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AN ARGUMENT FOR NON-AGREE-DRIVEN MOVEMENT

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Abstract. This paper argues for the occurrence of movement that is not the by-product of an Agree relation in which a probe searches for a goal. The hypothesis that not all instances of movement might be feature-driven was entertained in early Minimalism, but it has nevertheless become widely assumed that all instances of syntactic movement should be attributed to the operation of Agree. Here, using complex patterns of DP-internal movement in Bangla, we argue that certain instances of syntactic movement may indeed take place without Agree. Taking the Phase Impenetrability Condition/PIC as the signature property of phases, and sensitivity to the PIC to be indicative of Agree-related movement, we show that some occurrences of movement within a single domain are constrained by the PIC, while others are not.

1. Introduction

This paper develops an argument for the potential occurrence of movement operations that are not feature-driven, i.e. not the by-product of any Agree relation in which a probe searches for a goal with features that it requires. The hypothesis that not all instances of movement might be feature-driven was entertained in early Minimalism (Chomsky 2000, the possibility of 'stylistic movement', see section 5 of the current paper), but it has nevertheless become widely assumed that all instances of syntactic (i.e. non-PF/non-prosodic) movement should be attributed to the operation of Agree, even occurrences of fully optional scrambling (Miyagawa and Arikawa 2007). Here we argue that some occurrences of syntactic movement may indeed take place without Agree. Taking the Phase Impenetrability Condition/PIC as the signature property of phases, and sensitivity to the PIC to be indicative of Agree-related movement, we show that certain instances of movement within a single domain are constrained by the PIC, while others are not. This leads to the conclusion that the latter are not required to undergo the same kind of successive cyclic movement through phasal edges as required by cross-phasal movement triggered by Agree. The paper shows that non-Agree-dependent movement is nevertheless subject to a syntactic constraint on movement which has commonly been associated with probe-goal relations - Relativized Minimality/RM (Rizzi 1990, Chomsky 1995), suggesting that RM is a constraint which operates independently of the trigger for movement (i.e independent of a probe-goal relation). The conclusions of the paper are also shown to have consequences for the finer understanding of cyclic spellout: while the

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complements of phase heads may be assumed to become derivationally opaque for later operations of Agree, they are not fully isolated from all other inter-phasal non-Agree syntactic processes. Such a conclusion is shown to be supported by the analysis of a range of movement patterns in other languages which are commonly described as being instances of PF movement.

The structure of the paper is as follows. Section 2 describes the occurrence of feature-driven focus and definiteness-related movement in Bangla DPs, and how this appears to be restricted by the PIC, following Simpson and Syed (2016). Section 3 then shows how the movement of agent and theme arguments of the head noun within the same DP-domain is subject to different movement constraints, not those linked with the PIC. Section 4 presents an analysis of these differences which suggests that DP-internal agent/theme movement is an instance of pure scrambling, not driven by Agree and a higher probe, but initiated by the element which undergoes movement, restricted by RM but not the PIC. Consequences of the analysis and support for the paper's conclusions from other languages are then presented in Section 5.

2. Restrictions on phrasal movement in Bangla nominals: Simpson and Syed (2016)

Simpson and Syed (2016) (henceforth SS16) investigate the occurrence of certain phrasal movement operations in Bangla and how these are subject to an intervention effect involving numerals present in nominal projections. The patterns discussed by SS16 are shown to lead to a phase-based/PIC analysis and the conclusion that a nominal-internal QP phase is projected within DPs. The key components of the analysis are summarized as follows.

In Bangla nominals, two kinds of DP-internal phrasal movement are regularly found to occur (Bhattacharya 1999). First, NP-movement of a noun and its modifiers to the left of numerals and classifiers automatically results in a definite interpretation of the DP, as shown in (1)[1]:

[1] CL = classifier, DEM = demonstrative, LOC = locative, DAT = dative, INF = infinitive, GEN = genitive, TOP = topic marker, ACC = accusative, NOM = nominative, COMP = complementizer.

(1) a. du ʈo lal boi
2 CL red book
'two red books'

b. [lal boi]$_k$ du ʈo t$_k$
red book 2 CL
'the two red books'

Second, AdjPs that are heavily focused may also raise past numerals and classifiers, as shown in (2):

(2) [K^{H}UBI DAMI]$_m$ oi du ʈo [t$_m$ boi]
very expensive DEM 2 CL book
'those two *very expensive* books'

Such definiteness-licensing NP-movement and the focus movement of AdjPs are both constrained by the presence of numerals and only found to be possible when the low numerals 1–4 occur. When higher numerals are present, this movement is ungrammatical:

(3) a. *[lal boi]$_k$ šat/aʈ/doš-ʈa t$_k$
red book 7/8/10- CL
Intended: 'the 7/8/10 red books'

b. *[K^{H}UBI JOGHONYO]$_k$ oi šat/aʈ/doš-ʈa t$_k$ biskuʈ
very disgusting DEM 7/8/10 - CL biscuit
Intended: 'those *very disgusting* 7/8/10 biscuits'

SS16 propose a structural account of this blocking effect of higher numerals. They note that a range of works have shown there is both cross-linguistic and language-internal variation in the ways that numerals are projected within nominal phrases, and such elements may either occur as heads or as phrasal constituents in specifier positions (Danon 2012, Borer 2005, Bailyn 2004, Shlonsky 2004, Franks 1994, Pereltsvaig 2006). In Bangla, it is suggested that low numerals occur in a head position, Q^0, while higher numerals are merged in SpecQP. To account for the interference effect caused by the latter, it is argued that NP-movement and AdjP-movement must proceed successive-cyclically through SpecQP in order to reach higher positions. The presence of any higher numeral in SpecQP blocks this movement, while the occurrence of

lower numerals in Q^0 allows for NPs/AdjPs to transit through the empty SpecQP position.

One might naturally ask what factors would cause low numerals to instantiate the head position of QP while higher numerals occur in SpecQP. We believe that this may result from the interaction of frequency of use and patterns of structural change in grammaticalization, in the following way. First, it can be noted that paucal numerals occur in everyday speech with a naturally higher frequency than other, larger numerals (and because of this certain languages have only developed a series of lower numerals - Epps et al. 2012, Hammarström 2010, Pica et al. 2004, Everett 2013). Second, the general property of high frequency of use has regularly been noted to condition processes of grammaticalization in an important way, resulting in the common development of functional elements from high frequency lexical elements, and in the physical reduction of existing functional morphemes (Bybee et al. 1994, Hopper and Traugott 1997, Roberts and Roussou 2003). Third, focusing particularly on the structural properties of grammaticalization, a number of recent works have argued that phrasal categories may often become reanalyzed as heads of the projections in which they occur (Van Gelderen's 2004:18 *Spec to Head* or *Head Preference Principle* and Simpson and Wu's 2002:308 principle of *Spec-Head Reduction*) as part of the continued grammaticalization of functional elements. Putting such pieces together, it can be suggested that the occurrence of low numerals as heads of QP and higher numerals as specifiers of QP is the natural result of the broader process of Spec-Head reduction/the Spec to Head Principle applying to those numerals with the highest frequency of use - 1-4 - rendering Q^0 heads from elements which are otherwise regularly projected as phrasal categories in the specifier of QP. Considered from such a perspective, the distribution of paucal numerals as heads can be understood as the outcome of dynamic processes of structural simplification which have affected other categories of functional elements in a highly similar way.

Interestingly, there are actually two numerals, 6 and 9, which have two overt realizations, with both full and reduced, clitic-like forms: *choy*/*cho*- and *noy*/*no*-. The full forms pattern as phrasal elements in SpecQP and block both AdjP and NP-movement, whereas the reduced forms block neither kind of movement and pattern like lower numeral heads in Q^0, as shown in (4) with focused AdjP movement and (5) with NP-movement.

Similar alternations occur with the full and reduced form of the quantifier *kOyek*/*kO*- 'some', as noted in SS16.[2]

(4) gɔto æk bɔc^{h}or-e [K^{H}UBI JOGHONNO$_{k}$ c^{h}o-ʈa/*c^{h}oy ʈa t$_{k}$ boi]
last one year- LOC very disgusting 6- CL 6 CL book
ama-ke review kor-te hoyeche
I-DAT review do- INF occured
'In the last year, I had to review six *very disgusting* books.'

(5) ami [boi$_{k}$ c^{h}o-ʈa/*c^{h}oy ʈa t$_{k}$] kinlam
I book 6- CL 6 CL bought
'I bought the six books'

The key properties of AdjP- and NP-movement are noted to be as follows. First, it is caused by properties of focus and definiteness. Second, the movement needs to pass through SpecQP. Third, movement through SpecQP only takes place when an element needs to reach a position higher than QP - no raising occurs in the absence of interpretations of focus or definiteness. SS16 suggest that SpecQP therefore appears to function as an escape hatch for lower phrasal elements which need to enter into agreement relations with probes located higher than QP relating to focus and definiteness – movement through SpecQP allows AdjPs/NPs to reach higher licensing positions.

[2] In sequences such as (4), if the *numeral* is stressed instead, the pre-numeral AdjP itself is not stressed. This results in the numeral being in (contrastive) focus and the AdjP is interpreted more as background-topic-like material. In this case, it is found that either the full form or the reduced form of 6/9 may occur and neither causes a blocking effect on movement. We suggest that this pattern results from the AdjP actually being base-generated in the pre-numeral position as a topic – it is not focused, and there is no (focus) movement of the AdjP from a lower position, so there are no blocking effects. An independent study of adjective stacking patterns in the pre- and post-numeral-classifier position in Syed (2014) has noted that adjectives in the latter position are subject to clear ordering restrictions, resulting from their occurrence in a set of ordered functional projections, whereas those in the former position are much more free in the orders they occur in, suggesting that AdjPs can be directly adjoined into the pre-numeral position. This supports a view of AdjPs in Bangla in which AdjPs which are construed as background-topic-like information can be directly merged in their surface positions preceding numerals, and are therefore not blocked by the presence of higher numerals, as no movement is involved. In this patterning, DP-initial AdjPs in Bangla can be directly compared with the differences observed in Italian between clause-initial topics and foci (Cinque 1990, Georgi 2015). The former, involving clitic left dislocation, are base-generated topics and not subject to locality restrictions, while the latter occur clause-initially as a result of (focus-)movement and are constrained by typical locality restrictions on movement. DP-initial, pre-numeral AdjPs in Bangla show clear signs of a parallel distinction, either being topic-like/given information base-generated in their surface position and not subject to restrictions on movement, or occurring as foci moved to the pre-numeral position and blocked by the same movement-related locality restrictions which constrain NP-movement to the pre-numeral position.

SS16 point out that in current Minimalist approaches to syntax, any movement of an element X to a structural position Y which occurs only in order for X to become visible in position Y to a higher probe must be attributed to the Phase Impenetrability Condition/PIC.[3] Elements with unlicensed features move to the edge of phases in order to enter into Agree relations with higher functional heads (Legate 2003, Citko 2014, Bošković 2016). SS16 conclude that the movement of NPs and AdjPs through SpecQP occurs because QP is a phasal constituent in Bangla. NPs and AdjPs which need to enter into Agree relations with higher heads must first move to the edge of the QP phase, before moving to the specifiers of higher heads related to focus and definiteness. The paradigm of nominal-internal phrasal movement is therefore given a phase-based analysis of the locality restriction caused by numerals, with QP being projected as a phase.[4] Note that while SS16 assume that a single specifier position is available for QP and blocks edge movement when occupied by higher numerals, a *multiple* specifier modeling potentially allows for similar conclusions about PIC-effects caused by the presence of high numerals if Bošković's (2016) approach to phase edges is adopted, in combination with Tucking In (Richards 2001). Bošković presents arguments that only the outer specifier of a phase is visible to higher probes, when multiple specifiers occur. In Bangla, if DP-internal movement of AdjPs/NPs in Bangla results in these constituents tucking in as lower specifiers below higher numerals merged in SpecQP, such AdjPs/NPs, in Bošković's approach, will not be visible to probes located in a higher phase, causing a failure of Agree and the impossibility of movement. A PIC analysis of the blocking effects of higher numerals on AdjP/NP movement can therefore be motivated whether QPs actually project a single or multiple specifiers.

What will now be seen to be puzzling and challenging for such a PIC approach, or, importantly, *any* kind of analysis of the numeral intervention effects, is the observation that certain other instances of movement not examined in SS16 are completely unaffected by the presence of higher numerals – the DP-internal scrambling of nominal arguments, as described in section 3.

[3] The Phase Impenetrability Condition (Chomsky 2000:108): In phase α with head H, the domain of H is not accessible to operations outside H, only H and its edge are accessible to such operations.

[4] SS16 stress that the blocking effects of higher numerals *cannot* plausibly be analyzed in an alternative way as a relativized minimality-type effect in which potential interveners (numerals above five, but not lower numerals) share features with a lower element and so block movement of the latter to a higher functional head searching for a particular type of feature. Higher, blocking numerals in SpecQP have no definiteness features and so are not competing with NPs and AdjPs as more local targets for movement to the higher definiteness-related position (and there is also no semantically relevant distinction in definiteness between lower and higher numerals). Parallel considerations hold for the focus-related movement of AdjPs.

3. A puzzle: the variable positioning of nominal arguments in Bangla DPs[5]

The Possessor, Agent, and Theme/PAT arguments of Bangla nouns all occur inflected with genitive case, and a genitive-marked element can potentially be interpreted as having any of these thematic relations to the head noun, as illustrated in (6):

(6) gand^{h}i-r chobi
Gandhi- GEN picture
'Gandhi's picture' Gandhi = Possessor or Agent or Theme

Agent and Theme arguments may also occur in a variety of positions within a DP. Agents and Themes may occupy a low position between numerals-classifiers and the noun, in the NP core, where it can be assumed their thematic relation to the noun is established, as in (7):

(7) du ʈo gand^{h}i-r chobi
2 CL Gandhi- GEN picture
'two pictures of/by Gandhi'

Such elements can also occur higher in the DP, between demonstratives and numeral-classifier pairs, as in (8), with no difference in interpretation:

(8) šei gand^{h}i-r du ʈo c^{h}obi
DEM Gandhi- GEN 2 CL picture
'those two pictures of/by Gandhi'

Finally, Agents and Themes may also occur positioned even higher up in the DP, to the left of demonstratives, as in (9), again with no difference in interpretation:

(9) gand^{h}i-r šei du ʈo c^{h}obi
Gandhi- GEN Dem 2 CL picture
'those two pictures of/by Gandhi'

We take the NP-internal position to the right of numerals-classifiers to be the first-merged, theta-position of Agents and Themes, and assume that the realizations of Agent and Theme in higher positions result from optional movement of these elements from their base positions in NP. Such an assumption receives support from the observation that there are

[5] This section builds on observations first noted in Syed (2017).

restrictions on the higher, leftward positioning of Agent and Theme arguments. Although these elements can indeed occur in all three positions seen in (7-9), as schematized in (10a/b), when more than one of these elements is present, restrictions occur on the positions they may occupy, and a Theme may never occupy a position higher than an Agent, as represented in (11) and illustrated in (12).[6]

(10) a. (Agent) Dem (Agent) Num CL (Agent) Noun

b. (Theme) Dem (Theme) Num CL (Theme) Noun

(11) a. **Agent** Dem **Theme** Num CL N

b.*__Theme__ Dem **Agent** Num CL N

c. Dem **Agent** Num CL **Theme** N

d.*Dem **Theme** Num CL **Agent** N

e. Dem **Agent Theme** Num CL N

f.*Dem **Theme Agent** Num CL N

[6] Note that the Agent > Theme ordering of genitive-marked arguments is not unacceptable due to parsing reasons and confusion as to which element is Agent and which is Theme. If the Theme argument has an inanimate referent and is not confusable as an Agent, it still cannot precede an Agent, as shown in (i).

(i) a. *oi taj mɔhol-er du ʈo ram-er pʰoʈo

DEM Taj Mahal- GEN 2 CL Ram- GEN photo

b. *taj mɔhol-er oi du ʈo ram-er pʰoʈo

Taj Mahal- GEN DEM 2 CL Ram- GEN photo

c. *taj mɔhol-er oi ram-er du ʈo pʰoʈo

Taj Mahal- GEN DEM Ram- GEN 2 CL photo

intended meaning: 'those two photos of the Taj Mahal (taken) by Ram'

(12) a. du ʈo šannal-er gand^{h}i-r c^{h}obi Num CL **Agent Theme** N
2 CL Sanyal- GEN Gandhi- GEN picture
'two pictures of Gandhi by Sanyal'

b. šannal-er du ʈo gand^{h}i-r c^{h}obi **Agent** Num CL **Theme** N
Sanyal- GEN 2 CL Gandhi- GEN picture
'two pictures of Gandhi by Sanyal'

c. šannal-er gand^{h}i-r du ʈo c^{h}obi **Agent Theme** Num CL N
Sanyal- GEN Gandhi- GEN 2 CL picture
'two pictures of Gandhi by Sanyal'

d. *du ʈo gand^{h}i-r šannal-er c^{h}obi *Num CL **Theme Agent** N
2 CL Gandhi- GEN Sanyal- GEN picture
'two pictures of Gandhi by Sanyal'

e. *gand^{h}i-r du ʈo šannal-er c^{h}obi ***Theme** Num CL **Agent** N
Gandhi- GEN 2 CL Sanyal- GEN picture
'two pictures of Gandhi by Sanyal'

f. *gand^{h}i-r šannal-er du ʈo c^{h}obi ***Theme Agent** Num CL N
Gandhi- GEN Sanyal- GEN 2 CL picture
'two pictures of Gandhi by Sanyal'

Such restrictions suggest that there is movement of Agent and Theme elements to higher locations from a lower thematic position in NP, and this movement is inhibited when there is an interaction of Agent and Theme arguments, with any attempted raising of the Theme over the Agent being unacceptable.[7]

Considering Possessors in Bangla DPs, these elements do not have the optional mobility of Agents and Themes, and may only occur to the left of demonstratives, in the highest position in nominal phrases, putatively SpecDP, where it can be assumed they are base-generated, as shown in (13):

[7] These restrictions of the relative positioning of Agent and Theme argue clearly against an alternative assumption that such elements can be base-generated in all the positions indicated in (10a/b). If this were to be possible, given that Themes can appear to the left of numerals and classifiers (10b), and Agents can occur to the right of these elements (10a), a base generation approach would expect sequences such as (11d, 12e) to be acceptable, contra observation.

(13) (ram-er) oi (*ram-er) du ʈo (*ram-er) cʰobi
Ram- GEN DEM Ram- GEN 2 CL Ram- GEN picture
'those two pictures belonging to Ram'

The occurrence of a Possessor also interacts with the optional re-positioning of Agent and Theme arguments, and the latter may only be raised to a position following a Possessor:

(14) a. ram-er šannal-er oi du ʈo chobi **Poss Agent** Dem Num CL N
Ram- GEN Sanyal- GEN DEM 2 CL picture
'Those two pictures painted by Sanyal and owned by Ram'

b. *šannal-er ram-er oi du ʈo chobi ***Agent Poss** Dem Num CL N
Sanyal- GEN Ram- GEN DEM 2 CL picture
'Those two pictures painted by Sanyal and owned by Ram'

(15) a. ram-er gandhi-r oi du ʈo chobi **Poss Theme** Dem Num CL N
Ram- GEN Gandhi- GEN DEM 2 CL picture
'Those two pictures of Gandhi owned by Ram'

b.*gandhi-r ram-er oi du ʈo chobi ***Theme Poss** Dem Num CL N
Gandhi- GEN Ram- GEN DEM 2 CL picture
'Those two pictures of Gandhi owned by Ram'

All three elements, Possessor, Agent and Theme may potentially co-occur, but only if their relative positioning is Poss > Agent > Theme. Example (16) consequently has only one possible interpretation, as given in the translation:[8]

(16) coudʰuri baɽi-r poritoš šen-er gandʰi-r cʰobi
Chowdhury household- GEN Paritosh Sen- GEN Gandhi- GEN picture
'a picture of Gandhi painted by Paritosh Sen and owned by the Chowdhury household'
Chowdhury household = Possessor, Paritosh Sen = Agent, Gandhi = Theme

The Possessor > Agent > Theme ordering template observed here in Bangla has also been found to characterize the ordering of arguments of the noun in Korean (An 2014), Japanese (Kuno 1973), Spanish

[8] Many thanks to an anonymous reviewer for this example.

(Ticio 2005), and Italian (Cinque 1980). We take the base structure producing the Agent > Theme linearization to result from parallelism with the clausal domain, with the Theme combining with the relevant head (N in DP, V in vP) as its complement before the Agent is merged, producing the common hierarchical structure: [[Agent] [[Theme] N/V]]]]. There is much crosslinguistic support for the view that objects (prototypically Themes) combine with verbs before subjects (prototypically Agents) are merged (for example, idiom formation, incorporation of Themes but not Agents, ellipsis phenomena, phrasal movement), as discussed and motivated in Radford (1988), Dowty (1991), Baker (2003), Bruening (2020) and many other works. Assumptions of broadly parallel structures across verbal and nominal domains lead to the expectation that Themes in nominal structures are merged with the head noun before Agents are subsequently merged, and this corresponds to what is observed in the linearization of Agent > Theme > N in the lowest, first-merged positions of Agent and Theme to the right of numerals and classifiers in Bangla (example 12a). As for the position of Possessors, as there is no argument equivalent to Possessors in the clausal domain (hence no influence of clausal/nominal parallelism), one might anticipate some cross-linguistic variation with regards to where Possessors are initially merged, and this is borne out in a comparison of Bangla and Korean. Whereas Possessors in Bangla can only occur very high up in the nominal domain, to the left of demonstratives (SpecDP), in Korean such elements can be first merged lower down within *n*P – see An (2014) for discussion.

The variable surface positioning potentially open to PAT elements in Bangla nominals is represented in Table 1 and described in (17):

Table 1. The distribution of PAT elements relative to demonstratives, numerals-classifiers and nouns in Bangla

zone 1	Dem	zone 2	Num CL	zone 3	head noun
Poss/Agent/ Theme	*oi*	Agent/ Theme	*du ʈo*	Agent/ Theme	N

(17) The distribution of PAT elements in Bangla

I. Agent and Theme arguments of nouns are mobile and can be re-located to different positions within nominal projections. Possessors are merged higher up, to the left of demonstratives.

II. Although Agents and Themes can occur in any of zones 1-3, any distribution of PAT elements in nominal projections must conform with a P>A>T linear sequencing, whether PAT elements occur in the same zone or in different zones.

The relative sequencing restrictions on PAT elements which apply to the (otherwise legitimate) placement of Agent and Theme arguments in higher positions indicates that some kind of relativized locality constraint is applying to instances of Agent/Theme re-merge in higher positions, hence the occurrence of these elements in higher positions should be attributed to movement. What is now interesting, and initially quite puzzling, is that this movement does not seem to be intercepted and blocked by the presence of high numerals between the base position of Agent and Theme and their raised positions above numerals and classifiers, as illustrated in (18). The optional movement of Agents and Themes is found to be completely unaffected by the intervention of higher numerals in SpecQP, unlike the occurrence of focus- and definiteness-related movement, with AdjPs and NPs.

(18) a. gand^{h}i-r$_{i}$ c^{h}oy/šat/aʈ ʈa t$_{i}$ chobi

Gandhi- GEN 6/7/8 CL picture

'six/seven/eight pictures of Gandhi'

b. šannal-er$_{i}$ c^{h}oy/šat/aʈ ʈa t$_{i}$ chobi

Sanyal- GEN 6/7/8 CL picture

'six/seven/eight pictures by Sanyal'

Bangla nominals therefore present a situation in which certain (to be determined) locality principles restrict the movement of Agents and Themes, but other movement constraints do not, and the movement of elements of different types appears to be subject to different principles of locality. Such observations pose a serious challenge for any kind of analysis of movement, whether phase-based or otherwise, and it might

initially seem to be unexpected that the single operation Move would be selectively constrained by different kinds of locality restrictions. The non-uniform nature of the Bangla paradigm suggests a need and opportunity to re-examine constraints on the ways that movement may be forced to occur, and how these might potentially give rise to differing surface results.

4. Analysis: a reconsideration of the licensing of movement

The analysis we will propose is essentially quite simple, and involves a reassessment of the triggers of movement. Considering the DP-internal repositioning of AdjPs and NPs first, in section 2 this has been seen to have the signature property of inter-phasal movement – such movement seems constrained to pass through an intermediate position (SpecQP) simply in order to raise to a final landing-site associated with the licensing of some specific aspect of interpretation - focus or definiteness. As focus and definiteness are categories that are cross-linguistically realized with morpho-syntactic features (exponed by affixes, particles, or other fusional inflections), any focus/definiteness-related movement of AdjPs and NPs can be understood to be feature-driven movement relating to higher functional heads which enter into an Agree relation with the AdjPs/NPs. The intermediate step of movement to SpecQP, however, cannot be motivated by any featural/Agree relation between the Q-head and focused AdjPs or NPs involved in the encoding of definiteness in the DP, and so appears to be edge-movement, raising a constituent to a lower phasal edge for this element to become visible to a higher functional head. The movement of Agents and Themes, by way of contrast, is of a significantly different nature. This movement cannot be attributed to case reasons, as Agents and Themes are well-formed and inflected with case in their first-merged locations (12a) and do not need to move to either of the higher positions that Agents and Themes can target within the DP. The relocation of Agents and Themes to higher positions is, instead, purely

optional scrambling with no effect on interpretation and no morpho-syntactic feature as a driving force.[9]

When considered alongside the observation that Agent/Theme-movement does not need to occur successive-cyclically through SpecQP, the edge of the lower phase, the lack of any featural trigger for Agent/Theme scrambling allows for a potential understanding of the odd asymmetry in locality restrictions on different types of DP-internal movement. We suggest that Agent/Theme scrambling is not the by-product of an Agree relation between a higher functional head and lower Agents/Themes and not triggered by a need to license morpho-syntactic features in a local probe-goal relation. Not being dependent on Agree and not constrained by the PIC, the scrambling of Agents/Themes may occur non-successive-cyclically without passing through phasal edges, and the presence of high numerals in SpecQP subsequently has no effect on the scrambling of Agents and Themes, unlike its blocking of the movement of AdjPs and NPs in the licensing of focus and interpretations of definiteness.

The scrambling of Agent/Theme arguments is, however, subject to other relativized locality effects, as noted in section 3 – the rigid P > A > T ordering which applies to sequences of arguments occurring in DPs. We propose that the unacceptability of Theme>Agent sequences created by movement of a Theme over the Agent should be attributed to a Relativized Minimality interaction which is not induced by a higher probe searching for a suitable lower goal, but by a lower element, the

[9] We use the term 'scrambling' here to refer to movement in Bangla that (a) is fully optional, (b) has no obviously detectable effect on interpretation (it is 'semantically vacuous movement' in Saito's 1989 sense), and (c) is not restricted to a single landing-site. Property (c) is noted in Table 1 – Agent and Themes can move to either of two higher positions in zones 1 and 2. This indicates that Agents and Themes are not being attracted to a single functional head, such as a DP-internal TopicP. We therefore characterize the Agent/Theme displacement as 'scrambling' rather than DP-internal 'topicalization'. Additionally, it can be noted that it is not possible for the topic particles *-to* or *-na* (Dasgupta 1987) to appear on Agents or Themes that occur clearly within DPs (following demonstratives):

(i) **ei gand^{h}ir-to/na du ʈo c^{h}obi
DEM Gandhi- GEN-TOP /-TOP 2 CL picture

(ii) **ei du ʈo gand^{h}ir-to/na c^{h}obi
DEM 2 CL Gandhi- GEN-TOP /-TOP picture

Formally, we assume that Agent/Theme scrambling is an instance of XP-adjunction (Kidwai 2000) and occurs via movement rather than base-generation (Bošković and Takahashi 1998), due to the locality effects observed. For general discussion of scrambling in Bangla and how it differs from topicalization within the clausal domain in Bangla, see Bhadra (2018).

Theme, searching for a higher attachment-site, and failing to continue its search for a higher landing-site past a nominal that carries the same genitive case-marking. Although RM effects are commonly viewed as involving a downwards relation, occurring when a probe is unable to Agree with a goal that is structurally lower than (i.e. asymmetrically c-commanded by) some other element of the same formal type, we suggest that the patterns here reveal a more fundamental interference effect which is independent of directionality and operates either when a search is originated from a higher position by a functional head (Agree-driven movement), or from a lower position by an element searching upwards in the tree for a higher landing-site (non-Agree-driven movement). In the case of the latter, the search terminates when encountering an element of the same type, and a genitive-marked Agent blocks leftwards scrambling of a genitive-marked Theme.[10] Additionally, such a view of Relativized Minimality will block the raising of Agents and Themes over genitive-marked Possessors (i.e. *A > P and *T > P sequences).

Assuming such an approach to Agent/Theme scrambling and the focus/definiteness-related movement of AdjPs and NPs offers an explanation of the differing locality conditions which are seen to constrain DP-internal movement in Bangla, as described in sections 2 and 3. High numerals in SpecQP block focus and definiteness-related movement, which is dependent on Agree and must satisfy the PIC, whereas Agent/Theme scrambling is non-feature-driven movement and unconstrained by the PIC and the presence of high numerals, but still subject to relativized minimality effects.

Finally, it can be noted that raised, focused AdjPs (or NPs raised for reasons relating to the licensing of definiteness) do not block the movement of Agents or Themes to higher positions, as illustrated in (19b) below. Such a patterning is consistent (at least) with the suggestion made here that Agent/Theme movement is non-feature-driven scrambling and not intercepted by the presence/movement of other intervening elements. The movement of a genitive-marked argument is indeed only restricted by the presence of another genitive-marked argument and this can be naturally viewed as a relativized minimality effect sensitive to case features of a particular type.

[10] If the higher Agent undergoes movement first, however, this enables scrambling of the lower Theme, as the traces of movement are assumed not to cause intervention effects, as noted in Bošković (2016:17): 'It is well known that traces do not count as intervenors: RM violations are voided if the intervener undergoes movement.' This then allows for the raising of both Agent and Theme from their base-positions, as long as the final overt sequencing is A > T.

(19) a. gand^{h}i-r$_{m}$ du ʈo [$_{nP}$ t$_{m}$ notun c^{h}obi]
Gandhi- GEN 2 CL new picture
'the two new pictures of Gandhi'

b. gand^{h}i-r$_{m}$ NOTUN$_{k}$ du ʈo [$_{nP}$ t$_{m}$ t$_{k}$ c^{h}obi]
Gandhi- GEN new 2 CL picture
'the two NEW pictures of Gandhi'

c. NOTUN$_{k}$ gand^{h}i-r$_{m}$ du ʈo [$_{nP}$ t$_{k}$ t$_{m}$ c^{h}obi]
new Gandhi- GEN 2 GEN picture
'the two NEW pictures of Gandhi'

The range of movement and locality effects found within Bangla DPs can thus be analyzed in an internally-consistent way if the assumption is made that some occurrences of movement ('scrambling') are not phase-constrained, though still restricted by other intervention effects.[11] In section 5, we situate this proposal relative to previous and recent perspectives on the connection of Agree (feature-checking) to movement and discuss certain general, non-trivial consequences of this proposal, relating to the application of cyclic spell-out and the opacity of phases.

[11] One might wonder whether the locality puzzle analyzed here could be viewed as a difference between DP-internal A- and A'-movement, with the focus-fronting of AdjPs being an instance of A'-movement subject to quantificational intervention effects (Beck 1996, 2006), and the displacement of Agent/Theme argument being A-movement, constrained by RM. However, such an approach is not viable for two clear reasons. First, Beck-type intervention effects block in situ dependencies and are overcome by movement over the intervener (Beck and Kim 1997), but exactly the opposite is the case in the Bangla paradigm considered here – high numerals block the movement of focused AdjPs but do not block the in situ occurrence of AdjPs with focused interpretations (hence AdjPs can be focused via stress in positions following higher numerals). Second, there is no sense in which higher numerals (6 and above) are focused in a way that low numerals are not, hence no plausible semantic/pragmatic justification for assuming that high numerals induce focus-intervention effects when low numerals do not. We assume, with Rizzi (2018), Boeckx and Jeong (2004), Bailyn (2020) and many others that Agree and the relativized minimality effects associated with probe-goal relations are feature-specific (or, at least, sensitive to feature classes and hierarchies of features) and it is not the case that RM is 'feature-blind', with A- and A'-movement being blocked by the presence of any filled, intervening A- or A'-specifier (an older alternative to featural RM). There are many instances where A- and A'-movement is clearly not blocked by the presence of intervening, filled A−/A'-specifiers, for example, OSV structures in Japanese where the object A-moves over the subject to SpecTP (Miyagawa 2010), NW British English passivization of direct objects over indirect objects ('The book was given her yesterday' Biggs 2016), the lack of *wh*-island effects in Bulgarian and other languages where *wh* phrases are able to raise over other raised *wh* phrases (Rudin 1988), the failure of adverbs as specifiers (Cinque 1999) to block either A- or A'-movement, the lack of blocking effects with Russian long-distance scrambling over raised *wh*-phrases, among many other cases. For these reasons, we believe that there is no gain to be had from pursuing a potential A/A'-distinction in the movements considered here.

5. Movement without features, cyclic spell-out, and RM

The purpose of our examination of DP-internal movement in Bangla was to try to reach an understanding of how different movement types might be constrained in different ways within Bangla nominals. The analysis of the locality differences developed in the paper now results in a specific empirical argument for the suggestion made in Chomsky (2000:207) that certain instances of movement may in fact not be feature-driven - in more recent Minimalist terms not be related to instances of Agree:

> ".*movement can be feature-driven or not* (emphasis added), and in the former case can be directly or indirectly feature-driven. Typical cases include raising to subject (directly feature-driven), the nonfinal stages of successive-cyclic movement (indirectly feature-driven), and QR and "stylistic movement" (perhaps not feature-driven)." (Chomsky 2000:207–208)

While analyses of movement have sporadically been cast without reference to morpho-syntactic features since Chomsky's (1995) remarks, the overwhelming trend of analyses has been to attribute movement of all kinds to Agree and some kind of morpho-syntactic features, a view emphasized in the following representative sample of quotes:

> '.movement operations are always parasitic on Agree relations' (van Urk and Richards 2015: 138)

> 'all syntactic movement is feature-driven' (Aravind 2018:11); 'Agree is a prerequisite for movement' (Aravind 2018:21)

> 'The syntactic operation Move is parasitic on Agree'. (Adger and Ramchand 2005: 162)

This broadly dominant perspective has, in fact, been called into question in certain works, either explicitly or as an implication of the kind of analyses presented, hence there are existing precedents and potential support for the proposal made on the basis of Bangla in the current paper. For example, Aoun and Benmamoun (1998) present strong empirical arguments for the conclusion that clitic left dislocation/CLLD in Lebanese Arabic 'is a post-Spell-Out operation taking place in the PF component of the grammar' (p.591) and that 'CLLD is not driven by feature-checking' (p.594). Titov (2020) argues that contrastive focus movement in Russian is not triggered by syntactic features, building on work in Neeleman and van de Koot (2008) and Neeleman, Titov, van de Koot and Vermeulen (2009). Holmberg (2005) suggests that *stylistic fronting* in Icelandic, Faroese and Old Scandinavian is a phonological operation which 'does not belong to 'narrow syntax' (in Chomsky's 2000 terminology) but to the phonological component, following spell-out'

(Holmberg 2015:551). Head-movement has been frequently argued to be phonological in nature and not driven by any syntactic features (Chomsky 2000, 2001, Boeckx, and Stjepanović 2001, Embick and Noyer 2001, Harizanov and Gribanova (amalgamation) 2018). And work on classical Greek in Agbayani and Golston (2010) and modern Japanese in Agbayani, Golston and Ishii (2015) have shown that there are optional scrambling operations in these languages which are driven by prosodic factors at PF, rather than any syntactic features. The Bangla paradigm of DP-internal movement, approached in the way outlined in section 4 now adds further support for the alternative view that not all operations of movement are driven by syntactic features/Agree, offering specifically a PIC-related argument to the different kinds of evidence and argumentation found in the other works mentioned here.

A second conclusion entailed by the account developed in the current paper concerns the nature of cyclic spellout. A common Minimalist assumption has been that the complements of phasal heads are isolated from further syntactic operations when phases have been completed, and are immediately transferred to the phonological component for realization at PF (though this view has been challenged in works such as Cheng and Downing 2016).[12] Such a hypothesis provides a rationale for the effects of the PIC and the need for elements to raise to the edges of phases if they are to enter into morpho-syntactic relations with probes in higher domains. The analysis of the Bangla movement patterns offered here suggests a different interpretation of the process of cyclic spellout, as the scrambling of Agents and Themes remains possible out of QP constituents *after* higher numerals have been merged in SpecQP. If QPs are phases, as suggested by the numeral intervention effects in SS16, this indicates that, contra common assumptions, phasal complements are *not*

[12] With a careful consideration of patterns from various Bantu languages, Cheng and Downing (2016, p.156) argue that 'phonology accesses syntax only when the syntactic derivation is complete'. Chris Golston (p.c.) also notes that certain phonological processes take place across clauses, such as palatalization of the final consonant in the first of the following two clauses (/t/ and /d/ respectively), conditioned by the palatal glide at the beginning of the following clause:

(i) He lied, you swam. [hiláɪdʒuswǽm]

(ii) I hit, you miss. [aɪhíʧjumís]

Such patterns cannot be captured if phases are immediately isolated from the derivation and sent directly to phonology, as there is a clear phonological interaction between elements in different clauses here.

immediately frozen/'locked-up' and transferred to PF once phases are completed, and actually permit further applications of extraction from internal positions when probe-goal Agree relations are not involved.[13] In such a perspective, the PIC governs all instances of inter-phasal Agree, as widely assumed, but *not* the occurrence of other operations which are independent of Agree (by hypothesis, certain applications of movement), resulting in a form of relativized phasal transparency.[14]

The conclusion that cyclic spell-out actually does *not* prohibit all further occurrences of movement clearly represents a challenge to the mainstream Minimalist assumption that phases (or the complements of phasal heads) are fully isolated from the derivation upon their completion. Such a claim naturally calls for further investigation and substantiation, but is also independently supported by various existing analyses of PF movement in which instances of movement may occur from within a lower phase to a landing-site in a higher phasal unit. We will briefly note three such cases, all of which have been very convincingly argued to be post-syntactic PF movement by their authors. A first example is Aoun and Benmamoun's (1998) study of interactions between CLLD, topicalization and *wh*-movement in Lebanese Arabic. Due to the reconstruction and scopal properties of the clitic left-dislocated phrase *saahabt-a* 'her friend' in example (20), this element must be analyzed as an instance of CLLD that takes place as movement at PF, according to Aoun and Benmamoun. The launching-site of this movement is in a lower clause/phase, and it undergoes raising at PF to a sentence-initial position, following the completion of lower phases. It therefore is an example of CLLD movement which is initiated from a lower phase *after* this phase (and other intervening phases) has been completed. The lowest phase is consequently not fully frozen upon its completion/spell-out and permits the PF extraction of an element contained within the phase to a higher, phase-external position.

[13] In this conclusion, there is a similarity with Fox and Pesetsky's (2005) approach to spell-out, in which elements in domains which have already been spelled-out may still move into higher spell-out domains, providing this does not lead to any violations of Order Preservation (the relative ordering of elements in earlier spell-out domains). For reasons of space, we will not attempt any comparison of the proposals in the current paper with those of Fox and Pesetsky (2005), but just note that Fox and Pesetsky also argue that spellout domains are not frozen for extraction, contra mainstream minimalist approaches.

[14] When the PIC is first introduced by Chomsky (2000:207), he adds the following qualification/explanation: 'The cycle is so strict that operations cannot "look into" a phase alpha below its head H.' The 'operations' referenced in the PIC are therefore those in which a probe is blocked from searching inside a phase (below the phase head H), i.e. instances of attempted Agree.

(20) saahabt-a_k fakkaro ‘anno arrafatne kall m’aalme ‘alay-a
friend-her thought.3P that introduced.3SF-me every teacher to-her
‘Her friend, they thought that every teacher introduced her to me.’
(Aoun and Benmamoun 1998:590)

A second set of cases are the occurrences of PF prosodic scrambling described and analyzed in Agbayani, Golston, and Ishii (2015). It is noted that various instances of scrambling in Japanese may violate islands and other syntactic conditions, do not affect quantifier scope, apply to non-syntactic constituents, and must form a phonological phrase. Such patterns are shown to contrast very clearly with other applications of syntactic movement and convincingly lead to the conclusion that Japanese allows post-syntactic prosodically-licensed scrambling of non-syntactic constituents, as in (21). As seen in in (21) the phonological phrase *riyuu-mo naku sono setsu-o* ‘without any reason that theory’ undergoes movement from a deeply embedded position in a lower clause vP phase to an initial position in the matrix clause. Accepting the convincing arguments given by Agbayani et al. (2015) that this is prosodic PF movement, (21) and many other examples in Agbayani et al. (2015) show that elements may be extracted from lower phases after these have been completed.

(21) (riyuu-mo naku sono setsu-o)$_{k\text{-}\Phi}$ Mary-ga
reason-even without that theory-ACC Mary-NOM
[John-ga t_k sinziteiru to] omotteiru <koto>
John- NOM believe COMP think fact
‘Mary thinks [that John believes in that theory without any reason.’
(Agbayani, Golston, and Ishii 2015:58)

Prosodic movement has also been argued to occur in classical Greek in Agbayani and Golston (2010) and in Latin in Agbayani and Golston (2016), with phonological constituents being moved to phonologically defined positions, and able to violate conditions on syntactic movement. As illustrated in (22) from classical Greek, and (23) from Latin, this phonologically-driven movement may bring elements from positions in complete, lower phases to landing-sites in higher clauses:

(22) allos$_k$ ei tis$_m$ bouloito [[ton t_m t_k hoplophoron] prosistasthai]
other if some wish the hoplites to-approach
'if some of the other hoplites should wish to approach'
(Xenophon, Cyropaedia 6.2.13; Agbayani and Golston 2010:162)

(23) meo$_k$ tu epistulam dedisti [t_k servo]
my-DAT you letter-ACC gave servant-DAT
'you gave the letter to my servant'
(Plautus, Pseudolus 1203; Agbayani and Golston 2016:9)

Additionally, if head movement is taken to be PF movement, as argued in many works, Danish V2 patterns offer evidence that this post-syntactic movement may also occur inter-phasally. The patterning of embedded clauses in Danish shows that there is no V-to-T movement of finite verbs (24a), but in matrix clauses, finite verbs occur raised in C (24b). This suggests that there is direct movement from V to C in V2 matrix clauses, hence PF extraction of the verb after the lower vP phase has been completed:

(24) a. Jeg spurgte hvofor Peter ofte havde læst den.
I asked why Peter often had read it
'I asked why Peter had often read it.

b. Peter drikker ofte kaffe om morgonen.
Peter drinks often coffee in morning
'Peter often drinks coffee in the morning.' (Harizanov and Gribanova 2018)

These studies all support the conclusion reached in the current paper (although this is not explicitly flagged in these other works) that further applications of certain types of movement *may* indeed occur from non-edge positions within phasal constituents after phases have been syntactically completed and merged with higher structure - instances of movement which are (by hypothesis) not driven by syntactic features and hence not constrained by the PIC, this including but not restricted to occurrences of post-syntactic PF movement – as Agent/Theme scrambling in Bangla is restricted by relativized minimality, we take it to be syntactic rather than PF movement. Phases are therefore not fully isolated from the derivation once completed, although the complements of phasal heads become opaque for movement driven by Agree.

Thirdly, it has been noted that the paper promotes a broader view of the ways that Relativized Minimality may condition derivations which is independent of the directionality of a search, and applies not only to top-down but also bottom-up searches for syntactic targets. The search for a particular syntactic property (a featural specification, or a landing-site for movement) can be initiated either from above by a functional head probing for a lower goal, or from below, in non-Agree relations, by an element scanning for potential higher attachment-sites, and in both cases may be constrained by relativized minimality.[15]

Finally, if both Agree-dependent and Agree–independent movements may occur within derivations, it needs to be considered what diagnostics may be available to potentially identify and distinguish Agree- from non-Agree-related movement. We take PIC effects, the presence of morpho-syntactic features and any obligatory occurrence of raising as three good syntactic indicators of movement which is a reflex of Agree.[16] Such movement may bring a goal to the position of a probe if an EPP-feature occurs on a higher searching functional head, or to a lower edge position that is visible to the higher probe when no EPP-features are present, to overcome PIC opacity, as, for example, in the case of Hindi partial *wh*-movement to Spec*v*P making *wh*-elements in the phasal edge visible to a higher C probe (Manetta 2010). As for non-Agree-related movement, we believe that what has often been very broadly referred to as 'scrambling' may turn out to be non-feature-driven movement in many cases, when focus and topicalization are not involved. There may also be other dependencies where no obvious morpho-syntactic motivation for movement is present, and Agree again does not play a role in triggering movement. What will be key in distinguishing such cases is the sensitivity of a movement relation to the PIC, which we take to be the signature property of probe-goal relations, or the discovery of a marked difference in locality relations when comparisons are made with other more clearly feature-driven movement dependencies, or patterns which strongly suggest that movement takes place post-syntactically at PF. We believe the investigation of such phenomena should be a significantly fruitful area for further attention.

[15] The way that relativized minimality has been considered here, with Agent/Theme scrambling, has envisaged it as a constraint on the actual *movement* of a genitive-marked Theme over a c-commanding genitive Agent. However, it might also be possible to assume that there is an LF intervention effect on the result of movement of a Theme over an Agent, causing the interpretation of such a chain of movement to be disrupted, so that a scrambled Theme would fail to be linked to its lower theta position [*.Theme-$_{\text{Gen-k}}$.Agent-$_{\text{Gen-m}}$-….t_k…] and therefore not receive interpretation as a Theme.

[16] All of which are absent from Bangla Agent/Theme scrambling within DPs. And, as far as we are aware, there are no languages in which an overt morphological scrambling particle/affix occurs attached to elements which have undergone scrambling (unlike the well-attested occurrence of topic and focus markers in many languages). There is consequently no overt *morphological* support for the assumption of scrambling being feature-driven in general.

REFERENCES

ADGER, D. and RAMCHAND, G. 2005. Merge and move: wh-dependencies revisited. *Linguistic Inquiry* 36:2:161–193.

AGBAYANI, B. & GOLSTON, C. 2010. Phonological Movement in Classical Greek. *Language* 86.1: 133–167.

AGBAYANI, B. & GOLSTON, C. 2016. Phonological constituents and their movement in Latin. *Phonology* 33:1–42.

AGBAYANI, B., GOLSTON, C. & ISHII, T. 2015. Syntactic and prosodic scrambling in Japanese. *Natural Language and Linguistic Theory* 33:47–77.

AN, D-H. 2014. Genitive case in Korean and its implications for noun phrase structure. *Journal of East Asian Linguistics* 23: 361–392.

AOUN, J. & BENMAMOUN, E. 1998. Minimality, reconstruction, and PF movement. *Linguistic Inquiry* 29:4:569–97.

ARAVIND, A. 2018. Licensing long-distance wh-in-situ in Malayalam. *Natural Language and Linguistic Theory* 36: 1–43.

BAILYN, J. 2004. The case of Q. In *FASL 12: Proceedings of the Formal Approaches to Slavic Linguistics 12*. ed. by Arnaudova, O., Browne, W., Rivero, M.L., Stojanovic, D, 1–36. Ann Arbor: University of Michigan Press.

BAILYN, J. 2020. The scrambling paradox. *Linguistic Inquiry* 51: 635–669.

BAKER, M. 2003. *Lexical Categories: Verbs, Nouns, and Adjectives*. Cambridge: Cambridge University Press.

BECK, S. 1996. Quantified structures as barriers for LF movement. *Natural Language Semantics* 4, 1–56.

BECK, S. 2006. Intervention effects follow from focus interpretations. *Natural Language Semantics*, 14:1–56.

BECK, S. & KIM, S-S. 1997. On Wh- and operator-scope in Korean. *Journal of East Asian Linguistics* 6, 339–384.

BHADRA, D. 2018. Evidentials are syntax-sensitive: the view from Bangla. *Glossa*. 3: 1–39.

BHATTACHARYA, T. 1999. The Structure of the Bangla DP. Doctoral dissertation, University of London.

BIGGS, A. 2016. Locating variation in the dative alternation. *Linguistic Variation* 16:2:151–182.

BOECKX, C. & STJEPANOVIĆ, S. 2001. Head-ing toward PF. *Linguistic Inquiry* 32:345–355.

BOECKX, C. & JEONG, Y. 2004. The fine structure of intervention in syntax. In *Issues in current linguistic theory: A festschrift for Hong Bae Lee*, ed. by Chungja Kwon and Wonbin Lee, 83–116. Seoul: Kyungjin.

BOŠKOVIĆ, Ž. 2016. Getting really edgy: On the edge of the edge. *Linguistic Inquiry* 47(1): 1–33.

BOŠKOVIĆ, Ž. & TAKAHASHI, D. 1998. Scrambling and last resort. *Linguistic Inquiry* 29:347–366.

BRUENING, B. 2020. Idioms, Collocations, and Structure: Syntactic Constraints on Conventionalized Expressions. *Natural Language and Linguistic Theory* 38: 365–424.

BYBEE, J., PERKINS, R. & PAGLIUCA, W. 1994. *The Evolution of Grammar*. Chicago: University of Chicago Press.

CHENG, L. L-S & DOWNING, L-J. 2016. Phasal Syntax = Cyclic Phonology? *Syntax* 19:2:156–191.

CHOMSKY, N. 1995. *The Minimalist Program*. Cambridge, Mass.: MIT Press.

CHOMSKY, N. 2000. Minimalist Inquiries. In *Step by step: essays on minimalist syntax in honor of Howard Lasnik*, ed. by Roger Martin, David Michaels, and Juan Uriagereka, 89–155. Cambridge, MA: MIT Press.

Chomsky, N. 2001. Derivation by Phase. In *Ken hale: A life in language*, ed. Michael Kenstowicz. Cambridge, Mass: MIT Press, 1–52.
Cinque, G. 1980. On extraction from NP in Italian. *Journal of Italian Linguistics* 1/2: 47–99.
Cinque, G. 1990. *Types of A'-dependencies*. Cambridge, Mass: MIT Press.
Cinque, G. 1999. *Adverbs and functional heads*. Oxford: Oxford University Press.
Citko, B. 2014. *Phase Theory*. Cambridge: Cambridge University Press.
Danon, G. 2012. Two structures for numeral-noun constructions. *Lingua*, 1282–1307.
Dasgupta, P. 1987. Sentence particles in Bangla. In E. Bashir, M. Deshpande & P. Hook (eds.) *Selected papers from SALA 7*, 49–75. Bloomington: Indiana University Linguistics Club.
Dowty, D. 1991. Thematic proto-roles and argument selection. *Language* 67: 547–619.
Embick, D. & Noyer, R. 2001. Movement operations after syntax. *Linguistic Inquiry* 32: 555–595.
Epps, P., Bowern, C., Hansen, C., Hill, J. & Zentzl, J. 2012. On numerical complexity in hunter-gatherer languages. *Linguistic typology* 16:41–109.
Everett, C. 2013. *Linguistic Relativity: evidence across languages and cognitive domains*. Berlin: De Gruyter Mouton.
Fox, D., & Pesetsky, D. 2005. Cyclic linearization of syntactic structure. *Theoretical Linguistics* 31(1–2): 1–45.
Franks, S. 1994. Parametric properties of numeral phrases in Slavic. *Natural Language and Linguistic Theory* 12: 597–674.
Georgi, A. 2015. Discourse and the syntax of the left periphery. In Josef Bayer, Roland Hinterhözl and Andreas Trotzke (eds.) *Discourse-oriented syntax*. Amsterdam: John Benjamins, 229–250.
Hammarström, H. 2010. Rarities in numerical systems. In Jan Wohlgemuth and Michael Cysouw (eds.) *Rethinking universals: How rarities affect linguistic theory*. Berlin: Mouton de Gruyter, 11–60.
Harizanov, B. & Gribanova, V. 2018. Whither head-movement? *Natural Language and Linguistic Theory* 37: 461–522.
Holmberg, A. 2005. Stylistic fronting. In Martin Everart and Henk van Riemsdijk (eds.) *The Blackwell companion to syntax*. Oxford: Blackwell, 530–563.
Hopper, P. & Traugott, E. 1997. *Grammaticalization*. Cambridge: Cambridge University Press.
Kidwai, A. 2000. *XP-Adjunction in Universal Grammar*. Oxford: Oxford University Press.
Kuno, S. 1973. *The Structure of the Japanese Language*. Cambridge, Mass.: MIT Press.
Legate, J-A. 2003. Some interface properties of the phase. *Linguistic Inquiry* 34:506–16.
Manetta, E. 2010. Wh-expletives in Hindi-Urdu: the vP Phase. *Linguistic Inquiry* 41:1, 1–34.
Miyagawa, S and Arikawa, K. 2007. Locality in Syntax and Floated Numeral Quantifiers. *Linguistic Inquiry* 38:645–670.
Miyagawa, S. 2010. *Why Agree? Why Move?* Cambridge, Mass: MIT Press.
Neeleman, A. & Van de Koot, H. 2008. Dutch scrambling and the nature of discourse templates. *Journal of Comparative Germanic Linguistics* 11:137–189.
Neeleman, A., Titov, E., Van de Koot, H. & Vermeulen, R. 2009. A syntactic typology of topic, focus, and contrast. In Jeroen van Craenenbroeck,(ed.) *Alternatives to cartography*, Berlin: De Gruyter Mouton, 15–51.

Pereltsvaig, A. 2006. Passing by cardinals: in support of head movement in nominals. In *FASL 14: Proceedings of the Formal Approaches to Slavic Linguistics 14*. ed. by Lavine, J., Franks, S.L., Tasseva-Kurktchieva, M., Filip, H., 277–92. Ann Arbor: Michigan Slavic Publications.
Pica, P., Lemer, C., Izard, V. & Dehaene, S. 2004. Exact and approximate arithmetic in an Amazonian language. *Science* 306:499–503.
Radford, A. 1988. *Transformational Grammar*. Cambridge: cambridge University Press.
Richards, N. 2001. *Movement in language: interactions and architectures*. Oxford: Oxford University Press.
Rizzi, L. 1990. *Relativized Minimality*. Cambridge: Mass.: MIT Press.
Rizzi, L. 2018. Intervention effects in grammar and language acquisition. *Probus* 30:339–367.
Roberts, I. & Roussou, A. 2003. *Syntactic Change: A Minimalist Approach to Grammaticalization*, Cambridge University Press.
Rudin, C. 1988. On multiple wh questions and multiple wh fronting. *Natural Language and Linguistic Theory* 6: 445–501.
Saito, M. 1989. Scrambling as semantically vacuous A′-Movement. In Mark Baltin and Anthony Kroch (eds.), *Alternative Conceptions of Phrase Structure*, Chicago: University of Chicago Press.
Simpson, A. & Syed, S. 2016. Blocking effects of higher numerals in Bangla: a phase-based analysis. *Linguistic Inquiry* 47:754–763.
Simpson, A. & Wu, Z. 2002. Agreement, shells and focus. *Language* 78:2:287–313.
Syed, S. 2017. The structure of noun phrases in Bengali: what it tells us about phases and the universality of DPs. PhD dissertation, University of Southern California.
Syed, S. 2014. Adjective-fronting as evidence for focus and topic movement within the Bangla nominal domain. In Pritha Chandra and Richa Srishti (eds.) *The lexicon-syntax interface: perspectives from South Asian languages*. Amsterdam: John Benjamins.
Ticio, E. 2005. Locality and Anti-Locality in Spanish DPs. *Syntax* 8:3, 229–286.
Titov, E. 2020. Optionality of movement. *Syntax* 23:4:347–374.
Van Gelderen, E. 2004. *Grammaticalization as Economy*. Amsterdam: John Benjamins.
Van Urk, C. & Richards, N. 2015. Two components of long-distance extraction: successive cyclicity in Dinka. *Linguistic Inquiry* 46:1:113–55.

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