

Prosodic V2 in Northern Norwegian

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Abstract:

The formation of *wh*-questions in Northern Norwegian seems to be an example of a syntactic phenomenon which necessarily refers to phonological structure, namely the prosodic weight of the *wh*-expression. The subject and verb are ‘inverted’ after polysyllabic *wh*-expressions, but they are not inverted after monosyllabic ones. These data are discussed in the context of Pullum & Zwicky’s (1988) hypothesis of phonology-free syntax and are analyzed within Optimality Theory using Golston’s (1995) proposal that syntax dominates phonology. The analysis we develop offers a way to understand the interactions of syntax and phonology which preserves the integrity of the syntax, yet which facilitates their mediation. As such, it is a step forward in understanding the syntax-phonology interface.*

1. Introduction

It is a well-known characteristic of the Germanic languages other than English that the finite verb immediately follows the initial element in the sentence. Standard Norwegian is no exception. The initial element can be light and unstressed, as in the example in (1a), where the subject can be pronounced as a reduced vowel, or can be long and consist of several prosodic phrases, as in (1b).

- (1) a. Jeg vet ikke
I know not
‘I don’t know’
- b. På sørspissen av øya, nede ved bukta kjøpte han et hus.
on the.south.point of the.island, down by the.bay bought he a house
‘On the southern spit of the island, down by the bay, he bought a house’

The same restriction holds for questions, in Standard Norwegian as in Germanic more generally.

- (2) a. Hva sa du?
what said you
'What did you say?'
- b. I hvilket av de gamle husene som du kjøpte finnes det spøkelses?
in which of the old houses as you bought is.found it ghosts
'In which of the old houses that you bought are there ghosts?'

The verb-second (V2) restriction is clearly syntactic in that the element in the initial position must be a syntactic constituent. This is clear in the extensive work on the V2 phenomenon (see e.g. Vikner 1995 and references cited there).

In Northern Norwegian (NN), as in Standard Norwegian, V2 is ordinarily strictly observed for both declarative and interrogative sentences, as indicated in (3)-(4).

- (3) a. Det vet æ ikkje.
that know I not
'I don't know that'
- b. *Det æ vet ikkje.
that I know not
- (4) a. Koffor sa du det?
why said you that
'Why did you say that?'
- b. *Koffor du sa det?
why you said that

However, in certain cases, the syntax of wh-questions in NN allows the verb to remain in the base position, following the subject (this is discussed in §2, for Norwegian dialects in general, and §3, for NN specifically). An example of this is shown in (5).

- (5) Ka du sa?
what you said
'What did you say?'

The exact pattern of data is laid out in §3 for NN. We develop an analysis of this phenomenon in which the prosodic structure of the wh-question word plays a central role. Such an analysis raises the issue of the relationship between phonology and syntax, and we lay the groundwork for a discussion of this matter in §4 by reviewing Pullum & Zwicky's (1988 inter alia) *principle of phonology-free syntax*.

One detailed analysis of the NN word order facts is Taraldsen's (1986b) study of V2 in Norwegian, a study which is true to Pullum & Zwicky's principle insofar as it proposes a strictly syntactic explanation for the facts. We discuss Taraldsen's analysis in §4, and argue that it fails to capture the observed pattern of non-inversion without unwarranted stipulation.

Although our analysis allows for phonological influence in cases of syntactic optionality, it nonetheless preserves the integrity of the syntax. This is achieved in §5 through an optimality theoretic analysis in which the constraints of the syntax hierarchically dominate those of the phonology (as in Golston 1995). One important consequence of our analysis, discussed in §6, is that it also captures the distribution of the overt complementizer, *som*, in interrogatives in NN, where *som* appears in matrix questions just in case the subject is extracted and is a monosyllabic wh-word.

2. V2 in Norwegian declaratives and interrogatives

English is exceptional among the Germanic languages in failing to show V2 in declarative sentences. V2 is, however, in evidence in questions (cf. the ungrammaticality of **What you are reading?*). In certain Norwegian dialects, something like the reverse is the case: although V2 is obligatory in declarative sentences, it is optional or even impossible in questions. This fact has long been observed and commented on; see for example (Falk and Torp 1900; Nordgård 1985, 1988; Lie 1992:289). However, most previous work has been chiefly concerned with the geographical extent and/or historical origin of the phenomenon, rather than with a synchronic theoretical analysis (some notable exceptions are Åfarli 1985, 1986 and Taraldsen 1985, 1986b, discussed in §4 below).

The basic fact is that the verb remains in third position or later in questions in a wide variety of Norwegian dialects in the West and North of Norway (see the works cited above for more detail about the distribution). This is especially true for short wh-expressions, as indicated in (6) (Nordgård 1985:116). The percentage signs indicate that these sentences are not grammatical for all speakers of Norwegian.

- (6) a. Hva vil du drikke til peppersteiken?
what will you drink to the.pepper.steak
'What would you like to drink with the pepper steak?'

- b. %Hva du vil drikke til peppersteiken?
what you will drink to the.pepper.steak
(same meaning)

Optionality is also possible in some dialects with more complex wh-elements, as in (7) (also from Nordgård, *ibid.*).

- (7) a. Hvilken fisk har du kjøpt til selskapet i kveld?
which fish have you bought to the.party in evening
'What kind of fish have you bought for the party tonight?'
b. %Hvilken fisk du har kjøpt til selskapet i kveld?
which fish you have bought to the.party in evening
(same meaning)

As a point of reference, we will take the Møre district as representative of the pattern in (6)-(7) (where all alternatives are possible), following Nordgård (*op. cit.*) and Åfarli (1985, 1986). In the Møre dialect, inversion may be preferred after a multisyllabic or complex wh-expression, and dispreferred after a monosyllabic or simplex one, but apart from such tendencies it seems that inversion after a wh-expression is in general optional (*cf.* Åfarli 1986:12 or 1985, fn. 2).

Optionality is a thorny issue for any syntax that assumes principles of optimality or economy. Whatever the technique employed to explain syntactic optionality, the empirical fact is that it exists. What is important here is that it exists specifically with respect to V2 in (non-Standard) Norwegian main clause questions. We will not discuss the mechanics of syntactic optionality further in this paper, but will simply assume that in Northern Norwegian, as in the Møre dialect, V movement in wh-questions is fully optional, syntactically; we will rule out ungrammatical examples like that in (4b) by extrasyntactic means. Note that there is no such optionality in declarative clauses in either NN or in Møre.

3. The data for the Modern Tromsø dialect

Møre, mentioned in the last section, is a Western Norwegian dialect. Work specifically on Northern Norwegian non-V2 questions (for example Elstad 1982; Taraldsen 1985, 1986b; Fiva 1995, 1996, and Nilsen 1995, 1996) is consistent in observing a stricter contrast between short wh-expressions and long ones. (Elstad 1982:32) observes that non-inversion is only possible in NN after the words *ka* 'what', *kem* 'who', and *kor* 'where'. (Fiva 1995:141) states this as in (8) (our translation).

- (8) NN main clause questions with non-inverted word order are only possible with monosyllabic question words.

We follow Fiva (1995) in taking (8) to be true of the Modern Tromsø dialect, which we use as representative of NN. We present the pattern on which we base our analysis immediately below. First, there is obligatory V2 in *wh*-questions (as in Standard Norwegian) when the *wh*-expression is more than one syllable long. Subject-verb order in any of these examples would be ungrammatical (*hen* in (9e), glossed ‘loc’, is a locative particle).

- (9)
- a. Korsen kom ho hit?
how came she here
‘How did she get here?’
 - b. Koffor skrev han ikkje?
Why wrote he not
‘Why didn’t he write?’
 - c. Katti foreleser du?
when lecture you
‘When do you teach?’
 - d. Kor mange fiskebolla vil du ha?
where many fishballs will you have
‘How many fishballs would you like?’
 - e. Kor hen for han Espen?
where loc went he E.
‘Where did Espen go?’

Second, V2 fails when the *wh*-expression is only one syllable long. There are three monosyllabic *wh*-words, *ka* ‘what’, *kem* ‘who’, and *kor* ‘where’. These are exemplified in (10).

- (10)
- a. Ka du sa?
what you said
‘What did you say?’
 - b. Kem det va?
who that was
‘Who was that?’
 - c. Kor du kom fra?
where you came from
‘Where did you come from?’

Third, the length of the subject is irrelevant, as shown in (11). The monosyllabic wh-word is followed immediately by the subject, deviating from V2, as in (10). (Compare (11a), in which the locative particle *hen* is stranded, to the synonymous (9e) above, in which *hen* is pied-piped.)

- (11) a. Kor han Espen for hen?
where he E. went loc
'Where did Espen go?'
b. Ka de dær guttan du snakka med i går sa?
what those boys you spoke with yesterday said
'What did those boys you talked to yesterday say?'

And fourth, the verb does not move in the cases where V2 fails, but remains in its base position; this can be seen in (12).

- (12) a. Kem du ikkje ringte til?
who you not phoned to?
'Who didn't you call?'
b. Ka det egentlig har å si?
what it actually has to say
'What does it actually matter?'

That the verb remains in its base position is indicated by the position of adverbial elements, e.g. *ikkje* 'not' in (12a); compare (9b) where the verb has moved. This post-adverbial position is the position occupied by the verb in all non-V2 contexts in Mainland Scandinavian, e.g. in embedded clauses; cf. Holmberg and Platzack (1995) for a recent discussion of verb movement in Scandinavian and the use of adverbs as a diagnostic.

We claim that the crucial difference between the V2 and non-V2 patterns seen above is the prosody of the wh-phrase, as is suggested by the statement in (8). Other factors, such as the interpretation or prosodic size of the verb or of the subject, are not relevant. On these points there is no disagreement, with respect to Tromsø dialect. Opinion is more divided on the status of V2 with monosyllabic wh-words, as in (13) (cf. the non-inverted versions in (10)).

- (13) a. Ka sa du?
what said you
'What did you say?'

- b. Kem va det?
 who was that
 ‘Who was that?’
- c. Kor kom du fra?
 where came you from
 ‘Where did you come from?’

(Elstad 1982:32) counts such examples as acceptable in NN. This has also been the conclusion of Fiva (1995) and Nilsen (1996). However, Nordgård (1985) warns that influence from the standard makes informants reluctant to reject (13), regardless of their own usage; this is the line taken by Taraldsen (1986b), who assumes that the word order in (13) is ungrammatical in NN, and that when speakers accept it, it is because of influence from the standard dialect, which all speakers of Norwegian are familiar with and use for writing.

On our analysis, prosody is critical to the acceptability of strings like those in (13). None of the investigations cited recorded or considered intonation. Our own observation is that although informants accept the word order in (13) when it is suggested, they almost invariably use the non-V2 order in contexts of neutral intonation. This has been checked against a corpus of spoken NN kindly provided to us by Gøril Erikstad. We conclude that the word order in (13) is marked in NN. In the following sections we provide an account which derives the unmarked orders in (9)-(12) but not that in (13), unless the verb receives focal stress. Any degree of acceptability of the data in (13) with nonfocal stress is either the result of dialect interference or some additional, hitherto unexplained, rules involving focus.

To summarize, the fact is that *korsen* ‘how’, *koffor* ‘why’, and *katti* ‘when’, as well as more complex wh-expressions such as *kor mange* ‘how many’ or *kor hen* ‘where (loc)’ always trigger inversion, while *ka* ‘what’, *kor* ‘where’, and *kem* ‘who’ do not. The central claim for our analysis is that these two classes are correctly identified on the basis of their prosody: multisyllabic wh-expression trigger inversion; monosyllabic ones do not. We claim, contra Taraldsen (1986b), that the elements which fail to trigger inversion cannot be insightfully identified on the basis of their morphological, syntactic, or semantic properties.

4. Phonology-free syntax

Throughout their considerable corpus on the phonology-syntax interface, one of the central hypotheses advanced by Pullum & Zwicky (1988, *inter alia*) (P&Z) is the principle of phonology-free syntax (PFS). This hypothesis about the organization of grammar asserts that syntactic rules do not directly refer to phonology. P&Z offer alternative analyses of several syntactic rules ostensibly showing sensitivity to phonological information, includ-

ing various cases from English: dative shift (the trigger should be monosyllabic), heavy-NP shift (a constituent ‘moved’ to the right should be long), and coordinate ellipsis (the targeted constituents should be phonologically identical). The pre-theoretical description of the syntax of wh-questions in NN appears to constitute a violation of PFS. Specifically, it would appear to be “a generalization about a specific language which is correctly expressed as a syntactic rule referring to phonological constructs” (P&Z 1988:272). In this case, informally, invert the subject and verb if the wh-phrase is polysyllabic, otherwise do not.

P&Z identify five types of putative violations of their principle, listed in (14).

- (14) Types of apparent violations of PFS
- a. extragrammatical phenomena,
 - b. universal phenomena which need not be stated in a rule,
 - c. preferences or tendencies rather than rules,
 - d. spurious generalizations, and
 - e. rules which in fact are not syntactic.

The remainder of this section is structured around the possibilities presented in (14). Indeed, we can quickly dispense with (14a)-(14b). Prosodic V2 in NN is not an example of an extragrammatical phenomenon; P&Z use this term primarily for cases of verbal art and play, such as expletive infixation in English. We can also state with certainty that there are languages with V2 phenomena which are not sensitive to prosodic structure in this way, and thereby rule out the possibility that this is a universal phenomenon.

The possibilities in (14c)-(14d) are considered in turn in the following sections, followed by a brief discussion of (14e), which sets the stage for our analysis of PROSV2 in §5.

4.1. Preferences and tendencies

The distinction between the syntax of wh-questions with monosyllabic wh-phrases and those with polysyllabic wh-phrases suggests no sense in which the syntax is the result of mere preferences or tendencies. To take the polysyllabic cases first, there simply is no surface optionality whatsoever in NN. In a wh-question with a polysyllabic wh-phrase, the verb must immediately follow the wh-phrase, and the subject can never appear in that second position. However, note that the Møre dialect discussed in §2 above may be correctly described as showing merely a preference for inversion after longer wh-expressions.

We also claim that for monosyllabic wh-words as well, it is incorrect to understand the NN data as being the result of a preference or tendency. Wh-questions with monosyllabic wh-phrases place the subject immediately after the wh-word. We are aware that there

are some surface deviations from this generalization in NN, as presented in (13) in §3 above. Nonetheless, these deviations cannot be understood through an elaboration of the concept of preferences or tendencies. Rather, they have two potential sources, as we suggested in §3: either they are the result of dialect interference, as suggested by Taraldsen (1986b), or they are the result of special focus intonation (specifically, a verb may follow a monosyllabic *wh*-word but only if it has strong stress, conveying focus). This fact is unproblematic for the analysis developed in §5 below, although it will not be a central concern here. Our attention will rather be concentrated on sentences with unmarked intonation, ruling out (13).

4.2. Spurious generalizations

The type of apparent violation of the principle of phonology-free syntax which requires the most careful argumentation is the possibility that the generalization is a spurious one. The generalization could be spurious if there is some other property which happens to divide the inventory of *wh*-expressions into these same two subsets. To address this point, we consider two possibilities derived from the literature. First, the possibility that a distinction between arguments and non-arguments could be useful is explored by a review of a seemingly similar phenomenon in Spanish. Secondly, the possibility of a distinction between bare operators and non-bare operators is taken up through a discussion of Taraldsen's (1986b) analysis of Norwegian.

4.2.1. Spanish shows subject-verb inversion covarying with the type of *wh*-phrase fronted

At first blush, the situation looks almost like a mirror-image of the one in Northern Norwegian: for example, Torrego (1984) reports obligatory inversion with *quién* 'who' and *qué* 'what', and lack of (obligatory) inversion with *cuándo* 'when', *cómo* 'how', *por qué* 'why', and *en qué medida* 'in what way'. (exx. from Torrego 1984).

- (15) a. ?Qué querían esos dos?
 what wanted those two
 'What did those two want?'
 b. *?Qué esos dos querían?
 what those two wanted
 c. ?En qué medida la constitución ha contribuido a eso?
 in what way the constitution has contributed to that?
 'In what way has the constitution contributed to that?'

The generalization Torrego makes is that arguments in SpecCP trigger inversion, while non-arguments do not. Baković (1995) reports on a variety of Spanish dialects, noting some in which *dónde* and *cuándo* ('where' and 'when') pattern with *qué* and *quién* against

cómo and *por qué* ('how' and 'why'). The split in Northern Norwegian between 'who', 'what', and 'where' on the one hand, and the other question words on the other hand, might then be taken to fit into a general pattern cross-linguistically, in which the most argumental wh-elements behave differently from the least argumental.

However, we feel this would be mistaken. The Spanish categories are well-defined syntactically. In the dialect described by Torrego, the distinction is argument versus non-argument. In the version reported by Bakovic, the distinction may be VP-internal versus VP-external. But in neither case does the complexity of the phrase or word itself have any effect on inversion (except to the extent that general factors may prefer one word order over another when a phrase is especially heavy). This is in stark contrast to the NN case, where inversion becomes obligatory if the wh-phrase contains more than the lone element *ka*, *kem*, or *kor*. Compare the examples in (16) (from Torrego 1984 and Suñer 1994), showing that inversion is still obligatory when a PP containing the argument *quién* is fronted, or when *qué* appears as a determiner in a fronted argumental noun phrase, to the examples in (17), which show that the addition of a single word to argumental *kem* or *ka*, changing them from mono- to polysyllabic wh-phrases, forces inversion, (cf. 9 d,e).

- (16) a. ?A quién prestó Juan el diccionario?
to whom lent John the dictionary
'Who did John lend the dictionary to?'
b. *?A quién Juan prestó el diccionario?
to whom Juan lent the dictionary
c. ?Qué cosa compró José?
what thing bought José
'What thing did José buy?'

- (17) a. Kem du har snakka med?
who you have spoken with
'Who have you spoken with?'
b. Kem ellers har du snakka med?
who else have you spoken with
'Who else have you spoken with?'
c. *Kem ellers du har snakka med?
who else you have spoken with
d. Ka du fikk?
what you got
'What did you get?'
e. Ka slags fikk du?
what kind got you
'What kind did you get?'

- f. *Ka slags du fikk?
what kind you got

Thus, it seems that the various patterns reported for Spanish are best handled by syntactic machinery which allows a distinction between argumental or VP-internal elements from non-argumental or VP-external elements. But this same machinery, it is clear, could not account for the NN pattern without unmotivated stipulation: the simple generalization for NN is that non-inversion occurs when the wh-element in SpecCP is monosyllabic, a phonological rather than a syntactic characterization.

4.2.2. Taraldsen (1986b)

develops a general account for V2 and non-V2 in main and embedded clauses in Norwegian declarative and interrogative clauses which is specifically designed to accommodate the Northern Norwegian data. His account turns on a licensing requirement for all non-verbal heads, which he designates ‘+A’ heads. According to Taraldsen, a +A head must be ‘linked’ to an argument position, where linking can be satisfied in either of two ways: the head can be the head of an XP in an argument position, or the head can locally bind an empty category in an argument position.

V movement is in general forced by this requirement, in the following way: the element in SpecCP, call it XP, has a +A head, X. X must be linked to an argument position. Being embedded in a phrase, X does not c-command the trace of XP, so it cannot locally bind it. Therefore, X must be the head of an element in an argument position, i.e. SpecCP must be an argument position. Movement of V to C turns SpecCP into an argument position (building on Kayne 1983).

In an embedded interrogative, something else happens: the head of CP is empty, and the wh-feature of the wh-phrase in SpecCP percolates up to CP. The wh-phrase is then the ‘derived head’ of CP. Since CP is in an argument position, the head of the wh-phrase is licensed. There is no percolation of features in the case of topicalization, so a topicalized element is never the derived head of an embedded CP, therefore verb movement is forced in cases of embedded topicalization.

In Northern Norwegian, according to Taraldsen, the words *ka*, *kor*, and *kem* function as ‘bare operators’; they are linked by c-command to traces in argument positions in IP (their not branching is critical in this connection, as discussed below). This means that SpecCP need not be an argument position, so V does not move into C.

There are various problems with this account. Though Taraldsen shows that it extends to topicalization constructions in Italian (following an analysis of Cinque’s), it seems that

the licensing condition is not well-established; neither the +A feature nor the disjunction ‘heads or locally binds’ have been shown to have broader utility. Furthermore, it is unclear that all non-verbal heads satisfy these conditions. For example, it seems that PP adjuncts must have non-verbal heads, but PP adjuncts do not occupy argument positions, if that notion has any content; and it is not clear how P could be argued to locally bind an empty argument position. Another problem, which Taraldsen notes, is that movement to the topic position is only local to the extent that A-bar movement typically is, whereas his analysis requires much more local A-binding of the trace of that movement. (He suggests that binding can be checked at an earlier level, prior to movement; but this suggestion raises further questions.)

Even if these general objections to the account can be answered, there are problems specific to the NN data. First, there is the question of why exactly the elements *ka*, *kor*, and *kem* should have a special status as bare operators. For Taraldsen, it is critical that they c-command out of their surface location into the clause, something which they cannot do if they project phrasal nodes. This explains why more complex expressions, such as *kor i byen* ‘where in town’ or *kem ut av dokker* ‘which of you (pl.)’, cannot be bare operators. But it fails to explain why *katti* ‘when’, *korsen* ‘how’, and *koffor* ‘why’ cannot fail to trigger inversion. Historically, they are morphologically complex - *katti* has developed from *hvaD + tiD*, literally ‘what time’, and the initial syllable of both *korsen* and *koffor* is originally the separate morpheme *hvor* ‘where’ (cf. early modern English *wherefore*). But it is far from clear that they are synchronically complex. Taraldsen links his account closely to Cinque’s analysis of Italian topicalization, where phrasal quantifiers like *molti libri* ‘many books’ require clitic doubling, while bare quantifiers like *molto* ‘much’ do not.

- (18) a. *Molti libri, Giorgio non (li) ha letti.*
many books, Giorgio not them has read
‘There are many books that George has not read’
b. *Molto, Giorgio non ha letto.*
much Giorgio not has read
‘George has not read much’

But morphologically complex elements like *qualcuno* ‘someone’ and *qualcosa* ‘something’ pattern with *molto* (cf. Cinque 1990), suggesting that monomorphemicity cannot be a necessary condition for bare operator status. So Taraldsen is forced to simply stipulate for *ka*, *kem*, and *kor* that they are bare operators in NN, while *katti*, *korsen*, and *koffor* are not (unlike *qualcosa*, etc.).

Nor can monomorphemicity be a sufficient condition for bare operator status, since the Standard Norwegian counterparts to *kor*, *kem*, and *ka*, namely *hvor*, *hvem*, and *hva*, as well as *når* ‘when’, are morphologically simple but trigger inversion, and the same holds

for Standard and Northern Norwegian quantifiers like *alle* ‘all’ and *mange* ‘many’, which obligatorily trigger V movement, as in (19) (examples in standard orthography).

- (19) a. Alle har Geir ikke lest.
 all has Geir not read
 ‘Geir hasn’t read all of them’
 b. Mange har Guro ikke lest.
 many has Guro not read
 ‘There are many which Guro hasn’t read’

Since failure of V2 is a consequence of the non-projection of an operator, Taraldsen must stipulate for NN (as opposed to Italian) that only wh-words, and not non-interrogative operators like *alle*, fail to project. This amounts to a lexical stipulation over the words *ka*, *kem*, and *kor*, which has no independent motivation. Our account, on the other hand, has independent motivation. We have established (in §2 above) that some Norwegian dialects do not have obligatory V2 in questions at all. Here we are claiming that, as far as the syntax is concerned, NN is one of those dialects. From this vantage point, the task is to explain why *ka*, *kem*, and *kor* behave differently from other question expressions. For Taraldsen, it is because they fail to project, something not independently motivated. For us, it is because they are prosodically too small to support an entire metrical foot, something which is an empirical fact.

In order to maintain a purely syntactic analysis, one might be tempted to adopt the gist of Taraldsen’s proposal but to locate the difference between bare operators and non-bare operators in something other than the question of whether they project syntactic structure. However, such an account would lead to trouble, for example in coordinate constructions. A conjunction of two bare quantifiers should itself have the syntactico-semantic properties of a bare quantifier. Yet a wh-phrase composed of two monosyllabic wh-words does not behave like its bare operator components, rather showing obligatory inversion, as in (20).

- (20) a. Kem eller ka fikk du kyssesyka av?
 who or what got you mononucleosis of
 ‘Who or what did you catch mononucleosis from?’
 b. *Kem eller ka du fikk kyssesyka av?
 who or what you got mononucleosis of?

Since the conjunction *kem* eller *ka*, ‘who or what’, must be followed immediately by the verb, it is clearly not behaving like the ‘bare operators’ *kem* and *ka*. These facts follow as a natural consequence of the prosodic analysis below.

4.3. *A non-syntactic phenomenon*

At this point we have considered the first four of P&Z's types of apparent violations of PFS, presented in (14a-d) above. The final possibility, in (14e), concerned rules which are not in fact syntactic. On our account, this is nearest to the mark. Pre-theoretically, our description of wh-questions in NN would appear to be a syntactic phenomenon; at the descriptive level, surely a problem about word order is properly construed as syntactic. However, in our analysis, presented in §5, it will be seen that P&Z's central hypothesis is preserved. It will not be necessary to open the door to the presence of 'phonological constructs' in syntactic rules, an unwelcome development which would allow the expression of many types of rules which are unattested.

5. The prosodic analysis

The analysis we advocate in §5.3 below captures the prosodically based classification of wh-expressions in NN noted above, while at the same time maintaining a phonology-free syntax. To achieve this result, we follow Golston's (1995) proposal about the structure of the grammar, specifically the claim that syntax outranks phonology. We claim that incorporation of prosodic information into the analysis is necessary, in part due to the inadequacy of strictly syntactic analyses. This possibility is couched in the framework of optimality theory (OT).

An OT grammar is one in which there is a generator function, supplying candidate utterances, which are then assessed for their conformity to the grammar, a set of ranked, violable constraints. The candidate best satisfying the grammar is optimal, even though this candidate itself may violate constraints. Indeed, the inventory of constraints may be such that it would be impossible for a candidate to perfectly satisfy all of them. A further characteristic of ot is that the optimal candidate is not simply the one which satisfies the most constraints; the hierarchical arrangement of the constraints is crucial. Golston's (1995) proposal that syntax outranks phonology is one conceivable strategy for constraining the structure of grammar, although his arguments are generally for specific constraints of the syntax dominating specific constraints of the phonology. Nonetheless, in the absence of evidence to the contrary, it seems reasonable to follow his strong hypothesis that all constraints of the syntax dominate all constraints of the phonology. To illustrate this strategy, consider two examples in which the syntax is indeterminate and the phonology distinguishes the candidates from one another.

5.1. *Genitive constructions in English*

The two tableaux in (21) illustrate possible genitive constructions in English. In the first of these tableaux, (21a,b), both candidates are grammatical and must therefore be equally optimal in the syntax. In light of the acceptability of (21b), the unacceptability of (21d)

cannot be attributed to a syntactic violation.

(21)

		SYNT	PHON
a.	☞ the video of <i>Macbeth</i>		
b.	☞ the <i>Macbeth</i> video		
c.	☞ the video of <i>The Dead</i>		
d.	the <i>The Dead</i> video		*!

Golston (1995) argues that candidate (21d) is ruled out by the phonology, specifically by a constraint penalizing adjacent homophones, the details of which are irrelevant here. Phonology is relevant for selecting the candidate with the optimal word order, but only when the syntactic constraints are indeterminate.

5.2. Norwegian imperatives

Removing the final *-e* from Norwegian infinitives to make the imperative sometimes leaves an unsyllabifiable obstruent-sonorant consonant cluster. Examples of such imperatives include *klatr* ‘climb!’ and *sykl* ‘bike. The dialects of Norwegian show various strategies for dealing with these words, cf. Kristoffersen (1991). The strategy of interest here, taken from the dialect of Bergen, requires these imperatives to be followed by vowel initial words if they are to be pronounced at all.

Consider two tableaux in (22), where (22a,b) are two variants of ‘Don’t sit on that chair’, and (22c,d) are two variants of ‘Don’t climb on that chair’ (represented in standard orthography). Imperatives with the adverb *ikke*, ‘not’, can either have the verb in its base position, in which case the utterance begins with the negator as in (22a,c), or they can raise the verb, in which case the utterances are verb initial, as in (22b,d). However, with the verbs in question, the former option is ruled out by the phonology when the word following the verb begins with a consonant, as in (22c).

(22)

		SYNT	PHON
a.	☞ Ikke sitt på den stolen		
b.	☞ Sitt ikke på den stolen		
c.	Ikke klatr på den stolen		*!
d.	☞ Klatr ikke på den stolen		

In light of the well-formedness of (22a), the ungrammaticality of (22c) cannot be at-

tributed to the syntax. Rather, in these dialects it is ruled out by the syllabification constraints of the phonology.

Having illustrated the basic approach we take to characterizing the role of phonology in determining the grammaticality of utterances, we turn to the matter of prosodic V2 in NN *wh*-questions.

5.3. *Northern Norwegian wh-questions*

Our view of the syntax of NN *wh*-questions yields tableaux parallel to (21) and (22): the syntax fails to select a unique optimal candidate from the different word orders, cf. (23). All of the candidates in (23) are syntactically optimal, i.e., they equally well satisfy the constraints of the syntax. Selection of (23b) over (23a) and of (23c) over (23d) follows from the phonology. What remains is to determine the specific constraints of the phonology which distinguish the candidates. (Indication of the constraint violation in (23) is included for clarity; the relevant constraints are presented below.)

(23)		SYNT	PHON
a.	ka sa du what said you		*!
b.	☞ ka du sa what you said		
c.	☞ koffor skrev han why wrote he		
d.	koffor han skrev! why he wrote		*!

The optimal candidates in (23b,c) have their verbs in different positions if we consider them only from the point of view of the syntax (base position in (23b) and C in (23c), or non-V2 and V2, respectively). However, if we examine their prosodic structures, we see that in both cases the verb immediately follows the second syllable of the utterance, or, as we claim below, an initial prosodic unit, minimally disyllabic. The verb in (23a) is too far to the left, while the verb in (23d) is not far enough to the left. This observation forms the basis of our claim that NN differs from other dialects of Norwegian by including in its grammar a set of constraints yielding the requirement that the verb immediately follow the first prosodic phrase, (24). Before examining the details of this set of constraints, we give a single constraint which captures the essence of our claim.

(24) PROSV2: The left edge of the verb coincides with the right edge of the first

prosodic phrase of the utterance.

PROSV2 resembles a clitic placement rule like those in Anderson (1993) although as he notes, the verb is not a clitic in the phonological sense. Anderson proposes that Germanic V2 in general can be handled by clitic placement rules. Just as morphology locates inflectional material in words, clitic placement rules locate inflectional material in phrases (cf. also Miller 1991, Halpern 1995). According to Anderson, V2 languages place tense, mood, and agreement features at the right edge of the leftmost phrase in a clause. Since these features can only be expressed on the finite verb, the finite verb must appear there. No reference is made to prosody in such a characterization, so our account for NN must be slightly different, though nothing we say is inconsistent with Anderson's proposal for declarative sentences in NN or for V2 in other Germanic languages in general.

Our view of the mapping of a syntactic structure onto the prosodic hierarchy follows the extensive earlier research on this topic (Selkirk 1980a,b; Nespors and Vogel 1986; Hayes 1989; cf. Hulsloot 1995 for a recent review). A few points about this mapping, however, are crucial to our analysis. The material in SpecCP is a syntactic phrase, and we assume that it is also typically a prosodic phrase. Following traditional views of the prosodic hierarchy, the prosodic phrase contains a prosodic word, which in turn minimally contains a foot; a foot crucially contains two syllables. Hence, wh-words which are disyllabic may constitute a prosodic phrase, while monosyllabic ones may not. In the latter case, a phrase will be formed including the wh-word and subsequent material.

One important element of the ad hoc constraint in (24) is the requirement that the prosodic phrase which the verb follows be the first prosodic phrase of the utterance. This becomes relevant in cases with both disyllabic wh-words and subjects of sufficient prosodic substance to be a prosodic phrase. In both (25a) and (25b), the verb immediately follows a prosodic phrase. The candidate with the verb after the initial prosodic phrase, (25a), is optimal.

(25)			SYNT	PHON
a.	☞	[kati] _φ kom [de derre jenten] _φ		
		when came those there girls		
b.		[kati] _φ [de derre jenten] _φ kom		*!

As noted, PROSV2 is an ad hoc characterization of our analysis; we turn now to the matter of analyzing this phenomenon more generally, based on well-established constraints from the ot literature. Specifically, the PROSV2 constraint can be decomposed by employing constraints which require alignment of grammatical entities. This strategy is based on McCarthy & Prince's 1993 concept of generalized alignment, in which two entities and

an edge from each of them are specified for alignment, cf. also the related discussion of clitics in Anderson (1996).

PROSV2 encodes two different alignment constraints. One of these requires that a verb immediately follow a prosodic phrase; more specifically, the left edge of the verb should be aligned with the right edge of the prosodic phrase. Call this constraint $\text{AlignV}\Phi$, as in (26).

- (26) $\text{AlignV}\Phi$: $\text{Align}(\text{Verb}, \text{Left}, \text{ProsodicPhrase}, \text{Right})$: For every verb there is a prosodic phrase such that the left edge of the verb coincides with the right edge of the prosodic phrase.

The second alignment constraint which can be extracted from prosV2 exploits the defining property of ot , namely the violability of constraints. As seen in (25), the verb must follow the first prosodic phrase. This reveals a constraint on verb placement requiring the verb to be leftward in the utterance. Even though the verb is not initial in these questions, we posit a constraint requiring the verb to be initial, since this will lead to the superiority of candidates in which the verb follows the leftmost prosodic phrase, as will be illustrated below.

- (27) AlignUV : $\text{Align}(\text{Utterance}, \text{Left}, \text{Verb}, \text{Left})$: For every utterance, there is a verb such that the left edge of the utterance coincides with the left edge of the verb.

Since (27) reveals its role in the grammar by distinguishing relative distance of the verb from the left edge of the utterance, its violation is assessed gradiently. As nothing in particular hinges on the selection of the unit to be used in making this assessment, we award one violation per word intervening between the verb and the beginning of the utterance.

The replacement of prosV2 with these two alignment constraints improves the analysis by eliminating an ad hoc constraint constructed solely for the purpose of the problem at hand (namely, (24)). The crucial constraints in the analysis are now drawn from a well-known constraint family, alignment, which finds extensive motivation in the literature. The decomposition of prosV2 is not only theoretically motivated; in (31) below we will see that the original statement of prosV2 in (24) fails to distinguish an ungrammatical candidate from the optimal one, while the more explicit alignment analysis in (26-27) correctly yields an unambiguous result.

The relative ranking of the two alignment constraints is revealed by our core case, i.e., non-inversion after monosyllabic wh-words. Consider again a tableau such as (23a-b), restated in (28) with the first prosodic phrase indicated by brackets.

(28)

		SYNT	ALIGNVΦ	conAlignUV
a.	[ka sa] _Φ du what said you		*!	*
b.	[ka du] _Φ sa what you said			**

Candidate (28a) shows the verb immediately following the monosyllabic wh-word; this candidate places the verb further to the left in the utterance and is therefore superior when evaluated against ALIGNUV. However, it is candidate (28b) which is optimal, even though it fares worse on this constraint. Its optimality follows from constructing the grammar such that ALIGNVΦ crucially dominates ALIGNUV. A language otherwise identical to NN, but with these two constraints ranked in the other order, would favor (28a) over (28b), as in Standard Norwegian.

AlignUV is active in the grammar when two candidates equally satisfy both the syntax and ALIGNVΦ. Such cases have already been seen; cf. (25) above, which is displayed in (29) in a tableau incorporating the alignment constraints (26) and (27).

(29)

		SYNT	ALIGNVΦ	ALIGNUV
a.	[kati] _Φ kom [de derre jenten] _Φ when came those there girls			*
b.	[kati] _Φ [de derre jenten] _Φ kom			**!***

As noted in the discussion of (25), both (29a) and (29b) satisfy the requirement that the verb be immediately subsequent to a prosodic phrase, ALIGNVΦ. They are distinguished, however, by the distance of the verb from the beginning of the utterance; evaluation against the ALIGNUV constraint reveals (29b) as the inferior candidate.

As a final example in this section, consider a case illustrating the full force of the analysis. There are three candidates, one of which is eliminated by the syntax, while the remaining two are distinguished by the phonology. The data are as in (30), such that the verb is increasingly close to the beginning of the utterance as we proceed through these candidates.

- (30) a. Ka han Per, som e fisker, sie om det?
 what he Per, as is fisher, says about that
 ‘What does Per, who is a fisherman, say about that?’
 b. *Ka han Per sie, som e fisker, om det?
 what he Per says as is fisher about that
 c. *Ka sie han Per, som e fisker, om det?
 what says he Per as is fisher about that

To see the analysis in tableau form, consider (31).

(31)

		SYNT	ALIGNVΦ	conAligUV
a.	☞ Cand 30a			*****
b.	Cand 30b	*!		***
c.	Cand 30c		*!	*

The syntax provides two options: V in situ, as in (30/31a), or V in C, as in (30/31c). The syntax does not make available a landing site for the verb between the noun phrase and the relative clause, as seen in candidate (30/31b). Note that this candidate is like (30/31a) insofar as it perfectly satisfies the requirement that the verb be at the right edge of a prosodic phrase, assuming that *han Per* forms a prosodic phrase to which *ka* is adjoined and the relative clause forms another. Furthermore, of the two which satisfy this alignment constraint, it is superior on the second alignment constraint, ALIGNUV. Yet, this is not the optimal candidate, a fact which shows the crucial dominance of the syntax over the phonology, supporting Golston’s (1995) hypothesis; candidate (30/31b) is eliminated by the syntax (cf. Anderson 1993:89 for a similar account of why the verb in V2 languages does not generally appear after the first word).

Tableau (31) also demonstrates that the decomposition of PROSV2, (24), into the two alignment constraints is crucial to the success of the analysis as candidates (30a) and (30c) are not distinguished by PROSV2. In neither of these candidates is the verb immediately subsequent to the first prosodic phrase; so both candidates violate PROSV2. Furthermore, if PROSV2 is measured gradiently, counting the number of words between the left edge of the verb and the right edge of the first prosodic phrase, then it will incorrectly choose (30c) over (30a), since the left edge of the verb is only one word away from the right edge of a potential prosodic phrase *ka sie* in (30c), whereas in (30a) it is further away from the right edge of the prosodic phrase *ka han Per* (and is much further, in examples with longer relative clauses). This incorrect result is displayed in tableau (32).

(32)

		SYNT	PROSV2
a.	Cand 30a		***!
b.	Cand 30b	*!	
c.	Cand 30c		*

Only by positing the two alignment constraints do we achieve the correct result, namely that (30a) is superior to (30c).

The analysis developed in this section illustrates the use of constraints, the crucial possibility of their violability, and the hierarchical ranking of constraints standard in an OT grammar; in this case we specifically explore the broader possibility of ranking groups of constraints, specifically ‘syntax’ and ‘phonology’. The optionality that we have proposed in the syntax is different from other types of prosodically sensitive optionality (cf. Svenonius 1996; Guasti and Nespors 1997) in the sense that the two constructions delivered by the syntax are not both grammatical. The alignment constraints, or the phonology more generally, do not simply indicate which construction is preferred, e.g. for stylistic reasons. Rather, the phonology marks as ungrammatical one of the two candidates ranked as equally optimal by the syntax. Grammaticality in this case is determined by the phonology.

However, note that we have not resorted to any relative ranking of specific syntactic constraints with respect to any specific phonological constraints; in our model, the phonological constraints as a body can only operate on the output of a syntactic module. This means that nothing in the model requires syntactic and phonological rules to be stated in compatible terms; the syntactic module does not even have to be optimality-based. All that is necessary is that the syntax be non-deterministic: it must be able in principle to provide more than one grammatical output in the same candidate set. In other words this may be the result of equally ranked constraints; in a Minimalist-type syntax, it may occur because a single strong feature can be checked in either of two equally economical ways, e.g. by two equally ‘close’ elements; one must move to check the feature, but considerations of economy do not determine which one (cf. Svenonius 1996 for an application of this idea to optional particle shift, or Kitahara 1995 or Ura 1995 for similar ideas on optionality equally compatible with our assumptions).

6. Subject questions

Wh-questions in which the wh-expression is the subject show an additional point of variation which has also been noted repeatedly in the literature. This point is also naturally accounted for by the proposal in §5.

Standard Norwegian has constructions such as those in (33), in which extraction of the

subject of a subordinate clause leads to obligatory insertion of the word *som*. The word *som* appears in Norwegian in many contexts where English has *as*, but also introducing relative clauses (as in certain English dialects). Opinion is divided as to whether it is a relative complementizer, like *that*, or a relative pronoun, like *which*. We gloss it as ‘as’. The presence of *som* in relative clauses with a subject gap is not optional, cf. the ungrammatical constructions in (33b,d).

- (33) a. Jeg vet ikke hvem som ringte.
I know not who as called
‘I don’t know who called.’
b. *Jeg vet ikke hvem ringte.
I know not who called
c. Jeg vet ikke hvilke bøker som skal leses.
I know not which books as shall read-pass
‘I don’t know which books are to be read.’
d. *Jeg vet ikke hvilke bøker skal leses.
I know not which books shall read-pass

The full analysis of *som* in subordinate clauses is a complex matter; see for example Taraldsen (1986a). Northern Norwegian differs from Standard Norwegian in also requiring *som* in main clauses, as in (34). In Standard Norwegian, the judgments in (34) are reversed, i.e. (34a,c) are ungrammatical while (34b,d) are grammatical.

- (34) a. Kem som ringte?
who as called
‘Who called?’
b. *Kem ringte?
who called
c. Ka som kom i posten idag?
what as came in the.mail today
‘What came in the mail today?’
d. *Ka kom i posten idag?
what came in the.mail today

Most of the literature cited in §2 regarding failure of V2 in Norwegian questions also notes that in the same dialects that allow non-V2, *som* is allowed or required when the questioned element is the subject (e.g. Åfarli 1985, 1986, for example, reports a pattern similar to that in (34) for Møre dialect).

After multisyllabic wh-expressions, there is a certain degree of speaker variation. For

some speakers, *som* is impossible and the verb is moved to C, resulting in the pattern shown in (35) with the polysyllabic wh-phrase *kem* *ellers*.

- (35) a. **Kem ellers som ringte?*
 who else as called
 b. *Kem ellers ringte?*
 who else called
 ‘Who else called?’

For other speakers, however, sentences of the type in (35a) are grammatical; Fiva (1996) reports that even some speakers of Tromsø dialect accept (35a); even these speakers reject (34b) above, on the other hand. Below we will provide an account for this complex pattern of data. We will take the pattern demonstrated in (34-35) to be representative of NN, but we will also treat the language of speakers who reverse the judgments in (35).

The appearance of *som* in subordinate clauses, as illustrated above in (33), is presumably forced by syntactic requirements. Taraldsen (1986a) develops an analysis in which *som* is required by Kayne’s (1983) Connectedness Condition. Áfarli (1986) suggests a different explanation, based on selectional restrictions between C and IP. Vikner (1991), building on assumptions of Rizzi (1990), proposes that while the null interrogative C head is not a proper governor, the overt head *som* is, and is therefore necessary in embedded clauses to govern the trace of the subject (Keer 1996 implements this idea in an OT syntax). We will use Vikner’s idea in framing our discussion, and assume, as above, that NN is distinct from Standard Norwegian (and Danish, Vikner’s object of analysis) in not requiring the verb to move in main clause questions.

Consider a number of different possible syntactic outputs for a question in which the subject is the wh-phrase. If, as we have argued, V-movement is not syntactically obligatory in NN questions, but is possible, then there will be one output with the verb in C, and one version with the V in situ. If, as Vikner assumes, empty [+wh] C is not a proper governor, then the syntax rules out the option with no verb movement, and the option with verb movement should be good, despite violating the ALIGNVΦ constraint (assuming uncontroversially that a verb is a proper governor). However, if the syntax provides another option, namely insertion of the governor *som*, then this option will be passed on to the phonology along with the version in which the verb moves. Just in case the wh-phrase consists of one syllable, the version with *som* will be judged superior by the phonological component, cf. (36c). But if the wh-phrase is longer, then movement of the verb better complies with the requirements of the phonology, as in (36d).

In (36), syntactic constituency is indicated, since two string-identical syntactic alternatives have to be considered (movement of V to C being string-vacuous when the subject is in

SpecCP, in the absence of adverbial expressions).

(36)		SYNT	ALIGNVΦ	ALIGNUV
a.	[CP kem _i [C' ringte [IP t _i t _v]]] who called		*!	*
b.	[CP kem _i [C' [IP t _i ringte]]] who called	*!	*	*
c.	☞ [CP kem _i [C' som [IP t _i ringte]]] who as called			**
d.	☞ [CP kem ellers _i [C' ringte [IP t _i t _v]]] who else called			**
e.	[CP kem ellers _i [C' [IP t _i ringte]]] who else called	*!	*	**
f.	[CP kem _i ellers [C' som [IP t _i ringte]]] who else as called			***!

As (36) shows, the syntax rules out the examples where the verb fails to move and *som* is not inserted (examples (36b) and (36e)), since the subject trace is not properly governed. Insertion of *som* and movement of the verb are equally acceptable from the syntactic standpoint. It is the phonological component which determines whether insertion of *som* creates a better output. Comparing (36c) with (36a), insertion of *som* in (36c) leads to satisfaction of ALIGNVΦ, while (36a) is left with a violation. Movement of the verb in (36d) leads to fewer violations of ALIGNUV and hence the selection of (36d) over the candidate in which *som* has been inserted, (36f).

When there is an adverb, the movement is not string-vacuous, as can be seen in (37).

(37)		SYNT	ALIGNVΦ	ALIGNUV
a.	kem betalte ikkje who paid not		*!	*
b.	kem ikkje betalte who not paid	*!	*	**
c.	☞ kem som ikkje betalte who as not paid			***
d.	kem som betalte ikje who as paid not	*!	*	**

In (37a,b), corresponding to (36a,b) above, the verb is raised to the left of the adverb, or left in situ to its right. (37b) violates syntactic requirements on traces, following the

same reasoning as for (36b). Inserting *som* in this string yields a candidate which is syntactically well-formed and which is optimal due to its satisfaction of ALIGNVΦ. A fourth candidate, which better satisfies ALIGNUV, is also ruled out by the syntax, since *som* and the verb cannot occupy C together.

Recall from above that there are speakers of Northern Norwegian dialects which are otherwise like NN as we have described it, but in which sentences like (35a) above are grammatical. We assume that these speakers have the same prosodic constraint that we have proposed here, but have in addition a syntactic rule requiring *som* in cases of subject extraction, just as in embedded clauses in Standard Norwegian (cf. (33) above). Since the syntax, for such speakers, does not make a candidate like (35b) available, only (35a) can be evaluated by the phonological component.

7. Summary and conclusion

In this paper, we have explored two different points of variation in the construction of wh-questions in Northern Norwegian. The data in §§3-4 above show the relevance of the prosodic weight of the wh-expression to verb movement, in questions where non-subject elements are fronted. The data in (33-35) show the relevance of prosodic weight in explaining the appearance of the complementizer *som* in cases of subject extraction. Each of these sets of data invite analyses in which phonology and syntax interact.

The theoretical context for our discussion has been the hypothesis of phonology-free syntax, which claims that the statement of syntactic rules do not refer to phonology. Wh-questions in NN would seem to be a counterexample to this hypothesis. In light of this, we have carefully reviewed a catalog of types of putative counterexamples, stated in (14). To the extent that the syntax of NN wh-questions cannot be construed as one of these types of counterexamples, it challenges Pullum & Zwicky's hypothesis.

Yet, our conclusion is not to abandon the hypothesis of phonology-free syntax. Our analysis, as presented in §5, is one in which the syntax provides two possible structures for wh-questions. This is an independently necessary possibility, given that there are dialects of Norwegian in which this syntactic indeterminacy is seen on the surface, i.e. in which wh-questions vary between V2 and non-V2, regardless of the prosody of the wh-phrase, as discussed in §2. On our analysis, the syntax of NN is just as in that dialect, but the grammar is not; the distinction between the two dialects is found in the phonology. In this sense, our analysis characterizes wh-question formation in NN as something which is a result of the interaction of syntax and phonology, but nonetheless a syntax which is phonology-free.

There is, however, one nonobvious point of contact between the syntax and the phonology which is entailed by our analysis. Our proposal requires that the syntax provide the

phonological component not just with candidates for evaluation, but in fact with candidate sets.

This is because the candidate sets for evaluation in the phonological component include multiple prosodic parsings of different outputs from the syntax. The various phonological realizations of a sentence both with and without verb movement (or insertion of *som*) must be considered together, and evaluated against each other. Optimality theory provides a cogent framework for formalizing such an analysis, and in this regard the present paper lends further credibility to an old view of grammar. We propose that alternative theories of grammar may be judged in part on their ability to characterize the syntax-phonology interface in a way which offers an understanding of the prosodic basis of the word order for *wh*-questions in Northern Norwegian.

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