessor *wh*-questions. If both involved resumption, we would expect the patterns to be parallel. Assuming that pied-piping is a strategy to avoid resumption, as the evidence from possessor *wh*-questions suggests, then the fact that it is not resorted to in the case of periphrastic object *wh*-questions suggests that there is no need for it, that is, these *wh*-questions do not involve resumption anyway.

2.5   Unexpected object clitics

We have seen a number of empirical arguments that relative clauses and *wh*-questions formed on the object position of a periphrastical verbal form are not resumptive in nature. There is, however, a theoretical argument against this. One very attractive feature of a resumptive analysis is that it allows us to have a unified analysis of the distribution of object-agreement clitics. We can say that object-agreement clitics appear as proclitics to a nonfinite verb when that verb has an object pronoun as its complement. This standard environment was illustrated in (11) above. By denying that clauses such as (8) involve resumption, we are denying that there is an object pronoun in the complement position of

the nonfinite verb. Consequently, we are forced to develop a second mechanism for generating object-agreement clitics, allowing them to appear also in positions from which *wh*-movement has taken place. Such an approach seems uneconomical, and the onus is therefore on a proponent of such an analysis to demonstrate that it is necessary. Such evidence is offered in this and the following section, both of which describe *wh*-environments where object-agreement clitics appear in positions which would be unexpected for a resumptive account.

2.5.1   Object clitics in long-distance dependencies

The first context involves long-distance dependencies, which, somewhat surprisingly, allow an object clitic to precede a nonfinite verb in the main clause (if the main clause is of the AuxVSO type). This is illustrated with *wh*-questions, which show the phenomenon more clearly than relative clauses, in (23)–(25). Although the clitic may be elided in speech, its mutation effect (a soft mutation, which changes *meddwl* 'think' from its base form to its soft-mutated for *feddwl*) remains, indicating the presence of the clitic quite clearly.

(23)   Pwy   wyt   ti   'n   **(ei)**   **feddwl**   wyt   ti?
        who   be.PRES.2S   you   PROG   3MS   think.INF   be.PRES.2S   you
        'Who do you think you are?'   (predicate)

(24)   Pwy   wyt   ti   'n   **(ei)**   **feddwl**   sy   'n   mynd   i   dalu?
        who   be.PRES.2S   you   PROG   3MS   think.INF   be.REL   PROG   go.INF   to   pay.INF
        'Who do you think is going to pay?'   (subject)

(25)   Beth   wyt   ti   'n   **(ei)**   **feddwl**   bod   hyn   yn   (ei)   olygu?
        what   be.PRES.2S   you   PROG   3MS   think.INF   be.INF   this   PROG   3MS   mean.INF
        'What do you think this means?'   (object)

The clitic in the higher clause must be third-person masculine singular, even if the *wh*-element is plural. Note the contrast between (26), where a plural *wh*-phrase combines with a masculine singular agreement clitic in the higher clause and a plural agreement clitic in the lower clause. This pattern is grammatical, whereas (27), with a plural clitic in both clauses, is not.

(26)   Pa   lyfrau   wyt   ti   'n   **ei**   **feddwl**   oedd   M.   yn   **eu darllen**?
        which   books   be.PRES.2S   you   PROG   3MS   think.INF   be.IMPF.3S   M.   PROG   3P   read.INF
        'Which books do you think Megan was reading?'

(27)   *Pa   lyfrau   wyt   ti   'n   **eu meddwl**   oedd   M.   yn   **eu   darllen**?
        which   books   be.PRES.2S you   PROG   3P   think.INF   be.IMPF.3S   M.   PROG   3P   read.INF
        'Which books do you think Megan was reading?'

In fact, the base of the *wh*-dependency need not even be nominal:

(28)   Ble   wyt   ti   'n   (ei)   feddwl   mae   e   'n   mynd?
        where   be.PRES.2S   you   PROG   (3MS)   think.INF   be.PRES.3S   he   PROG   go.INF
        'Where do you think he's going?'

This phenomenon is mostly found with bridge verbs taking a finite complement clause, notably *credu* 'believe', *dweud* 'say', *meddwl* 'think', *gobeithio* 'hope', *gwybod* 'know', *teimlo* 'feel' and *tybio* 'suppose', but does not seem to be completely excluded with other verbs taking a a finite complement clause. With verbs that require a nonfinite complement clause, such as control verbs, clitics are possible, but less usual:

(29) Beth wyt   ti   'n   **(ei) fwriadu**   ei   wneud?
      what be.PRES.2S you PROG 3MS   intend.INF   3MS   do.INF
      'What do you intend to do?'

(30) Beth wyt   ti   'n   **(ei) ddisgwyl**   i   mi ei   wneud?
      what be.PRES.2S you PROG 3MS   expect.INF   to me 3MS   do.INF
      'What do you expect me to do?'   (Harlow 1981: 252, Rouveret 2007)

What is the status of the clitic in these examples? It clearly does not license a null object *pro*, as a resumptive analysis would be forced to claim. The verbs in question are generally two-place predicates taking a subject experiencer and a proposition as an internal argument. If they involved a resumptive pronoun, that pronoun could not be an argument of the main-clause verb. The appearance of the pronoun would therefore be entirely unexpected. If, on the other hand, these examples are the result of movement of a *wh*-element, then the clitic could be analysed as a reflex of *wh*-movement.

It is clear then that the clitic in these cases is not associated directly with a resumptive pronoun in the higher clause. If resumptive pronouns are just ordinary pronouns interpreted as bound variables, then this would be problematic: we could posit a (null) resumptive pronoun as the object of the most deeply embedded verb, but there would be no mechanism to motivate the clitic in the higher clause. It is not problematic for approaches to resumptive pronouns that assume their relationship with their *wh*-operator to be syntactic rather than semantic, such as Rouveret (2007). Rouveret proposes that such cases are evidence that resumption is mediated by multiple agreement relations between successive phasal heads. The clitic is then the reflex of an intermediate functional head that forms an Agree relation directly or indirectly with the resumptive pronoun. The disadvantage of this type of approach is that it forces us to list resumptive pronouns as separate and additional items in the lexicon even though neither Welsh nor any other language makes a morphological distinction between ordinary and resumptive pronouns.

2.5.2 'As'-clauses
A similar phenomenon occurs with a local *wh*-dependency in 'as'-clauses. In (31), the nonfinite verb *disgwyl* 'expect' hosts an object clitic, but this clitic cannot be licensing a null resumptive pronoun for the same reasons as above.

(31) Fel (y) byddech   chi 'n   **ei   ddisgwyl**, mae   syrffio yn
      as (PRT) be.COND.2P you PROG 3MS expect.INF   be.PRES.3S   surfing PRED
      boblogaidd iawn   yma.
      popular   very   here
      'As you'd expect, surfing is very popular here.'

Positing a null resumptive pronoun does not help here, therefore a different mechanism needs to be proposed for introducing the clitic here as above. Consequently, it is actually more economial to reject the resumptive analysis of object *wh*-dependencies and invoke movement instead. Whatever mechanism is used to introduce the object clitics in the structures discussed here can be generalized to more straightforward cases of *wh*-dependencies formed on the object position of a nonfinite verb. This approach leads us towards the conclusion that Welsh falls into the class of languages where *wh*-dependencies formed on object positions trigger the introduction of object-agreement marking (in this case object-agreement clitics) in contexts where this is available (cf. French non-resumptive object relatives).

2.6   Quantifier binding

Gap relatives manifest scope interactions with quantifiers that are indicative of movement. For instance, in English, a relative clause formed on object position with a quantifier in subject position is ambiguous between wide and narrow scope of the quantifier. That is, the sentence in (32) is ambiguous between an interpretation (*de dicto*) where each girl loves a different man (hence as many men as girls) and another interpretation (*de re*) with a single man loved by all the girls, who is different, unusual or quirky. The former, 'multiple-individual' reading manifests wide scope of the quantifier *every*; the latter, 'single-individual' reading manifests narrow scope of the quantifier.

(32)   The man$_i$ that every girl loves ø$_i$ is different.

No such ambiguity arises where the quantifier is in object position and the quantifier is in subject position, as illustrated in (33). There, only the single-individual reading (narrow scope of the quantifier) is possible: there is only a single man, who is different, usual or quirky (Aoun and Li 2003: 98–9, Boeckx 2003, Doron 1982, Sharvit 1999: 596–610).

(33)   The man$_i$ who ø$_i$ loves every girl is different.

Welsh manifests the same asymmetry. Example (34) has the same structure as (32), and is ambiguous in the same way.[4]

(34)   Mae   'r gŵr   mae   pob merch   yn   ei   garu   yn   wahanol.
         be.PRES.3S the man be.PRES.3S every girl   PROG 3MS   love.INF PRED   different
         'The man that every girl loves is different.'

Example (35) has the same structure as English (33), and, like that example, has only the single-individual narrow-scope interpretation.[5]

(35)   Mae   'r   gŵr   sy   'n   caru   pob   merch   yn   wahanol.
         be.PRES.3S   the man   be.REL PROG love.INF every girl   PRED   different
         'The man who loves every girl is different.'

If both (33) and (35) involve movement, the contrast between them can be accounted for straightforwardly in terms of the scope (c-command) relations between the quantifier *pob* 'every' and the variable position at the base of the *wh*-dependency. In (34), *pob merch* 'every girl' c-commands the base of the *wh*-dependency (object position of *caru* 'love'), and may therefore bind it giving rise to the multiple-individual reading. In (35), the base of the *wh*-dependency is in subject position, and hence is not c-commanded by *pob merch* in object position. Without c-command, quantifier binding is not possible and the multiple-individual reading does not arise. The single-individual reading is simply a case of ordinary pronominal anaphora and can therefore arise whatever the structure. On the other hand, resumptive pronouns, being independently referential, seem crosslinguistically to be resistant to supporting *de dicto* multiple-individual readings, hence it would be surprising that (35) is ambiguous if it involved a resumptive pronoun.

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[4]   See Rouveret (2002: 134–8) for further discussion of this phenomenon and some speculation as to how the data in (34) might nevertheless be compatible with a resumptive analysis.

[5]   Some speakers reject multiple-individual interpretations of all *wh*-structures containing quantifiers. The judgements given are for those speakers who accept these interpretations in at least some environments.

2.7   Conclusions about object *wh*-dependencies

We have seen a number of empirical arguments to suggest that *wh*-dependencies formed on the position of the direct object in an aspectual periphrasis do not contain a null resumptive pronoun, but rather involve a gap instead. This conclusion allows us to treat all direct objects on an equal basis with respect to the formation of *wh*-dependencies. We now move on to consider the wider context of Welsh *wh*-structures. In the next section, we look at long-distance *wh*-dependencies in Welsh, suggesting that there is extensive evidence for cyclicity, but questioning the extent of the evidence for actual resumption in these environments.

3   INTEGRATING OBJECT *WH*-DEPENDENCIES INTO A WIDER ACCOUNT OF WELSH SYNTAX

3.1   Cyclicity

Celtic, specifically Irish, *wh*-dependencies have provided some of the clearest evidence that *wh*-movement proceeds cyclically, with the *wh*-element stopping off (at least) in the specifier of every CP even where movement appears to be long-distance (McCloskey 1979, 1990, 2001, 2002). Each individual movement thereby obeys strict locality constraints. Although Welsh *wh*-dependencies do not provide such dramatic evidence of the cyclic nature of *wh*-movement, subtle morphosyntactic alternations provide evidence for effects of much the same kind as in Irish. We have already seen evidence from object clitics that argues for another kind of cyclicity, namely cyclic movement via SpecvP. The evidence for cyclicity via CP will be set out in this section. Essentially, any morphosyntactic change that targets a CP position intermediate between the top and the base of the *wh*-dependency is evidence for some intermediate syntactic position being involved in the creation of these dependencies. In the following section an analysis will be presented that accounts straightforwardly for the various morphosyntactic alternations that are manifested.

          There are various attested forms of long-distance *wh*-dependency in Welsh. In one type, the initial segment of the verb at the front of each clause undergoes soft mutation, a morphophonological alternation that is found in various syntactic environments in Welsh. This is often obscured, since such clauses generally begin with auxiliary *bod* 'be' or (*gw*)*neud* 'do', both of which have many inflected forms that begin with segments that fail to show mutation. However, when the verb can show mutation, it does. In (36), the radical form of the embedded verb is *daw* 'will come'. The non-*wh* form of the sentence is given in (37), which shows that *daw* does not mutate in an ordinary embedded clause. However, in (36), it soft-mutates to *ddaw* because in this example it participates in a *wh*-dependency.[6]

(36)   Beth   yn   ni 'n   ei   obeithio   **ddaw**   o   'r   gefeillio
         what   be.PRES.1P   we PROG 3MS   hope.INF   come.FUT.3S   from the twinning
         ydi   y   bydd   y   naill   a   'r   llall   yn   elwa.
         be.PRES.3S   COMP   be.FUT.3S   the one   and the other PROG benefit.INF
         'What we hope will come from the twinning is that both sides will benefit.'
              (BBC News, *Timbuktu a'r Gelli yn gefeillio*, 'Timbuktu and Hay-on-Wye twin', 24
              October 2007)
                   (http://news.bbc.co.uk/welsh/hi/newsid_7060000/newsid_7060600/7060643.stm)

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[6]   The verb in the higher clause also undergoes a morphosyntactic change, from *gobeithio* to *ei obeithio* in accordance with the rule by which object clitics appear in *wh*-dependencies as discussed in section 2.5.1 above.

(37) Ryn   ni   'n gobeithio (y) **daw** / *ddaw elw   o   'r   gefeillio.
      be.PRES.1P we PROG hope.INF (COMP) come.FUT.3S benefit from the twinning
      'We hope that benefit will come from the twinning.'

This mutation seems to be commonest when there is extraction from an embedded subject position (cf. discussion of *sy(dd)* below), but it can take place irrespective of the position from which extraction occurs in the embedded clause. Extraction from the object position of a nonfinite verb is shown in (38) with mutation of the embedded finite verb, auxiliary *byddai* becoming *fyddai*.

(38) Beth ydych   chi   'n feddwl **fyddai**   Llinos wedi ei   ddweud
      what be.PRES.2P you PROG think.INF be.COND.3S Llinos PERF 3FS say.INF
      wrth ei   thad?
      to   3FS   father
      'What do you think Llinos would have said to her father?'
                    (adapted from http://www.cynnal.co.uk/llythrennedd/Plant/cyfnod_allweddol_2/
                              Storiau_teithio/tren_y_wyddfa/gweithgaredd_3_haen_2.htm)

A second piece of evidence for cyclicity in Welsh comes from the form of auxiliary *bod* 'be'. This verb has a special relative form *sy(dd)*, used when there is extraction from subject position. Its use in unembedded environments is shown in (39).

(39) Pwy **sy / *mae** 'n gwybod yr ateb?
      who be.PRES   PROG know.INF the answer
      'Who knows the answer?'

In long-distance subject extractions, *sy(dd)* appears in initial position in the clause from which immediate extraction has taken place:

(40) Pwy wyt   ti   'n feddwl **sy / *mae**   'n gwybod yr ateb?
      who be.PRES.2S you PROG know   be.PRES.REL PROG know.INF the answer
      'Who do you think knows the answer?'

In both cases, there is a contrast with those clauses, for instance in non-*wh* environments, from which no subject extraction has taken place. In such clauses, the verb form is *mae* in the third person singular:

(41) **Mae**   Megan yn gwybod yr ateb.
      be.PRES.3S Megan PROG know.INF the answer
      'Megan knows the answer.'

The same phenomenon occurs, but less obviously, in the imperfect tense, where two forms, *oedd* and *roedd*, alternate. In clauses from which subjects have been immediately extracted, only *oedd* is possible:

(42) Pwy **oedd / *roedd** yn gwybod yr ateb?
      who be.IMPF   PROG know.INF the answer
      'Who knew the answer?'
(43) Pwy oeddet / roeddet ti   'n feddwl **oedd / *roedd** yn gwybod yr ateb?
      who be.IMPF.2S   you PROG know   be.IMPF   PROG know.INF the answer
      'Who did you think knew the answer?'

In clauses from which there has been no immediate extraction of a subject, both *oedd* and *roedd* are generally possible.

(44)   **Roedd / Oedd** Megan yn   gwybod   yr ateb.
       be.IMPF.3S   Megan PROG know.INF the answer
       'Megan knew the answer.'

This phenomenon is limited to subject extractions. In extractions from other positions, the non-*wh* forms, present-tense *mae* and imperfect *roedd*, remain:

(45)   Beth wyt / rwyt ti   'n   feddwl   **mae**   Megan yn   ei   wybod?
       what be.PRES.2S you PROG think.INF be.PRES.3S Megan PROG 3MS know.INF
       'What do you think that Megan knows?'

(46)   Beth oeddet / roeddet ti   'n   feddwl   **roedd**   Megan yn   ei   wybod?
       what be.IMPF.2S   you PROG think.INF be.IMPF.3S Megan PROG 3MS know.INF
       'What did you think that Megan knew?'

A third effect linked to successive-cyclicity is the fact that tense restrictions, as manifested on the verb at the start of the embedded clause, are voided in *wh*-dependencies. In general, in Welsh, a finite complement clause in the present or imperfect tense is ungrammatical. Where necessary, this will be referred to as the complement-clause tense restriction. There is some idiolectal variation and the effect is strongest in the present tense. Sentences such as (47) are thus ungrammatical for most speakers:

(47)   ?*Dwi   'n   meddwl   mae   Megan yn   gwybod yr ateb.
        be.PRES.1S PROG think.INF be.PRES.3S Megan PROG know.INF the answer
       'I think that Megan knows the answer.'

Instead, the embedded auxiliary 'be' takes on its nonfinite form *bod*:

(48)   Dwi   'n   meddwl bod   Megan yn   gwybod yr ateb.
       be.PRES.1S PROG think.INF be.INF Megan PROG know.INF the answer
       'I think that Megan knows the answer.'

The clause retains its finite interpretation and forms a paradigm with similar complement clauses in other tenses that are formally tensed. For instance, the future-tense equivalent of (47) is entirely grammatical:

(49)   Dwi   'n   meddwl bydd   Megan yn   gwybod yr ateb.
       be.PRES.1S PROG think.INF be.FUT.3S Megan PROG know.INF the answer
       'I think that Megan will know the answer.'

In *wh*-dependencies, however, this restriction is relaxed. A legitimate *wh*-dependency can be built on the structure of (47) without making the embedded clause nonfinite:

(50)   Beth wyt   ti   'n   meddwl mae   Megan yn   ei   wybod?
       what be.PRES.2S you PROG think.INF be.PRES.3S Megan PROG 3MS know.INF
       'What do you think that Megan knows?'

The auxiliary verb in initial position (presumably either C or T) in the embedded clause evidently 'knows' then that it is in a *wh*-dependency.

All three of these phenomena suggest that the CP-layer of the embedded clause of a *wh*-dependency contains some feature identifying it as forming part of a *wh*-dependency and triggering various morphosyntactic changes. The type of *wh*-dependency discussed in this section therefore looks similar to one type of Irish *wh*-dependency, exemplified in (51), in which successive-cyclic movement effects are attested.

(51) rud   a   gheall   tu   a   dheanfa
      thing   a^L promise.PAST   you   a^L do.COND.2S
      'something that you promised that you would do'   (McCloskey 2001: 68)

The relative particle is *a*^{L} in each clause. There is a gap at the base of the dependency. The *wh*-dependency itself seems to be responsible for the alternation in compementizer between the declarative complementizer (which would have the form *go*) and the relative complemtizer *a*^{L}.

3.2   The limits of resumption in long-distance *wh*-dependencies

A second type of long-distance dependency deserves consideration. This is one in which the embedded clause is tenseless (the most deeply embedded verb is nonfinite *ei fod* 'be (3MS)'):

(52)   arwriaeth yr unigolyn yma   yn   sefyll   i fyny   dros   yr   hyn   [yr
        heroism   the individual this   PROG   stand.INF   up   for   the DEM   COMP
        oedd   hi 'n   ei   gredu   **ei   fod**   yn   iawn]
        be.IMPF.3S   she PROG 3MS   belive.INF 3MS be.INF PROG right
        'the heroism of this individual standing up for what she believes is right'

We have already seen that, in Welsh, finite complement clauses with present or imperfect interpretations become syntactically tenseless, although they retain their finite interpretation. We have also seen that this requirement can be obviated in *wh*-contexts. The type of *wh*-dependency in (52) simply represents the case where this requirement is not obviated and the complement clause is syntactically tenseless but receives a present or imperfect interpretation.

This type of *wh*-dependency has generally been taken to be resumptive.[7] However, this is not obviously the case. When the dependency is formed on the subject position, as in (52), the embedded nonfinite verb *bod* takes the same agreement clitics used to agree with the pronominal object of a nonfinite verb. Thus, in (53), the masculine third-person singular clitic *ei* appears, agreeing with the object of the nonfinite verb *hoffi* 'like', while, in (54), the same clitic appears, this time agreeing with the subject of the nonfinite verb *bod* 'be'.

(53)   Mae   Megan yn   ei   hoffi   e.
        be.PRES.3S   Megan PROG   3MS   like.INF   it
        'Megan likes it.'
(54)   Mae   Megan yn   meddwl ei   fod   e   'n   iawn.
        be.PRES.3S   Megan PROG   think.INF 3MS   be.INF   it   PRED right
        'Megan thinks it's right.'

This means that the same question arises as before. Does the presence of the agreement clitic *ei* imply the presence of a null resumptive pronoun in the subject position of the complement clause in (52)? Now that we have established that such clitics can be the reflex of the *wh*-dependency itself, then the

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7   Rouveret (2002: 164), for instance, takes all long-distance *wh*-dependencies in Welsh, except for those formed on adjunct positions (compare (56) below), to be obligatorily resumptive.

mere presence of the clitic is not sufficient to demonstrate that these dependencies are resumptive. We need further evidence.

The same question arises when the dependency is formed on an embedded object position. There is an object-agreement clitic on the embedded nonfinite verb, but this could be licensing a null pronominal object or it could be a reflex of the *wh*-dependency. The relevant type of *wh*-dependency is exemplified in (55).

(55)   rhywun   [roedd   e   'n   meddwl   bod   Megan   yn   ei   nabod]
        someone   be.IMPF.3S   he   PROG   think.INF   be.INF   Megan   PROG   3MS   know.INF
        'someone that he thought that Megan knew'

Finally, when the dependency is formed on an adjunct position, the interpretation is fairly clear. For adjunct *wh*-dependencies, there is no plausible licenser for a null resumptive, so these clearly involve a gap:

(56)   Sut   wyt   ti   'n   credu   bod   dy   genhedlaeth di   o   feirdd   ifanc
        how   be.PRES.2S   you   PROG   believe.INF   be.INF   2S   generation   you   of   poets   young
        yn   wahanol   i   'r   genhedlaeth   ddiwethaf   o   feirdd   ifanc…?
        PROG   different   to   the   generation   last   of   poets   young
        'How do you think your generation of young poets is different to the last generation of young
            poets…?'
        (www.bbc.co.uk/cymru/deorllewin/papurau_bro/cwlwm/newyddion/gorffennaf07.shtml)

The crucial evidence here is the very existence of the pattern. If gap *wh*-dependencies were in principle unavailable in nonfinite complement clauses, then we would expect the pattern in (56) to be simply ruled out. The fact that it is not shows that we cannot simply exclude the possibility of a gap analysis of (52) and (55).

The evidence in fact suggests that these are not resumptive either. Overt resumptive pronouns are not found in subject or object position of these clauses. In colloquial varieties where object clitics are omitted, loss of the clitic makes no difference to the grammaticality of this type of *wh*-dependency. Consider the example in (57). Here the most deeply embedded (nonfinite) verb *nabod* has a gap in its object position and no preverbal object clitic. More formal varieties, as illustrated in (55) above, would require an object clitic *ei* before this verb. Although the absence of this clitic would disallow a null pronominal object, it makes no difference to the grammaticality of the *wh*-dependency.

(57)   y   boi   roedd   e   'n   meddwl   ei   fod   e   'n   **nabod**
        the   boy   be.IMPF.3S   he   PROG   think.INF   3MS   be.INF   he   PROG   know.INF
        'the boy that he thought he knew'   (Owen Martell, *Dyn yr eiliad* 12)

Thirdly, the unexpected appearance of an object-agreement clitic on a nonfinite verb in the higher clause is attested here just as well as it is attested when the lower clause is finite. We have in fact seen this already in (52) above, where the verb in the higher clause is *ei gredu*, that is, the third-person masculine singular object-agreement clitic *ei* plus the verb *credu* 'believe'. The alternative pattern noted above, where the clitic is dropped in the higher clause, but its mutation effect remains, is also found. In (58), the higher-clause verb is *meddwl*, but it mutates to *feddwl* because it is in a *wh*-dependency.

(58)   Holwch   y   plant   faint   o   'r   emynau   maen   nhw
        ask.IMPER.2P   the   children   how-many   of   the   hymns   be.PRES.3P   they
        'n   **feddwl**   eu   bod   yn   eu   gwybod.
        PROG   think.INF   3P   be.INF   PROG   3P   know.INF
        'Ask the children how many of the hymns they think they know.'

We have previously seen that the appearance of these clitics is evidence of a non-resumptive, gap dependency into embedded finite clauses. Their appearance in *wh*-dependencies formed on embedded finite clauses implies then that these too are non-resumptive.

4 FORMAL ANALYSIS

4.1 Successive cyclicity effects

The evidence presented above suggests that all direct object *wh*-dependencies and all subject, object and adjunct long-distance *wh*-dependencies (except those involving islands and certain other inaccessible embedded positions) are formed using a gap strategy. Asssuming that gaps arise through movement, we can suggest that, in the normal case, movement is available in Welsh unless extraction takes place from DP or PP.[8] The unavailability of extraction of possessors from within DP is a crosslinguistically familiar fact. It is reasonable to suppose then that, while extraction of objects and standard cases of long-distance extraction are made possible by the availability of escape hatches at the edges of the C- and v-phases, no such escape hatch exists in Welsh at the left edge of DP or PP.[9] With respect to possessor extraction, this extends to Welsh Gavruseva's (2000) intuition that possessor extraction is possible only in languages that possess a mechanism to move possessors to the left edge of DP.

Let us assume that *wh*-movement is triggered by an unintepretable WH-feature on the head of the *wh*-clause. That is, C exists in two versions, a non-*wh* version (realized in Welsh as *y(r)*, in Irish as *gu(n)*, in English as *that* etc.), and a *wh*-version. The *wh*-version bears an uninterpretable WH-feature and triggers movement via an EPP-diacritic (notated henceforth as *):[10]

(59)   C *[uWH: ___]

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[8]   Adger and Ramchand (2005) suggest that gap *wh*-dependencies in Scottish Gaelic are base-generated, with the syntactic dependency being constrained by feature checking mediated via an Agree relation. As the principal concern here is to establish that certain *wh*-dependencies in Welsh involve gaps rather than resumption, we cannot consider at length the question of whether gaps are best derived through movement or not. Most of the arguments that Adger and Ramchand use to motivate base-generation of gaps derive from syntactic patterns with no direct counterpart in Welsh. However, they do suggest that base-generation of gaps leads to the absence of multiple *wh*-questions in Scottish Gaelic (and Irish). Welsh, by contrast, freely allows multiple *wh*-questions (Borsley et al. 2007: 118), suggesting a straightforward transfer is not possible. We can therefore continue to assume the traditional position that gaps are created by movement.

[9]   However, on the possibility of extraction from PP, see section 4.4 below.

[10]   McCloskey (2002) effectively endows C with this same combination of features, in his analysis, an Op-feature with an EPP-feature attached, but allows such features to be added to the derivation at the end of the phase, effectively making them 'edge features' in the sense of Chomsky (2008). Clearly this avoids the 'spurious' nature of these features when inserted into intermediate SpecCP positions solely to trigger movement to the edge of the phase. However, it robs us of the ability to locate parametric variation within the feature makeup of phase heads (unless assignment of edge features itself is subject to parametric variation). In the current case, we want to say that attracting features are present on C and v, but not on P and D. An edge-feature based approach, at least in its most literal interpretation, would force us to allow edge features to appear on P and D.

In a simple *wh*-clause, this uninterpretable WH-feature scans for an interpretable WH-feature. Such a feature is borne by a *wh*-word in a *wh*-question, or by its null equivalent, a null operator, in a relative clause. This is illustrated by a sample lexical entry for *pwy* 'who' in (60).

(60)   *pwy*   D [WH: +]
        'who'

C agrees with the *wh*-word, valuing its WH-feature and causing the *wh*-word to move to SpecCP (henceforth copies left by movement are indicated in angle brackets). This is illustrated for movement from unembedded subject position in (61).

(61)   Pwy   **sy**   \<pwy\>   'n   gwybod   yr   ateb?
        [$_{CP}$ [WH: +] C*[uWH: +]   ...]
                who   be.PRES.REL   PROG   know.INF   the   answer
        'Who knows the answer?'

Where greater distance intervenes between C and the *wh*-word, movement must be staged through all intermediate v and C positions in a successive cyclic manner. The Phase Impenetrability Condition (Chomsky 2001) prevents Agree from scanning down into the complement of a phasal head, defined provisionally as C, v, D and P. Since movement across v (from object position) and C (across clause boundaries) occurs in Welsh, both these heads must have the ability to attract the *wh*-word to their specifiers, thereby making them accessible to *wh*-features attached to higher heads. This means that v must also exist in a version with a WH-feature:[11]

(62)   v *[uWH: ___]

Where the *wh*-versions of both C and v are selected, *wh*-movement from within vP is made available, as in (63), which illustrates extraction from unembedded object position. Given that we have seen that all *wh*-dependencies formed on direct object position are actually parallel, the availability of a mechanism for extraction from vP need not be constrained in any particular way. In (63), considered now to be a gap dependency rather than a resumptive dependency, extraction proceeds as in (61), with the exception that there is an extra stage of movement via the lower SpecvP.

(63)   Pwy   mae   'r   heddlu   wedi   \<pwy\>   'i   ddal   \<pwy\>?
        [$_{CP}$ [WH: +] C*[uWH: +]   ...   [$_{vP}$ v*[uWH: +]   ...]]
        who   be.PRES.3S   the   police   PERF   3MS   catch.INF
        'Who have the police caught?'

Long-distance extraction is then simply an extension of this procedure with movement via several SpecvP and SpecCP positions:

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[11]   Rouveret (2002) ensures *wh*-movement via SpecvP by assuming that all direct objects of synthetic verbs in Welsh under object shift to SpecvP, even in non-*wh* environments. There are two reasons for not adopting that proposal here. First, we have seen that long-distance cyclic movement is required to account for *wh*-dependencies formed into embedded clauses. Relying on object shift would restrict *wh*-movement to single-clause environments because it would attract only the closest direct object. Secondly, Rouveret has to have some means to prevent object shift when the verb is in an aspectual periphrasis. He can only do this by introducing a structural difference between objects of synthetic verb and objects of periphrastic verbs, a move which we have already seen is conceptually undesirable.

(64)   Pwy   wyt   ti   'n   feddwl   **sy / *mae** 'n   gwybod yr ateb?
       [$_{CP}$ [WH: +] C*[uWH: +] …   [$_{vP}$ v*[uWH: +]]   …   C*[uWH: +]   …]
       who   be.PRES.2S you PROG think.INF   be.PRES.REL PROG know.INF the answer
                                                                *be.PRES.3S

       'Who do you think knows the answer?'

This provides a framework in which the realization of the successive cyclic properties of Welsh *wh*-dependencies can be accounted for straightforwardly. First, consider the clitics on bridge verbs. Any v head across which *wh*-movement has taken place will have a valued WH-feature. We can therefore state a morphological spellout rule as (65) (where SM is the diacritic to trigger soft mutation):

(65)   v[uWH: +] spells out as *ei*$^{.SM}$ or ^{SM}

Recall that both a clitic plus soft mutation and soft mutation alone are possible effects of a *wh*-dependency, depending on sociolinguistic factors, hence the optionality within the spellout rule.[12] [13]

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[12]   Two provisos are needed here. First, since the clitics appear only where there has been extraction across a nonfinite verb, these clitics must actually spell out T[FIN −] together with v[uWH +]. Secondly, although the masculine clitic or soft mutation is clearly the default option, feminine singular or plural clitics appear where the *wh*-element is feminine singular or plural. Agreeing clitics occur only where the *wh*-element is the direct object of the verb on which the clitic appears. That is, the only environment is that illustrated in (i), where the clitic is feminine *ei*, which requires a following non-mutated verb (hence *dal* rather than *ddal* as would be expected with a masculine clitic):

(i)   Pa   wraig   mae   'r   heddlu wedi 'i   dal?
       which woman be.PRES.3S the police PERF 3FS catch.INF
       'Which woman have the police caught?'

This means that the feminine (or plural) clitic is the spellout of the agreement between v and the direct object in a *wh*-context. That is, a v-head with a valued *wh*-feature, coupled with a feminine phi-feature (the result of ordinary non-WH checking of accusative case with the direct object), spells out as a feminine object clitic (where AM is the diacritic for aspirate mutation, the morphophonological effect on the following verb triggered by the clitic):

(ii)   v [uWH +]
        [uCase: ACC]   spells out as *ei*$^{.AM}$
        [uphi: F]

Since this spellout rule is more specific that the one in (65), it will take precedence where it applies. There is some sociolinguistic variation as to whether feminine and plural clitics actually appear (masculine ones often being sustituted). The relationship of the two spellout rules reflects this, the 'masculine' one have a default, 'elsewhere' characteristic, making no actual reference to gender in its formulation. Speakers with variable default output lack the spellout rule in (ii) to the extent that they fail to apply agreement consistently.

[13]   Note that this does not predict that object-agreement clitics will appear with *wh*-dependencies formed on the object position of preposition or on possessors, because these are resumptive. So, (i) is excluded because it could only arise through movement of a null *wh*-operator via SpecvP, and this movement is prevented by the phasal status of PP.

(i)   *y dyn   mae   Megan yn ei   feddwl   [$_{PP}$ amdano]
       the man be.PRES.3S Megan PROG 3MS think.INF about.3MS
       'the man that Megan is thinking about'

Similarly, we have seen that verbs in initial position in all clauses participating in a *wh*-dependency undergo soft mutation. Since all C heads in such clauses will bear a *wh*-feature, we can associate that feature with soft mutation at Spellout:

(66)   C [WH +] spells out as $^{\text{SM}}$

The variation in the form of the verb *bod* 'be' in *wh*-dependencies can also be accounted for straightforwardly. This alternation seems essentially to be a form of subject–verb agreement, a standard phenomenon except for the fact that, in Welsh, the verb *bod* agrees with its subject in terms of *wh*-features (and not, say, person or number). Let us assume then that Welsh T bears agreement features (phi-features) for *wh*, in addition to any other phi-features it might have. T will agree with the subject in standard fashion, valuing its phi-features against the subject. A [WH: +] subject will therefore value the phi-features of T as [uWH: +]. Morphological spellout rules thereby ensure the correct forms:

(67)   T *bod* [uWH: +] [PRES] spells out as *sy(dd)*
        T *bod* [uWH: +] [IMPF] spells out as *oedd*

Contrast this with the corresponding non-*wh* spellout rules:

(68)   T *bod* [PRES] spells out as *mae*
        T *bod* [IMPF] spells out as *(r)oedd*

Note that the spellout rule in (67) piggybacks on subject–verb agreement. This ensures correctly that the *wh*-forms of 'be' only appear when there is extraction of the immediate subject (and not a further embedded subject).

4.2   Features of this analysis

Under this analysis, *wh*-dependencies formed on the object position of a periphrastic verb become largely unremarkable. Now that these have been demonstrated to involve a gap, they can be treated just like other gap extractions. The analysis gains simplicity as a result: all direct objects are treated equally, and the environments from which movement is possible can be characterized straightforwardly as those which involve movement only across phase edges where Welsh makes an escape hatch available in the form of the relevant WH-feature. Object clitics in *wh*-contexts are now seen as the spellout of agreement triggered in the course of the formation of the *wh*-dependency.

By extending the realm of the gap strategy at the expense of the resumption strategy, we partially resolve a problem regarding reconstruction in *wh*-environments (however, problems remain – see section 4.4 below). Reconstruction of anaphoric binding relations is permitted in Welsh into object positions in *wh*-dependencies. Hence, in (69), the noun phrase *Ifan* may bind the anaphor *ei hun* 'himself' in the fronted *wh*-phrase. It is generally suggested that resumptive pronouns are independently referential and therefore do not permit reconstruction.

(69)   Dyma   'r llun   o   'i   hun   mae   Ifan   yn   ei   leicio   fwyaf.
        this-is the picture of 3MS REFL   be.PRES.3S Ifan   PROG 3FS like.INF   most
        'This is the picture of himself that Ifan likes most.'

If, only the other hand, (69) involves a gap, there is no problem.[14]

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[14]   On the null-operator (matching) analysis adopted here, a mechanism is of course needed to ensure that the operator is in some sense linked to anaphor *ei hun* 'himself' in the antecedent of the

4.3   Where resumption is possible in Welsh

The approach taken above has sought to limit the set of environments which are analysed as involving a resumptive pronoun. In particular, it has been argued that resumptive pronouns are not found in unembedded direct-object position or in long-distance *wh*-dependencies formed on subject, object or adjunct positions. This leaves a rump of environments, including the object of a preposition and the possessor of a possessive noun phrase, where the evidence for resumption in Welsh remains strong, principally because these environments allow overt resumptive pronouns, as we saw above (examples (2) and (5)). The traditional view that negation may lead to resumption also seems to hold water for the same reason. Where negative *wh*-dependencies are formed using the complementizer *na(d)*, negation seems to act as an optional island.[15] Overt resumptive pronouns are permitted in negative *wh*-dependencies, even in the highest subject position (resumptive pronouns in bold) in (70):

(70)   …yn   gwrthod gadael i   ’r   plentyn [nad   yw   **e**   wedi dod
           PROG refuse.INF let.INF to the child   NEG.COMP be.PRES.3S he   PERF come.INF
        ag unrhyw beth] i   ymuno yn yr   hwyl.
        with any   thing to join.INF in the fun
        ‘…refusing to allow the child who (he) hasn’t brought anything to join in the fun.’
                                                                    (Owen Martell, *Dyn yr eiliad* 142)

(71)   ’Roedd   o   ’n   defnyddio lot o   ryw   eiria’   Saesneg
        be.IMPF.3S he PROG use.INF   lot of some words   English
        nad   oeddwn   i   ’n   ’u   dallt   **nhw**.
        NEG.COMP be.IMPF.1S I PROG   3P understand.INF them
        ‘He used a lot of English words that I didn’t understand.’
                                                                    (T. Rowland Hughes, *William Jones* 134)

Na(d), though, appears only to permit resumption; it does not require it.

        Finally, Welsh allows fairly free violation of island constraints, and we must suppose that such cases also involve a resumptive pronoun. Examples of violations of *wh*-islands are given in (72) and (72). The resumptive pronoun is overt (*o*) in (72). In (73), we must posit a null resumptive *pro* as the subject of *ydoedd* ‘was’.

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relative clause. That is, the fact that *Ifan* c-commands a copy of the null operator must be sufficient to allow *Ifan* to bind *ei hun*. This complication can be avoided by using a promotion (head-raising) analysis of the relative, whereby the antecedent noun raises from within the relative clause (Bianchi 2000, Kayne 1994). On the other hand, the promotion analysis cannot derive recursive restrictive relative clauses such as (i) (with both relative clauses understood as restrictively modifying *cat*).

(i)   the cat that chased the mouse that is purring in the corner

It assigns no plausible structure to such clauses and therefore predicts them to be ungrammatical.

        I remain neutral as to which of these approaches should be adopted for the Welsh data discussed here. The matching analysis sketched in the text can be converted into a promotion analysis by replacing the null operator with the antecedent of the relative, replacing the D-layer of the antecedent with a null determiner bearing an interpretable [WH: +] feature. The essential features of the analysis will remain under such a reworking. The definiteness data discussed below in section offer some support for a promotion analysis, since the null determiner can be lexically specified as indefinite, a somewhat more natural move than stipulating the null operator to be indefinite.

[15]   Note that resumption seems to be triggered by the specific complementizer *na(d)*, rather than by negation itself. Negation can be expressed in another way in relative clauses in Welsh, namely using the postverbal negative marker *ddim*, in which case resumption behaves as it does in affirmative clauses.

(72) rhyw aflwydd   na   ŵyr   neb   be   **ydi**   **o**
      some afliction COMP.NEG   know.PRES.3S   no-one   what be.PRES.3S it
      'some afliction that no one knows what (it) is'   (William Owen Roberts, *Y pla* 103)

(73) aroglau na   fedrai   Owen   ddweud beth **ydoedd**
      smell   COMP.NEG   can.IMPF.3S Owen   say.INF what be.IMPF.3S
      'a smell that Owen couldn't say what (it) was'   (Kate Roberts, *Traed mewn cyffion* 48)

4.4   Extending this analysis to resumptive relatives

Reconstruction though still poses a problem, since even resumptive *wh*-dependencies show some successive-cyclic effects. First of all, reconstruction into positions that we have continued to consider resumptive is possible, for instance, reconstruction of anaphoric binding in a preposition relative is available. Furthermore, prepositional *wh*-dependencies with preposition stranding show obviation of the complement-clause tense restriction. In (74), the embedded clause is in the present tense (a violation of the complement-clause tense restriction) with an overt resumptive.[16]

(74) y   llyfr mae   pawb   yn   dweud   **mae**   Mair yn   sôn
      the book be.PRES.3S everyone PROG say.INF be.PRES.3S   Mair PROG talk.INF
      amdano   fe
      about.3MS it

Finally, clitics or soft mutation on higher bridge verbs are grammatical in long-distance prepositional relatives formed using a resumptive pronoun (*meddwl* becomes *ei feddwl*):

(75) y   llyfr roedd   pawb   yn   **(ei)** **feddwl**   oedd   Mair yn
      the book be.IMPF.3S everyone PROG 3MS   think.INF   be.PRES.3S Mair PROG
      sôn   amdano   fe
      talk.INF   about.3MS   it
      'the book that everyone thought that Mair was talking about'

In these cases, it looks as though a gap and a resumptive pronoun induce the same (successive-cyclic) syntactic properties.

    How can these facts be incorporated into our analysis? Let us suggest that the contexts in which resumptive pronouns appear contain a feature that blocks movement, but which allows insertion (Merge) of a wh-element. Effectively these contexts contain a point that blocks the extension of a gap dependency. Such a feature is an uninterpretable WH-feature lacking an EPP-feature. The lexical entries for the relevant heads therefore include the following:[17]

(76) P   [uWH: ____]
      D   [uWH: ____]
      C *na*(*d*) [uWH: ____]

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[17]   Rouveret (2007) proposes an account of Welsh resumption in which resumptive pronouns participate in a syntactic Agree relation with the head of the CP. It is this Agree relation for him that gives rise to reconstruction effects. The proposal adopted here is somewhat different in rejecting a syntactic relation between the resumptive pronoun and the wh-dependency (only a semantic one). This saves us from positing special resumptive pronouns with [WH: +] features in the lexicon.

In a prepositional relative, for instance, the relevant features will be introduced in the configuration illustrated in (77).

(77)   y bobl [CP werthodd   Ieuan [vP   y ceffyl   iddyn   **nhw**
         [CP C*[uWH:___]... [vP v *[uWH:___]...[PP Op[WH:+] P[uWH:___] [DP [them]]]]]
         the people sell.PAST.3S Ieuan   the horse   to.3P   **them**
         'the people that Ieuan sold the horse to (them)'

Let us assume that resumptive pronouns are simply ordinary pronouns and therefore bear no WH-feature . The pronoun *nhw* 'them' is therefore introduced to satisfy the argument structure of the verb *gwerthu* 'sell' and the preposition *i* 'to'. The unvalued WH-feature on P cannot be satisfied by any element within the PP, so an element with a WH-feature must be merged in SpecPP. The null operator bears the relevant feature, Op [WH: +], and can be merged in SpecPP. The resumptive pronoun is then (semantically) A´-bound by this operator, although there is no syntactic relation between the two. The derivation then continues as with the movement analysis above. The v head's unvalued WH-feature is valued by the null operator, which moves to SpecvP, and the same happens with C. Hence we end up with (78):

(78)   y bobl [CP werthodd   Ieuan   [vP   y ceffyl   iddyn   **nhw**
         [CP Op[WH:+] C*[uWH:+]...[vP <Op> v*[uWH:+]...[PP <Op> P[uWH:+] [DP [them]]]]]
         the people sell.PAST.3S   Ieuan   the horse   to.3P   **them**
         'the people that Ieuan sold the horse to (them)'

A gap in place of the resumptive pronoun is excluded, because a gap could only arise if the null operator were merged into the object position of the preposition. This null operator would need to move via SpecPP, but since the WH-feature of P lacks an EPP-feature, this movement cannot occur.

This analysis retains the intution that resumptive pronouns are syntactically normal pronouns. It avoids the need to list special resumptive pronouns with WH-features in the lexicon with, embarrassingly, the same form as ordinary pronouns. This is both economical, and consistent with the observed universal that no language makes available a special morphological form for resumptive pronouns (McCloskey 2002: 192).

Finally, we should note that younger speakers allow extraction of the object of a non-agreeing preposition. Under this approach, such speakers either possess a *wh*-version of some functional project at the left edge of P (thereby creating an escape hatch for movement from within PP), or else P is not a phase head for them. The former seems more in keeping with the idea that the locus of crosslinguistic and dialect variation is the lexicon.

4.5   Further evidence for 'mixed' derivations

We have used the evidence that certain successive-cycle effects obtain even in resumptive relatives to motivate an analysis where movement is used except to bridge phase boundaries that provide no escape hatch. This introduces 'mixed' derivations, that is, dependencies where some of the links are derived by movement, but where others involve binding of resumptive pronouns. I note here two further pieces of evidence that support this approach.

First, there is evidence that such derivations are needed for other languages, notably Irish (McCloskey 2002) and Selayarese (Finer 1997). Consider the Irish data in (79) and (80). In (79), the upper part of the A´-dependency has the features of a gap strategy (use of complementizer a[L], realized in the form of the copula as *is*), whereas the lower part has the features of resumption (use of complementizer a[N], realized in the form of the verb *a bhfuil*, and the presence of a resumptive inflection on the preposition *aige* 'at him').

(79) Cé   is   dóigh leat   a   bhfuil an t-airgead aige?
      who   a^L-COP.PRES likely with.you a^N is   the money   at.him
      'Who do you think has the money?'   (McCloskey 2002: 198)

In the adjunct A´-dependency in (80), the forms of the complementizers indicate that the higher part of the dependency involves a gap (movement) strategy (complementizer a^L), whereas the lower half is resumptive (complementizer a^N).

(80) Cén fáth   a   dúirt Pól a   raibh Seán   ann?
      what reason   a^L said Pól a^N was   Seán   there
      'Why did Paul say that John was there?'   (McCloskey 2002: 210)

McCloskey proposes a mixed derivation to account for these cases, with movement only in the higher of the two clauses.

Secondly, even within Welsh, there is another context in which such 'mixed' dependencies are required. These involve relatives with promotion to subject, similar to (but not identical with) the first class of so-called 'anomalous' relatives described by Awbery (1977: 194–201). With certain impersonal predicates (*angen* 'need', *eisiau* 'want' etc.), a non-subject can be raised to subject position in a wh-environment and then extracted as though it were a subject, inducing the form of the verb 'to be' associated with subject extraction, namely *sy(dd)*. The non-*wh* construction is given in (81). In a non-*wh* environment, the raising construction, shown in (82), is for possible for some speakers, somewhat marginal for others.

(81) Mae   angen gwneud cryn dipyn o   waith.
      be.PRES.3S need   do.INF   quite.a.bit of work
      'There's a need to do quite a bit of work.'
(82) ?Mae   cryn dipyn o   waith angen ei   wneud.
      be.PRES.3S quite.a.bit of work   need   3MS do.inf
      'Quite a bit of work needs to be done.'

A fully grammatical relative clause can be formed on the basis of (82):

(83) rhywbeth sydd   angen ei   wneud
      something be.PRES.REL   need   3MS do.INF
      'something that needs to be done (lit. 'something there's a need to do')

The crucial case is where there is a resumptive environment at the base of the construction. If we introduce a prepositional phrase, then raising to subject of the type illustrated in (82) is very marginal. The grammatical non-raising construction is given in (84), and the marginal raising construction in (85).

(84) Mae   angen ymdrin â   nifer   o   bethau ar frys.
      be.PRES.3S need   deal.INF with number of things   urgently
      'There's a need to deal with a number of things urgently.'
(85) ?*Mae   nifer   o   bethau angen ymdrin â   nhw ar frys.
      be.PRES.3S number of things   need   deal.INF with them urgently
      'A number of things need to be dealt with urgently.'

The marginal structure in (85), however, seems to be capable of forming the basis for a grammatical *wh*-dependency involving resumption, as illustrated in (86). Here, the verb is *sydd*, indicating subject extraction and hence a gap in subject position, while there is an overt resumptive pronoun at the base of the dependency.

(86)   pethau   sydd   angen   ymdrin   â   nhw   gartref
       things   be.PRES.REL   need   deal.INF   with   them   at.home
       'things that need to be dealt with at home' (lit. 'things that there's need to deal with them at
       home')   (Robin Llywelyn, *Un diwrnod yn yr eisteddfod*, chapter 3)

How can this be? The natural hypothesis to make is that we are dealing with a mixed *wh*-dependency of the type discussed above:

(87)   pethau   sydd   angen   ymdrin   â   nhw
       $[_{CP}$ Op[WH:+] C*[uWH:+]…$[_{vP}$ <Op> v*[uWH:+]…$[_{PP}$ <Op> P[uWH:+] $[_{DP}$ [them]]]]]
       things   be.PRES.REL   need   deal.INF   with   them

That is, a pronoun is inserted into the object position of *â* 'with'. The PP has a *wh*-feature but no EPP feature. This means no element can be raised from within the PP. However, a null *wh*-operator can be merged to satisfy the *wh*-feature. This operator can then be raised to subject position (by whatever process achieves this in (82)), giving rise to the movement properties associated with the higher part of the relative clause.

     Finally, we can note that, even for English, there is evidence of mixed derivations for resumptive structures. A mixed derivation analysis complicates the procedure for establishing whether reconstruction occurs or not (McCloskey 2002: 220–1). In fact, it predicts partial reconstruction with 'last-resort' resumptives in island violations. This seems to be the correct prediction. For instance, in (88) and (89), *John* is a possible antecedent of *himself*, whereas *Bill* is not. This would follow if a null operator (with matching) had moved from SpecvP in the higher clause to SpecCP, in the spirit of the current analysis.

(88)   the pictures of himself that John asked why Bill had destroyed them
(89)   the pictures of himself that John cried after Bill destroyed them

5   CONCLUSION

This article has argued that object clitics in *wh*-dependencies formed on the object of a periphrastic verb are not indicative of resumption. In fact, such dependencies involve a gap and are derived by movement. This conclusion allows a more straightforward analysis of Welsh *wh*-dependencies, according to which there is successive-cyclic movement, mediated by escape hatches in SpecCP and SpecvP, but no equivalant escape hatches at the DP or PP level. Under such an analysis, the object clitics are in fact a manifestation of the *wh*-dependency relation itself, and appear in a number of environments where they could not possibly be arguments of the verb. This is one piece of evidence for successive-cyclic movement via both SpecvP and SpecCP in Welsh. Other evidence comes from the complement-clause tense restriction and from the form of the verb 'to be' in embedded *wh*-dependencies.

     Much of the evidence for successive-cyclic movement applies equally to gap *wh*-dependencies and to resumptive *wh*-dependencies, which leads us to conclude that the mechanisms which derive these successive-cyclic effects must be common to both types. In order to achieve these effects, I have proposed an approach which extends aspects of McCloskey's (2002) analysis of Irish wh-dependencies to Welsh, suggesting that Welsh resumptive *wh*-dependencies involve a mixture of movement of a *wh*-operator, along with semantic binding of a resumptive pronoun at the point where movement is unavailable.

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