

A minimalist approach to Jespersen's Cycle in Welsh

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A frequent development is for languages to replace a preverbal marker of negation with a newly innovated postverbal one ('Jespersen's Cycle'), as with French *ne* VERB > *ne* VERB (*pas*) > *ne* VERB *pas* > (*ne*) VERB *pas*. Although it has long been known that Welsh has undergone Jespersen's Cycle, the Welsh development has never been traced in any great detail. This chapter provides documentation of the various stages of Jespersen's Cycle in Welsh and an account within minimalism. It shows that the postverbal negative marker (*d*)*dim* developed via a series of staged reanalyses, from a noun 'small thing' to become an indefinite pronoun 'anything', itself a negative-polarity item. This was then reanalysed as a negative polarity adverb 'at all', which became an optional then compulsory marker of negation. I interpret these stages in minimalist terms as a change in the features on (*d*)*dim*: first from noun (N-head) to indefinite pronoun (D-head marked as a negative-polarity item); then to adverb (AP marked as a negative-polarity item); then to a specifier of NegP with an uninterpretable Pol [Neg] feature; and finally as a specifier of NegP with an interpretable Pol [Neg] feature. The Welsh evidence also bears on broader issues of the nature of syntactic change and grammaticalisation. This chapter shows that the historical development can be conceived of as a series of distinct reanalyses, with (*d*)*dim* successively splitting into two items with distinct syntactic properties at each stage.

1 INTRODUCTION

1.1 Jespersen's Cycle

As is well known, many European languages, and a number outside Europe, have undergone a historical change whereby an earlier (preverbal) exponent of negation has been supplanted by another (postverbal) marker.* The original observation goes back to Otto Jespersen in his (1917) book *Negation in English and other languages*:

The history of negative expressions in various languages makes us witness the following curious fluctuation: the original negative adverb is first weakened, then found insufficient and therefore strengthened, generally through some additional word, and this in its turn may be felt as the negative proper and may then in course of time be subject to the same development as the original word.

(Jespersen 1917: 4)

The 'strengthening' postverbal marker is first innovated, often as the result of the grammaticalisation of a noun denoting a small unit of measurement (minimiser) or a generic noun. It then becomes compulsory, as the preverbal marker itself undergoes phonological weakening before disappearing entirely.

This paper focuses on formal aspects of Jespersen's Cycle within a minimalist approach, using the Welsh Jespersen's Cycle as a paradigm case. On the face of it, Jespersen's Cycle looks like a gradual process: over time, the postverbal marker becomes more frequent, the preverbal marker less frequent. However, it will be argued that a close

* I would like to thank Bob Borsley, Liliane Haegeman and Ian Roberts for useful comments on earlier drafts of this paper.

analysis of the data reveals it to be a staged process, amenable to being interpreted as a series of reanalyses, some of which amount to grammaticalisation. The main formal aspect of the analysis is that it views the essential development as being a change in the interpretability of features: the polarity feature of the (preverbal) Neg-head (Middle Welsh *ny(t)*, Modern Welsh *ni(d)*) goes from being interpretable at the start of Jespersen's Cycle to being uninterpretable, before finally disappearing entirely (being transferred to the verb). Conversely the polarity feature of the 'strengthening' postverbal element (Middle Welsh *dim*, Modern Welsh *ddim*) goes from being uninterpretable to being interpretable. However, other reanalyses are also involved, leading to successive splitting of the 'strengthening' element into a number of homophonous items.

At various points, I will compare developments in Welsh with those in French, which follow an extremely similar path, although the two languages differ in certain points of detail. I focus on the marking of pure sentential negation, ignoring both constituent negation and, except where relevant to pure sentential negation, the development of the various negative quantifiers and indefinite pronouns (such as Welsh *neb*, French *personne* 'anyone, no one'), which themselves have an interesting and complex story to tell.¹

1.2 The stages of Jespersen's Cycle

The process that Jespersen described can broadly be characterised as having five stages (for similar divisions, distinguishing between three and five stages of Jespersen's Cycle, see Poppe 1995: 101, Roberts & Roussou 2003: 154–5, Rowlett 1998: 90, Van Kemenade 2000: 57, and Zeijlstra 2005):

Stage 1. Negation is expressed using a preverbal negative marker;

Stage 2. This marker weakens and is reinforced by some other element (noun phrase or adverb). Some such reinforcing element is initially (Stage 2(a)) optional, but is later (Stage 2(b)) compulsory;

Stage 3. The preverbal marker becomes itself optional (Stage 3(a)), eventually disappearing entirely from the language (Stage 3(b)).

Stage 2 involves the innovation (via reanalysis) of some suitable element. I will argue though that stage 2 itself is not entirely uniform, in the sense that the reinforcing element may be a reinforcing adverb or a reinforcing negation marker. Welsh stage 2 seems to instantiate first the former, then the latter option. The main aim of the rest of this paper will be to examine the formal instantiation of each of these stages, and the mechanisms that motivate the relevant reanalyses and grammaticalisations, ensuring a directed, unidirectional pathway through the various stages.

1.3 A minimalist approach to Jespersen's Cycle

In this section, I sketch an outline of what a formal account of Jespersen's Cycle might look like, taking the accounts of the French and Greek Jespersen's Cycle in Roberts & Roussou (2003) and, especially, Roberts (2004) as my starting point, but with some modifications. Other attempts to investigate negation systems from an explicitly diachronic perspective within a minimalist account include Brown (2003) and Zeijlstra (2005).

¹ By focussing on sentential negation, the similarities between the historical developments in Welsh and French will actually appear more striking than a wider consideration would suggest, since there seem to be fairly extensive differences, both diachronically and synchronically, between the two languages in the development of negative indefinite pronouns.

Roberts (2004) treats the history of French negation as involving a change in the interpretability of the Neg-feature of the items involved in negation. The preverbal marker of negation *ne* goes from having an interpretable Neg-feature to having an uninterpretable one, possibly via a period of variation. The postverbal element *pas* undergoes a partially reverse development, ultimately acquiring an interpretable Neg-feature. I adopt this basic insight as being at the heart of Jespersen's Cycle.

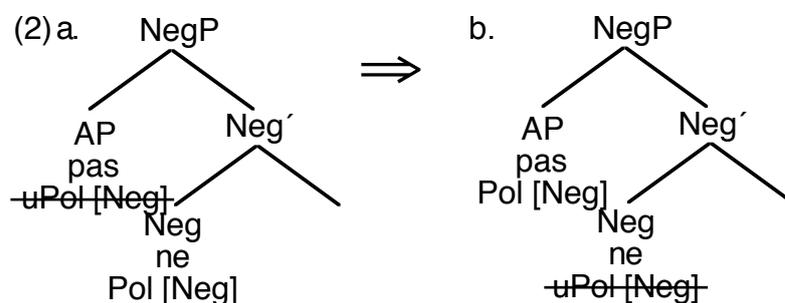
Adapting Roberts's framework slightly, we can say that *ne* in Old French bore an interpretable polarity feature, inherently valued as Negative.² Being interpretable, this did not need to participate in an Agree relation, so sufficed to convey sentential negation in contexts such as (1). This is Stage 1 of the cycle.

- (1) ... je ne norriroie trahitor...
 Pol [Neg]
 I NEG feed.COND.1S traitor
 '...I would not feed a traitor...'
 (*La Chastelaine de Vergi*, cited by Foulet 1990 [1928]: 73)

Preverbal *ne* came to be reinforced (Stage 2(a)) by postverbal *pas*, reanalysed as a marker of negation, having originally been a (fairly) generic noun meaning 'step, pace'. Roberts suggests that *pas* (and parallel items) initially bore no negative feature, but merely an uninterpretable operator feature (Roberts 2004: chapter 1, 76, 79–80), which had to stand in an Agree relation with an appropriate c-commanding polarity licenser, either negation or some other licenser.

Again, adapting somewhat, I suggest that *pas* (and its counterpart, *dim*, in Welsh) initially is simply a (weak) negative polarity item, subject to the requirement on all negative polarity items that it must be c-commanded by an appropriate licenser (this is equivalent to Roberts's uninterpretable operator feature). *Ne* is among the class of appropriate licensers along with various other negative, interrogative and irrealis markers. Later, *pas* is incorporated into the negative system, and acquires an uninterpretable polarity feature. Being uninterpretable, this feature needs to be valued by another feature, in this case by the interpretable Neg-feature of *ne*. Crucially it requires the presence of a licensing head (*ne*).

Finally, this relationship is inverted, via the reanalysis in (2), with *pas* bearing the interpretable polarity feature, and *ne* bearing an uninterpretable one. This reanalysis opens up the way for *pas* to become the sole exponent of negation, with preverbal *ne* becoming optional in present-day colloquial French.³ Whereas, before, the uninterpretable feature of *pas* needed to agree with the interpretable feature of *ne*, after the reanalysis, the uninterpretable feature of *ne* needs the interpretable feature of *pas* to agree with.



² Roberts (2004: Ch. 1, 80) in fact has an interpretable Neg-feature, rather than a polarity feature. On polarity features, see Brown (2003: 168).

³ I further depart here from Roberts's account in assuming that the relevant elements are merged into a NegP projection, and that the Agree relations may be established within this projection, rather in the spirit of Haegeman's (1995) Neg-Criterion, or Rowlett's (1998) analysis of French negation.

Jean n' a pas vu Marie.
 Jean NEG has NEG seen Mary
 'John hasn't seen Mary.'

In all cases, I assume verb movement in French (and in Welsh, see below) via Neg to a head-position above NegP. This movement carries the Neg-head along with it, resulting in the observed *ne-verb-pas* order. Note that raising of the verb through Neg to a higher functional head ensures also that the uninterpretable polarity feature of *ne* in (2b) c-commands the interpretable polarity feature of *pas*, allowing the usual Probe-Goal relation normally required for an Agree relation to be formed.

1.4 Negation and clause structure in Middle Welsh

The basic markers of sentential negation in Middle Welsh are main-clause *ny(t)* and embedded-clause *na(t)*. These appear in immediately preverbal position. Both are sufficient alone to convey clausal negation. A main-clause example with *ny(t)* is given in (3a), and an embedded-clause example with *na(t)* in (3b).

- (3) a. ...ac ny deffroes ef yny vu hanner nos.
 and NEG woke.3S he until was.3S midnight
 '...and he did not wake up until it was midnight.' (YSG 1987)
- b. A Galaath a dywawt na allei ef dyuot yn diberigyl.
 and Galahad PRT said.3S NEG could.3S he come.INF PRD safe
 'And Galahad said that the could not come safely.' (YSG 629)

Both items trigger various mutations on the initial segment of the following verb; for instance, in (4), the verb is *keffy* 'you get, will get', and the change /k/ > /x/, orthographic <k> to <ch>, is triggered by the negative marker *ny(t)*.

- (4) ...ny cheffy di varch gennyf i.
 NEG get.2S you horse from me
 '...you will not get a horse from me.' (YSG 1940)

These particles are found only in finite clauses. Nonfinite verbs must be negated using other means, principally by substituting an equivalent finite clause. For details, see Evans (1964: 164–5) and Richards (1948).

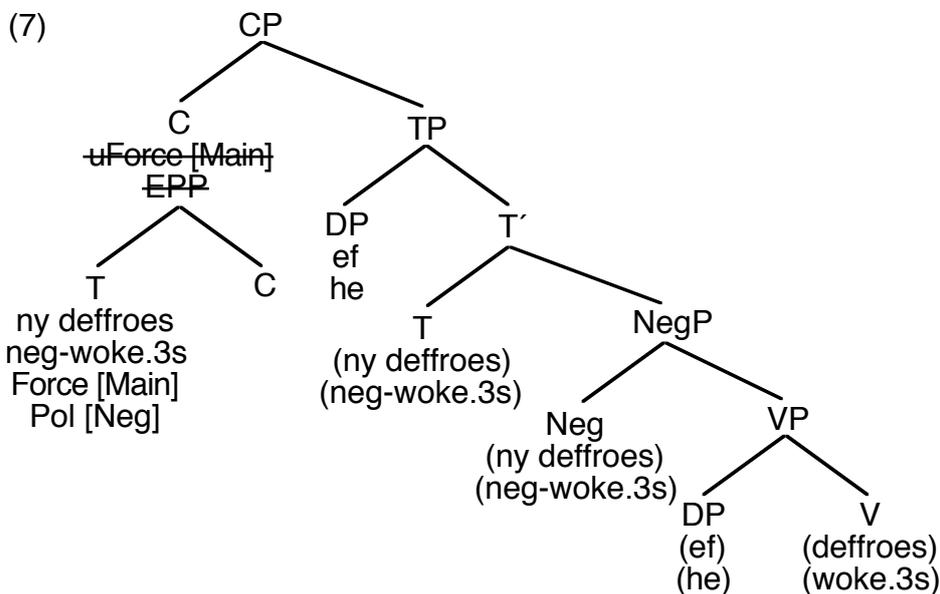
Although Middle Welsh embedded clauses are verb-initial (like all clauses in present-day Welsh), Middle Welsh operates a verb-second rule in most main clauses. However, this rule is applied only optionally (and, in fact, rarely) in negative clauses. That is, the majority of negative main clauses, as well as all embedded clauses are basically verb-initial (VSO), with the negative particle attached to the front of the verb, as is the case in (3a) and (4). An example of the minority pattern, with an argument topicalised to clause-initial position, is given in (5):

- (5) Y deu ereill ny deuant...
 the two other NEG came.3P
 'The other two didn't come...' (YSG 3084)

I shall assume that this means that *ny(t)* and *na(t)* are lexically specified for their polarity (Pol) and for their clause-type (Force), and that these features are interpretable:

- (6) *ny(t)* Pol [Neg]
 Force [Main]
 na(t) Pol [Neg]

Abstracting away from the possibility of a more articulated CP-domain, we can assume that both *ny(t)* and *na(t)* are merged into the Neg-head position and raise, along with the verb, to C, giving verb-initial order, as illustrated in (7) for the simple negative main clause in (3a). This movement is driven by the need to check an unvalued uninterpretable Force (clause-type) feature of C. I assume that Middle Welsh complementiser heads lack an inherent specification for clause type, and hence bear the uninterpretable feature $u\text{Force}[___]$. The unvalued Force feature probes for an interpretable Force feature, which it finds on *ny(t)* or *na(t)*. It is valued by this feature, acquiring either the value [Main] or [Embedded]. Checking is accompanied by movement of the interpretable feature, triggered by a relevant (EPP-)feature on C. The whole verbal complex (negative marker, verb and T) pied-pipes along with this feature. The feature is on a head (Neg), hence movement is to the head position of C. Since the Neg-feature on *ny(t)* in (7), merged in Neg, is interpretable, it does not need to be licensed in any way. Unpronounced copies left by movement are given in parentheses in the tree in (7).



Verb-second order in (5) is derived by additional phrasal movement of a topic to [Spec, CP].

1.5 Clausal negation in present-day Welsh

In present-day spoken Welsh, main clause negation is expressed using a postverbal element *ddim*.⁴ This is illustrated in (8). The verb may undergo the same mutation on its initial segment as in Middle Welsh. Some verbs, notably *bod* ‘be’, have special forms with initial *d-* that are used in negative contexts only. Affirmative (9a) has the verb form *mae*, whereas negative (9b) uses the special negative form *dyw*.⁵

⁴ Literary Welsh maintains preverbal *ni(d)* with optional postverbal *ddim*, and has therefore not participated in the change found in spoken Welsh. This partially mirrors the difference between spoken French, which has begun to drop preverbal *ne*, and literary French, which has retained it.

⁵ A number of problems arise when more complex cases are considered, for instance, negative concord with negative quantifiers such as *neb*, such as (i), where the negative verb *doedd* and the postverbal negative marker *ddim* are both required.

- (8) Chysgodd e ddim.
slept.3S he NEG
'He didn't sleep.'
- (9) a. Mae e wedi deffro.
is he PERF wake.INF
'He has woken up.'
- b. Dyw e ddim wedi deffro.
NEG+is he NEG PERF wake.INF
'He hasn't woken up.'

A straightforward analysis of the basic data can be achieved by proposing that negative verbforms bear an uninterpretable (but valued) polarity feature (*uPol* [Neg]). This serves much the same function as the Negative Dependent Constraint in Borsley & Jones's (2005) analysis of Welsh negation, which requires a weak negative verb to have a negative dependent of some kind.⁶ Being uninterpretable, this feature must be deleted by Agree with an interpretable feature. It therefore acts as a probe, looking for a goal bearing an interpretable polarity feature with value [Neg]. All finite verbs will raise at least as far as T, so, at this point, the uninterpretable [Neg] polarity feature of the verb will c-command *ddim*, merged in [Spec, NegP]. The uninterpretable *uPol*[Neg] of the verb can therefore agree with *ddim*, and be deleted successfully.

Ddim is ungrammatical with an unambiguously affirmative verbform, such as *mae* 'is' in (10). Here, *mae* bears an interpretable affirmative feature, *Pol* [Aff], and *ddim* bears an interpretable negative feature, *Pol* [Neg]. The ungrammaticality of (10) is therefore due to semantic contradiction between these features, and will arise irrespective of the syntactic status of the sentence.

- (10) *Mae e ddim wedi deffro.
is he NEG PERF wake.INF
'He hasn't woken up.'

1.6 Jespersen's Cycle in Welsh

Comparing Middle Welsh with present-day spoken Welsh, we clearly have a full Jespersen's Cycle. I now turn to investigate the stages of this development. We will see that the Welsh Jespersen's Cycle breaks down into a number of constituent parts, and that, even within some of the stages proposed above, there can be more than one structural change. A new marker of negation must develop. In practice, such markers seem to develop almost entirely out of nouns, in particular, generic nouns and minimisers, often, but not always, via an indefinite

- (i) Doedd Dafydd ddim yn nabod neb yno.
was.NEG.3S Dafydd NEG PROG know.INF no-one there
'Dafydd knew no one there.'

Since these cases are not directly relevant to the discussion here, I shall not deal with them in the current analysis.

⁶ I follow Borsley & Jones (2005) in assuming that the verb bears the Neg-feature. This complicates the morphological component of the lexicon, in that it requires us to generate distinctively negative forms of verbs which, in many cases, will be identical to their affirmative counterparts. An alternative would be to posit a null Neg-head bearing an uninterpretable Neg-feature, and acting as a trigger for the various changes to the verbs. This is more plausible for the mutation illustrated in (8), which is morphologically regular, but is less plausible for the case of (9a) versus (9b), where the distinction involves a synchronically highly irregular change.

pronoun. Close investigation of the Welsh data shows that the Welsh postverbal negation marker underwent successive reanalysis from noun > indefinite pronoun > VP-adverb > uninterpretable negative specifier > interpretable negative specifier. At each stage, *dim* splits into two, resulting in the ‘layering’ effect characteristic of grammaticalisation, whereby earlier properties of an item are peripherally present in a historically later grammar. In each case therefore the result of reanalysis is a split, and hence an increase in the number of homophonous (or nearly homophonous) items. This type of layering gives the effect of a gradual continuum of change.

2 NOUN > INDEFINITE PRONOUN IN MIDDLE WELSH

What ultimately becomes the negative reinforcer, *dim*, seems originally to have been a noun meaning ‘thing’. However, by the earliest Middle Welsh, it had already developed a use as an indefinite polarity-sensitive pronoun ‘anything’. We can hypothesise that this reanalysis took place in contexts such as the following:

- (11) Y neb a gudyo dim y mywn tir dyn arall trwy
 anyone REL hide.SUBJ.3S DIM in land man other through
 glad, perchen y tir bieuyd y gudia...
 digging owner the land belong.3S the hidden-object...
 ‘(In the case of) anyone who buries a thing / anything in another man’s land, the
 hidden object belongs to the owner of the land...’ (LIB 80.20)

In (11), the polarity-licensing context is the subjunctive verb *gudyo* ‘may hide’. Example (11) is, in principle at least, ambiguous between an interpretation of *dim* as an indefinite noun ‘a thing’ and as an indefinite pronoun ‘anything’. Note that, at all periods, Welsh has a definite article, but no indefinite article. This means that there was no particular reason to force an analysis of *dim* as non-nominal.

Compare this with the equivalent development in French, where generic nouns (*rien* ‘thing’ and *personne* ‘person’) also became polarity-sensitive indefinite pronouns. In (12a), Old French *riens* is a feminine noun, with feminine agreement on the accompanying adjective, whereas in (12b) it appears to be an indefinite pronoun.

- (12) a. Douce riens por cui je chant...
 sweet.FEM thing for whom I sing.1S
 ‘Sweet one for whom I sing’
 (Colin Muset, *Les Chansons*, cited in Foulet 1990 [1928]: 273)
- b. ...li feus, qu’ il ne pooit por riens estaindre.
 the fire that he NEG could.3S for anything put-out.INF
 ‘...the fire that he couldn’t put out for anything.’
 (Huon Le Roi, *Le Vair Palefroi*, cited in Foulet 1990 [1928]: 279)

Déprez (2000) suggests that the French development was triggered by the loss of null determiners, that is, by the emerging requirement that French nouns should be preceded by some kind of overt determiner. A plausible scenario for French is certainly one in which children heard *rien* and *personne* without an article, but had otherwise adopted a grammar in which nouns had to be preceded by some kind of determiner. Faced with lone *rien* and *personne* in the input data, such children would have evidence, namely the fact that they appeared alone, that these were not nouns, but rather pronouns. It may also have been the case that *rien* and *personne* appeared in the input data more frequently in an indefinite form without an article than other nouns, that is, it would be harder to ignore the cases of null determiner + *rien* / *personne* than other cases of null determiners. However, in the case of Middle Welsh, this argument does not apply. Even after the reanalysis lone *dim* was, in

3 STAGE TWO OF JESPERSEN'S CYCLE

More significant for Jespersen's Cycle is the further emergence of *dim* as a negative marker pure and simple. This process is itself more complicated than might at first be imagined, and is itself staged. At least two stages can be distinguished: indefinite pronoun > negative polarity adverb, and negative polarity adverb > negative marker. I investigate each in turn.

3.1 Indefinite pronoun > polarity-sensitive adverb

3.1.1 Properties of nonargument *dim*

First, *dim* is reanalysed as negative polarity adverb, which may reinforce negation, or modify other negative-polarity contexts. This is most clearly illustrated by cases where *dim* could not possibly be the direct object or any other argument of the verb:

- (17) ...ac yr hynny ni chyffroai ef ddim.
 and despite this NEG stir.3S he DIM
 '...and despite this he didn't stir.' (BSM 21.25–26)

At this stage, which represents a stage of the language between the fourteenth and sixteenth centuries, *dim* has a number of important syntactic properties that distinguish it from the later period.

First, nonargument *dim* is optional, and, in fact, relatively infrequent, occurring in under 5% of negative main clauses in texts of this period.

Second, it is not confined to negative contexts, and an interrogative or conditional context is sufficient to license it, just like any other weak negative polarity item. Hence, we find it occurring in embedded questions, as in (18).⁷

- (18) Ac yno y wylyaw a orugant y edrych a allei ymdidan
 and then 3SM watch.INF PRT did.3P to see.INF PRT could.3S talk.INF
 dim ac wynt.
 DIM with them
 'And then they watched him to see if he could talk to them at all.' (YSG 5213)

The fact that *dim* is not confined to negative contexts suggests that it is not inherently negative. That is, it acquires a negative specification only via its interaction with other elements in the sentence, in particular, the presence of some other element bearing a negative feature.

Third, this *dim* is not normally used alone with transitive verbs. This must be partially because direct objects may optionally be preceded by a quantifier *dim* (which I take to be a distinct quantifier), either alone (19) or with a following preposition *o* 'of' (20):⁸

⁷ Questions with *ddim*, such as (i), are grammatical in colloquial registers of present-day Welsh, but notice that they are negative questions:

- (i) Nei di ddim (ein) helpu ni?
 do.2S you NEG 1P help.INF us
 'Won't you help us?'

Contrast this with (18), which is an affirmative (embedded) question.

⁸ The modern distribution of these, whereby lone *dim* is used with an indefinite noun phrase and *dim o (mo)* is used with a definite noun phrase is not yet clearly established in Middle Welsh. *Dim o* 'any of' appears with both definite and indefinite noun phrases.

- (19) A guedy nat oed [dim bvyt] gan y Saesson...
and after NEG was [no food] with the Saxons
'And once the Saxons had no food left...' (BD 228.12)
- (20) a. Or trychir [dim o'r goloren], gwerth yr amws oll
if damage.IMPERS [any of-the stump], value the stallion all
a telir.
PRT pay.IMPERS
'If any of the stump of the tail is damaged, then the value of the whole of the
stallion is (to be) paid.' (LIB 91.14)
- b. A mi a wnn na wrthyt ef [dim ohonat ti]...
and I PRT know.1S NEG refuse.3S he [none of you]
'And I know that he will not refuse you...' (YSG 1423)

The same tendency not to co-occur with a direct object is noted for thirteenth-century Old French *pas* by Foulet (1990 [1928]: 260); see also Roberts & Roussou (2003: 156).

Fourth, it may appear in a late clausal position in various nonfinite environments. This is significant from the perspective of the historical development of the language because *dim* in present-day Welsh may not be used for narrow-scope negation of an embedded nonfinite verb, and, in any case, only rarely follows a nonfinite verb (but see (36) below). Examples of the relevant Middle Welsh construction are given in (21).

- (21) a. ...kanhat yw idaw ef tewi heb dadleu dim...
permission is to him be-silent.INF without argue.INF DIM
'...he is permitted to remain silent without arguing at all...' (LIB 45.21)
- b. ...eisoes ni ellid peri i Glarius gredu
yet NEG was-possible.IMPERS cause.INF to Clarius believe.INF
dim iddo.
DIM to-him
'...yet it was not possible to make Clarius believe him at all.' (BSM 22.28–9)

In (21b), *dim* appears to modify *gredu* 'believe'. Notice that this means that it has independent scope from its licenser. Whereas *ni* has scope over the whole sentence ('it was not possible...'), *dim* has scope only over the most deeply embedded nonfinite clause ('believe him at all' rather than 'it was not at all possible'). Such independence of scope is not a feature of present-day Welsh, nor of other languages, such as French, with bipartite marking of negation. Furthermore, *dim* here modifies a nonfinite verbal form. As the examples in (22) demonstrate, *ddim* is not possible inside an embedded nonfinite clause in present-day Welsh. Only (22a), where *ddim* modifies the main-clause finite verb, and takes wide scope, is possible.

- (22) a. Allen ni ddim peri [i Dafydd gredu iddo].
could.1P we DIM cause.INF to Dafydd believe.INF to-him
- b. *Allen ni beri [i Dafydd gredu ddim iddo].
could.1P we cause.INF to Dafydd believe.INF DIM to-him
- c. *Allen ni ddim peri [i Dafydd gredu ddim iddo].
could.1P we DIM cause.INF to Dafydd believe.INF DIM to-him
'We couldn't make Dafydd believe him.'

Finally, Middle Welsh *dim* at this stage is ordered late with respect to complements. The dominant order with a PP-complement is to have *dim* after the PP-complement. This order is illustrated in (23). The reverse order, illustrated in (24), and in (18) above, is attested in fewer cases.

- (23) a. Ac wynteu ... nyt arhoysant [arnunt] dim...
and they NEG waited.3P for-them DIM
'And they didn't wait for them...' (YSG 1919)
- b. Pan gibleu Galaath hynny, ny symudawd [arnaw] dim...
when heard.3S Galahad this NEG moved.3S on-him DIM
'When Galahad heard this, he didn't move toward him...' (YSG 759)
- c. ...ac nyt argwedwys [idaw] dim.
and NEG harmed.3S to-him DIM
'...and it did not harm him.' (YCM 27.18)
- d. A weissyon Iessu Grist, na ryuedet [arnawch] dim...
PRT servants Jesus Christ NEG marvel.IMPER.3S on-you DIM
'Servants of Jesus Christ, do not be surprised...' (YSG 5446)
- (24) ...ac o cheffir yn bellach no hynny, a 'e sarhau,
and if get.IMPERS PRD further than this and 3SM injure.INF
ny diwygir dim [idaw].
NEG compensate.IMPERS DIM to-him
'...and if he is found further (away) than this, and he is injured, he is not compensated.' (LIB 23.9)

On the other hand, with a PP-adjunct, *dim* precedes:

- (25) a. A phan weles ynteu daruot llad y varch, ny
and when saw.3S he happen.INF kill.INF his horse NEG
lidiawd dim [yr hynny]...
grew-angry.3S DIM despite this
'And when he saw that the horse had been killed, he did not get angry nevertheless...' (YSG 2874)
- b. Ac nyt argyssyryawd ef dim [yr hynny]...
and NEG was-afraid.3S he NEG despite this
'And he wasn't afraid nevertheless...' (YSG 4235)

This again contrasts sharply with present-day Welsh, where *ddim* must precede both complements of the verbs and its adjuncts:

- (26) Arhosodd e ddim [amdanyn nhw].
waited he NEG for them
- (27) *Arhosodd e [amdanyn nhw] ddim.
waited he for them NEG
'He didn't wait for them.'

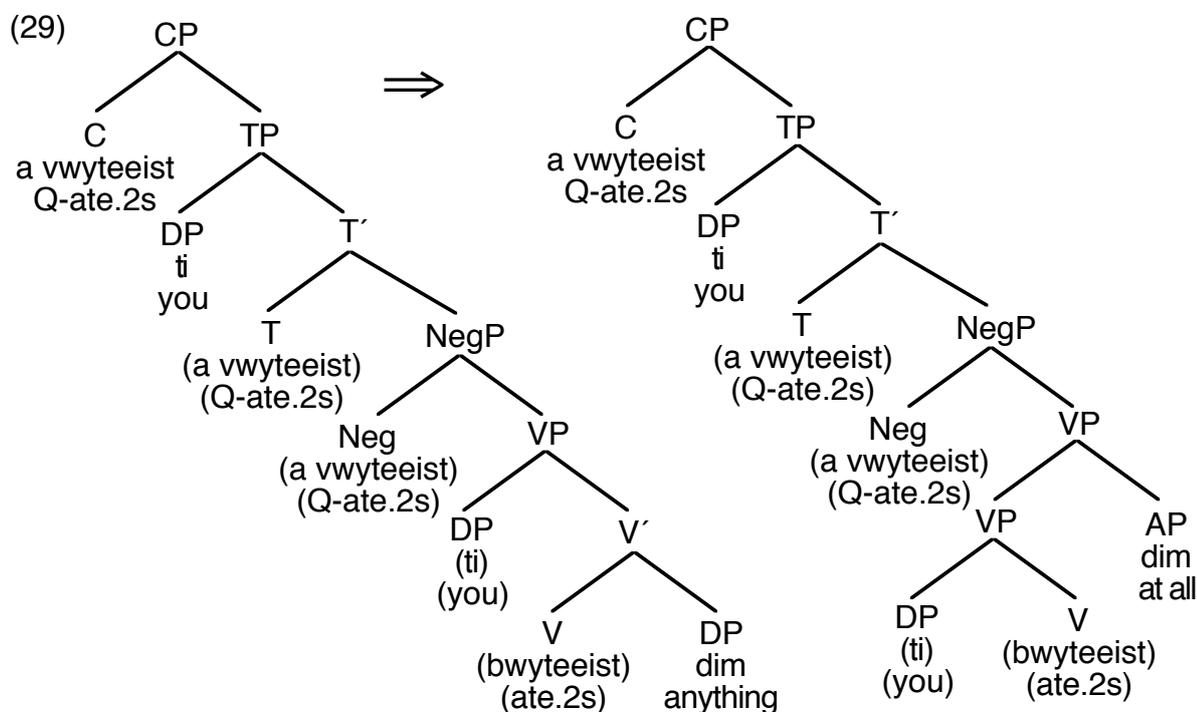
3.1.2 Reanalysis from argument to nonargument

These facts can broadly be accounted for by suggesting that indefinite pronoun *dim* in Middle Welsh is reanalysed as a VP-adverb occupying a right-adjoined position.⁹ This reanalysis is based on such cases as (28), where *dim* is an argument of an optionally transitive verb.

- (28) A vwyteeist di dim hediw?
Q ate.2S you anything today
'Have you eaten anything today?' (YSG 2293)

⁹ In frameworks that disallow right-adjunction, or that disallow adjunction of any kind, this can always be reinterpreted as *dim* being the head of an adverbial projection, with movement of the entire VP to its specifier. Although this is technically feasible, it will force us to claim that *dim* was once a head (of Adv), and has since been reanalysed as a phrase (in [Spec, NegP]), something which seems to run against general principles of syntactic change.

In language acquisition, this sentence would be ambiguous between the interpretation given, and the interpretation ‘Have you eaten at all today?’, and there will be little extralinguistic evidence to distinguish between the two. Such ambiguity arises fairly systematically with a number of fairly common optionally transitive verbs, notably ‘know’, ‘eat’, ‘see’ and ‘hear’, and so would be particular prominent in the trigger experience. The reanalysis in (29) can therefore be posited.



This involves the learner postulating an additional (homophonous) lexical entry for *dim*:

- (30) *dim* [AP]
negative polarity item

Reanalyses of this type, indefinite pronoun > negative polarity adverb, are widely attested (cf. Greek *dhen* < *oudhén* ‘nothing’, Roberts & Roussou 2003: 155), and seem to be unidirectional.

Children acquiring the conservative grammar must choose between two analyses for *dim*, either DP or AP. In considering what evidence is available to ensure that *dim* is successfully acquired as nominal (DP), there are four types of context that need to be considered:

- (i) obligatorily transitive verb + *dim* as only argument (e.g. *taflu dim* ‘throw anything’);
- (ii) optionally transitive verb + *dim* (either as argument or adjunct) e.g. *bwyta dim* ‘eat anything / at all’;
- (iii) intransitive verb + adjunct *dim* (e.g. *kyffroi dim* ‘move at all’);
- (iv) *dim* in other argument positions (e.g. object of preposition *yr dim* ‘for anything, for any reason’).

Before the change, children are presented with data that contain instances of (i), (ii) and (iv), but not (iii). It is reasonable to suppose that (ii) is approximately as frequent in the trigger

experience as (i) and (iv) combined.¹⁰ If they hypothesise that *dim* is a DP, they will use *dim* correctly, that is, exclusively in these three environments. If they hypothesise that *dim* is an AP, they will use *dim* incorrectly, failing to produce it in environments (i) and (iv), but innovating its use in environment (iii).

Suppose that some children start out with the initial hypothesis that *dim* is a DP, whereas others start out with the hypothesis that *dim* is an AP.¹¹ The first group of children will never come across evidence to contradict their (correct) hypothesis, and will therefore grow up into adult speakers who replicate the language conservatively. The second group will eventually come across evidence to contradict their hypothesis, in the form of sentences they hear that cannot be generated by a lexicon in which *dim* is an AP, for instance, sentences of the type in (i) and (iv). Such sentences will form a sizeable proportion of the sentences with *dim* in the primary linguistic data. These will lead these children to revise their hypothesis. In accordance with the ‘no negative evidence’ principle adopted in most work on child language acquisition, it is reasonable to suppose that they are unable to use the absence of *dim* in environment (iii) to reject the hypothesis that *dim* is an AP. At this point, they are left with two options: either revise their analysis of *dim* so that it is a DP, or else to introduce a new lexical entry for *dim* as a DP, alongside the entry for *dim* as an AP that they had previously hypothesised.¹² Whichever of these hypotheses is chosen will survive into the adult grammar, since no non-negative evidence can ever contradict either hypothesis. Note, in particular, that this is true even of the ‘incorrect’ DP/AP hypothesis, which can only be rejected if the child has access to the negative evidence that construction (iii) is not present in the primary linguistic data. Under this scenario, children do not need to ignore any of the evidence in the trigger experience; all that is necessary is that they are unaware of negative evidence. This scenario is summarised schematically in Figure 1.

¹⁰ In Middle Welsh texts, this is approximately the case, although, it is, of course, dangerous to assume that the extant texts are congruent with the primary linguistic data that was available to children.

¹¹ This, or something like it, is, of course, a crucial assumption. If hypothesising nominal elements wherever possible (that is, treating DP as the default category) were a principle of child language acquisition, then faulty acquisition of the category of *dim* could not arise.

¹² On this second possibility, compare Müller (1994), who argues that children who set word-order parameters incorrectly retreat from their incorrect hypothesis not by resetting the parameter but by learning additional rules.

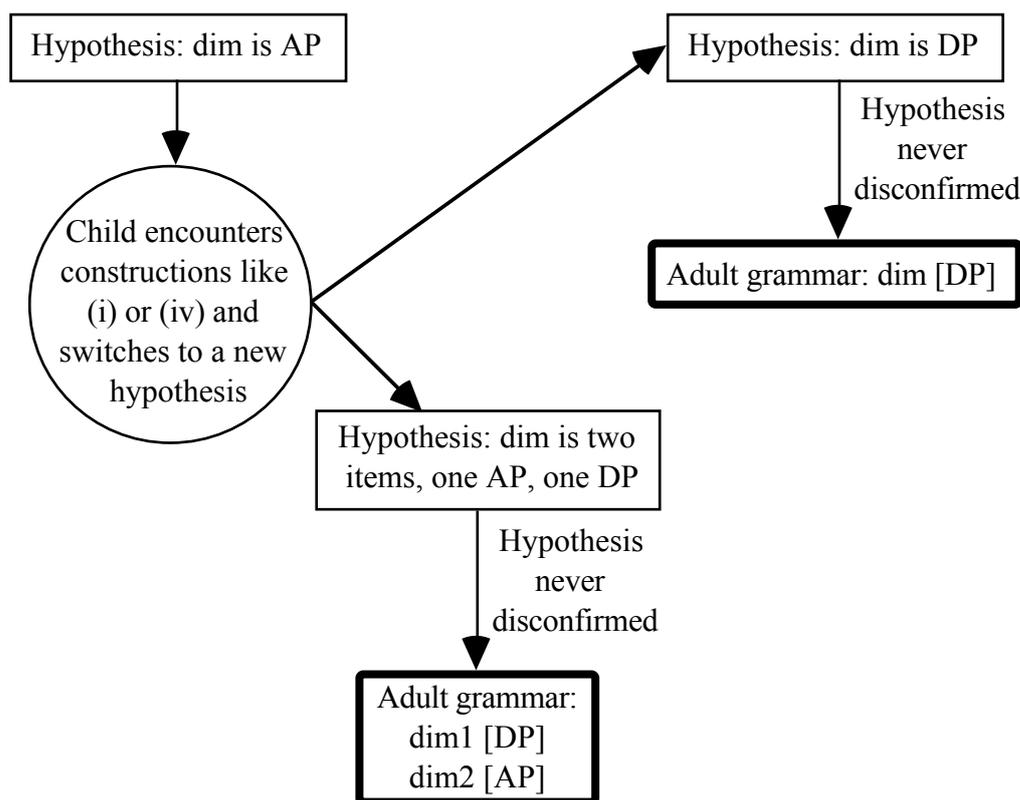
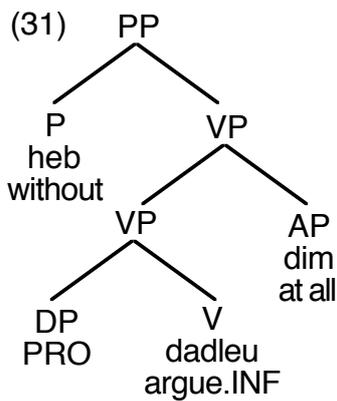


Figure 1. Language acquisition scenario for the reanalysis of *dim* as a negative-polarity adverb.

A child who hypothesises that *dim* is an AP may produce constructions of type (iii), which may provide evidence to other children to reinforce their own hypothesis that *dim* is (or can be) an AP. Such children will now have actual positive evidence to reject the DP-hypothesis in favour of the DP/AP-hypothesis.

Finally, note that this scenario is rather different from the standard ones dealt with in the literature on first language acquisition and language change, which normally involve binary parameters (cf. Clark and Roberts 1993, Roberts 2001). Since we are here dealing with the categorisation of a lexical item rather than a parameter setting, the choice for the child is not (necessarily) an either-or one. Whereas a parameter can, on standard theoretical assumptions, be set only to a positive or to a negative value, the choice of lexical category involves two yes-no choices (is the item a DP?; is the item an AP?), and therefore allows a third option, yes in both cases, in the form of the DP/AP-hypothesis. This therefore presents an interesting variant on the Subset Problem (Berwick 1985): there are three options, one of which results in a grammar that contains all the sentences generated by the other two options combined. Under such circumstances, it is often proposed that children begin with the option that generates the smallest set of sentences, amending this hypothesis upon encountering sentences that are compatible only with the superset option (the Subset Principle; for useful discussion, see Atkinson 2001). However, in this case, there are two subset options, only one of which will ensure ultimate acquisition of the conservative grammatical system.

With the reanalysis in (29), adverbial *dim* may appear in non-argument positions, innovating sentences of the type in (17). Two other properties that we have noted will also follow straightforwardly (and in fact continue the earlier grammar): *dim* will be able to co-occur with nonfinite verbs (which I assume to head VPs, or, in an articulated structure, vPs, in Middle Welsh), and *dim* will follow PP-complements. The relevant nonfinite clause structure is illustrated in (31), representing the embedded clause *heb dadleu dim* ‘without arguing (at all)’ in (21a).



Notice finally that the example in (21b) demonstrates that the licenser for *dim* can be in a higher clause. I take this fact (which is replicated by other negative-polarity items in Middle Welsh, as frequently in other languages) to be evidence that licensing of negative-polarity items cannot be the result of an Agree relation. This is certainly true of a direct Agree relation between the licenser and licensee. An Agree relation mediated by some intermediate element (for instance, a null negative operator) might be feasible, but it is not immediately clear how to implement this.¹³ I therefore conclude that licensing of negative-polarity items is akin to binding, and requires only a c-command relation between licenser and licensee. Since nonargument *dim* has no polarity features of its own, it will inherit those of its licenser, and can be negative or interrogative/irrealis as required.

3.1.3 An alternative analysis of polarity-sensitive adverbial *dim*

A second possibility worth considering is that *dim* is merged as a nonthematic direct object, and raises to adjoin to VP. This might successfully implement the restriction against *dim* co-occurring with a direct object, assuming that merger of *dim* in some sense saturates the object position. However, there are several problems with this view.

First of all, the restriction against *dim* co-occurring with a direct object is only a tendency, and is not an entirely watertight generalisation. It is not clear that a hard-and-fast restriction is the appropriate way to deal with this.

Second, it is not entirely clear what a nonthematic object is. It might be possible to assimilate *dim* in this case to the case of cognate objects, such as (32), which are also not thematically integrated with their verbs (cf. Roberts & Roussou 2003: 156 on this possibility for French *pas*). However, cognate objects are at least plausibly implicit arguments of the verbs in question (laughing implies the existence of a laugh). Such a relation would not hold in the case of a negative nonthematic object in Welsh.

(32) David laughed a long slow laugh.

Third, the nature of the movement itself is problematic: it is not clear what would motivate movement from the direct object position to adjoin a phrase to VP.

Finally, the nature of the reanalysis that would be required to innovate this movement is very unclear. Assuming that some type of Least Effort Principle (Roberts 1993) is operative in language acquisition (and therefore, indirectly, in syntactic change), we would have to suggest that a structure in which there was no movement was rejected in favour of one with movement. That is, we would be positing innovation of movement. This seems highly problematic in the light of general principles of change. Diachronic innovation of movement

¹³ Furthermore, in languages with long-distance licensing of negative-polarity items, licensing is not blocked by the presence of *wh*-elements (cf. Giannakidou 2000: 470 on this in Greek), which would be surprising if licensing involved long-distance Agree mediated by intermediate negative operators.

seems to be difficult, and, to the extent that it happens at all, it may be restricted to cases where structure is deleted in the process.

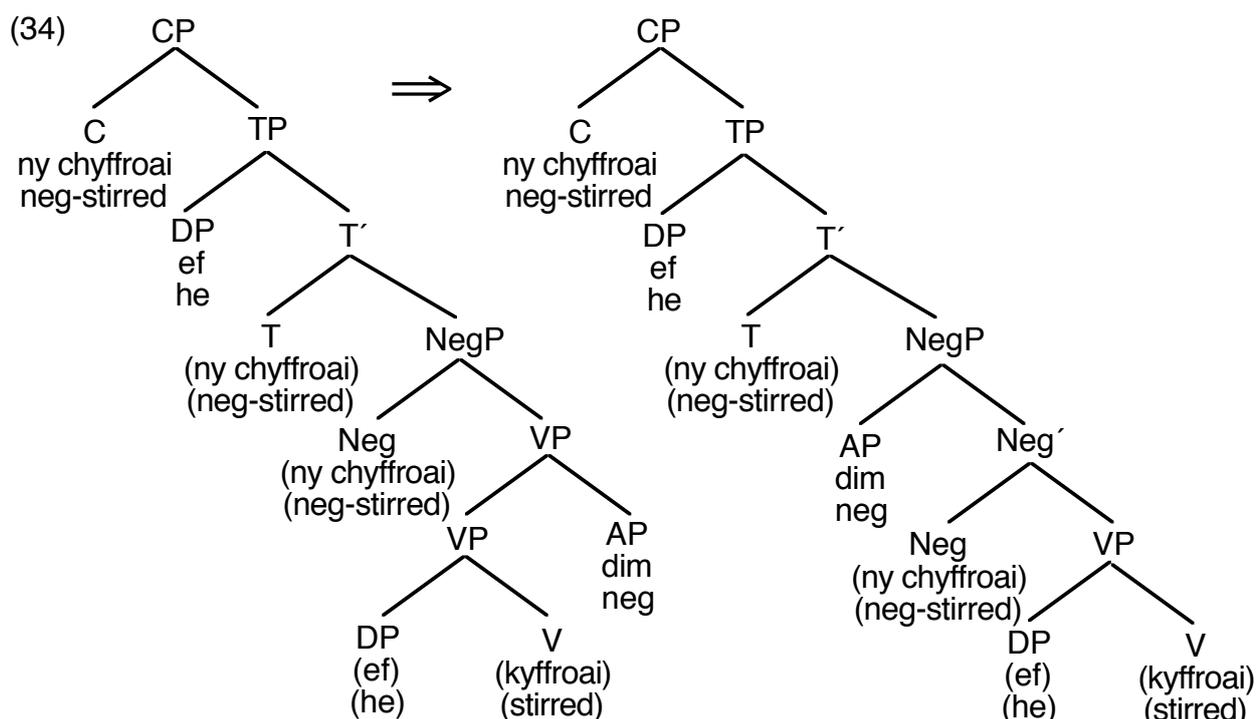
3.2 Polarity-sensitive adverb > negative specifier

3.2.1 The reanalysis

The next stage of the Welsh Jespersen's Cycle, which nevertheless remains part of Stage 2(a), involves a reanalysis of adverbial *dim*, a change which paves the way for the ultimate loss of the patterns in (23) (the availability of PP-complement – *dim* order) and (21) (nonfinite verb – *dim* constructions). This also brings with it the possibility of *dim* subsequently becoming the usual or even compulsory marker of negation. Up to this point, *dim* is, in fact, not a negative marker at all. I suggest that, in early modern Welsh, *dim* was reanalysed as a negative specifier. This reanalysis is based on the potential ambiguity inherent in clauses such as (33), where the positive evidence that *dim* is a VP-adverb in a late clausal position is absent, given the absence of any of the postverbal elements that would lead to this conclusion.

- (33) ...ac yr hynny ni chyffroai ef ddim.
 and despite this NEG stir.3S he DIM
 '...and despite this he didn't stir.'
(BSM 21.25–26)

Such sentences open up the way to the reanalysis in (34).



The result is that *dim* again splits, and a further lexical entry is innovated, this time with *ddim* as an adverbial phrase, with an uninterpretable negative feature, whose lexical entry requires it to merge only into [Spec, NegP].¹⁴

¹⁴ Middle Welsh *dim* must have varied phonologically between /dɪm/ and (mutated) /ðɪm/ according to syntactic environment, as part of the wider phonological and syntactic rules of the language. Unfortunately, Middle Welsh orthography does not encode this distinction. At some point, (and with a new spelling system) the mutated form *ddim* /ðɪm/

- (35) *ddim* AP in [Spec, NegP]
uPol [Neg]

This reanalysis has some similarities with the previous one in terms of language acquisition. The following syntactic constructions are relevant when considering the scenario for acquisition:

- (i) *dim* with intransitive finite verbs (e.g. *ny chyffroai dim* ‘(he, she) didn’t move (at all)’);
(ii) *dim* following the PP with verbs that take PP-complements (e.g. *nyt arhoysant arnunt dim* ‘they didn’t wait for them (at all)’);
(iii) *dim* preceding the PP with verbs that take PP-complements (e.g. *nyt arhoysant dim arnunt* ‘didn’t wait (at all) for them’);
(iv) *dim* with nonfinite verbs (e.g. *heb dadleu dim* ‘without arguing (at all)’);
(v) *dim* in long-distance licensing environments (e.g. *ny ellid peri idaw gredu dim* ‘it wasn’t possible to make him believe (at all)’).

If *dim* is a negative-polarity AP adjoined to VP, the grammar will generate constructions (i), (ii), (iv) and (v) freely, and will also generate (iii), but as a marked construction, since it requires rightward extraposition of the prepositional phrase. If *dim* is an optional negative marker in [Spec, NegP], the grammar will generate constructions (i) and (iii). For acquisition, both before and after the change, constructions of the type in (i) will be by far the most frequent in the trigger experience. Type (v) will be particularly rare, and it is possible that constructions of this type are completely ignored by children anyway, if some form of degree-zero learning is assumed (Lightfoot 1991, 1993, 1999). For the actual historical outcome to happen, we need only to assume that some children’s initial hypothesis is that *dim* is a [Spec, NegP] element. This hypothesis is shown to be wrong when evidence of constructions of type (ii), (iv) or (v) is encountered. These constructions being fairly infrequent in the trigger experience, this may be some time in coming. When children are eventually confronted with data of this sort to disprove their initial hypothesis, rather than *switching* to the alternative hypothesis, namely that *dim* is a VP-adjoined negative-polarity adverb, they instead postulate the additional lexical item in (35). Once this hypothesis is made, it can never be disproved. The child’s grammar generates all five types. The set of grammatical sentences will be basically the same as that of the adult grammar, although the set of structures generated will be greater, since types (i) and (iii) will be syntactically ambiguous for the child, being amenable to analysis in terms of either of the items postulated.

3.2.2 *The fate of adverbial dim*

The reanalysis just discussed leaves the grammar generating all of five types discussed above. Nevertheless, it must be observed that sentences of types (ii), (iv) and (v) are marginal or ungrammatical in present-day Welsh. Since the time of this reanalysis, there appears to be have been a gradual narrowing of the availability of the older VP-adjoined adverbial *dim*. It survives in present-day Welsh, but in very limited environments, a subset of those discussed for it in late Middle Welsh above. An example from present-day Welsh is given in (36), where clause-final *dim* modifies the nonfinite verb *cysgu* ‘sleep’.

- (36) Dw i ddim wedi cysgu dim.
be.PRES.1S I NEG PERF sleep.INF DIM
‘I haven’t slept at all.’

(Borsley & Jones 2005: 142)

became established for the pure negative marker, while the other *dims* continue to alternate according to syntactic environment. The precise form that the morphophonological development took must be the subject of further philological research.

The present-day adverbial *dim* seems to be syntactically fossilised. It is itself quite rare, can only be used in negative (not other negative-polarity) contexts, and, according to Borsley & Jones (2005: 143–4), it tends to occur only where the verb has no complements of any kind (hence in context (iv), but not commonly in context (ii)).

3.2.3 Interpretable and uninterpretable features on [Spec, NegP]

Clearly the completion of Jespersen's Cycle comes when the postverbal marker itself becomes the sole exponent of negation. To reach this point, the negative-polarity feature on [Spec, NegP] must be reanalysed as interpretable, and hence the essential locus of negation.

Early modern (seventeenth-century) informal Welsh texts allow both *ni(d)* ... *ddim* and lone *ni(d)* to mark main-clause negation. Later (from the late eighteenth century, but perhaps somewhat earlier in reality given the possibility that these structures were hidden by the rise of a conservative literary standard), it is possible to express negation using *ddim* in the absence of *ni(d)*. Late-eighteenth century examples are given in (37).

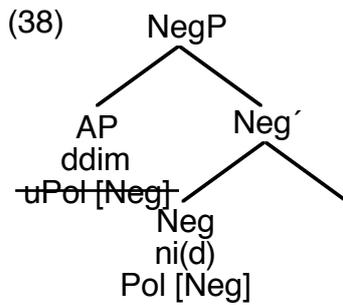
- (37) a. Cheiff dynion ar fusness ddim eiste 'n hir, Na fernir,
 can.3S men on business NEG sit.INF PRD long NEG+COMP judge.IMPER
 'n hwy mewn Tafarneu...
 them in taverns
 'Men on business can't sit for long without them being judged in taverns...'
 (TChB 684)
- b. Mi roedd hi yn discwyl iddo fo ei chymeryd hi
 PRT was.3S she PROG expect.INF to him 3SF take.INF her
 ac wneist o ddim.¹⁵
 and will-do.3S he NEG
 'She was expecting him to take her but he won't.'
 (Bangor Consistory Court, 1778, Denio & Penmorfa, Suggett 1983)

This raises a chicken-and-egg problem: did *ddim* become compulsory because it became interpretable (inherently negative), or did *ddim* become interpretable (inherently negative) because it became compulsory? Clearly by the time of the examples in (37), *ddim* must have an interpretable Pol [Neg] feature, since it is basically the sole exponent of negation in these sentences, yet even at this time, we also find examples where *ni(d)* is the sole marker of negation in informal texts. This presents a problem.

In the initial (late Middle Welsh) system, we have a structure like (38), where *ddim* has an uninterpretable polarity feature which it values under Agree with the interpretable polarity feature on Neg.¹⁶ This is illustrated in (38).

¹⁵ *Wneist* here is a scribal error for *wneiff* 'will do (3s.)'.

¹⁶ It may be that we need to distinguish between the possibility of having a uninterpretable negative polarity feature, and an uninterpretable unvalued polarity feature in order to ensure that *ddim* here can only appear in a negative-polarity context, that is, its Pol feature can only Agree with a Pol [Neg] feature (and not, say, an interrogative Pol [Q] feature]).



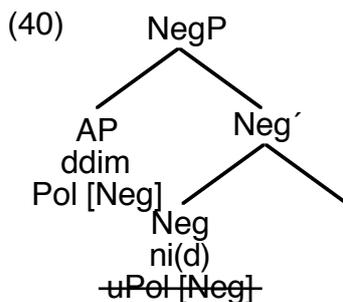
Ddim does not become compulsory until perhaps the early nineteenth century in spoken Welsh. In the meantime, we have a period of unstable variation in which three options seem to have been possible in speech:

- (39)
- a. *ni(d)* + verb
 - b. *ni(d)* + verb + *ddim*
 - c. verb + *ddim*¹⁷

This situation amounts to the coexistence of Stages 2(a), 2(b) and 3(a) of Jespersen's Cycle.

How should we characterise this period of variation? One possibility would be to posit continuity with the earlier system. That is, we would suggest that (39a) continued to be analysed with *ni(d)* having an interpretable Pol [Neg] feature. This would conversely mean that in (39c) *ddim* would have an interpretable Pol [Neg]. Assuming that we cannot have both being interpretable (since this would lead to a double negation interpretation), one or other of them would have to be uninterpretable in (39b). Inevitably this leads to a situation in which we have optionally interpretable features, which in itself seems undesirable. Furthermore, this system would suggest stable variation, since there seems to be no reason why competition between these variants should lead to any one of them ousting any of the others.

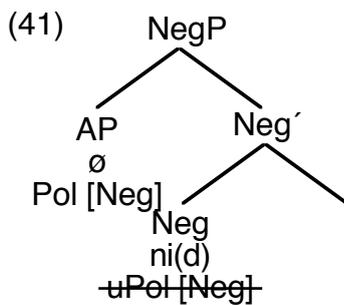
I suggest instead that *ni(d)* was reanalysed early as not being the interpretable negative element, and therefore bore an uninterpretable *uPol* [Neg] feature. This will straightforwardly derive (39b). Here, the uninterpretable *uPol* [Neg] feature of *ni(d)* Agrees with the interpretable Pol [Neg] feature of *ddim*, and is therefore satisfied.¹⁸



If *ni(d)* is no longer the bearer of interpretable negation, what are we to make of (39a)? I suggest that, for this case, learners posited a null specifier, effectively a null *ddim*, which satisfied the relevant requirements of the negative head:

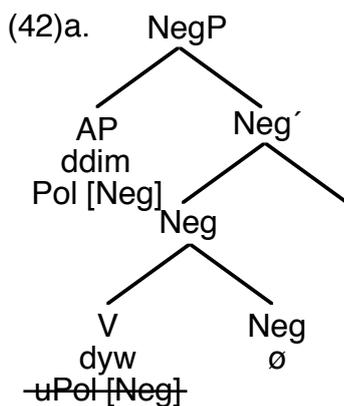
¹⁷ I include in (39c) cases where the verb shows some remnant evidence of the preverbal negative marker, either by adding an initial *d-* or by a change in its initial consonant triggered by the negative marker.

¹⁸ In (40), I actually assume that the uninterpretable polarity feature on the Probe, *ni(d)*, can be satisfied by Merge of *ddim* in its specifier position.



This gives us a solution to our directionality problem. This null negative specifier must be acquired by successive generations of learners. However, being null, it is naturally difficult to acquire, and therefore highly susceptible to being lost from the language. This account therefore builds in diachronic pressure for long-term movement away from the ‘losing’ structure in (39a) towards the ‘winning’ structures in (39b) and (39c).

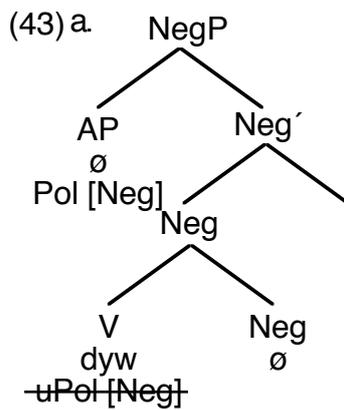
Finally, (39c) will have the structure in (42). Here the Neg-head is null, and the negative feature itself has been reinterpreted as being part of the verbal morphology. The example in (42) uses a verb *dyw* ‘is’ that has a distinctive negative form, with initial *d-*, the historical remnant of the final consonant of negative marker *nid* (*nid yw* > *dyw*). I assume that this verb bears an uninterpretable *uPol* [Neg] feature. The equivalent affirmative forms of the same verb, *yw* and *mae*, would bear *Pol* [Aff].¹⁹



- b. Dyw e ddim wedi deffro.
 NEG+is he NEG PERF wake.INF
 ‘He hasn’t woken up.’

There is one potential problem with this, namely that it seems to allow (43), where negation will be left with phonological realisation only in the form of the verb.

¹⁹ The negative-affirmative distinction shows up particularly clearly on *dyw* : *yw* / *mae*. Many verbs have ambiguous forms, for instance, *frathodd*, the mutated form of *brathodd* ‘bit’ is compatible with both negation (if supported by *ddim*) or an affirmative interpretation without *ddim*. I assume that such a verb bears an uninterpretable polarity feature *uPol*[___], unspecified as to whether it is negative or not. Other elements in the sentence will determine whether a negative interpretation eventually arises.



- b. *Dyw e wedi deffro.
 NEG+is he PERF wake.INF
 'He hasn't woken up.'

This leads us to posit a synchronic restriction to exclude (43):

- (44) NegP must have phonological content.

In (43), no element of NegP has phonological content. The only phonological content is in V, adjoined to Neg. I assume that this is not sufficient to satisfy the constraint in (44). The synchronic constraint in (44) will inevitably lead to a corresponding derived diachronic generalisation, which would prevent erosion of *ni(d)* at an earlier stage:

- (45) Head of Neg may become phonological only after a language develops a [Spec, NegP] item.

4 CONCLUSION

This paper has examined in some detail the formal analysis of Jespersen's Cycle in Welsh. The analysis proposed makes two major claims:

- (i) the postverbal negative marker in Welsh develops via a series of staged reanalyses which create homophonous lexical entries along a path: noun > indefinite pronoun > VP-adverb > uninterpretable negative specifier > interpretable negative specifier;
- (ii) the Neg-feature of the Neg-head changes from interpretable to uninterpretable during Stage 2(a) of Jespersen's Cycle; this change creates pressure for subsequent changes by which the features and phonological content of the Neg-head are lost entirely (Stage 3(b)).

Both claims are specific to Welsh, but it is to be hoped that they will generalise (with some modification, particularly in the case of (i)²⁰) to other instances of Jespersen's Cycle.

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²⁰ It is, for instance, clear that some cases of Jespersen's Cycle have no obvious origin in a noun, but rather seem to start from an indefinite pronoun. It is also not clear whether the VP-adverb stage is necessary.

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