

Phonological Movement in Ukrainian*

Victoria Teliga,¹ Brian Agbayani,² and Chris Golston²

¹London and ²California State University Fresno

1 Introduction

Extant accounts of scrambling in Ukrainian generally don't extend past object- and other NP-related processes (Féry et al. 2007, Mykhaylyk 2010). Analysis of Slavic scrambling as XP movement (Corver 1992, Bošković 2005) runs into problems with split constituency, as does OT syntax (Gouskova 2001). Remnant movement (Sekerina 1997, Bašić 2004) runs afoul of Slavic data and theory too (Pereltsvaig 2008, Kariaeva 2009). Analyses that mix syntax with prosody (Antonyuk-Yudina & Mykhaylyk 2013; Mykhaylyk 2012) are more promising but also fail. Ukrainian scrambles only prosodic entities, ignores core principles of syntax, and respects core principles of phonology.

The driving force behind the scrambling is not our focus here. It is generally assumed to be pragmatic in nature, based on things like topic, focus, and givenness (e.g., Féry et al. 2007). Fanselow & Lenertová have recently argued against this, however, and claim for most scrambling that 'accentuation rather than informational status determines which categories can be fronted' (2012:169); their findings support Chomsky's (2008) view that information structure does not result in movement. We leave this to future research and focus here on which part of the grammar the movement takes place in. We propose that Ukrainian scrambling is *phonological movement* of exactly the sort found in Ancient Greek and Latin (Agbayani & Golston 2010, 2016), and similar to the more limited type found in Japanese (Agbayani, Golston & Ishii 2015) and Irish (Bennett, Elfner, & McCloskey 2016).

2 Ukrainian scrambling is not syntax

Ukrainian scrambling ignores all of the things we expect syntactic movement to respect. In this section we go through a long list of these to show that any manner of syntactic analysis has a hard row to hoe. Despite the fact that it clearly involves movement, Ukrainian scrambling's blindness to all things syntactic strongly suggests that the movement is not syntactic. All of the facts discussed in this section are found in Ancient Greek and Latin as well, where it has been argued that the movement involved cannot be syntactic (Agbayani & Golston 2010, 2016).

2.1 *Scrambling ignores part of speech* Nouns and verbs move in Ukrainian, adjectives and adverbs move, prepositions move, etc. This immediately makes a syntactic analysis difficult insofar as it is hard to imagine any kind of feature-checking that would target nouns (which want case and such) and verbs (which want tense and such) equally, and target prepositions and determiners as well. Examples of these will appear throughout, but the generalization is well-known.

2.2 *Scrambling ignores the X⁰/XP distinction* A basic tenet of modern syntax is that heads and phrases occupy different types of positions and that heads move only to head positions while phrases move only to SPEC positions. Since both heads and phrases are scrambled in Ukrainian, this means that no uniform landing site for movement (SPEC or X⁰) is available for a syntactic analysis. Sekerina (1997) distinguishes *split scrambling* (moving less than an XP) from *XP-scrambling* (moving a full XP), as we will see below and it should be clear that only the latter admits of a simple syntactic analysis.

2.3 *Scrambling ignores syntactic constituency* A core concept in syntax is that you can only move

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something if it's a constituent. So it comes as a shock that you can move non-constituents like the following:

- (1) *cieju_a radisnoju_b sxvyliovanyj* [*t_a* [*t_b* [novynoju]]]
 this good excited news
 'excited by this good news'
- (2) *u_a jake_b vin pojide* [*t_a* [*t_b* [misto]]]
 to which he will.go town
 'To which town will he go?' (Féry et al. 2007)

2.4 Scrambling ignores islands Ukrainian scrambling ignores all of the major islands that normally block movement in syntax, which strongly suggests that it is not a syntactic process.

2.4.1 Scrambling ignores the CSC A core constraint of syntax across languages is the Coordinate Structure Constraint, which bans things like 'What did you eat ___ and pancakes?' (Ross 1967). Ukrainian scrambling easily splits coordinate structures like the following:

- (3) *mašynu_a maje* [*t_a* i *kvartyru*]
 car has and apartment
 'has a car and an apartment'

2.4.2 Scrambling ignores the LBC As noted by Féry et al. (2007) and others, scrambling ignores the Left Branch Condition (Ross 1967):

- (4) *skil'ky_a vona pročytala* [*t_a* *cikavyx knyžok*]
 how.many she read interesting books
 'How many of the interesting books has she read?' (Féry et al. 2007)

(*skil'ky* is accusative here and *cikavyx knyžok* is genitive plural, though this does not affect the issue at hand.)

2.4.3 Scrambling ignores the Subject Condition Ross's Subject Condition prohibits movement out of a subject (Ross 1967). We see such movement in data like the following, where *bagato rokiv* 'many years' is clearly the subject of *mynulo*.

- (5) *bagato_a mynulo* [*t_a* *rokiv*]
 many have.passed years
 'many years have passed'

In (5) *bagato rokiv* is the derived subject. It could of course be that *rokiv* has moved rightwards over the verb instead of *bagato* having moved leftwards over the verb: but either way there is movement out of the subject, in violation of the Subject Condition if the movement is syntactic.

2.4.4 Scrambling ignores the Adjunct Condition While moving part of a direct object occurs in many languages, moving part of an adjunct is generally disallowed (Huang 1982). But the intransitive verb in (6) shows us clearly that *v riznyx mistah* is an adjunct, so syntactic movement should be blocked:

- (6) *v_a riznyx_b meškajut'* [*t_a* [*t_b* [mistah]]]
 in different they.live cities
 'They live in different cities'

The example is also worrisome because the moved string *v riznyx* doesn't form any sort of syntactic constituent (see 2.3 above).

2.4.5 Scrambling ignores Freezing Islands Wexler & Culicover 1980 showed that a constituent that has been moved becomes an island for further movement: you cannot move x to satisfy a formal syntactic requirement and then move a subpart of x . But this appears to happen in Ukrainian sentences like (7), where the initial structure has to include *zris na dvadc'at' vidsotkiv* ‘increased by twenty percent’:

- (7) *vidsotkiv_b [na dvadc'at' t_b]_a zris t_a riven'*
 percent by twenty increased level
 ‘The level increased by twenty percent’

The obvious way to get (7) from that initial structure is to front *na dvadc'at'* ‘by twenty percent’ *vidsotkiv* and then to front *vidsotkiv* to a position preceding *na dvadc'at'*. Such a derivation creates a freezing island (the PP) only to violate it by moving part of the NP it contains. We note here that the syntactic analyses proposed by Sekerina (1997, for Russian) and by Franks & Progovac (1994, for Serbo-Croatian) runs into the freezing problem.

2.4.6 Scrambling ignores Anti-Locality Anti-Locality (Grohmann 2002) involves the movement of material from the complement of a head to the specifier immediately preceding that head. The idea is that such movement is too local and that a higher specifier position needs to be sought out. So it’s worrisome that *duže* below seems to have moved to a position immediately preceding the P:

- (8) [*duže_a [v [t_a tisnyh stosunkah]]]*
very in close relationship
 ‘in very close relationship’

If that position is the [spec, PP], as would seem to be the case, (8) would involve moving something to a position that is more local than is usually allowed in syntax.

Syntactic accounts of the kinds of data we have seen here must explain why Ukrainian scrambling ignores so much syntax. Analyses that invoke prosody in addition to syntax have the same problem: if syntax is still around, why does prosodically driven movement get to violate it?

2.5 Scrambling splits names and compounds Names and compounds are generally taken to be syntactic atoms and you don’t expect to see them broken apart by movement operations taking things to head or specifier positions: we don’t expect to find **Barack I voted for Obama* or **Chalk I wrote on the -board*. Such things occur in Ukrainian though, as the split name in (9) and the split compound in (10) show:

- (9) *Olenu_a ja siogodni zustriv [t_a Verbyc'ku]*
 Olena I today met Verbyc'ka
 ‘Today I met Olena Verbyc’ka’
- (10) *v_a školi_b vin navčavsja [t_a [t_b internati]]*
 in school he studied boarding
 ‘He studied in a boarding-school’

(10) poses the additional worry that when *školi* ‘school’ scrambled it took the preposition *v* ‘in’ with it—and there’s clearly no sense in which P plus the first half of a compound form a syntactic constituent.

2.6 Scrambling ignores LF Syntax feeds LF, which has the power to block certain configurations including those that involve binding. Anaphors must be bound by their antecedents, which requires the anaphors to be c-commanded; but in Ukrainian we see reflexives scramble past their antecedents, as below where *sebe* ‘self’ has moved from the postverbal position to one where it presumably c-commands its own antecedent *ja* ‘I’:

- (11) *sebe_a ja_a pro ce vesⁱ čas pytaju t_a*
 self I about this all time ask
 ‘I ask myself about this all the time’

The same kind of movement is allowed with reciprocals; so in the following, *odyn vid odnogo* ‘from one another’ moves from the position after the verb past its antecedent *vony* ‘they’ to a position that clearly isn’t c-commanded by the antecedent:

- (12) *duže [odyn vid odnogo]_a vony_a vidriznjajut’sja t_a*
 greatly one from another they differ
 ‘They differ greatly one from another’

Together with movement of non-constituents and disobedience to islands, immunity to LF binding conditions further suggests that the movement is not likely syntactic.

2.7 Scrambling can be partial and is optional Our final problem for syntactic analyses of Ukrainian scrambling comes from work by Fanselow & Lenertová (2011). They point out that Czech and German have scrambling that is *partial* and *optional*, two properties that Ukrainian scrambling shares; the argue convincingly that neither is straightforwardly captured in a syntactic analysis. Partial scrambling involves moving part of a topicalized or focused constituent rather than the whole thing. So to the question *What did you do?* it is fine to answer with a discontinuous VP in German, where only the direct object is fronted:

- (13) *einen Hasen habe ich gefangen*
 a rabbit have I caught
 ‘I caught a rabbit.’

Although the focus is clearly the VP (it’s the answer to *What did you do?* not *What did you catch?*), (13) has only a subpart of the focus fronted, with the focused verb *gefangen* remaining *in situ*. Fanselow & Lenertová argue that is difficult if the movement is driven by feature-checking in the syntax, since we would then expect full fronting of the focused constituent rather than partial fronting. They therefore reject analyses such as Rizzi 1997 that have focus and topic positions in the syntax, and adopt Chomsky’s (2008) view that there is no direct link between syntax and information structure. If they are right, partial movement is fatal for a syntactic analysis based on feature checking or the like: whatever forces movement of an XP to the focus position should prohibit moving just part of that XP. It would be the equivalent of moving only part of a subject up the tree to get NOM case, something we don’t expect to find.

Fanselow & Lenertová point out a second and related problem with left-peripheral focus: the focus needn’t be moved at all:

- (14) *Ich habe einen Hasen gefangen*
 I have a rabbit caught
 ‘I caught a rabbit.’

Here the subject *ich* ‘I’ occupies the left-peripheral position and the focused element *einen Hasen* ‘a rabbit’ is *in situ*. If fronting were forced by any kind of feature-checking it would be the focused element that moved, not the unfocused subject.

Based on these and a number of other considerations, Fanselow & Lenertová conclude that scrambling of this sort is generally altruistic ‘in the sense that the displacement does not satisfy any requirement of the moved phrase’ (2011:184). This precludes any type of syntactic operation that depends on formal features of the moved string; specifically, *focus* and *topic* aren’t lexical properties, so using them in syntax violates the inclusiveness condition (Chomsky 1995:225), which requires that the output of a computational system not contain anything beyond its input.

3 Ukrainian scrambling is phonology

3.1 A prosodic definition of split- and XP-scrambling Sekerina 1997 distinguishes two types of scrambling in Slavic languages: *XP-scrambling*, where syntactic constituents are moved as one unit, and *split-scrambling*, where the parts of constituents are extracted and placed in different positions within a clause. We propose that her cases of split scrambling are generally phonologically scrambled prosodic words (ω), while her cases of XP-scrambling are scrambled phonological phrases (φ). Exactly parallel cases of ω - and φ -scrambling are found in Ancient Greek and Latin (Agbayani & Golston 2010, 2016).

3.1.1 Split-scrambling is ω -scrambling Most of the data we've seen so far are cases of split-scrambling for Sekerina and thus of ω -scrambling for us. We can see this in (1), repeated below as (15), with the prosodic constituency we assume, where each lexical word (N, V, or Adj) is its own prosodic word (ω) under which preceding function words (e.g., *cieju* 'this') are embedded (Selkirk 1986). We indicate the phonological movement with an arrow:

- (15) (*cieju radisnoju*) ω (*sxvyloovanyj*) ω (*novynuju*) ω
 this good excited news
 'excited by this good news'

We saw that the phrase *cieju radisnoju novynuju* 'this good news' was split by scrambling *cieju radisnoju* 'this good' leftwards, moving a string that doesn't form a syntactic constituent and creating a discontinuous DP in the process. But although *cieju radisnoju* doesn't form a constituent in the syntax, it does form one in the phonology—the determiner *cieju* forms a prosodic word with the following adjective in Ukrainian as it would in many languages. Thus the scrambling moves a well-established phonological constituent (ω).

Similarly for (2), repeated as (16) with prosody and movement indicated. The PP *u jake misto* 'to which town' is split by moving a prosodic word leftwards, even though it doesn't constitute any kind of syntactic constituent. Here again, a phonological account of the scrambling allows us to move a constituent (ω) rather than a non-constituent, as must be done if the movement is syntactic.

- (16) (*u jake*) ω (*vin pojide*) ω (*misto*) ω
 to which he will go town
 'To which town will he go?'

Similarly for (6) and (10) repeated below as (17) and (18). In each of these cases a preposition is moved along with a following content word as a ω despite the fact that the moved string does not form any kind of syntactic unit. In (17) we see that the preposition consists of just a consonant (*v* 'in'), so it is not surprising that fronting the following adjective drags the preposition along too; note that no such analysis is available in the syntax, where the preposition and adjective don't form any kind of constituent. The fact that material is scrambled out of an adjunct is explained as well, as syntactic notions like adjunct aren't encoded directly into the prosodic hierarchy: the information required to see a violation of the Adjunct Condition isn't available in prosodic constituency.

- (17) (*v riznyx*) ω (*meškajut'*) ω (*mistah*) ω
 in different they.live cities
 'They live in different cities'

- (18) (*v školi*) ω (*vin navčavsja*) ω (*internati*) ω
 in school he studied boarding
 'He studied in a boarding-school'

The grammaticality of (18) is likewise unsurprising if the scrambling takes place in the phonology. The compound *školi internati* 'boarding school' consists of two ω s, as does its English equivalent (Inkelas 1989). And of course the preposition is dominated by the first of these (*v školi*)(*internati*). The phonological movement in (18) does not see a preposition plus the first half of a compound, since morphosyntactic information like this is lost in the transform to prosodic structure; instead it just sees a ω

(*v školi*), which it fronts as it would any other focused ω .

If split-scrambling is ω -movement, we immediately have an explanation of why it appears to violate the LBC, as we saw above in (4), repeated below:

- (19) (*skil'ky*) ω (*vona pročytala*) ω (*cikavyx*) ω (*knyžok*) ω
 how.many she read interesting books
 ‘How many of the interesting books has she read?’

When the phonology scrambles *skil'ky* it cannot know that it is the left branch of a DP, because such information is not encoded prosodically. The phonology only knows that it is scrambling a prosodic word, so the LBC is irrelevant and unmolested.

Similarly for (5), repeated below, and the apparent violation of the Subject Condition:

- (20) (*bagato*) ω (*mynulo*) ω (*rokiv*) ω
 many have.passed years
 ‘many years have passed’

Scrambling the ω *bagato* in the phonology cannot affect the sanctity of the Subject Condition in the syntax if syntax and phonology are different components of the grammar: once the phonology is present, the syntax is not.

The anti-locality case in (8=21) admits of the same explanation. While *duže* appears to be too close to the position it moved from in syntactic terms, there can be no such restriction on the phonological representation:

- (21) (*duže*) ω (*v tisnyh*) ω (*stosunkah*) ω
 very in close relationship
 ‘in very close relationship’

While too-close is an issue in syntax, it is not in phonology, where movement is predicted to be minimal, so as not to unnecessarily violate faithfulness. Thus the fact that *duže* has moved minimally, across one intervening ω is to be expected if the movement is phonological.

Turning now to (9=22) it should be clear that although names seem to be atoms syntactically, they clearly form distinct prosodic words phonologically in Ukrainian as in most languages. So although we're surprised to see a name split if we see the splitting as syntactic:

- (22) (*Olenu*) ω (*ja s'ogodni*) ω (*zustriv*) ω (*Verbyc'ku*) ω
 Olena I today met Verbyc'ka
 ‘Today I met Olena Verbyc'ka’

we should not be surprised to see a ω fronted in this language if scrambling is phonological.

The same applies to movement that upends proper binding relationships, as we saw in (11), repeated below with our assumptions about prosodic constituency:

- (23) (*sebe*) ω (*ja pro ce*) ω (*vesi čas*) ω (*pytaju*) ω
 self I about this all time ask
 ‘I ask myself about this all the time’

We don't claim to know the exact prosodic constituency of the string of *ja...čas*, but this doesn't affect our analysis or argument, which relies only on the fact that the reflexive *sese* belongs after the verb, where it constitutes a ω ; this ω is fronted in scrambling that is understandably blind to binding issues, since there's no reason to think that phonological representations feed or influence LF in any way.

3.1.2 XP-scrambling is φ -scrambling Sekerina's second type of scrambling moves an XP in the syntax; since XPs generally correspond to phonological phrases, we analyze most such cases as φ -scrambling in the phonology. This puts us in a position to understand the rest of the data from above, i.e.,

the data that cannot be understood as *ω-scrambling*. We begin with the movement of an NP in (apparent) violation of the CSC, as shown above in (3). We assume that the syntax outputs a simple VO structure that is prosodified as in (24), where the edge of each NP marks the end of a phonological phrase that the preceding function words are embedded into, either as a prosodic word (*maje* ‘has’) or just as a syllable (*i* ‘and’):

- (24) ((*maje*)_ω (*mašynu*)_φ)_φ (*i kvartyru*)_φ
 has car and apartment
 ‘has a car and an apartment’

(We remain agnostic as to whether the entire conjoined structure above constitutes its own phonological phrase above those of its conjuncts; the argument isn’t affected either way.) Deriving the order we saw in (3) requires movement of the phonological phrase (*mašynu*)_φ, as shown below:

- (25) ((*mašynu*)_φ (*maje*)_ω)_φ (*i kvartyru*)_φ
 car has and apartment
 ‘has a car and an apartment’

Additional work remains to be done to ascertain the prosodic constituency we have shown here, but the general result is not at issue: *mašynu* ‘car’ is fronted past *maje* ‘has’ in the phonology, where notions like the CSC are completely irrelevant because notions like coordination have no prosodic reflex.

The apparent freezing violation in (7) seems to require movement both of *ω* and *φ*. Recall that a syntactic analysis would require movement of one XP (*na dvadc’at’ vidsotkiv* ‘by twenty percent’) followed by movement of *part of that XP* (*vidsotkiv* ‘percent’). The prosodic story is similar, but with a twist. The output of the syntax should be as follows with everything *in situ*:

- (26) ((*riven’*)_ω)_φ ((*zris*)_ω)_φ (*na dvadc’at’*)_ω (*vidsotkiv*)_ω)_φ
 level increased by twenty percent
 ‘The level increased by twenty percent’

We assume above that the right edges of the subject *riven’* ‘level’ and of the intransitive verb *zris* ‘increased’ terminate in a *φ* as is appropriate for XPs; likewise for the PP adjunct *na dvadc’at’ vidsotkiv* ‘by twenty percent’. Recall from (7) that the subject shows up phrase-finally, which requires something like the anti-topic movement discussed by Féry et al. (2007); we’ll not look into this here except to note that it requires *rightward* movement and that we assume it is also phonological in nature:

- (27) ((*zris*)_ω)_φ (*na dvadc’at’*)_ω (*vidsotkiv*)_ω)_φ ((*riven’*)_ω)_φ
 increased by twenty percent level
 ‘The level increased by twenty percent’

To get to the attested order in (7) we need to front the *ω* ‘percent’ past the *ω* ‘by twenty’,

- (28) ((*zris*)_ω)_φ ((*vidsotkiv*)_ω (*na dvadc’at’*)_ω)_φ ((*riven’*)_ω)_φ
 increased percent by twenty level
 ‘The level increased by twenty percent’

and front the entire reordered (*vidsotkiv na dvadc’at’*) past the verb:

- (29) ((*vidsotkiv*)_ω (*na dvadc’at’*)_ω)_φ ((*zris*)_ω)_φ ((*riven’*)_ω)_φ
 percent by twenty increased level
 ‘The level increased by twenty percent’

We have no way of knowing whether the *ω* moves first (as just envisioned) or the *φ*, or whether they move at the same time (as seems OT-likely). Whatever the case, it should be clear that no Freezing Island should be expected: like all syntactic islands it should have no effect on phonological movement, as appears to be

the case.

A less involved case of fronting both a ω and a ϕ is seen below, where *vona* ‘she’ originates before *vykonaje* ‘will perform’ and *zavdannja* ‘task’ originates after it:

- (30) (vona) _{ω} (zavdannja) _{ϕ} (ja vpevnena) (ščo vykonaje) _{ω}) _{ϕ}
 she task I am.sure that will.perform
 ‘I’m sure that she will perform the task’

It is thus clear that Ukrainian can move multiple prosodic constituents of different sizes in the same utterance.

We aren’t currently sure whether the reciprocal *odyn vid odnogo* ‘one from another’ is a ω or a ϕ , but we’ll assume the latter and derive (12) above by fronting it past *vony vidriznjajut’sja* ‘they differ’. Omitting ω for clarity, the fronting looks like this:

- (31) (duže) _{ϕ} (odyn vid odnogo) _{ϕ} (vony vidriznjajut’sja) _{ϕ}
 greatly one from another they differ
 ‘They differ greatly one from another’

The partial (13) and optional (14) movement found with scrambling will be either ω - or ϕ -movement depending on the sized of the element moved. What is of interest here is the crucial role of accentuation in these cases. We follow Roksolana Mykhaylyk’s insight here ‘that what underlies scrambling is an obligatory grammatical process, but one that may be expressed in at least one of two ways: by syntactic movement or by prosodic (re)contouring. Apparent ‘optionality’ of scrambling thus results from its simply being one of the means available to speakers for achieving the same end’ (2010, iii). A similar argument is made for scrambling in Japanese: that syntactic scrambling precedes and bleeds phonological scrambling (Agbayani, Golston & Ishii 2015).

3.2 Scrambling is sensitive to syllable count Ukrainian scrambling can in principle affect any content word and most function words; that’s part of the insensitivity to morphosyntactic information that suggests the movement isn’t driven by the usual syntactic considerations. But among the function words, there is a remarkable restriction: monosyllabic prepositions cannot scramble. Despite (32), where the polysyllabic preposition is fronted:

- (32) (prot’agom) _{ω} (vony zustričalys’ja) _{ϕ} (lita) _{ϕ}
 during they met summer
 ‘They met during summer.’

we do not find the likes of (33), where a monosyllabic preposition is fronted:

- (33) *(u) _{ϕ} (vony zustrilys’ja) _{ϕ} (universyteti) _{ϕ}
 in they met summer
 ‘They met in the university.’

The same holds for Russian (Franks & Yadroff 2002).

Prepositions in Russian (Henderer 2009:9) and Latin (Fortson 2010:139) can be stranded phrase-finally by moving all of their complement—but not if the stranded preposition is a monosyllable. Ukrainian seems to have the same restriction and can strand prepositions like *zarady* ‘for’.

3.3 The OCP restricts scrambling Scrambling in Ukrainian is also blocked if it brings together homophonous function words within the same prosodic constituent. Compare (34), which begins with *tomu tij žinci* ‘that’s why that woman’,

- (34) (tomu tij žinci)_φ (vona ne mogla dovirjaty)_φ
 that’s.why that woman she not could trust
 ‘That’s why she couldn’t trust that woman.’

with the minimally different and ungrammatical (35), which begins with **tomu tomu čolovikovi* ‘that’s why that man’:

- (35) *(tomu tomu čolovikovi)_φ (vona ne mogla dovirjaty)_φ
 that’s.why that man she not could trust
 ‘That’s why she couldn’t trust that man.’

In both cases the direct object (‘that woman/man’) has been fronted to a position following *tomu* ‘that’s why’; in the former case this brings together *tomu tij* (feminine), which is fine; but in the latter case it brings together homophonous *tomu tomu* (masculine), which violates the OCP (Leben 1973). Identical restrictions on movement are found in Ancient Greek (**meé meé, *téès téès, *tóù tòù, *tòn tòòn*, Agbayani & Golston 2010:147ff), Latin (**cum cum*, Agbayani & Golston 2016), and Russian (**čto čto*, Henderer 2009:12); in each case the homophones are avoided even when they are morphosyntactically distinct, showing that the prohibition is driven by phonology *sensu stricto*.

4 Conclusion

Ukrainian scrambling ignores pretty much everything we expect of syntactic movement: part of speech, the X⁰/XP distinction, syntactic constituency, syntactic islands, binding issues at LF; it even splits syntactic atoms like proper names and compounds. Syntacticians working within restrictive models of grammar do not want this kind of data and we are happy to tell them it is not their concern. Scrambling in Ukrainian is not a syntactic process: it doesn’t violate anything syntactic because it doesn’t occur in the syntax. It is syntactically irrelevant in the same way that palatalization and devoicing are. But Ukrainian scrambling is not unrestricted and respects pretty much everything we expect of phonological movement: prosodic constituency of ω and φ, prosodic size, and the OCP.

In this, Ukrainian scrambling is pretty much identical to scrambling in Russian (Henderer 2009), Ancient Greek (Agbayani & Golston 2010), and Latin (Agbayani & Golston 2016). Scrambling in Japanese is quite different and primarily syntactic in the narrow sense; even there, though, there is a substantial element of phonological movement that cannot be overlooked (Agbayani, Golston & Ishii 2015). And phonological movement has also been reported on the corners of Irish (Bennett, Elfner & McCloskey 2016).

The word order patterns in these languages require phonological movement to a greater (Greek, Latin, Slavic) or lesser degree (Irish, Japanese), but they all require it to some degree. Somewhat surprisingly, however, none of these languages require grammars in which syntax and phonology mix or are co-present: instead, they are all compatible with traditional generative models in which syntax feeds and precedes phonology, and is itself phonology-free (Zwicky & Pullum 1986ab). The phonological movement in these languages is not phonologically conditioned movement in the syntax, nor is it syntactic movement in the phonology, i.e., ‘movement at PF’. Instead, it is movement of prosodic constituents within a prosodic tree, conditioned only by prosodic considerations: phonological movement is as syntax-free as syntactic movement is phonology-free. Both support a model of grammar that is modular, in which phonological and syntactic processes are distinct and separate, if somewhat similar and parallel.

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