Optionality of Movement

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Abstract. This article looks at constructions involving optional movement of contrastive foci and argues that this type of reordering cannot be accounted for by assuming that it is driven by a syntactic feature. I maintain that an interface-based approach that rests on the principles of economy fares better at capturing the data, as it accounts not only for optionality of contrastive-focus movement, which is found in a wide variety of languages, but also for multiple landing sites for contrastive-focus movement, which are found in scrambling languages, such as Russian.

1. Introduction

Many languages exhibit an uneven distribution of focused constituents: noncontrastive new-information foci (NIFs) consistently remain in situ (É. Kiss 1998), as in (1) and (3),[1] while contrastive foci (CFs) optionally undergo A′ scrambling to the left periphery of the sentence, as in (2) and (4).[2] (Throughout, italics indicate the main sentential stress.)[3]

(1) [Who did John meet?]$_{context}$
    a.   John met *Mary*.
    b. *#Mary* John met.

(2) [John met Sue.]$_{context}$
    a. (No,) John met *Mary* (not Sue).
    b. (No,) *Mary* John met (not Sue).

(3) [Who did Ivan meet?]$_{context}$
    a. Ivan vstretil *Marij-u*.
      Ivan met   Marija-ACC
      'Ivan met Marija.'
    b. *#Marij-u* Ivan vstretil.

  [1] All non-English examples in this article, unless otherwise noted, are from Russian.
  [2] Languages that have been noted to have optional movement of contrastive focus are Dutch, English, German, Greek, Italian, Japanese, Portuguese, Russian, Spanish, among many others (Belletti 2004, Benincà 2001, Cinque 1999, Kechagias 2011, Neeleman & Van de Koot 2008, Neeleman & Titov 2009, Neeleman et al. 2009, Poletto 2000, Rizzi 1997, Titov 2012, 2013a, Vercauteren 2015, R. Vermeulen p.c.).
  [3] The sentences in (1b) and (3b) are possible under an emphatic construal, which is a type of contrastive interpretation (Titov 2013a). Emphatic focus is discussed in section 4.

(4) [Ivan met Sveta.]$_{context}$
   a. (Net,) Ivan vstretil *Marij-u*   (a   ne   Svet-u).
      no   Ivan met   Marija-ACC and not Sveta-ACC
      '(No,) Ivan met Marija (not Sveta).'
   b. (Net,) *Marij-u* Ivan vstretil (a ne Svet-u).

The optionality of CF movement demonstrated in (2) and (4) presents a problem for any analysis that sees such displacement as driven by a syntactic feature, be it an edge feature that drives movement to the edge of a syntactic phase (Chomsky 2001); an uninterpretable (unvalued) instance of a formal feature F on a probe that under the operation Agree licenses Internal Merge of a goal carrying the feature F with the probe (Chomsky 2000, 2004);[4] a strong syntactic feature related to focus (Aboh 2004, Belletti 2004, Brody 1990, Cinque 1999, É. Kiss 1998, Rizzi 1997, 2006, 2010, Rizzi & Shlonsky 2006, Szabolcsi 1994)[5] or contrast (Molnár 2002);[6] or any other feature that is present in the syntactic derivation and is responsible for displacement.[7,8] Naturally, a syntactic feature driving CF movement must be consistently present in syntactic derivations containing a CF, such as the derivations of the sentences in (2) and (4). Moreover, it cannot be optionally strong or weak in a given language, the assumption being that feature strength regulates parametric variation related to the

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[4] Although the Agree–pied-pipe–Merge approach to movement (Chomsky 2000, 2004), which was originally motivated for the case-agreement system (i.e., the A system), has been extended to deal with such instances of A′ movement as *wh* movement, it is unclear how to apply it to CF movement, given that CFs bear no morphological marking that could suggest the presence of some formal feature (see Horvath 2007).

[5] Proponents of this view codify focus as a syntactic primitive, instantiated either as a feature (e.g., Horvath 1986) or as a functional category (e.g., Belletti 2004).

[6] The fact that noncontrastive foci do not move (see (1b) and (3b)) strongly suggests that the feature driving CF movement cannot be [focus]. However, even if we assume that it is [contrast] that triggers movement in (2b) and (4b), we will still have a problem explaining why this feature does not trigger movement in (2a) and (4a). If this feature is strong in a given language, it should consistently trigger movement, and if it is weak, it should never do so.

[7] It has been proposed that foci move either overtly or covertly (Chomsky 1976). This, however, does not obviate the problem with optionality, since the choice between the two types of movement is still reliant either on the strength of the feature triggering it or on the mere presence of the relevant feature in the syntactic derivation. Moreover, the idea of covert focus movement has been shown to be unsustainable (Williams 1997, Vercauteren 2015).

[8] Bailyn 2011 argues that A′ scrambling in Russian (dubbed *movement to the far left*) cannot be accounted for by assuming that it is feature driven, as this would fail to account, among other things, for the optionality of this operation and the multitude of possible landing sites. Bailyn maintains that movement to the far left is licensed by the need to feed the surface representation of a linguistic interface that he calls Functional Form (Bailyn 1995). In other words, movement to the far left is Functional Form driven. However, Bailyn does not consider CF movement. Instead, he claims that only discourse-given constituents can undergo A′ scrambling across NIFs in Russian and that the displacement serves to fix the theme–rheme structure, in that the dislocated constituent represents the presupposed/given information (i.e., the theme) and the remainder of the sentence the NIF (i.e., the rheme).

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presence/absence of movement.[9,10] Thus, there is no way for a syntactic feature to optionally drive movement.

A natural way out of this complication is to assume that the feature licensing CF movement is not syntactic. Such an assumption finds not only empirical support, in the optional status of the CF-movement operation, but also theoretical support. To be precise, the postulation of discourse features in syntax requires that one stipulates that they are either stored in the mental lexicon or added to constituents in the course of the derivation. Yet being a CF is not a lexical property: a syntactic constituent is categorized as a CF only when used in a specific context. Adding such features in the course of the derivation, on the other hand, demands a weakening of the Inclusiveness Condition of Chomsky 1995, according to which only those features can figure in syntactic computations that represent properties of lexical items (see Szendrői 2001, Neeleman & Szendrői 2004, Den Dikken 2006, Fanselow & Lenertová 2011).

In what follows, I adopt the idea that the relevant information-structural features operate at the postgrammatical level of discourse (Reinhart 1995, 2006) and are encoded via mapping of syntactic representations onto information-structure templates (Neeleman & Van de Koot 2008, Titov 2017).[11] The article is organized as follows. Section 2 outlines the mechanism of postgrammatical encoding of information-structural interpretations that captures the optional status of CF movement. Section 3 looks at constructions that involve CF movement to an intermediate position and applies the proposed mechanism of information-structural encoding to them. Section 4 spells out the nature of emphatic focus and outlines the differences and similarities between the syntactic behavior of emphatic and contrastive foci. Section 5 concludes the article.

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[9] An anonymous reviewer suggests that one way to think about feature strength is that there is a feature (contrast, focus, topic, etc.) and that this feature has an optional EPP property, which forces overt movement/displacement. Naturally, such an approach faces the same problem of how to regulate the optionality of movement, only this time it takes the form of how to regulate the optionality of the EPP property of the relevant feature.

[10] L. Rizzi (p.c.) suggests that the optionality of *wh* movement in French might be a counterexample to the idea that a syntactic feature cannot be optionally weak and strong in a given language. However, according to F. Hamlaoui (p.c. and 2011), the two French structures are information-structurally distinct. The in-situ structure is allowed if and only if the *wh* element represents the only discourse-new category in the sentence, with the rest of the sentence containing given material. The inability of any constituent apart from the *wh* phrase to carry the main sentential stress, which is assigned by default to the sentence-final position, forces the *wh* phrase to remain in situ. Hamlaoui 2011 accounts for the French data using an Optimality Theoretic approach. Conversely, a theory that assumes that a syntactic feature triggers *wh* movement in French faces the challenge of accounting for the interpretive difference between the two structures. In particular, it is unclear why the *wh* feature should be strong in French when there is a discourse-new constituent at the right edge of the sentence bearing the main sentential stress but weak when all the material in the sentence apart from the *wh* phrase is given. Furthermore, the rather large number of languages exhibiting optional CF movement challenges the idea that this type of movement is regulated by a parameter specified by a formal feature of a functional head (Borer 1984) that is either strong or weak in a given language. If such a parameter existed, we would expect to find languages where CFs move consistently and languages where they never move, with languages where such movement is optional being very rare (if existent at all).

[11] The analysis outlined here is compatible with the idea I developed in Titov 2012, 2013b, 2017 that mapping from syntax onto discourse is indirect, that is, that what is mapped onto discourse is a PF representation that may inherit markedness of the syntactic representation in its input.

2. An Interface-Based Approach to CF Movement

2.1. Economy and Interpretive License

Traditionally, the interface-based approach to information-structural encoding assumes that the mapping from syntax onto discourse is regulated by the principles of economy.[12] That is, given two structures with the same numeration and truth-conditional interpretation, the structure that contains movement is syntactically costly compared to the one without movement and is chosen by the interface system if and only if it achieves an interpretive effect that the simpler structure fails to express. This suggests that a structure that contains CF movement must be interpretively distinct from a structure without movement. Since the two structures are truth-conditionally identical, the interpretive difference must be related to information structure. Yet a structure involving movement of a CF appears information-structurally identical to one without movement—see, for example, the pairs of sentences in (2) and (4)—in that both are compatible with the interpretation of narrow CF on the object, whether it is moved or in situ. Nevertheless, economy demands that the coexistence of the two syntactically distinct structures with the same numeration and truth-conditional interpretation is interpretively licensed and that the structure with movement achieves an interpretive effect that is not available for its in-situ variant.

To understand what this effect is, let us look at the interpretations that are available for each of the two structures. The structure without movement, as seen in (5)–(8), is largely ambiguous as regards information structure. First of all, it is compatible not only with a context licensing a contrastive construal, as in (5) and (6), but also with the interpretation of noncontrastive NIF, as in (7) and (8). Moreover, the focused constituent can be either the object NP, the VP, or the entire IP: see the contextual

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[12] The interface-based approach adopted here is fundamentally different from approaches that assume that syntactic representations may be filtered out at the interface with the phonological component (Costa 1998, 2004, Costa & Kula 2008, Nespor & Vogel 1986, Samek-Lodovici 2005, Szendrői 2001). Here I do not assume that PF filters out syntactic representations in which focused constituents do not occur in positions of prominence, as indicated by prosodic phrasing of these structures, and I do not propose any prosodic constraints that compete with syntactic constraints. As will become apparent, the syntactic constraint employed here has to do with syntactic simplicity (economy) rather than syntactic well-formedness, which is assumed here to be inviolable. Moreover, as argued in Neeleman & Titov 2009, CF movement in Russian cannot be accounted for in terms of attraction of focused constituents to the main-stress position (Reinhart 1995, Zubizarreta 1998, Costa 1998, Büring 2001, Szendrői 2003, Samek-Lodovici 2005) because a moved CF in Russian is interpreted in the position to which no stress is assigned. That is, although the surface position of a moved CF in Russian is the main-stress position, that is not the position in which this type of focus is interpreted. To be precise, CFs consistently reconstruct to sentence-final position, that is, the position in which noncontrastive NIF surfaces. Yet in sentences hosting a moved CF, no stress is assigned to sentence-final position.

questions. In other words, the structure without movement is compatible with at least six distinct information-structural interpretations.[13,14]

(5) [(Is it the case that) Bill kissed Sue?/John kissed Sue?/John hugged Sue?]$_{context}$
(No, it's the case that) *[$_{CF}$ John [$_{CF}$ hugged [$_{CF}$ Mary]]].*

(6) [(Is it the case that) Igor kissed Sveta?/Ivan kissed Sveta?/Ivan hugged Sveta?]$_{context}$
(Net, èto) *[$_{CF}$ Ivan [$_{CF}$ obnjal [$_{CF}$ Marij-u]]].*
  no   it   Ivan   hugged   Marija-ACC
  '(No, it is the case that) Ivan hugged Marija.'

(7) [What happened?/What did John do?/Who did John hug?]$_{context}$
[$_{NIF}$ John [$_{NIF}$ hugged [$_{NIF}$ Mary]]].

(8) [What happened?/What did Ivan do?/Who did Ivan hug?]$_{context}$
[$_{NIF}$ Ivan [$_{NIF}$ obnjal [$_{NIF}$ Marij-u]]].
      Ivan   hugged   Marija-ACC
  'Ivan hugged Marija.'

The structure involving movement to the left periphery, conversely, is compatible only with one such construal, namely narrow CF on the moved object, as in (9) and (10). All other interpretations that are available for the in-situ structure are unavailable for the structure involving movement to the left periphery, as shown by (11)–(14).

(9) [John kissed Sue.]$_{context}$
(No,) *Mary* John kissed (not Sue).

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[13] The six interpretations of (5)–(8) result from so-called focus projection (Reinhart 1995, 2006) regulated by the following rule.

  (i) The focus rule
    The focus of IP is a(ny) constituent containing the main stress of IP, as determined by the stress rule (Cinque 1993).   (Reinhart 1995:30)

The basic idea behind Reinhart's focus rule is that the main stress assigned by PF enables a sentence to be used in a variety of contexts, since it permits a large set of possible foci, from which the context can select the appropriate one. Sticking to the SVO structure in English and Russian, the focus set defined by (i) is as follows.

  (ii) a. [$_{IP}$ S [$_{VP}$ V *O*]]
      b. Focus set: {IP, VP, O}   (Reinhart 1995:31)

Hence, the six interpretations of (5)–(8) follow from (i) on the assumption that focus is a basic notion in information structure that can be enriched to yield contrastive interpretation (Neeleman & Vermeulen 2012).

[14] In English, the structure without movement is compatible with even more interpretations. Thus, the interpretation of narrow focus on the subject or the verb is also available for this structure due to stress shift. In Russian, conversely, these interpretations are typically encoded via a scrambled structure (see Titov 2012, 2013b).

(10) [Ivan kissed Sveta.]_{context}
      (Net,) *Marij-u*   Ivan poceloval (a   ne Svet-u).
       no   Marija-ACC Ivan kissed   and not Sveta-ACC
      '(No,) Marija John kissed, not Sveta.'

(11) [What happened?/What did John do?/Who did John hug?]_{context}
      #*Mary* John hugged.

(12) [What happened?/What did Ivan do?/Who did Ivan hug?]_{context}
      #*Marij-u*   Ivan obnjal.
       Marija-ACC Ivan hugged

(13) [(Is it the case that) Bill kissed Sue?/John kissed Sue?]_{context}
      #(No, it is the case that) *Mary* John hugged.

(14) [(Is it the case that) Igor kissed Sveta?/Ivan kissed Sveta?]_{context}
      #(Net, èto) *Marij-u*   Ivan obnjal.
        no   it   Marija-ACC Ivan hugged

The above data demonstrate that the two structures are indeed interpretively distinct. That is, out of all of the interpretations that are available for the in-situ structure, only one can be captured by the structure involving movement to the left periphery. If so, the structure that contains CF movement does achieve an interpretive effect that the structure without movement fails to express. The relevant effect has to do with interpretive disambiguation via the ruling out of at least one of the interpretations that are available for the in-situ structure (compare (5)–(8) and (9)–(10)). The interpretive license for CF movement must therefore capture this interpretive disambiguation. In the next subsection, I spell out the nature of the interpretive license for CF movement and outline the mechanism of mapping from syntax onto discourse that results in optionality of CF movement.

2.2. The Optionality of CF Movement

In my analysis of the syntax–discourse interface, I will adopt Jackendoff 1997's general correspondence rule that mediates the interface between syntactic structure and conceptual structure; it is given in (15). I will treat the interpretive license for A′ scrambling that is given in (16) as a subcase of (15), since it applies exclusively at the syntax–discourse interface.[15]

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[15] Note that the license in (16) says nothing about the interpretation of an in-situ focus because a structure without movement does not require an interpretive license, that is, it is already the simplest possible syntactic structure. Hence, an in-situ focus is interpretively ambiguous in that it admits both readings, contrastive and noncontrastive.

(15) General form of syntactic structure–conceptual
    structure correspondence rules
    Syntactic structure X {must/may/preferably does} correspond to conceptual
    structure Y.   (Jackendoff 1997:17)

(16) Interpretive license for A′ scrambling
    Interpret an XP in an A′-scrambled position as contrastive.

   Assuming that the constraint operating at the information-structural level is as in
(17), our theory must explain why it is possible to disobey (15) when the focus is
in situ, as in (2a) and (4a), where mapping of the corresponding syntactic
representation onto the information-structural template in (17) fails, but not when
the focus moves, as in (1b) and (3b), where the mapping again fails.[16]

(17) Information-structural well-formedness constraint
    a. $[_{CP} XP_{[+contrast]1} \ldots t_1]$
    b. $[_{CP} (\ldots) XP_{[-contrast]}]$

   To account for this asymmetry, I will adopt Bobaljik & Wurmbrand 2008's idea of
violable constraints (economy conditions) that value a particular type of correspon-
dence between LF and PF representations, and I will maintain that very similar
constraints operate at the interface between syntax and discourse. The interaction of
these constraints yields a "signature effect," namely, the *¾ signature*.[17] That is, taking
one syntactic property and one information-structural property, three of the four
logical combinations are grammatical, resulting in the appearance of optionality.
   Assuming that (16) is correct, A′ scrambling provides a better reflection of the
information structure of the sentence, distinguishing CF from noncontrastive NIF by
placing the focus in a position where a noncontrastive reading is impossible, but the
trade-off is a costly structure. Under Bobaljik & Wurmbrand's approach, such a trade-
off generally results in the appearance of optionality, as in (2) and (4). Conversely, in
sentences that contain a noncontrastive focus, such as those in (1) and (3), there is no
trade, so movement is unmotivated and hence disallowed. Table 1 illustrates the

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[16] For convenience, the information-structural constraints in this article are presented as the output of
mapping the corresponding syntactic structures onto discourse templates. The discourse templates
themselves, however, are assumed to merely correspond to either the presence or absence of a particular
information-structural reading. In (17), this reading has to do with contrast.
   [17] Bobaljik & Wurmbrand argue that a general pattern exists according to which, for a given combination
of LF and PF properties, the acceptable correlations are neither fully rigid nor fully free. For example, given
a binary choice at LF (*a* takes scope over *b* or *b* takes scope over *a*) and a corresponding binary choice at PF
(*a* precedes *b* or *b* precedes *a*), rigidity would predict that only two of the four combinations are acceptable;
but often, instead, three of the four logical pairings are acceptable and only one is unacceptable. Bobaljik &
Wurmbrand call this the ¾ effect and maintain that it arises as the characteristic signature of the interaction
of soft constraints.

observed focus paradigm.[18] The information-structural constraint in (17) demands that a syntactic structure with a displaced focus be mapped onto a contrastive template while a structure with an in-situ focus must be mapped onto a noncontrastive template. Grammar produces syntactic representations with or without movement that either satisfy the mapping rule in (15) or not. On the other hand, *MOVE requires syntax to produce simple structures, that is, structures without movement.[19]

Table 1. The ¾ signature of CF with A′ scrambling. The information-structure column shows the relevant part of the constraint in (17). The configuration that results in unacceptability is shaded.

	A′ scrambling	Information structure	Syntax	(15)	*MOVE
(1a)		$[_{CP} \ldots \mathrm{XP}_{[-contrast]}]$	$[_{CP} \ldots \mathrm{XP}_{[-contrast]}]$		
(1b)	✔	$[_{CP} \ldots \mathrm{XP}_{[-contrast]}]$	$[_{CP} \mathrm{XP}_{[-contrast]1} \ldots t_1]$	*	*
(2a)		$[_{CP} \mathrm{XP}_{[+contrast]1} \ldots t_1]$	$[_{CP} \ldots \mathrm{XP}_{[+contrast]}]$	*	
(2b)	✔	$[_{CP} \mathrm{XP}_{[+contrast]1} \ldots t_1]$	$[_{CP} \mathrm{XP}_{[+contrast]1} \ldots t_1]$		*

Table 1 illustrates the interpretive effect of A′ scrambling that serves to rule out the noncontrastive reading. The rule in (15) favors a correspondence between the syntactic representations in (1) and (2) and the information-structural template in (17) and thereby serves to distinguish CF from noncontrastive focus under A′ movement. Syntax produces representations with or without A′ scrambling, but representations with movement are costly. The ¾ paradigm demonstrated in table 1 results from three out of four combinations satisfying at least one of the two constraints. The structure with no A′ scrambling in (1a) satisfies both constraints in that it contains no movement and the focus is noncontrastive. The structure in (1b), conversely, violates both constraints, as it not only contains movement but movement of a noncontrastive focus. As a result, the structure in (1b) fails to be licensed by (16). The structure in (2a) satisfies *MOVE, as it does not involve movement, but violates (15) because it does not syntactically represent the information structure of the sentence. That is, there is no correspondence between the syntactic representation in (2a) and the information-structural template in (17). Finally, the structure in (2b) violates *MOVE but satisfies the information-structural condition in (15) as it corresponds to (17a).

The interaction of the syntactic and information-structural constraints results in optionality of CF movement. That is, both structures, the one where the CF moves and the one where it stays in situ, are accepted by the interface system because each of these structures obeys one well-formedness constraint at the cost of violating the other. Thus,

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[18] Although the constraint interactions in the tables used in this article may appear to have an Optimality Theoretic flavor, they merely follow the notation in Bobaljik & Wurmbrand 2008, which is not intended to imply a commitment to OT. Along with Bobaljik & Wurmbrand, I remain agnostic with regard to the many frameworks that have in common the use of soft constraints, including OT and the Economy framework as well as hybrid models such as those of Pesetsky 1998 and Broekhuis 2008. Bobaljik & Wurmbrand make no crucial use of the mechanisms that differentiate OT from the Economy framework, such as constraint (re)ranking as a theory of variation and the absence of universally inviolable constraints.

[19] Like Bobaljik & Wurmbrand, I assume that A′ scrambling is "free" (not feature driven or required for convergence) but costly (*MOVE).

the structure with CF movement violates *Move but satisfies (15), whereas the structure without CF movement satisfies *Move but violates (15). To put it differently, the syntactically costly structure with movement is chosen by the interface system only when it achieves the effect of interpretive disambiguation by placing the focus in a position where it cannot be construed as noncontrastive; the syntactically simple structure is chosen merely for its syntactic simplicity and does not require any interpretive license.

For languages such as English, the above analysis is sufficient to account for CF movement and its optional status. Other languages, however, allow CF movement to target more than one position. Thus, in Russian, it is possible to move a CF to an intermediate position, immediately before the verb (Dyakonova 2009, Bailyn 2011). In fact, this is the most natural position for a contrastively focused object in Russian (Krylova & Khavronina 1988). Assuming that movement takes place in steps, our theory should be able to provide an interpretive license for each step of CF movement. That is, if CF movement to an intermediate position is available, moving it further to the left is uneconomical unless this movement step achieves an interpretive effect that is unavailable for a structure where CF does not move any further than the intermediate position. Our theory predicts that each step of CF movement disambiguates the information-structural interpretation of a sentence further by ruling out at least one interpretation that is available prior to this movement step. The next section investigates the interpretive properties of Russian constructions with CF movement to an intermediate position and demonstrates that the predictions made by the theory are indeed borne out.

3. Movement to an Intermediate Position

In this section, I extend the analysis to cases where movement targets an intermediate position, providing an interpretive explanation for the coexistence of the two movement structures. After the interpretive license is established for each step of CF movement, I apply the ¾-signature analysis to both movement structures—the one that involves movement to an intermediate position and the one containing movement to the left periphery.

A Russian object with a narrow-CF interpretation has the option of staying in situ, as in (18a), moving to the left periphery, as in (18b), or moving to the position immediately before the verb, as in (18c) (Krylova & Khavronina 1988, Dyakonova 2009, Bailyn 2011).[20]

(18) [Is Ivan washing the floor?]_context
    a. (Net,) Ivan moet *posud-u* (a ne pol).
        no Ivan washes dishes-ACC and not floor
       '(No,) Ivan is washing the dishes (not the floor).'

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[20] The structure in (18c) cannot be accounted for by assuming topicalization of the subject across the focused object in the left periphery: (moved) topics in Russian obligatorily carry the rising intonational contour IK3 (Bryzgunova 1971, 1981, Titov 2013a), but the subject in (18c) is by default deaccented and destressed. Adding IK3 to this subject results in its construal as a contrastive topic, in which case the sentence obtains a distinct information-structural interpretation that requires a distinct context.

    b. (Net,) *posud-u*$_1$ Ivan moet t_1 (a ne pol).
    c. (Net,) Ivan *posud-u*$_1$ moet t_1 (a ne pol).

   The option of moving to an intermediate position, as in (18c), presents a challenge for an analysis that assumes that (contrastive-) focus movement consistently targets a position within the left periphery of the sentence, such as spec,FocP (Rizzi 1997).[21] Conversely, in our theory, CF movement can target a variety of syntactic positions as long as each step of movement is interpretively licensed.[22] The analysis outlined in section 2 entails that a representation involving CF movement to an intermediate position is interpretively more restricted than one without movement *and* that a representation involving CF movement to the left periphery is interpretively more restricted than one with movement to an intermediate position. That is, each step of movement further disambiguates the information-structural interpretation of a sentence.

   We have seen that the structure without movement is largely ambiguous (see (5)–(8)), with at least six interpretations compatible with it, some of which do not involve contrast. The structure involving movement to the left periphery, conversely, allows only one such interpretation, namely narrow CF on the moved object (see (9) and (10)). What we expect, then, is that the structure involving movement to an intermediate position is compatible with more interpretations than the structure involving movement to the left periphery but compatible with fewer interpretations than the structure without movement. This prediction is borne out:

(19) [What is happening?/What is Ivan doing?/What is Ivan washing?]$_{context}$
     #[$_{NIF}$ Ivan [$_{NIF}$ [$_{NIF}$ *posud-u*$_1$] moet t_1]].
     Ivan   dishes-ACC washes

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   [21] Russian data involving CF movement to an intermediate position cannot be captured by postulating a template within the so-called clause-internal VP periphery (Belletti 2001, 2004, 2005, Jayaseelan 2001, Szabolcsi 1994) because CF movement in Russian can target positions that follow the verb, as in (i), for example. Since the verb in Russian does not move outside the VP (Slioussar 2007, Titov 2012, 2013b, 2017), which is confirmed by the placement of low manner adverbs, like *slučajno* 'accidentally' in (i), the position of the A′-moved CF direct object in (i) cannot be within the VP periphery.

  (i) [Did Ivan accidentally give Marija a violin?]$_{context}$
    (Net,) Ivan slučajno   podaril *gitar-u*$_1$ Marij-i t_1 (a   ne skripk-u).
    no   Ivan accidentally gave guitar-ACC Marija-DAT and not violin-ACC
    '(No,) Ivan accidentally gave Marija a guitar (not a violin).'

   [22] The present analysis adopts the idea that an A′-moved CF adjoins to maximal projections, such as IP, vP, and VP. That contrastive XPs undergo A′ movement in Russian follows from the observation that such XPs obligatorily reconstruct for binding and scope (Neeleman & Titov 2009, Neeleman et al. 2009, Titov 2013a). Moreover, CFs can, as in (i), undergo long-distance movement, which can only target an A′ position.

  (i) *Posud-u*$_1$ ja xoču, čtoby ty pomyl t_1 (a ne mašin-u).
    dishes-ACC I want that you washed and not car-ACC
    'I would like you to wash the dishes (not the car).'

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(20) [(Is it the case that) Peter is doing homework?/Ivan is doing homework?/Ivan
     is washing the floor?]$_{context}$
     (Net, èto) *[$_{CF}$ Ivan [$_{CF}$ [$_{CF}$ posud-u$_1$] moet t$_1$]].*
      no   it   Ivan   dishes-ACC washes
     'Ivan is washing the dishes.'

As can be seen from (19), a structure involving movement to an intermediate position
is incompatible with a noncontrastive-NIF interpretation, regardless of the size of the
focused constituent. This implies that A′ scrambling rules out the noncontrastive
reading regardless of the targeted syntactic position and that the interpretive license in
(16) applies to any representation involving CF movement. If so, the analysis illustrated
in table 1 is readily applicable to (18c) as compared to (18a), as long as the well-
formedness constraint in (17) is adapted to account for an intermediate landing site:

(21) Information-structural well-formedness constraint
     a. [$_{CP}$ ... XP$_{[+contrast]1}$ ... t$_1$]
     b. [$_{CP}$ (...) XP$_{[−contrast]}$]

Unlike the structure involving movement to the left periphery, the structure
involving only movement to the intermediate position is still interpretively
ambiguous. It is compatible not only with a narrow-CF interpretation of the moved
object but also with VP- or IP-wide contrast (see (20) and, in the appendix, Q1 and
Q2). It follows, then, that while movement to the intermediate position rules out the
noncontrastive reading, the subsequent movement step, to the left periphery, rules out
the wide-contrast construal. If so, we can hypothesize that the information-structural
constraint that is relevant for this last movement step is as follows.

(22) Information-structural well-formedness constraint
     a. [$_{CP}$ [$_{CF}$ XP$_1$]/[$_{IP}$ ... t$_1$ [$_{VP}$ ... t$_1$]]]
     b. [$_{CP}$ [$_{CF}$ [$_{IP}$ ... XP$_1$ [$_{CF}$ [$_{VP}$ ... t$_1$]/]/]/]

Unlike the constraint in (21), which states that a moved focus must be contrastive and
an in-situ focus noncontrastive, the constraint in (22) states that an object that moves
to the left periphery must be construed as the narrow CF of the sentence but that a
structure where the object moves to the intermediate position must correspond to
either VP- or IP-wide contrast (i.e., wide contrast).

Let us now apply the ¾-signature analysis to each step of CF movement in Russian.
We have seen that it is the first movement step that serves to rule out the noncontrastive
reading. Assuming that (15) holds, the structure without movement is required to map
onto (21b), as in (23a), whereas structures with movement to the intermediate position
must map onto (21a), as in (24b). Yet the structure without movement is allowed to
violate (15), as in (24a), given that the requirement for information-structural well-
formedness competes with the requirement for syntactic simplicity. The structure where
a noncontrastive focus A′ scrambles, conversely, violates both requirements and is
therefore ruled out, as shown by (23b). Table 2 summarizes these findings.

Table 2. The ¾ signature of CF with A′ scrambling to the intermediate position. The information-structure column shows the relevant part of the constraint in (21). The configuration that results in unacceptability is shaded.

	A′ scrambling	Information structure	Syntax	(15)	*MOVE
(23a)		$[_{CP} (\ldots) XP_{[-contrast]}]$	$[_{CP} \ldots XP_{[-contrast]}]$		
(23b)	✔	$[_{CP} (\ldots) XP_{[-contrast]}]$	$[_{CP} \ldots XP_{[-contrast]1} \ldots t_1]$	*	*
(24a)		$[_{CP} \ldots XP_{[+contrast]1} \ldots t_1]$	$[_{CP} \ldots XP_{[+contrast]}]$	*	
(24b)	✔	$[_{CP} \ldots XP_{[+contrast]1} \ldots t_1]$	$[_{CP} \ldots XP_{[+contrast]1} \ldots t_1]$		*

(23) [What is Ivan washing?]$_{context}$
    a. Ivan   moet   *posud-u.*
       Ivan   washes   dishes-ACC
       'Ivan is washing the dishes.'
    b. #Ivan *posud-u*$_1$ moet t_1.

(24) [Is Ivan washing the floor?]$_{context}$
    a. (Net,) Ivan moet   *posud-u*   (a   ne pol).
       no   Ivan washes dishes-ACC   and   not floor
       'Ivan is washing the dishes.'
    b. (Net,) Ivan *posud-u*$_1$ moet t_1 (a ne pol).

   We have seen that the movement step that targets the left periphery serves to rule out the wide-contrast construal. A structure containing this movement step must map transparently onto the information-structural template in (22a), as in (26b), whereas a structure that does not contain this movement step can violate the correspondence rule in (15) in mapping onto (22a), as in (26a). This is because the structure that does not contain this extra movement step is syntactically less costly than the structure that does. It is therefore chosen by the interface system for its relative simplicity. Consequently, it does not require an interpretive license beyond the ruling out of the noncontrastive reading, and it can map onto a template representing either wide contrast, as in (25a), or narrow CF on the object NP, as in (26a). Conversely, the syntactically costlier structure cannot violate (15) and map onto wide contrast, as in (25b) (see Q3 and Q4 in the appendix), because that results in a violation of both constraints, the one that demands information-structural well-formedness and the one that requires syntactic simplicity. Table 3 summarizes these findings.

(25) [(Is it the case that) Boris is doing homework?/Ivan is doing homework?]$_{context}$
    a. (Net, éto) Ivan *posud-u*$_1$ moet t_1 (a   ne (Boris) urok-i
       no   it   Ivan dishes-ACC washes   and   not Boris homework-ACC.PL
       delaet).
       does
       '(No, it is the case that) Ivan is washing the dishes (not that Boris/Ivan is doing homework).'
    b. #(Net, éto) *posud-u*$_1$ Ivan moet t_1 (a ne (Boris) urok-i delaet).

Table 3. The ¾ signature of CF with A′ scrambling to the left periphery. The information-structure column shows the relevant part of the constraint in (22). The configuration that results in unacceptability is shaded.

	A′ scrambling to left periphery	Information structure	Syntax	(15)	*Move
(25a)		$[_{CP} [_{CF} [_{IP} \ldots XP_1$ $[_{CF} [_{VP} \ldots t_1]]]]]$	$[_{CP} [_{CF} [_{IP} \ldots XP_1$ $[_{CF} [_{VP} \ldots t_1]]]]]$		
(25b)	✔	$[_{CP} [_{CF} [_{IP} \ldots XP_1$ $[_{CF} [_{VP} \ldots t_1]]]]]$	$[_{CP} [_{CF} XP_1 [_{IP} \ldots t_1$ $[_{CF} [_{VP} \ldots t_1]]]]]$	*	*
(26a)		$[_{CP} [_{CF} XP_1 [_{IP} \ldots$ $t_1 [_{VP} \ldots t_1]]]]$	$[_{CP} [_{IP} \ldots [_{CF} XP_1]$ $[_{VP} \ldots t_1]]]$	*	
(26b)	✔	$[_{CP} [_{CF} XP_1 [_{IP} \ldots$ $t_1 [_{VP} \ldots t_1]]]]$	$[_{CP} [_{CF} XP_1 [_{IP} \ldots$ $t_1 [_{VP} \ldots t_1]]]]$		*

(26) [Is Ivan washing the floor?]$_{context}$

    a. (Net,) Ivan *posud-u*$_1$ moet t_1 (a   ne pol).
       no   Ivan dishes-ACC washes   and not floor
       '(No,) Ivan is washing the dishes (not the floor).'

    b. (Net,) *posud-u*$_1$ Ivan moet t_1 (a ne pol).

Assuming that a structure with A′ scrambling to the left periphery contains two movement steps, one to the intermediate position and one to the left periphery, each of these steps must be interpretively licensed by the ruling out of at least one interpretation that is available prior to it, as shown in (27). The result is that the surface structure is compatible with only one information-structural interpretation, namely narrow CF on the moved object.

(27)
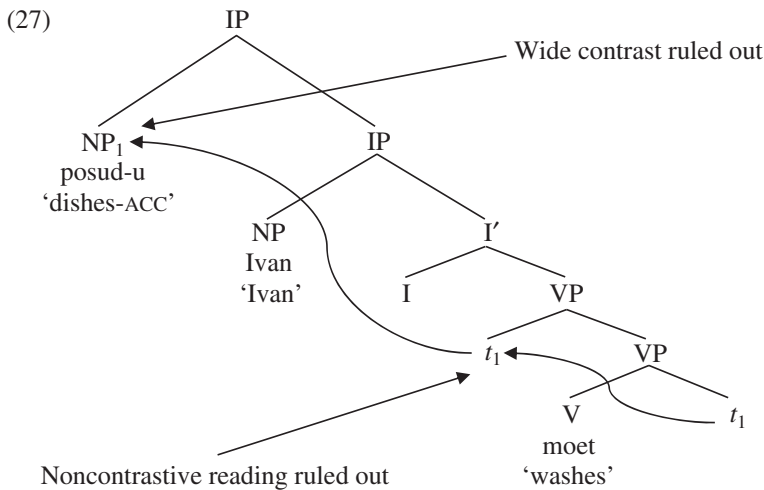
4. Emphatic Focus

In the previous sections, we have looked at structures involving noncontrastive NIF and CF. We have argued that while CFs optionally undergo A′ scrambling, noncontrastive NIFs must remain in situ. However, some of the illicit examples showing A′ scrambling of a focus that lacks a contextual licensing of contrast, such as (1b), repeated in (28), are felicitous under an emphatic construal. That is, the sentence in (28) is possible within the given context as long as the fact that it is *Mary* that provides a value for *x* in 'John met *x*' is conceived as either very surprising or, conversely, highly predictable.

(28) [Who did John meet?]$_{context}$
     #*Mary* John met.

In other words, focus movement becomes less restricted if the emphatic reading is added to the construal of the focused constituent. In this section, we will look more closely at emphatic interpretation and its effects on Russian A′ scrambling.

In what follows, I adopt the definition of emphatic focus (EF) that I proposed in Titov 2013a. Just as in the case with CF, sentences containing an EF activate the interpretation that the focus belongs to a discourse-salient set of alternatives. This time, though, the relevant set is activated not by the presence of a member of it in the context but by shared knowledge that the referent of the focused constituent occupies an extreme scalar position with respect to all alternatives in its set. When the focused constituent occupies the lowest scalar position, it is interpreted as the weakest member of its set; (29a) is an example. Conversely, when it occupies the highest scalar position, the focused constituent is construed as the strongest member of its set; (29b) is an example.

(29) a. [Who did you just see?]$_{context}$
        (Predstavljaeš',)
         imagine
        ja tol'ko čto [čelovek-a s   ruž'ëm]$_1$ videl t_1!
        I just   man-ACC with gun-INS saw
        '(Can you imagine!) I just saw a man with a gun!'
    b. [What are you fishing for?]$_{context}$
        Ja *ryb-u*$_1$ lovlju t_1 (čto   že   ešče)!
        I   fish-ACC catch   what (PARTICLE) else
        'I'm fishing for fish! (What else could I be fishing for!)'

The assignment of the focused constituent in (29a) to the lowest scalar position in a set of alternatives conveys surprise at the fact that out of a set of individuals the speaker could have seen, it was the least expected one, a man with a gun, that was seen (see also *mirative* focus). The interpretation of the focused constituent in (29b) is the direct opposite. This time, the focus is perceived as the strongest member of the set of alternatives compared to all other potential members. That is, out of the set of things one might be fishing for, fish are the most obvious choice. It can therefore be

said that in (29b) what is conveyed is not surprise at the answer to the question but rather annoyance at the fact that one is asked a question that has an obvious answer.

Since EF often occurs out of the blue or in a context that does not license a contrastive interpretation (as in (29), for example), it can easily be mistaken for noncontrastive NIF. However, unlike an NIF, an EF is interpreted as belonging to a pragmatic set of alternatives, which is constituted through interlocutors' shared knowledge about the scalar position of the focused constituent with respect to potential alternatives.[23] Plausibly, no item can be perceived as occupying either the highest position or the lowest position in a set lacking alternative members. Since alternative members must be salient for the interpretation of EF to be achievable, in Titov 2013a I group EF together with CF and analyze both as contrastive in the sense that both involve quantification over a discourse-salient set of alternatives.

Let us now see how emphatic interpretation affects the distribution of focused constituents in Russian. We have seen in (19), repeated as (30), that movement of an object in a context that only licenses NIF is impossible, regardless of the size of the focused constituent.

(30) [What is happening?/What is Ivan doing?/What is Ivan washing?]$_{context}$
      #Ivan *posud-u*$_1$ moet t_1.
       Ivan dishes-ACC washes

However, if the relevant focus is interpreted as emphatic—that is, if it is part of the shared knowledge of interlocutors either that the event of Ivan washing the dishes is unlikely in comparison to other events that could have taken place instead, that it is unlikely for Ivan to undertake the action of washing the dishes in comparison to other actions he could potentially undertake, or that it is unlikely for Ivan to wash the dishes in comparison to other objects he could potentially wash—then movement of the object becomes possible:[24]

(31) [What is happening?]$_{context}$
      (Predstavljaeš',)
       imagine
      Ivan *posud-u*$_1$ moet t_1!
      Ivan dishes-ACC washes
      (Takogo eščë ne   byvalo!)
       that   yet not happened
      '(Can you imagine!) Ivan is washing the dishes! (That has never happened before!)'

---

[23] The fact that knowledge about the scalar position of EF must be shared by the interlocutors is confirmed by the observation that whenever the hearer lacks this knowledge, a sentence with a moved focus in a context that does not license contrast is perceived as odd and requires clarification; that is, the speaker is perceived as being either surprised or annoyed for no apparent reason.

[24] Similarly, when all of the described events and actions are very obvious as opposed to surprising, movement is again allowed.

(32) [What is Ivan doing?]_context
 (Predstavljaeš',)
  imagine
 Ivan *posud-u*$_1$ moet t_1!
 Ivan dishes-ACC washes
 (On ètogo nikogda ne delaet!)
  he this   never   not do
 '(Can you imagine!) Ivan is washing the dishes! (He never does that!)'

(33) [What is Ivan washing?]_context
 (Predstavljaeš',)
  imagine
 Ivan *posud-u*$_1$ moet t_1!
 Ivan dishes-ACC washes
 (On eë nikogda ne moet!)
  he it never   not washes
 '(Can you imagine!) Ivan is washing the dishes! (He never washes them!)'

On the assumption that EF is a type of CF, it is unsurprising that an emphatically focused object can move, as in (33). Similarly, it is unsurprising that a sentence containing an emphatically focused VP or IP can have an object moved to the intermediate position, as in (32) and (31), respectively. We have seen that the same is possible in a sentence containing a contrastive VP or IP (see (20), (25a), and in the appendix, Q1 and Q2). At the same time, we have seen that movement to the left periphery is disallowed in sentences with a VP- or IP-wide contrast (see (25b) and in the appendix, Q3 and Q4). The question, then, is whether emphasis licenses a longer movement chain than contrast and allows movement to target the left periphery in sentences with a VP- or IP-wide focus. As can be seen from (34) and from Q5 in the appendix, movement to the left periphery becomes felicitous in sentences with a VP-wide focus for most speakers of Russian, as long as emphatic construal is assumed.

(34) [Is Ivan doing homework?]_context
 Posud-u$_1$ Ivan moet, t_1 (a   ne urok-i   delaet)!
 dishes-ACC Ivan washes   and not homework-ACC.PL does
 (Sam čto li   ne vidiš'?)
  self that (PARTICLE) not see
 '(No,) Ivan is washing the dishes (not doing homework)! (Can't you see that yourself?)'

However, movement to the left periphery is disallowed in sentences with an IP-wide focus even when emphasis is assumed, as shown by (35) and by Q6 in the

appendix. This suggests that the influence of emphasis on focus movement is not unrestricted.[25]

(35) [Did you say that Boris was doing homework?]$_{context}$
    (Net,) ja skazal, čto nado že . . .
     no I said   that wow
    #*posud-u*$_1$ Ivan moet t_1!
     dishes-ACC Ivan washes
    (Takogo ešče ne byvalo!)
     that   yet not happened
    '(No,) I said that, surprisingly, Ivan is washing the dishes! (That has never happened before!)'

The above observations are in line with the theory that states that each movement step restricts the information-structural interpretation of a sentence by ruling out at least one interpretation that is available without this movement step. We have observed that contrast licenses movement to the intermediate position for IP-, VP-, and NP-wide focus (see (25a) and (26a)) and to the left periphery for NP-wide focus (see (26b)). Emphasis extends the movement chain licensed by contrast one step further and licenses movement to the left periphery for VP-wide focus, as in (34). But movement licensed by emphasis is not completely unrestricted, in that it cannot target a position within the left periphery in sentences with an IP-wide focus, as (35) shows.

We can now extend our analysis to include emphasis and state that the first movement step, to the intermediate position, rules out noncontrastive and nonemphatic construal, while the second movement step, to the left periphery, rules out VP- and IP-wide contrast and IP-wide emphasis. This is shown in (36). In other words, a structure with movement to the left periphery cannot map onto a template that corresponds to either wide contrast or sentence-wide emphasis.

[25] In German, object movement to the left periphery is allowed within an emphatically focused IP, as in (ia). This might be because, due to the head finality in the verbal domain, movement and adjunction to the VP cannot derive a surface word order that is distinct from the surface order of the structure with no movement, as in (ib). If so, movement to the left periphery is the only way to disambiguate the sentence as emphatic in German.

(i) a. [Eine *Lawine*]$_1$ haben wir t_1 gesehen!   German
         an avalanche have we   seen
         'We saw an avalanche!'
    b. Wir haben eine *Lawine* gesehen!   (Fanselow & Lenertová 2011:172, (6c, d))

Fanselow & Lenertová 2011 analyzes optional A′ scrambling of EFs, as in (i), as triggered by an unspecific edge feature of C, with its restrictions attributed to requirements of cyclic linearization. The authors argue that this type of reordering cannot be successfully captured in terms of information-structure-driven movement. However, as argued here, EF movement can be captured by assuming an interface-based, economy-driven approach to information structure.

(36)
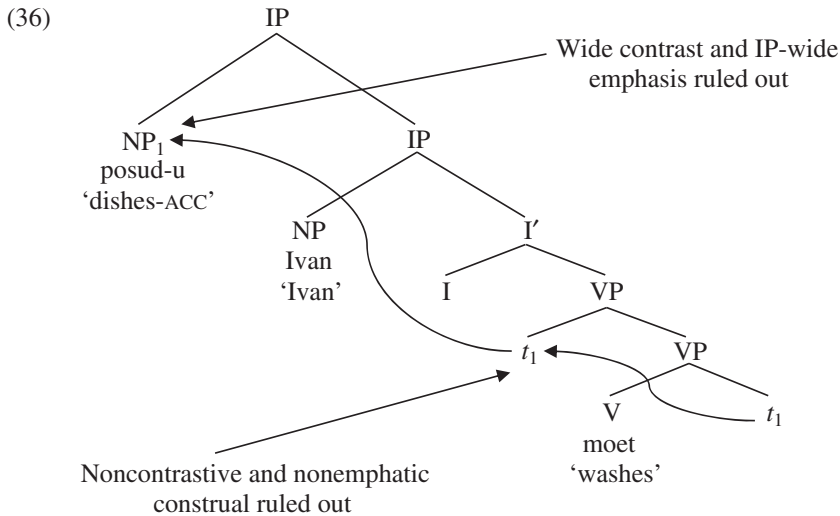
Since we have adopted the idea that EF is a type of CF (Titov 2013a), we can use the license in (16) for the first EF movement step as well. Table 2 captures the ruling out of the noncontrastive reading and hence of the nonemphatic construal as well; it can be used for a structure that involves movement to the intermediate position licensed by emphasis. Conversely, for EF movement to the left periphery we need to assume that the information-structure level contains an additional constraint that refers to emphasis:

(37) Information-structural well-formedness constraint
  a. $[_{CP} [_{EF} XP_1 / [_{IP} \ldots [_{EF} t_1 [_{VP} t_1]/]]$
  b. $[_{CP} [_{EF} [_{IP} \ldots XP_1 [_{VP} t_1]]/]$

The constraint in (37) states that whenever emphatic construal is added, a structure showing movement to the left periphery must map onto a narrower focus than IP-wide focus, such as VP- or NP-wide focus, whereas a structure where movement targets the intermediate position must map onto IP-wide focus. A structure with the movement step that targets the left periphery cannot violate the correspondence rule in (15) by having an IP-wide-focus construal, as (35) shows, whereas a structure without this movement step can violate (15) by corresponding to VP- or NP-wide emphasis, as in (32) and (33), respectively, rather than IP-wide emphasis, as in (31).

Table 4 captures these findings. In (31), the structure where the object does not move above the intermediate position maps transparently onto (37), specifically (37b), as it has an IP-wide-focus construal. This structure therefore satisfies both of the constraints at play, the correspondence constraint (15) and the constraint penalizing movement (*MOVE). The structure in (35), conversely, violates both constraints as it involves movement to the left periphery that is not interpretively licensed. The structure in (32) violates (15) (as does the one in (33)) in that it does not correspond to

Table 4. The ¾ signature of EF with A′ scrambling to the left periphery. The information-structure column shows the relevant part of the constraint in (37). The configuration that results in unacceptability is shaded.

A′ scrambling to left periphery	Information structure	Syntax	(15)	*MOVE
(31)	$[_{CP} [_{EF} [_{IP} \dots XP_1 [_{VP} \dots t_1]]]]$	$[_{CP} [_{EF} [_{IP} \dots XP_1 [_{VP} \dots t_1]]]]$		
(35) ✔	$[_{CP} [_{EF} [_{IP} \dots XP_1 [_{VP} \dots t_1]]]]$	$[_{CP} [_{EF} XP_1 [_{IP} \dots t_1 [_{VP} \dots t_1]]]]$	*	*
(32)	$[_{CP} [_{EF} XP_1] [_{IP} \dots [_{EF} t_1 [_{VP} \dots t_1]/]]]$	$[_{CP} [_{IP} \dots [_{EF} XP_1 [_{VP} \dots t_1]/]]]$	*	
(34) ✔	$[_{CP} [_{EF} XP_1] [_{IP} \dots [_{EF} t_1 [_{VP} \dots t_1]/]]]$	$[_{CP} XP_1 [_{IP} \dots [_{EF} t_1 [_{VP} \dots t_1]/]]]$		*

(37), but it satisfies *MOVE. Finally, the structure in (34) satisfies (15) but violates *MOVE.

Since the constraints in (22) and (37) both refer to the movement step that takes the object from the intermediate position to the left periphery, they can be collapsed into one:

(38) Information-structural well-formedness constraint
    a. $[_{CP} [_{CF} [_{EF} XP_1]][_{IP} \dots [_{EF} t_1 [_{VP} t_1]/]]]$
    b. $[_{CP} [_{EF} [_{CF} [_{IP} \dots XP_1 [_{CF} [_{VP} t_1]/]/]/]]$

When the interface system detects that the syntactic structure in its input contains an additional movement step targeting the left periphery, it attempts to map this structure onto (38a). If mapping fails for both types of focus, contrast and emphasis, that is, if the sentence does not correspond to either NP-wide contrast or VP/NP-wide emphasis, the structure is rejected by the system (see (25b) and (35)), and the simpler structure without this movement step is chosen instead.

5. Conclusion

In this article, I hope to have demonstrated that an interface-based approach to information-structure encoding that rests on the principles of economy fares better at capturing CF movement than a theory that sees this type of reordering as a result of the encoding of a syntactic feature. The interface-based approach successfully accounts for optional CF movement, found in a vast variety of languages, as well as for the availability of multiple landing sites for CF movement, found in scrambling languages, such as Russian. The optionality of CF movement has been argued here to result from the competition of two constraints operating at the interface between syntax and discourse—one demanding correspondence between syntax and discourse (15) and the other syntactic simplicity (*MOVE)—with three out of four possible

combinations satisfying at least one of these requirements. I have argued that the availability of multiple landing sites for CF movement is due to the fact that each step of movement is interpretively licensed by the ruling out of at least one information-structural interpretation that is available prior to the relevant movement step. In other words, the interpretive license for A′ scrambling is interpretive disambiguation. I have demonstrated that contrast is not the only interpretation that licenses A′ scrambling in Russian (and possibly other languages): what appears to provide the interpretive license for A′ scrambling is quantification over a discourse-salient set of alternatives, which is unavailable in the absence of contrast or emphasis. EF has been analyzed here as a subtype of CF, as both types of focus involve quantification over a discourse-salient set of alternatives (Titov 2013a). Hence, I have argued that both CF and EF are subject to the interpretive license for A′ scrambling given in (16). I have shown that although emphasis licenses a movement chain that is one step longer than the chain licensed by contrast, EF movement is still interpretively constrained in the same way as CF movement in the sense that for either type of focus, each movement step disambiguates the information-structural interpretation of the sentence by ruling out at least one interpretation that is available prior to this movement step.

The observation that CF movement is best accounted for by assuming that it is not driven by a syntactic feature has several implications for our understanding of the organization of the language faculty. The most obvious consequence of the interface-based approach adopted here is that discourse-related interpretations are not encoded in the computational system but are external to it. More importantly, however, if CF movement is not driven by a syntactic feature, it is unclear to what extent it is plausible to analyze other types of A′ movement, such as *wh* movement, as driven by a syntactic feature. Evidence from French suggests that *wh* movement is optional in this language and that the optionality is discourse conditioned (Hamlaoui 2011), rendering an analysis that sees it as driven by a (strong) syntactic feature, such as the *wh* feature, implausible (see footnote 10). If so, we might want to rethink our analysis of syntactic parameters as being specified by a formal feature of a functional head (Borer 1984). A potential alternative to this view is a theory that sees syntactic parameters as a result of the interaction of the syntactic component of grammar with the PF component (Titov 2012, 2013b). On this account, the requirement to overtly represent interpretive relations (semantic or pragmatic) must be satisfied with whatever linguistic tools are available, with the parametric variation resulting from the choice of linguistic tool—syntactic, morphological, or prosodic—used for the encoding of a specific interpretation in a given language. A consequence of this analysis is that syntactic flexibility is directly reliant on the mor-phophonological properties of a language.

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Appendix. Russian Data

The judgments on the information-structural interpretations available for specific syntactic positions in Russian were obtained via an anonymous online survey that used acceptability-judgment tasks. The participants were presented with contexts licensing particular information-structural interpretations and asked to judge whether a sentence with a particular word order was compatible with this context. Below, I provide examples of questions used in the survey and the obtained results. (English translations of contexts and example sentences are provided for each question above a reproduction of the Russian instructions.)

A.1. Contrastive Environments

Q1. Movement to the intermediate position, with VP-wide focus
    Context: Is Ivan doing (his) homework?
    Example sentence: Net, Ivan posud-u   moet.
                         No   Ivan dishes-ACC washes
                         'No, Ivan is washing the dishes.'

A. Посмотрите на подчёркнутое предложение. Подходит ли предложение с этим порядком слов к данному контексту? А: Иван делает уроки? В: <u>Нет, Иван посуду мое</u>т.
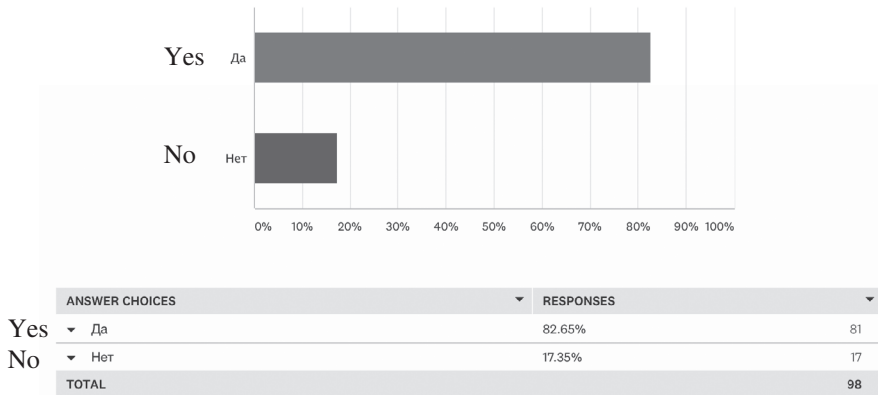
B. Answered: 98   Skipped: 2

ANSWER CHOICES	▼	RESPONSES	▼
▾ Да		82.65%	81
▾ Нет		17.35%	17
TOTAL			98

Figure A.1. Question 1 of the online survey. A. Russian text, with target sentence underlined. B. Results.

Q2. Movement to the intermediate position, with IP-wide focus
Context: What's happening there? Is it Ivan reading the book?
Example sentence: Net, éto Marija kursovuj-u   pišet.
                         no   it   Marija coursework-ACC writes
                         'No, it is Marija writing (her) coursework.'

A. Посмотрите на подчёркнутое предложение. Подходит ли предложение с этим порядком слов к данному контексту?А: Что там такое происходит? Это Иван читает книгу? Б: <u>Нет, это Мария курсовую пише</u>т.
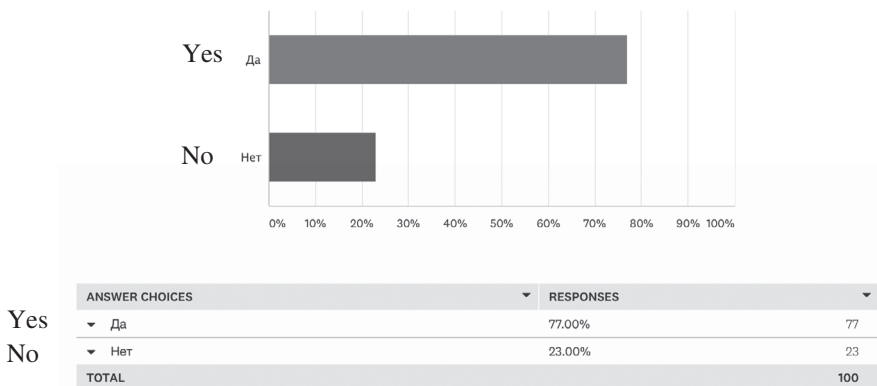
B. Answered: 100   Skipped: 0

ANSWER CHOICES	▼	RESPONSES	▼
▾ Да		77.00%	77
▾ Нет		23.00%	23
TOTAL			100

Figure A.2. Question 2 of the online survey

Q3. Movement to the left periphery, with VP-wide focus
    Context: Is Ivan washing the car?
    Example sentence: Net, kursovuj-u   Ivan pišet.
                        no   coursework-ACC Ivan writes
                        'No, Ivan is writing (his) coursework.'

A.   Посмотрите на подчёркнутое предложение. Подходит ли предложение
      с этим порядком слов к данному контексту?А: Иван моет машину?Б:
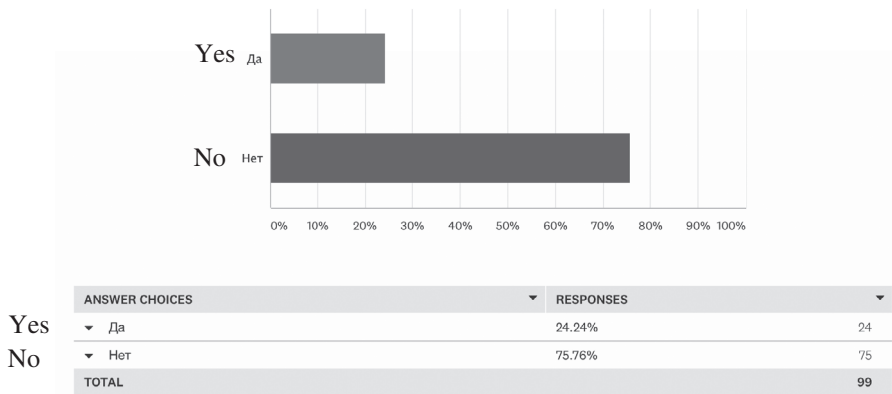   <u>Нет, курсовую Иван пишет</u>.

B.   Answered: 99   Skipped: 1

ANSWER CHOICES	RESPONSES	
Yes ▾ Да	24.24%	24
No ▾ Нет	75.76%	75
TOTAL		99

Figure A.3. Question 3 of the online survey

Q4. Movement to the left periphery, with IP-wide focus
       Context: What's happening there? Is it Ivan writing (his) essay?
       Example sentence: Net, éto posud-u   Mikhail moet.
                               no   it   dishes-ACC Mikhail washes
                               'No, it is Mikhail washing the dishes.'

A. Посмотрите на подчёркнутое предложение. Подходит ли предложение
    с этим порядком слов к данному контексту? А: Что там такое
    происходит? Это Иван пишет реферат?Б: <u>Нет, это посуду Михаил моет</u>.
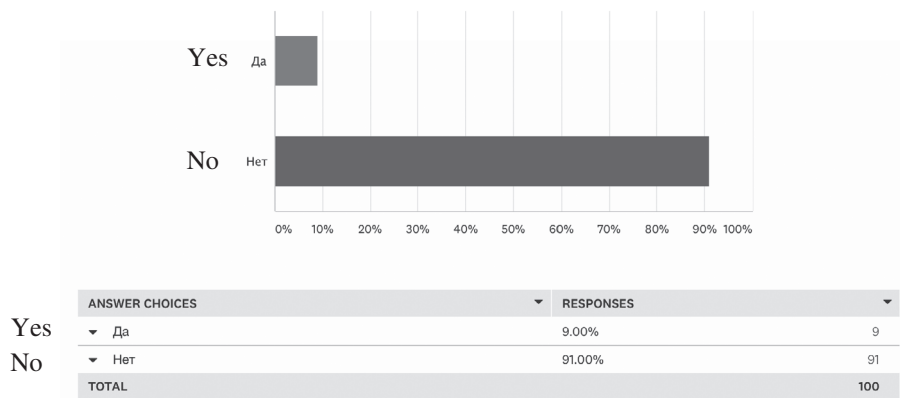
B. Answered: 100   Skipped: 0

ANSWER CHOICES	RESPONSES	
Да	9.00%	9
Нет	91.00%	91
TOTAL		100

Figure A.4. Question 4 of the online survey

A.2. Emphatic Environments

Q5. Movement to the left periphery, with VP-wide focus
    Context: A: Is Ivan doing (his) homework?
             B: Can you imagine!
    Example   Posud-u   Ivan moet!
    sentence: dishes-ACC Ivan washes
                  'Ivan is washing the dishes!'
    Context: He has never done anything of the sort!

A. Посмотрите на подчёркнутое предложение. Подходит ли предложение
    с этим порядком слов к данному контексту? А: Иван делает уроки?Б: Ты
    представляешь! <u>Посуду Иван моет</u>! Он никогда подобным не занимался!
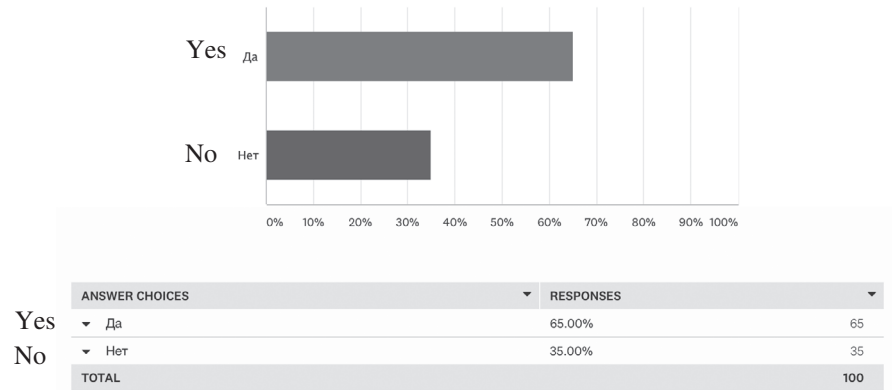
B. Answered: 100   Skipped: 0

ANSWER CHOICES		RESPONSES	
Yes	Да	65.00%	65
No	Нет	35.00%	35
	TOTAL		100

Figure A.5. Question 5 of the online survey

Q6. Movement to the left periphery, with IP-wide focus
Context: A: What's happening there? Is it Ivan reading (his) essay?
           B: Can you imagine!
Example   Éto kursovuj-u   Pëtr   pišet!
sentence: it   coursework-ACC   Pyotr   writes
           'It is Peter writing (his) coursework!'
Context: This has never happened before!

A.   Посмотрите на подчёркнутое предложение. Подходит ли предложение с этим порядком слов к данному контексту? А: Что там такое происходит? Это Иван читает реферат?Б: Ты представляешь! Это курсовую Пётр пишет! Такого ещё не бывало!

B.   Answered: 100   Skipped: 0

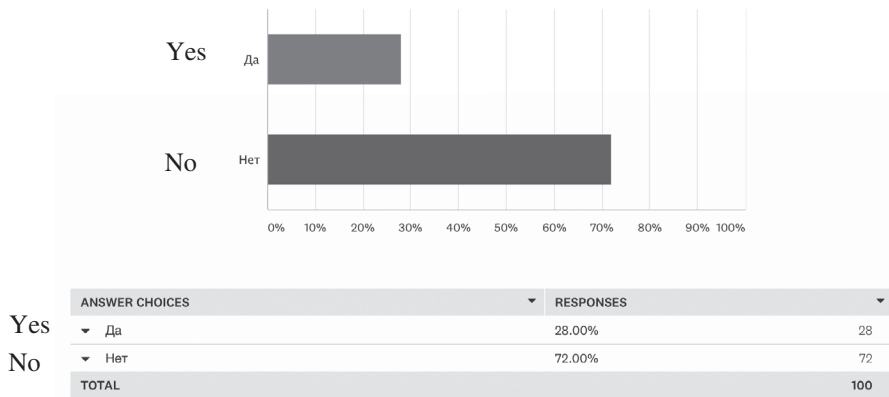| ANSWER CHOICES		RESPONSES	
Yes	Да	28.00%	28
No	Нет	72.00%	72
TOTAL			100

Figure A.6. Question 6 of the online survey