Mari and Udmurt Do Not Require Post-Syntactic Operations (A Reply to Georgieva et al. 2021 and Guseva and Weisser 2018)

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Abstract

Georgieva et al. (2021) argue that negation in Mari and Udmurt requires the Distributed Morphology conception of grammar with a post-syntactic level of grammar where extra-syntactic operations take place. I show that, by modifying one of their assumptions, a purely syntactic head movement account becomes available that uses no operations other than those of the phrasal syntax. I further show that suspended affixation in Meadow Mari does not require post-syntactic operations, either, contra Guseva & Weisser (2018). I argue that the default view of grammar should be one where there are no operations other than those of the phrasal syntax, and there is only one level of grammar, the morphosyntax. Cases where extrasyntactic levels and mechanisms have been proposed, like Mari and Udmurt, can and should be analyzed in purely syntactic terms.

1 Introduction

In recent years, researchers have begun to seriously explore the possibility that morphology can be entirely reduced to syntax in a model of grammar (e.g., Bruening 2018, Collins & Kayne 2023). This would be desirable, because, conceptually, the simplest model of grammar would be one where the only operations that are necessary for morphology are the ones that are independently necessary for syntax. Being the simplest, this model of grammar should be preferred over others. Positing extrasyntactic levels and mechanisms should only be countenanced given strong empirical arguments that the default model is insufficient.

This is not how the field has proceeded, however. Rather, the starting assumption seems to have been that morphology requires its own levels and mechanisms. Even one of the leading approaches to morphology that views it primarily as syntax, Distributed Morphology (Halle & Marantz 1993), does not reduce morphology to syntax; instead it has a post-syntactic level of Morphological Structure where morphology-specific operations permute the output of the syntax. This is a clear departure from the default model. For the most part, proponents of Distributed Morphology have just assumed that this must be how things work; the assumption is that there are mismatches between the syntax and the morphology, and so we need some way to capture those

mismatches. Few researchers have given actual arguments that such post-syntactic operations are *necessary*.

One example of such an argument is presented by Georgieva et al. (2021). Georgieva et al. (2021) argue that negation in Mari and Udmurt requires a post-syntactic level of grammar where an operation of Lowering (Embick & Noyer 2001) takes place. In this brief remark, I show that this is not necessary at all. By changing one of their assumptions (that negation heads a projection in the clausal spine), a simple syntactic head movement account becomes available. This account actually covers more data than the Lowering account that Georgieva et al. (2021) propose.

While this is just one case, it happens to be one of the few where the facts have been claimed to *require* post-syntactic operations. The argument does not go through, since a simple syntactic analysis is available. In most other cases in the literature where people have proposed post-syntactic analyses, they have not argued that such an analysis is necessary; they have only presented one possible analysis, and perhaps argued against one or two other possibilities. To illustrate that this is also insufficient to motivate extrasyntactic mechanisms, I also briefly address suspended affixation in Meadow Mari. Guseva & Weisser (2018) analyze this phenomenon in terms of two post-syntactic operations, Lowering and a metathesis operation. I show that a purely syntactic account is available for this case, as well.

What these two Finno-Ugric case studies show is that the strong empirical motivation that should be necessary to justify extrasyntactic levels and mechanisms is lacking. There is no justification for departing from the default model where there is only a single level, the morphosyntax, and there are no mechanisms that are not independently necessary for phrasal syntax. It is indeed possible to reduce morphology entirely to syntax, and this is the direction that the field should move.

Section 2 discusses Mari and Udmurt negation. Section 2.1 presents the facts of negation in Mari and Udmurt and the Lowering account proposed by Georgieva et al. (2021). Section 2.2 shows that a simple syntactic head movement account captures the basic facts, without any need for post-syntactic operations. Section 2.3 shows that the head movement analysis enables a simpler analysis of the adverbial clitics discussed by Georgieva et al. (2021). Section 2.4 shows that the head movement analysis also accounts for the appearance of a dummy verb, and section 2.5 shows that the Lowering analysis of Georgieva et al. (2021) makes an incorrect prediction regarding fragment answers. Section 2.6 compares the syntactic and the post-syntactic analysis, and section 2.7 argues that the model of grammar that Georgieva et al. (2021) end up with is conceptually problematic, as it violates the Strict Cycle Condition and so cannot ensure that post-syntactic operations take place in the correct order. This section further argues that having any post-syntactic level at all runs afoul of the Strict Cycle Condition, and so post-syntactic levels should be rejected. Section 3 addresses suspended affixation in Meadow Mari and shows that a purely syntactic analysis is available for that case, as well. Finally, section 4 concludes.

2   Negation in Mari and Udmurt

2.1   Negation in Mari and Udmurt and the Lowering Account

Mari and Udmurt are Finno-Ugric languages. They are nominative-accusative, agglutinating SOV languages. Georgieva et al. (2021) show that negation occurs immediately before the highest

verb in the clause, and takes the tense and agreement that go on that verb in the corresponding affirmative. The highest verb is then in a form called the "connegative" (abbreviated "CN" in the glosses):

(1) Udmurt (Georgieva et al. 2021: (16b), (21a))

    a.   Ta peśanaj kartoška   mertti̮-ni̮ bi̮gate.
           this grandma potato.Acc plant-Inf can.Prs.3Sg

           'This grandma can plant potatoes.'

    b.   Ta peśanaj kartoška   mertti̮-ni̮ **ug**   bi̮gati̮.
           this grandma potato.Acc plant-Inf Neg.Prs.3 can.CN.Sg

           'This grandma cannot plant potatoes.'

The following examples illustrate the morphology more clearly, as well as the alternation with the affirmative:

(2) Mari (Georgieva et al. 2021: (1a–b))

    a.   purə̂-š-na
           go.in-Pst-1Pl

           'We went in.'

    b.   **ə̂-š-na**   puro
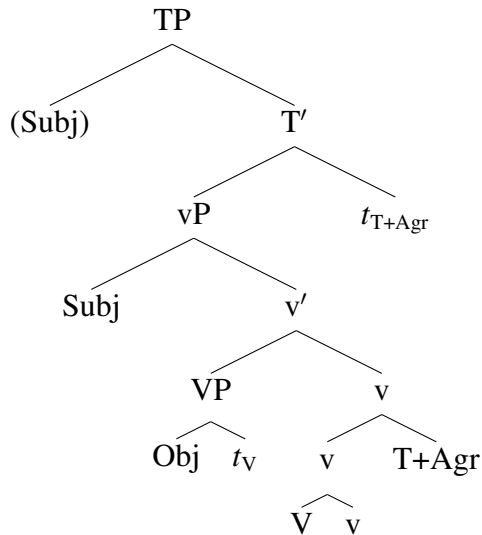   Neg-Pst-1Pl go.in.CN

           'We didn't go in.'

As can be seen, there is a Tense suffix and an Agr suffix, which occur on the verb in that order in the affirmative. In the negative, they instead occur on the Neg head.

    Georgieva et al. (2021) argue that negation, bearing tense and agreement, forms a complex head with the highest verb in the clause. They propose that the clause structure of both languages is the following, with a head v above the lexical verb, then Neg if the clause is negative, then T+Agr (which they do not spell out):

(3)   a. Affirmative   b. Negative
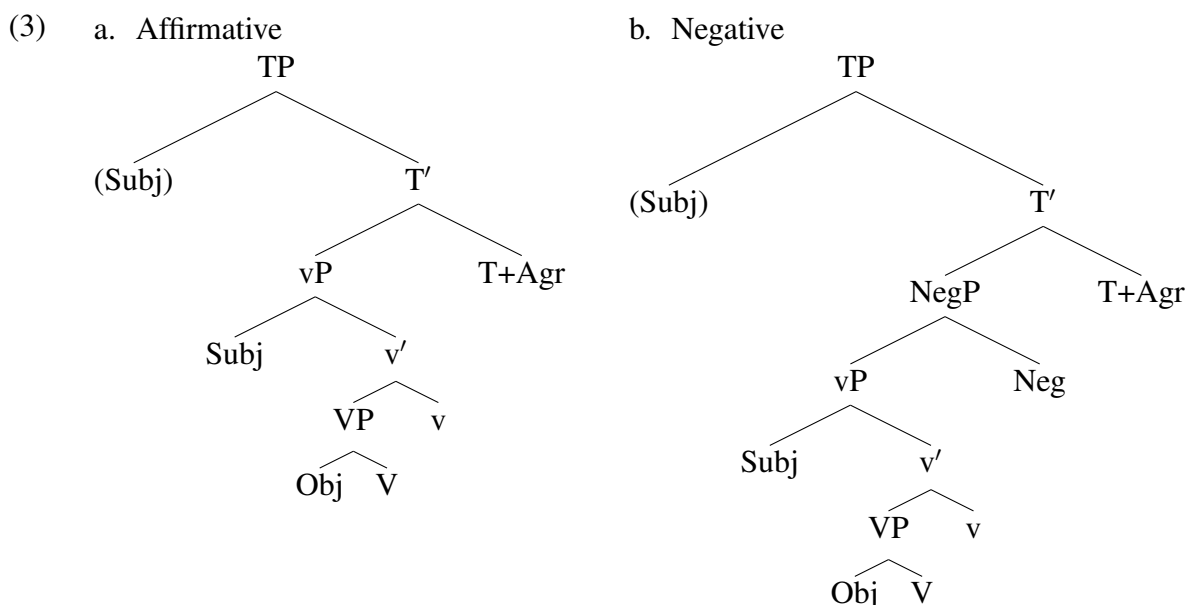
The subject optionally moves to Spec-TP. The lexical verb V always undergoes syntactic head movement to v (it bears voice morphology, even in the negative). Then, in a post-syntactic component of grammar, T+Agr undergoes Lowering (Embick & Noyer 2001) to the head of its complement. In the affirmative, this is the lexical verb in v:
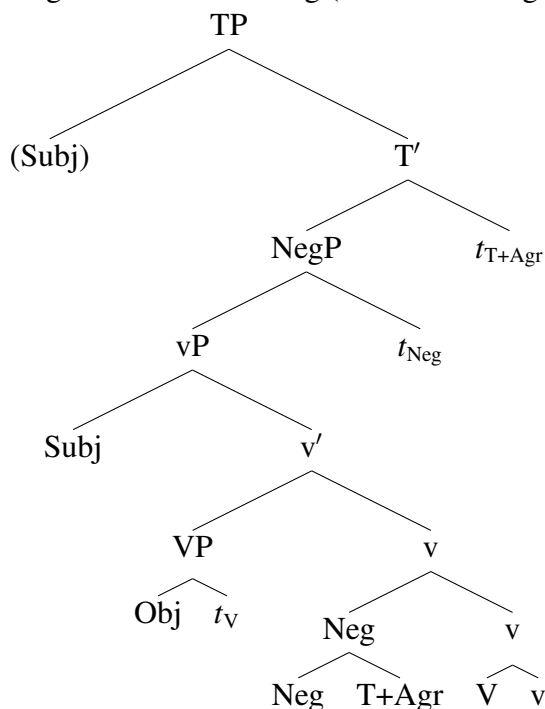
(4) Affirmative after Lowering (based on Georgieva et al. 2021: (37)):

```
                        TP
              ┌──────────┴──────────┐
          (Subj)                    T′
                          ┌──────────┴──────────┐
                         vP                    t_{T+Agr}
                    ┌─────┴─────┐
                  Subj          v′
                          ┌──────┴──────┐
                         VP             v
                      ┌───┴───┐     ┌────┴────┐
                    Obj    t_V      v      T+Agr
                                ┌───┴───┐
                               V    v
```

This locates tense and agreement as suffixes on the lexical verb.

In the negative, T+Agr again Lowers to the head of its complement, but this is now Neg. Subsequently Neg, carrying T+Agr, Lowers to the head of its complement, but it specifies that it must adjoin on the left rather than the (default) right:

(5) Negative after Lowering (based on Georgieva et al. 2021: (37)):

```
                        TP
              ┌──────────┴──────────┐
          (Subj)                    T′
                          ┌──────────┴──────────┐
                        NegP                   t_{T+Agr}
                    ┌─────┴─────┐
                   vP          t_{Neg}
              ┌─────┴─────┐
            Subj          v′
                     ┌─────┴─────┐
                    VP           v
                 ┌───┴───┐  ┌─────┴─────┐
               Obj   t_V   Neg          v
                        ┌───┴───┐   ┌───┴───┐
                      Neg   T+Agr   V    v
```

This correctly locates T+Agr on Neg, while that whole complex head immediately precedes V+v, forming a complex head with it.

Georgieva et al. (2021) argue against other possible accounts, in particular syntactic head movement. Given the clause structure that they assume in (3b), V would first move to v, then to Neg. That whole complex would then move to T+Agr. But this makes Neg and V+v a constituent, either [Neg V+v] or [V+v Neg]. T+Agr could attach on either side of one of those, to yield one of the following orders:

(6)   a.   [T+Agr [Neg V+v]]
      b.   [[Neg V+v] T+Agr]
      c.   [T+Agr [V+v Neg]]
      d.   [[V+v Neg] T+Agr]

None of those is the right order, which is Neg-T-Agr-V-v. The only order of adjunction that correctly locates T+Agr immediately following Neg (6d) has V+v on the wrong side of Neg.

This argument against head movement depends on the assumed structure. If we make a minor change to this structure, head movement gives us the right result, as I show in the next section.
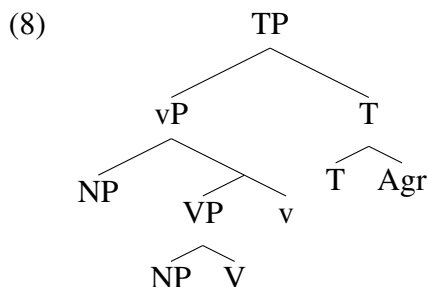
2.2   Proposed Head Movement Analysis

Georgieva et al. (2021) do not spell out "T+Agr." Given their evident assumption that T is the head of TP, and their following of Distributed Morphology where Agr nodes are adjoined to syntactic heads (Halle & Marantz 1993), we can assume that Agr is merged with T as a complex head:

(7)

```
        TP
       /  \
  (Subj)   T′
          /  \
        …     T
             /  \
            T   Agr
```
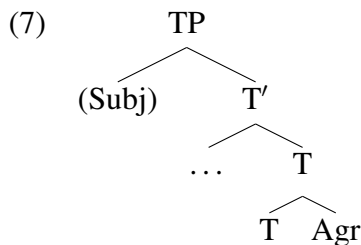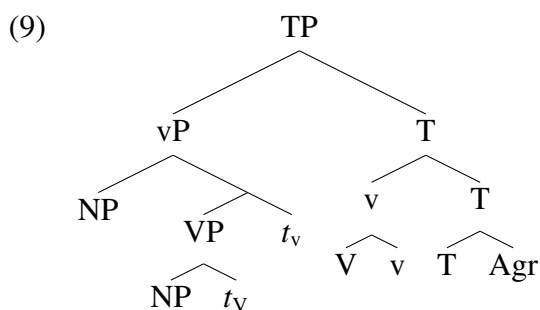
The change to the clause structure that I propose is to view Neg not as a head in the clausal spine, but as merged with T, just like Agr. I propose specifically that Neg is an adjunct that is a head. Analyzing Neg as an adjunct is not new, it has been proposed many times before. In fact, viewing Neg as an adjunct in English is probably the traditional view, dating back to Jespersen (1917). It has been revived in the theoretical literature more recently by Zeijlstra (2004) and in work on English do-support (Baker 1991, Bruening 2010b). There is specifically a proposal where Neg can be a *head adjunct*, meaning that it is an adjunct, which as a head rather than a phrase adjoins to another head (Bruening 2024b). As Bruening (2024b) argues, head adjuncts should be expected to exist; it would take some kind of external stipulation to rule them out in a model of grammar. They are just like phrasal adjuncts except that they are heads, not phrases, and adjoin to other heads, not phrases. I propose that Mari/Udmurt Neg is a head adjunct in the sense of Bruening (2024b). As an adjunct, it is not selected by the category it adjoins to (here, T), rather, it selects T as an adjunct. In contrast, (finite) T always appears with Agr, which I take to indicate that T selects Agr.

The clause structure that I propose for the affirmative is the following, essentially following Georgieva et al. (2021):

(8)

```
                    TP
          ┌─────────┴─────────┐
         vP                    T
    ┌─────┴─────┐          ┌───┴───┐
   NP          ┌─┴─┐       T      Agr
              VP    v
            ┌──┴──┐
           NP     V
```
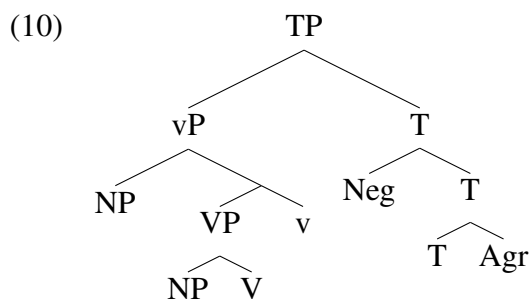
In the affirmative, the structure is built by selection-driven merge: V selects NP (optionally), v selects VP and NP, T selects vP as a phrase and Agr as a head.

I further propose that V moves to v and then to T, adjoining on the left by default (following much other literature, including Georgieva et al. 2021):

(9)

```
                         TP
            ┌─────────────┴─────────────┐
           vP                            T
      ┌─────┴─────┐              ┌────────┴────────┐
     NP        ┌──┴──┐          v                  T
              VP     t_v     ┌──┴──┐            ┌───┴───┐
           ┌───┴───┐         V    v            T      Agr
          NP      t_V
```
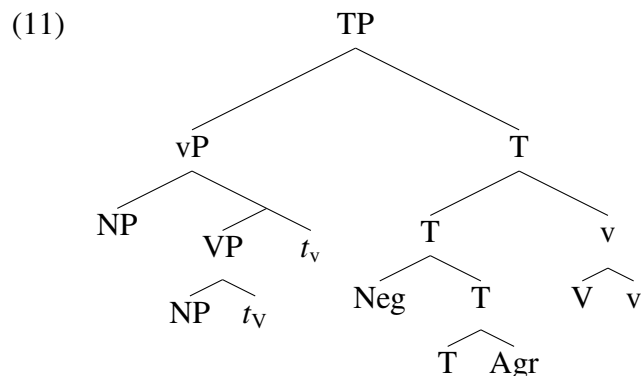
Along with Georgieva et al. (2021), I assume that when a head adjoins to a complex head, it adjoins to the highest segment of that complex head, as shown. This correctly locates T and Agr as suffixes on the verb, in that order, in the affirmative.

In the negative, Neg is selected from the lexicon for merger. As described above, it is an adjunct. It selects T (adjuncts select the categories they adjoin to; see Pollard & Sag 1994, Bruening 2010a, 2013, 2025, Bruening & Al Khalaf 2020). Selectional requirements must be satisfied as soon as possible, and adjuncts always merge outside of selected arguments, so once T has merged with its selected arguments vP and Agr, Neg merges with T to create a complex head. As a lexical property, Neg specifies that it adjoins on the left (Georgieva et al. 2021 have a similar statement in their analysis; in my analysis, this is typical behavior for adjuncts, many of which are limited to left or right adjunction):

(10)

```
                       TP
           ┌────────────┴────────────┐
          vP                          T
     ┌─────┴─────┐            ┌────────┴────────┐
    NP        ┌──┴──┐       Neg                 T
             VP     v                        ┌───┴───┐
          ┌───┴───┐                          T      Agr
         NP       V
```

V moves to v and then to T, exactly as in the affirmative. However, as in Georgieva et al. (2021), Neg overrides the typical linear order of adjunction (on the left) and forces v to adjoin on the right instead:

(11)

```
                        TP
              ┌─────────┴─────────┐
             vP                    T
        ┌─────┴─────┐         ┌────┴────┐
       NP          ┌─┴──┐     T         v
              VP      t_v   ┌──┴──┐   ┌──┴──┐
           ┌───┴──┐        Neg    T   V    v
          NP     t_V            ┌──┴──┐
                                T   Agr
```

We can assume that Neg is subject to a strong Leftmost constraint that forces it to be leftmost in the complex head it is part of (any way of formalizing this will do). This yields exactly the attested order: T and Agr are suffixes on Neg, in that order, and they are followed by V+v.

As for scope, the scope of negation needs to be the sister of T. Georgieva et al. (2021) show that a quantifier that moves to Spec-TP takes scope over negation, but negation takes scope over everything else in the clause. In (11), Neg will indeed take scope over the sister of T (vP) if the scope of any head within a complex head is the sister of that complex head. This is something that has generally been assumed since Baker (1988), who proposed a Government Transparency Corollary that has essentially that effect. I will assume that something like this is correct, and the scope of a head within a complex head is the same as the scope of the entire complex head.

As can be seen, a syntactic head movement account is a perfectly viable one. All one has to say is that Neg is an adjunct on T rather than a head in the clausal spine, and the facts follow. Analyzing Neg as a head adjunct is not unprecedented and is a perfectly reasonable analysis. There is no reason Neg needs to head its own projection (see especially Bruening 2024b), and it not doing so arguably makes stating selection easier: T always selects vP (and Agr).

It should also be noted at this point that all of the assumptions and stipulations that go into this purely syntactic account are either ones that are independently justified or at least commonly assumed, or they are ones that Georgieva et al. (2021) also make in their post-syntactic analysis (or both). It is therefore clear that the purely syntactic analysis is simpler, as it does without post-syntactic levels and post-syntactic mechanisms. There is only one level, the syntax, and the only mechanisms that are necessary are those that are necessary for the phrasal syntax anyway.
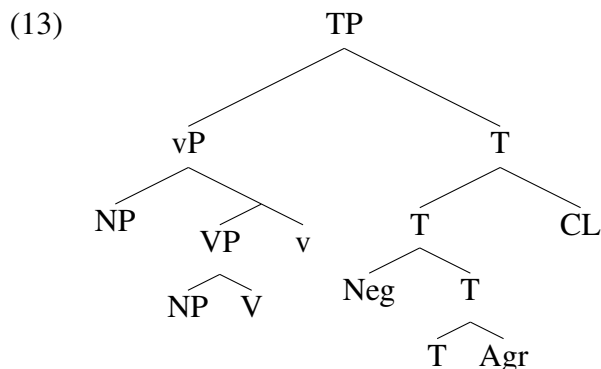
2.3 Adverbial Clitics

Georgieva et al. (2021) also show that two adverbial clitics, which normally attach to the final verb in the clause, can optionally appear between Neg and V when the clause is negative:

(12)   Udmurt (Georgieva et al. 2021: (45a–b))

   a.   Ta peśanaj ug   kịrdźa=**ńi**.
        this grandma Neg.Prs.3 sing.CN.Sg=anymore

   b.   Ta peśanaj ug=**ńi**   kịrdźa.
        this grandma Neg.Prs.3=anymore sing.CN.Sg

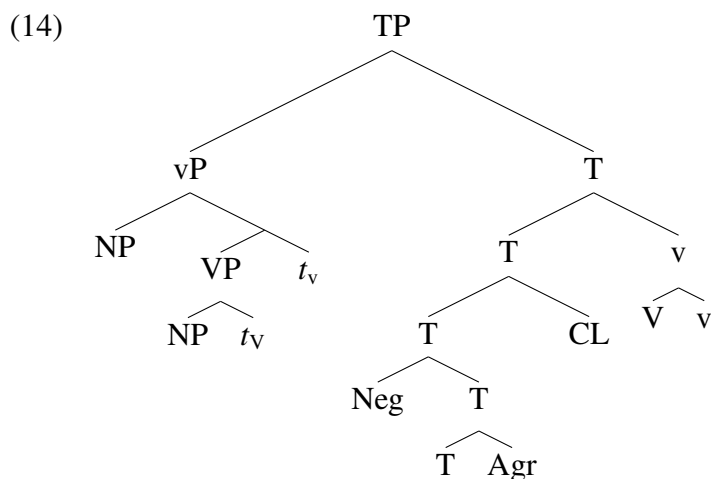   'This grandma does not sing anymore'

Georgieva et al. (2021) propose that these clitics appear between Neg and T on the clausal spine. They can optionally project. If they project, they are treated as heads, and T+Agr lowers first onto the clitic and then down onto Neg. Neg then moves along with T+Agr and the clitic down onto V+v. This gives the order in (12b). If the clitic does not project, it is treated as an adjunct and lowering skips over it. The clitic is then the last thing in the clause once T+Agr has lowered onto Neg and then onto V+v, so it cliticizes onto what is next to it, which is V+v. This gives us the order in (12a).

A very simple analysis of these clitics is available in the head movement account. Suppose the clitics, like Agr and Neg, adjoin to T:

(13)

```
                        TP
                  ┌──────┴──────┐
                 vP             T
              ┌───┴───┐      ┌───┴───┐
             NP      ┌┴┐     T       CL
                    VP  v  ┌─┴─┐
                   ┌─┴─┐  Neg   T
                  NP   V       ┌─┴─┐
                               T   Agr
```
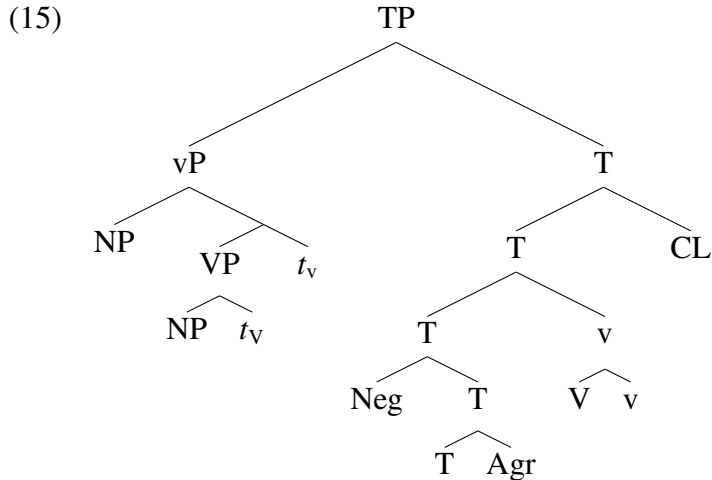
Georgieva et al. (2021) cite Löbner (1989) as justification for thinking that these clitics must scope above Neg but below T. However, this seems to be based on a misunderstanding of Löbner (1989). Nothing in that work would lead one to conclude that these sorts of clitics take scope above Neg but below T. Löbner's discussion of "inner" and "outer" negation has nothing to do with clausal negation in the clause such particles occur in. In fact, Löbner (1989) treats German *noch nicht* and *nicht mehr* as unanalyzable wholes, which take scope over the entire proposition. I see no difficulty for analyzing the Udmurt clitics as forming a complex head with both T and Neg, as in (13); the clitic can compose with Neg and T and the output of that can combine with the rest of the proposition (but I will leave a formal semantic analysis to another time).

Now, if clitic adjunction to T takes place before head movement of V+v to T, as in the tree in (13), then when V+v moves to T, it will adjoin outside of the clitic:

(14)

```
                          TP
                   ┌───────┴────────┐
                  vP                T
              ┌────┴────┐       ┌────┴────┐
             NP      ┌───┴──┐   T         v
                    VP    t_v ┌──┴──┐   ┌─┴─┐
                  ┌──┴──┐     T    CL   V   v
                 NP   t_v  ┌──┴──┐
                          Neg    T
                               ┌─┴─┐
                               T   Agr
```

8

This is the order in (12b). If head movement takes place first, and then the clitic adjoins to T, we get the order in (12a):

(15)

```
                        TP
              ┌──────────┴──────────┐
             vP                      T
        ┌─────┴─────┐          ┌─────┴─────┐
       NP          ┌─┴─┐       T          CL
              VP      t_v   ┌──┴──┐
            ┌─┴─┐          T      v
           NP  t_V      ┌──┴──┐  ┌─┴─┐
                      Neg    T   V  v
                          ┌──┴──┐
                          T    Agr
```

The adverbial clitics are thus amenable to a very simple analysis within the head movement account.[1]

2.4 Be-Support

Georgieva et al. (2021) also observe that in contexts of constituent negation, the form of Neg includes a default present tense T, default third person singular Agr (null, or a portmanteau with T), and a reduced copula:

(16)   Mari (Georgieva et al. 2021: (78))

Tə̂j šaχmat dene **o-g-ə̂l**,   a šaške   dene mod-ə̂ć́.
2Sg chess   with Neg-Pres.3Sg-be but checkers with play-Pst.2Sg

'You played not (with) chess but (with) checkers.'

Georgieva et al. (2021) analyze this as last-resort insertion of a dummy copula (plus default tense and agreement). Neg is simply adjoined to the constituent it negates, here a PP. It has a morphosyntactic requirement that it combine with a V. In the case of clausal negation, this is satisfied by Lowering Neg onto V+v. In the constituent negation case, no Lowering is possible, so the grammar inserts a verbal head v and the associated T and Agr through an operation of node sprouting.

In the current analysis, Neg adjoins to finite T in the case of clausal negation. This was stated in terms of selection: Neg is a head adjunct that selects for finite T. In the case of constituent negation, Neg must be adjoining to PP. This appears to violate the selectional requirement of Neg. Yet, the grammar clearly has a need for a negative element to negate different categories. I propose that what the grammar has done is create a new adjunct, *o-g-ə̂l*, from existing pieces. This adjunct is composed by the syntax but stored as its own item (the lexicon can store complex items built by the syntax, as with phrasal idioms). Its internal composition obeys all syntactic constraints

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[1]Georgieva et al. (2021) note that the clitic can sometimes be pronounced in both positions. They do not provide an account of this. I will not attempt to here, either.

and is put together by selection-driven merge: Neg selects for finite T, which is merged with it; finite T selects a verbal category and Agr, so those are merged, too. The verbal category is the semantically contentless copula which does not need to select anything, and Agr and T have default feature values. The composed whole can now be treated as an adjunct that can attach to any category (since it has no selectional features; the selectional requirements of all the pieces have been satisfied). In the example above, it adjoins to PP. According to a reviewer, this item is also used in non-finite clauses, even ones that clearly have T (and even C). This is forced because Neg strictly selects *finite* T. The only way to negate a non-finite T is to use the item *o-g-ə̂l*, which is an adjunct that can adjoin to any category (see Bruening 2024b for an analysis of English *not* as an unselective adjunct).

It is important to note that all merger takes place in the syntax in this account. The syntax can either create *o-g-ə̂l* anew each time it is used, or it can take it out of the lexicon as a whole (but the syntax built it previously on the latter view). There are no post-syntactic operations and there is no such thing as a node-sprouting operation. All merger is syntactic and takes place according to syntactic principles (driven by selection). This case, too, falls out simply from the way syntax works, driven by selection, without the need to appeal to extra mechanisms like node-sprouting.

2.5   Fragment Answers

Georgieva et al. (2021) also show that Neg+T+Agr can be stranded by ellipsis, as for example in fragment answers:

(17)   Udmurt (Georgieva et al. 2021: 92)

Q: Lịmị Tẹd'ị-jez kịrdźal-o-dị=a? A: **U-m**.
   snow white-Acc sing-Fut-2Pl=Q   Neg.Fut-1

Q: 'Will you sing *Snow is White*?' A: 'No.'

This seems on the face of it to be evidence against the contention of Georgieva et al. (2021) that negation forms a complex head with the following verb. However, there are cases where sub-parts of complex heads can be elided (see Bruening 2018 for examples and references). For the purposes of this paper I will not question the complex head status of negation plus the following verb. What I want to observe here is that the analysis of Georgieva et al. (2021) leads to an incorrect prediction. What they say is that the complement of Neg (vP) is marked for deletion in the syntax, prior to Lowering taking place in the post-syntax. So Neg+T+Agr lowers down into a constituent that is marked for deletion. All of the rest of that constituent is not pronounced, while Neg+T+Agr is, since it was not marked for deletion.

Recall that Georgieva et al. (2021) also posit lowering of T+Agr in an affirmative. So this analysis predicts that an affirmative answer to a question would be to pronounce just T+Agr. This is an incorrect prediction. According to Saarinen (2015: 344), affirmative answers in (Eastern) Mari take one of three forms: (1) repeating the verb; (2) the word *ańe*, 'yes' (seldom used); (3) the word *tuge*, 'so':

(18)   Eastern Mari (Saarinen 2015: 344 ,(36a))

Q: Tače tol-at   mo? A: Tol-am.   / Ańe. / Tuge.
   today come-2Sg Q   come-1Sg / yes   / so

Q: 'Will you come today?' A: 'Yes.'

10

I do not have comparable data for Udmurt, but Edygarova (2015) does give an example of an affirmative answer to a negative question, where the answer is the inflected verb:

(19)   Udmurt (Edygarova 2015: 280, (30))

        Q: ton u-d-a   min-iśk-i̯? A: min-iśko.
        2Sg Neg.Prs-2-Int go-Prs-Sg   go-Prs.1Sg

        Q: 'You don't go, do you?' A: 'I do go.'

It seems most likely that T+Agr can never be pronounced without a verb in an affirmative sentence, whether elliptical or not, in either language.

    I propose that, in these fragment answers, the entire TP is being elided. However, a focused element cannot be deleted. In the case of affirmation, I locate focus on T:

(20)
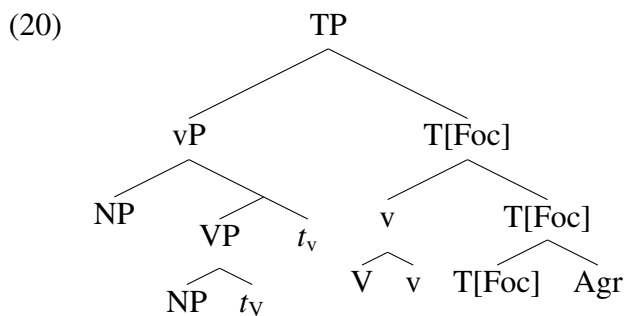
All segments of T are identical, so they all bear [Foc]. Everything in TP is then elided except for the complex head T, which is focused. This correctly leaves the full verb plus T and Agr pronounced.

    In a negative clause, what is focused is instead the head Neg:

(21)
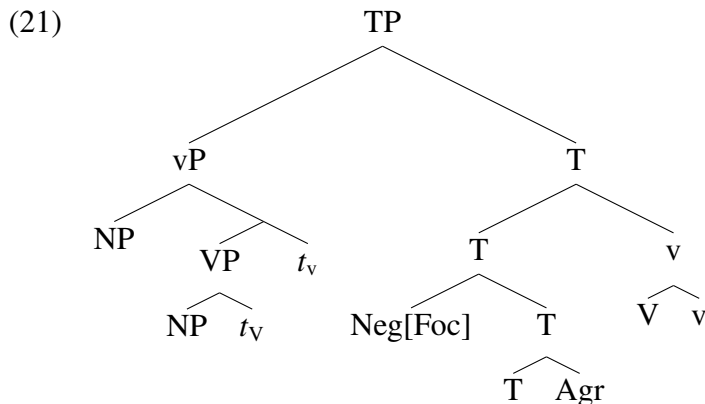
This would leave only Neg pronounced when TP elides. However, I assume that there is also a prosodic Minimal Word condition on fragments. To be pronounced, a string must be a minimal prosodic word. While I do not have data on Mari/Udmurt prosody to support this (other than the fragment answer itself), I hypothesize that Neg does not form a minimal prosodic word, but Neg+T+Agr do. This correctly permits a fragment answer to be Neg+T+Agr in the negative case.

    It should be noted that Georgieva et al. (2021) could also adopt this prosodic Minimal Word condition on ellipsis, and then they would not incorrectly predict that affirmative fragment answers could be just T+Agr. If T+Agr is not a minimal Prosodic Word, then V+v would have to be pronounced with it. This makes the two different analyses equivalent in their empirical coverage,

but this means again that there is no need for post-syntactic levels or operations, since a purely syntactic analysis is empirically adequate.

2.6   Taking Stock

To summarize the case of Mari/Udmurt negation, all of the facts discussed in Georgieva et al. (2021) receive a very simple account in terms of syntactic head movement. All that is necessary is to revise one simple assumption about the underlying syntax. If Neg is not a head in the clausal spine but is instead an adjunct on T, then all the facts can be accounted for very simply.

Let us now take stock of the two analyses. The post-syntactic analysis needs an additional level besides the syntax. It needs additional mechanisms besides those needed for the phrasal syntax, in particular, Lowering and node-sprouting. One thing that I have not commented on so far is that it also needs an additional operation of Vocabulary Insertion, beyond Merge in the syntax, to insert phonological and semantic features of lexical items.

In contrast, the purely syntactic analysis needs only one level, the syntax. There is only selection-driven Merge, and there is no separate operation of Vocabulary Insertion. (Having phonological features present in the syntax does not predict that the syntax would refer to them; the syntax routinely ignores most information that is accessible to it. See Bruening 2017: section 2.2.) There is no operation of Lowering and there is no node-sprouting operation. Stipulations and assumptions that are made in the purely syntactic analysis are either ones that are needed anyway, or they are also made by the post-syntactic analysis (e.g., Neg specifying its relative order with respect to other heads). It should be clear that the purely syntactic analysis is to be preferred according to all standard metrics of theory comparison, as the post-syntactic analysis multiplies theoretical devices unnecessarily.

2.7   Discussion: The Strict Cycle Condition

For Georgieva et al. (2021), it is important that Lowering take place successive-cyclically, starting with the highest head and proceeding downward. Typically, movement occurring in a successive-cyclic manner is enforced by a combination of the Strict Cycle Condition and locality conditions on movement. For instance, V could not move to T skipping v, because of the locality conditions on head movement (Relativized Minimality or whatever takes its place, see Rizzi 1990, Chomsky 1993). We also could not move v to T, and then move V to v, because that would violate the Strict Cycle Condition: The derivation would currently be working on TP, but an operation would affect only a subpart of TP, namely vP.

The thing to note is that *everything* in Distributed Morphology's post-syntactic component of grammar violates the Strict Cycle Condition. Lowering T to Neg certainly does, since the derivation will presumably have completed a CP above TP (or even more structure, in an embedded clause). Vocabulary Insertion, assumed to proceed from most deeply embedded position outward, also violates the Strict Cycle Condition in the worst possible way. The problem is, once the Strict Cycle Condition is violated, how can it be ensured that operations will proceed in any particular order? Nothing can force Vocabulary Insertion to proceed from most deeply embedded outward, because all orders of doing Vocabulary Insertion, including this one, violate the Strict Cycle Condition equally. Turning back to Lowering, there is no way to ensure that it will take place successive-cyclically, because the Strict Cycle Condition is violated by every instance of Lowering. Nothing

could block first lowering Neg onto V+v (on the left, as Neg requires), and then T+Agr onto (now empty) Neg and then V+v independently (on the right, since Neg is not part of T+Agr to force it to go on the left). This would result in the incorrect order Neg-V-v-T-Agr.

The model of grammar that the analysis of Georgieva et al. (2021) requires is one where the derivation is first built up successive-cyclically, from bottom to top, and then the grammar reverses and runs itself back down, performing Lowering as needed. This is a bizarre model of grammar, and one with no way to force the second, downward, pass to occur in a successive-cyclic manner, other than by divine intervention. It is also conceptually problematic for this pass to be operating on a syntactic representation, but violating a core principle of syntax.

It should also be noted that Salzmann (2019) analyzes displaced morphology in German in Distributed Morphology terms as well, but requires the opposite order: It is crucial that a hierarchically lower head undergo Local Dislocation with the V to its left *before* a hierarchically higher one does (Salzmann 2019: 25). Local Dislocation is a different operation from Lowering, and so it is conceivable that the grammar could run back down for Lowering, and then back up agaim for Local Dislocation. But again, these two orders would just have to be imposed by fiat, they could not follow from anything. And this just makes the overall grammar more and more complicated, much more complicated than it needs to be.[2] (See also the discussion of similar conceptual problems with Distributed Morphology operations in Collins & Kayne 2023.)

A conceptually much better model of grammar is one where there is only a single component of morphosyntax, where everything is assembled in a way that obeys the Strict Cycle Condition. The syntactic head movement account proposed here does that. Movement is only upward, the Strict Cycle Condition is obeyed at every step, and all the locality conditions are, too. As already noted, this model cannot have late insertion of vocabulary items, the way Distributed Morphology does, because that would violate the Strict Cycle Condition. Syntactic heads must be merged with their phonological features from the beginning.[3]

3   Suspended Affixation in Meadow Mari

Post-syntactic operations have also been claimed to be necessary for suspended affixation in Meadow Mari (Guseva & Weisser 2018). In this section I show that a very simple, purely syntactic alternative account is available. This means that there is no need for post-syntactic operations or levels for this phenomenon, either. In the interests of space, I will describe the facts and account for them schematically, with only a few examples; the reader is referred to Guseva & Weisser (2018) for full details and examples.

Meadow Mari nominals exhibit variable affix order. The three relevant affixes are the plural

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[2]A reviewer voices the opinion that the arguments given here merely express a personal theoretical preference. This is not the case at all. The arguments are based on standard metrics of theory comparison, in particular, the injunction not to multiply theoretical devices unnecessarily. This is standardly assumed and is generally taken to be a strong consideration in deciding between theories. In particular, very strong empirical arguments are needed to overcome it, and the point of this paper is that those arguments are lacking.

[3]Myler (2024) cites Preminger (2014) as showing that agreement requires feature valuation in the syntax, and therefore late insertion is necessary. Preminger (2014) does not show any such thing. All the facts in Preminger (2014) are compatible with feature checking rather than feature valuation. All that is necessary is allowing a default to be licensed in certain cases when checking fails. See Bruening (2024a) for just such an analysis of verbal morphology in German.

marker (Num), a possessive agreement marker (Poss[4]), and a case marker (K). The plural marker Num always precedes the case marker K, but Num and Poss are freely ordered with respect to each other. Case markers divide into two types, which Guseva & Weisser (2018) call "local" and "structural." The structural cases are genitive, accusative, comitative, dative, and comparative; local cases are all others (e.g., inessive, ablative). Local cases precede Poss, while structural cases follow it.
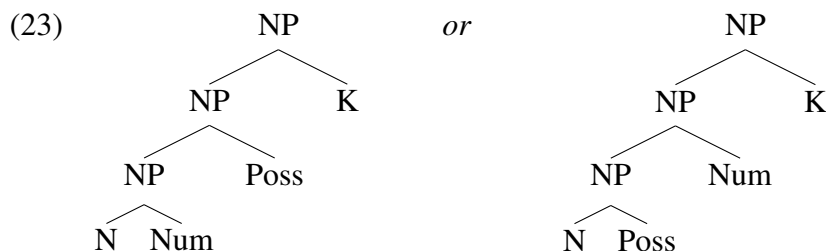
Guseva & Weisser (2018) propose that the output of the syntax is always NP-Num-Poss-K (they do not view this as a complex head, but as a phrase). There is an optional Lowering process that lowers Poss to Num, adjoining on its left. This accounts for the free ordering of Num and Poss. Then there is an obligatory metathesis rule that switches the order of Poss and K if K is a local case. If K is structural, this metathesis rule does not apply. (The metathesis rule is formulated in terms of the Generalized Reduplication framework of Harris & Halle 2005, which adds additional theoretical devices and machinery over standard Distributed Morphology; I take this as another strike against this account.)

Turning to suspended affixation, it is a deletion process that applies in coordination (Kornfilt 1996, 2012, Yoon & Lee 2005, Kabak 2007). Inflectional morphemes can be missing from the first conjunct if they are identical to those on the second conjunct. Suspended affixation generally obeys a right edge constraint, such that deleted material must be a continuous linear string that includes the final affix. However, in Meadow Mari, a local case affix and Num can be deleted while stranding Poss, which follows them:

(22) A-vlak tud-en   sad-**še**   den memn-an pasu-**vlak-ešte-na** mod-et.
      child-Pl 3Sg-Gen garden-3Sg and 1Pl-Gen field-Pl-Iness-IPl play-3Pl.Pres

      'The children are playing in his gardens and in our fields.' (Guseva & Weisser 2018: (31))

Guseva & Weisser (2018) propose that the deletion process that results in suspended affixation takes place after Lowering but before metathesis. In the example above, this intermediate representation has the order NP-Poss-Num-K, with Lowering of Poss to Num. The right edge deletion process deletes Num-K in the first conjunct, stranding Poss. Subsequently, Poss undergoes metathesis in both conjuncts, putting Poss last. This reordering is invisible in the first conjunct, but visible in the second, where the order is now NP-Num-K-Poss.

A much simpler analysis is available if we limit ourselves to purely syntactic mechanisms. I will make minimal changes to Guseva and Weisser's analysis for ease of comparison (but of course, completely different analyses are conceivable, as well). I assume with them that N, Num, Poss, and K do not form a complex head in the syntax, rather, they form a phrase. K necessarily merges last. However, I propose that Num and Poss can merge in either order:

(23)

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[4]Guseva & Weisser (2018) call this "D," for no good reason that I can see. "Poss" is descriptively better, so I will use that. The reader when consulting Guseva & Weisser (2018) should substitute "Poss" for "D."

I propose that this follows from Poss being a clitic (which Guseva & Weisser 2018 also say). (Note that the analysis would remain the same if Poss were always merged first and then optionally moved across Num.) This gives us either of the following two orders:

(24) a.   N-Num-Poss-K

      b.   N-Poss-Num-K

I now propose that suspended affixation is a deletion process that starts with the right edge of K and proceeds leftward, ending at the left edge of an inflectional affix (it is obligatory; see Guseva & Weisser 2018: 1095). In (24a), it can delete Num-Poss-K, Poss-K, or just K; in (24b), it can delete Poss-Num-K, Num-K, or just K again. (K is always present: Nominative is a null K head, so there is no issue with defining the process with respect to K.) Since the deletion process is triggered by K, it takes place as soon as K is merged into the structure.

In addition, a movement rule is triggered by local K, such that Poss must move across K:

(25)
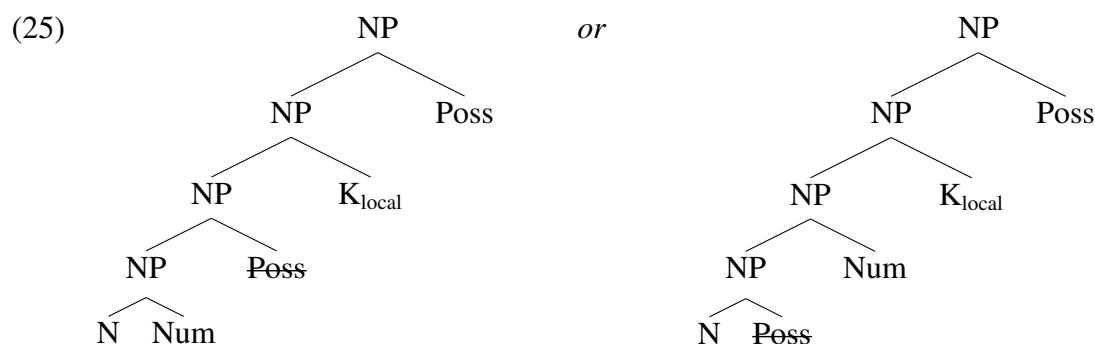
This takes Poss out of the domain of deletion, which starts with the right edge of K. Thus, this analysis treats the facts on a par with movement out of ellipsis, something that is familiar from analyses of sluicing (e.g., Merchant 2001), or from wh-movement out of VP ellipsis in English. Guseva & Weisser (2018) instead use baroque rule ordering on a post-syntactic level.

This analysis accounts for the crucial facts: In (22), the merge order was N-Poss-Num-K. The sequence Num-K is deleted; Poss moves across Num and K. This movement is not visible in the first conjunct, but is visible in the second conjunct.

Poss can also be marked for deletion before it moves, so that it is not stranded in the first conjunct when it moves across K:

(26)   Nuno memnan pört   den sad-**vlak-eške-na** tol-en-et.
        3Pl 1Pl.Gen house and garden-Pl-Ill-1Pl case-Past-3Pl

        'They came to our houses and our gardens.' (Guseva & Weisser 2018: (27))

The order here is either N-Num-Poss-K or N-Poss-Num-K, with all three of Num-Poss-K/Poss-Num-K marked for deletion in the first conjunct. Then Poss moves across K, but since it was marked for deletion it is not stranded in the first conjunct. The movement is visible in the second conjunct, where nothing is deleted.

This analysis successfully rules out instances of suspended affixation that need to be ruled out. In the following, it is not possible to understand the first conjunct as plural, meaning that Num is not able to be deleted:

(27)   sad-še   den pasu-vlak-na
       garden-3Sg and field-Pl-1Pl
       'his garden(*s) and our fields' (Guseva & Weisser 2018: (33))

This example has null nominative K. Poss has merged outside of Num, so that the order is N-Num-Poss-K. K is not local, so Poss movement is not triggered. Therefore, deleting K and Num to the exclusion of Poss is not possible; they are not a contiguous linear string.

   This analysis accounts for all of the facts in Guseva & Weisser (2018). Below I reproduce the two tables from Guseva & Weisser (2018: (34–35)) showing the judgments, and add a third column giving the explanation for the judgment in the current account:

(28)   Patterns of deletion with K_1-type cases:

1st conjunct	Judgment	Reason
(a) stem-Pl-Loc.Case-Poss	*	K must always be deleted
(b) stem-Pl-Loc.Case-~~Poss~~	*	K must always be deleted
(c) stem-Pl-~~Loc.Case~~-Poss	√	K deleted, Poss moves
(d) stem-Pl-~~Loc.Case-Poss~~	√	Poss-K marked for deletion before Poss moves
(e) stem-~~Pl~~-Loc.Case-Poss	*	K must always be deleted
(f) stem-~~Pl~~-Loc.Case-~~Poss~~	*	K must always be deleted
(g) stem-~~Pl-Loc.Case~~-Poss	√	Num-K deleted, Poss moves from below Num
(h) stem-~~Pl-Loc.Case-Poss~~	√	Poss-Num-K marked for deletion, Poss moves

(29)   Patterns of deletion with K_2-type cases:

1st conjunct	Judgment	Reason
(a) stem-Pl-Poss-Struc.Case	*	K must always be deleted
(b) stem-Pl-~~Poss~~-Struc.Case	*	K must always be deleted
(c) stem-Pl-Poss-~~Struc.Case~~	√	K deleted
(d) stem-Pl-~~Poss-Struc.Case~~	√	Poss-K deleted in Num-Poss-K order
(e) stem-~~Pl~~-Poss-Struc.Case	*	K must always be deleted
(f) stem-~~Pl-Poss~~-Struc.Case	*	K must always be deleted
(g) stem-~~Pl~~-Poss-~~Struc.Case~~	√	Num-K deleted in Poss-Num-K order
(h) stem-~~Pl-Poss-Struc.Case~~	√	all three deleted in either order

   This analysis is therefore empirically adequate. It is also clearly simpler than the analysis in Guseva & Weisser (2018). It does have some stipulations, but these same stipulations or analogous ones are also made in Guseva & Weisser (2018). It does without post-syntactic levels entirely, and without post-syntactic operations. The only operations needed are Merge, Move, and delete, which are needed for the phrasal syntax anyway (deletion for ellipsis processes like VP ellipsis and sluicing). There is no need for operations like Lowering and metathesis. There is no need for the Generalized Reduplication framework that Guseva & Weisser (2018) adopt for metathesis (which is far too powerful for a reasonable model of grammar). There is also no need to stipulate a rule ordering. The particular deletion process does have to be stipulated to affect a string of affixes starting from the right edge of K and proceeding leftward to the left edge of some inflectional affix, but this has to be stipulated in any account. Once this stipulation is made, the deletion will necessarily happen once K is merged and before movement across it takes place, given the Strict Cycle Condition and the principle that processes take place as soon as they can (a principle familiar from phrasal syntax).

Moreover, with minor modifications, the proposal also accounts for affix ordering in Hill Mari and Eastern Mari, which McFadden (2004) analyzes in terms of post-syntactic Lowering. In Hill Mari, Poss always follows Num; it has to be stipulated to merge outside of Num in this language. In Eastern Mari, in contrast, Poss always comes before Num, meaning that it has to merge before it. Additionally, both case markers are always last. Eastern Mari therefore lacks the movement of Poss across local K, which both Hill Mari and Meadow Mari have. (See also Guseva & Weisser 2018: 1118 for discussion of McFadden's analysis.) Post-syntactic Lowering is therefore not justified for any phenomenon in these languages.

4   Conclusion: Morphology-Syntax Mismatches?

In this paper I have shown that neither Mari/Udmurt negation nor suspended affixation in Meadow Mari requires post-syntactic operations, contra Georgieva et al. (2021) and Guseva & Weisser (2018). In the first case, changing one small assumption made a purely syntactic head movement account viable, and in the latter case, it is easy to translate the post-syntactic analysis into a syntactic one. These two cases do not provide the requisite strong empirical motivations for positing any levels or operations beyond those that are necessary for the phrasal syntax anyway. I contend that this is true generally, and there is no such evidence. English "affix-hopping," for instance (the canonical instance of Lowering), has been analyzed in purely syntactic terms many times (e.g., Gazdar et al. 1982, Chomsky 1993, Bruening 2010b). As a few other examples, English comparatives and superlatives have been shown not to have the character that Embick & Marantz (2008) ascribe to them and analyze by means of post-syntactic operations; see Matushansky (2013). The Bulgarian definite marker, which Embick & Noyer (2001) analyze with Lowering (as do Harizanov 2018 and Adamson 2022), has been analyzed in purely syntactic terms by Franks (2001), Koev (2011), Bruening (2024b). There is, to my knowledge, no phenomenon in any language that has been definitively shown to require a post-syntactic operation. Practitioners of Distributed Morphology routinely give analyses using post-syntactic operations, but they rarely argue that such analyses are necessary. Georgieva et al. (2021) is one of the rare exceptions, but this paper has shown that the arguments in that work do not go through. One other case is Salzmann (2019), but Bruening (2024a) shows that that case, too, is amenable to a purely syntactic analysis.

The model of grammar that we are led to is one where there is no separate module of morphology. There is only the syntax, and only syntactic operations. There is no such thing as a post-syntactic operation. This, I believe, should be the default: It is clearly the simplest model of grammar we could have, and should be pursued until it has been proven to be unworkable. So far it has not been.

In the introduction, I noted that the Distributed Morphology view of the grammar seems to be motivated by the belief that there are mismatches between syntax and morphology. In the conception of grammar advanced here, there could be no such thing. Morphology and syntax are the same thing. Such a mismatch would be a syntax-syntax mismatch, which is impossible. There are plenty of cases where something occurs on the surface in a position where it does not appear to be interpreted, but these kinds of cases are familiar from the domain of phrasal syntax and numerous tools have been proposed to address them (quantifier raising, agreement, abstract elements, etc.). If there are cases where some morpheme seems to be in a position where we would not expect it based on our prior assumptions about the syntax, those cases should be an invitation

to reanalysis. We should re-evaluate our assumptions about the syntax. Such cases should not be taken as the basic ones on which to build a model of grammar, the way Distributed Morphology has done.

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