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Sinhala Object Scrambling Revisited

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1 Introduction

The prevailing assumption in the scarce Sinhala syntax literature is that the OSV word order in Sinhala (1b) is syntactically derived from its canonical SOV word order (1a) by constituent scrambling (Chandralal 2010, Gair 1998, Kanduboda 2011, Kariyakarawana 1998, Kishimoto 2005 and Sumangala 1992, among others).

- (1) a. sarath kawayak liyuwa.
 Sarath.NOM poem.ACC write.PST
 Sarath wrote a poem.
 b. kawayak_i sarath t_i iyuwe.

Inman (1994) and Kariyakarawana (1998) further assume that the scrambled OSV word order in (1b) is associated with different semantic-pragmatics from its canonical SOV counterpart, an assumption that still remains to be empirically tested in a formal analysis of scrambling in Sinhala. Using diagnostics standard in scrambling research, including (radical) reconstruction, binding relations, Weak Crossover (WCO) effects, scopal ambiguity and parasitic gaps (Bošković 2004, Dayal 1994, Karimi 2005, Mahajan 1990, Miyagawa 2003, 2009 and Neeleman and Reinhart 1998, Saito 2004, 2006), in this paper I argue that: (i) the OSV word order in Sinhala is derived through syntactic movement (contra Bošković 2004, Bošković and Takahashi 1998 for Japanese) (ii) it is uniformly an A-bar movement operation (contra Mahajan 1990 and Miyagawa 2009) and (iii) the movement of the object results in clear semantic effects as the fronted object is obligatorily associated with a topic or focus interpretation (contra Bošković 2004, Bošković and Takahashi 1998, Saito 1985, 2006). A broader goal is to analyze Sinhala and determine its place in the typology of human languages as characterized by a Minimalist theory of principles and parameters.

The paper is structured as follows. Section 2 provides an overview of so-called object scrambling in Sinhala. Section 3 presents the proposed analysis and Section 4 provides a summary and concludes the discussion.

2 Observations

So-called object scrambling, illustrated in (1b), exhibits at least five main properties in Sinhala. First, a scrambled object neither feeds nor bleeds binding. Notice that the anaphor embedded in the subject remains unbound in both (2a) and scrambled (2b):

- (2) a. *thaman-ge_i malli sunil-wə_i taume-di dækka.
 self-GEN brother.NOM Sunil-ACC town-in see.PST
 * ‘Self’_{s_i} brother saw Sunil_i in town.’
 b. *sunilwə_i thaman-ge_i malli t taumedi dækka.

Second, (3b) is as grammatical as (3a), implying that the Principle A is satisfied at LF through reconstruction, a property generally associated with A-bar movement:

- (3) a. demawpiyo_i thaman-ge_i lamai-tə adarei.
 parents.NOM self-GEN children-DAT love.PRE
 ‘Parents_i love self’_{s_i} children.’

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- b. thaman-ge_i lamaitə_j demawpiyo_i t adarei.

Third, as evidenced in the following example, Sinhala object scrambling can license parasitic gaps.

- (4) parənə karekə sara [t_i hadanne nətuwa] t_i wikunuwa.
 old car.ACC Sara.NOM repairing without sell.PST
 ‘The old car, Sara sold without repairing.’

Fourth, similar to other SOV languages (see Karimi 2005), object scrambling in Sinhala does not trigger WCO effects: (5a) shows that wh-in-situ in Sinhala triggers WCO effects due to LF wh-movement (Kariyakarawana 1998), but object scrambling in (5b) does not.

- (5) a. *eya-ge_i amma ka-tə_i də adare?
 he-GEN mother.NOM who-DAT Q love-PRE-E
 ‘*Who_i does his_i mother love t_i?’
 b. katə_i də eya-ge_i amma t adare?

Finally, even though overt scrambling in languages such as Japanese (Miyagawa 2009) and Persian (Karimi 2005) alters scope interpretations, so-called object scrambling does not affect scope interpretation in Sinhala:

- (6) a. hāmə gayəkəyamə sinduwak kiwwa.
 every singer.NOM song.ACC sing.PST
 ‘Every singer sang a song’
 [∀ > ∃; *∃ > ∀]
 b. sinduwak_i, hāmə gayəkəyamə t_i kiwwa.
 [∀ > ∃; *∃ > ∀]

3 Analysis

3.1 Sinhala Object Scrambling as A-bar Movement

There are at least four major syntactic properties associated with A-movement which have been taken to distinguish it from A-bar movement: (a) the ability to create a new A-binder (b) the suppression of WCO effects and the (c) absence of reconstruction: the invisibility of a copy of an A-moved element for semantic interpretation (e.g., Lasnik 1999, Mahajan 1990, Epstein and Seely 1999/2006) and (d) the failure to license parasitic gaps. Following Mahajan (1990), different studies have used these properties as diagnostics to determine the nature of movement involved in scrambling cross-linguistically (e.g., Dayal 1994, Karimi 2005, Miyagawa 1997 and subsequent work, and Saito 2006). In the following discussion, I use similar tests to show that Sinhala object scrambling is an A-bar movement operation.

Binding properties are often treated as clear indications of the nature of movement involved in scrambling (see, among others, Dayal 1994, Karimi 2005, Mahajan 1990 and Saito 2006). The common assumption is that only elements in A-positions are visible for A-binding. The three principles of Binding Theory (Chomsky 1981), as reviewed below, state that:

- (7) A: An anaphor must be A-bound in its governing category.
 B: A pronoun must be free in its governing category.
 C: An R-expression must be A-free.

(The governing category for an element α is a minimal XP containing α , its governor and an accessible subject.)

As observed by Gair and Karunatilake (1998) and Kariyakarawana (1998), all three principles of Binding Theory hold in Sinhala. This is illustrated in (8) below:

- (8) a. siri_i prasiddiye thaman-wə_i/eya-wə_{*i/j} wiwechəṇəyə-kəla.
Siri.NOM openly self-ACC him-ACC criticize-PST
'Siri_i openly criticized himself_i/him_{*i/j}.'
- b. siri_i [ravi_j thaman-wə_{*i/j} eyawə_{i/*j} wiwechanayə-kəla kiyəla] dannəwa.
Siri.NOM Ravi.NOM self-ACC him-ACC criticize-PST that know.PRE
'Siri_i knows that Ravi_j criticized himself_{*i/j}/ him_{i/*j}.'
- c. ohu_i lal-tə_i kəməti.
he.NOM Lal-DAT like.PRE
'*He_i likes Lal_i.'

According to Binding Principles A and B, anaphors and pronouns are in complementary distribution; an anaphor can only be bound where a pronoun is free. In (8a), the subject Siri cannot bind the pronoun *eyawə* (he) because this would violate Binding Principle B. But it has to bind the anaphor *thamanwə* (himself) which would then be bound in its governing category. The reverse pattern is observed in (8b), regarding binding by the matrix subject. Finally, (8c) shows that Sinhala disallows the binding of an R-expression *laltə* by a c-commanding antecedent *ohu* (he). Since these Sinhala binding properties are consistent with Binding Theory, binding can be considered a reliable test to determine the nature of movement involved in Sinhala scrambling, in similar ways to other approaches that have used binding properties as diagnostics for movement typing.

Based on the fact that a scrambled object in Hindi can serve as an antecedent for a reflexive in the subject position, Mahajan (1990: 39) argues that the scrambled object undergoes A-movement. The same test is applied to Sinhala in (9) repeated from (2).

- (9) a. *thaman-ge_i malli sunil-wə_i taume-di dækka.
self-GEN brother.NOM Sunil-ACC town-in see.PST
'* Self_i brother saw Sunil_i in town.'
- b. *sunilwə_i thaman-ge_i malli *t* taumedi dækka.

The ungrammaticality of (9a) shows that Sinhala, similar to English, does not allow an anaphor to be a part of the subject because it cannot be bound by a c-commanding antecedent in the same clause. In addition, if scrambling in Sinhala were A-movement, (9b) would be expected to be grammatical: the scrambled object, which now occurs in a position c-commanding the anaphor, should A-bind it in its governing category. However, the ungrammaticality of the scrambled sentence in (9b) suggests that the scrambled element is in an A-bar position. Further evidence for this hypothesis comes from (10) which illustrates that a sentence in Sinhala can be grammatical despite the scrambling of a phrase with an anaphor to the sentence initial position (10b).

- (10) a. demawpiyo_i thaman-ge_i lamai-tə adarei.
Parents.NOM self-GEN children-DAT love.PRE
'Parents_i love self_i's children.'
- b. thaman-ge_i lamai-tə_j demawpiyo_i *t* adarei.

If Condition A were applied in overt syntax (after overt movement occurs), (10b) would be expected to be a violation of Binding Principle A because the anaphor in that position is not bound by any antecedent. Thus, both the ungrammaticality of (9b) and the grammaticality of (10b) indicate that scrambling in each of the above cases involves A-bar movement. Dayal (1994: 241) makes the same argument for Hindi.

One other property that distinguishes A-movement from A-bar movement is its potential for re-construction (Mahajan 1990). Reconstruction, as discussed by Chomsky (1992), Huang (1993) and Mahajan (1990) and many others, refers to the process by which a moved phrase is interpreted back in its (external)-merged position. For instance, the following English example would be a clear violation of Binding Principle A, if A-bar movement was not characterized by reconstruction. The assumption is that the binding requirement in the following sentence is fulfilled at LF through reconstruction.

- (11) [Which picture of himself_i] did Bill_i like *t* ?

Sinhala data in (9) and (10) are similar to the English example in (11) in the sense that reconstruction is responsible for their grammaticality or ungrammaticality. In (9b), the sentence is ungrammatical when the scrambled object is obligatorily reconstructed to its thematic position. Meanwhile, (10b) is grammatical because the scrambled anaphor is A-bound in its first merged position, as the result of obligatory reconstruction after A-bar movement. This evidence shows that scrambling does not alter the A-binding possibilities in Sinhala, a property associated with A-bar movement.

Reconstruction is also associated with scope interpretation involving quantifiers and negation. This has been extended to scrambling cross-linguistically (e.g., Karimi 2005, Miyagawa 2003, 2009, Saito 1989 and Tada 1993) to determine the nature of movement involved in it. One observation made by Miyagawa (2003) and Karimi (2005) for Japanese and Persian respectively is that scrambling yields scopal ambiguity in cases where the non-scrambled counterpart does not. However, the following example shows that scrambling does not affect scope interpretations in Sinhala:

- (12) a. *hæmə gayəkəyamə sinduwak kiwwa.* [A > E; *E > A]
 every singer.NOM song-ACC sing-PST
 Every singer sang a song
 b. *sinduwak_i, hæmə gayəkəyamə t_i kiwwa.* [A > E; *E > A]

In (12a), *hæmə gayəkəyamə* (every singer) takes wide scope when it c-commands the existential quantifier *sinduwak* (a song) in the surface position. The same scope interpretation is possible in (12b) despite object scrambling, implying that the scrambled phrase, by being in an A-bar position, can undergo reconstruction for scope purposes.

So far the discussion based on binding and reconstruction suggests that clause internal object scrambling in Sinhala bears A-bar properties. One other test that can determine the nature of movement involved in scrambling is parasitic gaps. A parasitic gap, as first discussed by Engdahl (1983:1), refers to a null element whose presence has to be licensed by the existence of another null element in the sentence. According to Chomsky (1982) and Mahajan (1990), a parasitic gap can only be bound by an antecedent in an A-bar position.

- (13) a. Which article did you file..... without reading.....?
 b. This is the kind of food you must cook..... before you eat.....
 c. *John was killed *t* by a tree falling on *e*.
 d. *Mary seemed *t* to disapprove of John's talking to *e*.
 (Engdahl 1983:5)

Mahajan (1990) and Karimi (2005) show that only A-bar scrambling can license parasitic gaps in Hindi and Persian, respectively. The following examples show that this property is associated with Sinhala object scrambling too.

- (14) *parənə karekə sara [t_i hadanne nætuwa] t_i wikunuwa.*
 old car.ACC Sara.NOM repairing without sell-PST
 'The old car, Sara sold without repairing.'
 (15) *redioekə nelu [t_i ahanne nætuwə] t_i wahala dæmme.*
 radio.ACC Nelu.NOM listen without switch.PST off.
 'It is the radio that Nelu switched off without listening to.'
 (16) *monə pəpərekə də_i siri [t_i kiyawanne nætuwa] t_i filekəle?*
 which paper.ACC Q Siri.NOM reading without file-PST
 'Which paper did Siri file without reading?'

Among the above examples, (14) shows an instance of topic-driven object scrambling while (15) shows focus driven object scrambling. In (16), the scrambled object is a wh-phrase. As well-established in literature (see Kishimoto 2005, among others), Sinhala lacks overt wh-movement. Hence, the parasitic gap in (16) must be licensed by wh-scrambling through A-bar movement. Thus, if a parasitic gap, as widely assumed (e.g. Mahajan 1990), can only be licensed by an ele-

ment in an A-bar position, the data confirms that local object scrambling in Sinhala is indeed A-bar movement.

Despite the evidence presented so far, the absence of WCO effects in (17), repeated from (5), challenges a uniform treatment of scrambling as A-bar movement.

- (17) *eya-ge_i amma katə_i də adare?*
 he-GEN mother-NOM who-DAT Q love.PST
 *‘Who_i does his_i mother love *t*?’

The absence of WCO effects is cross-linguistically a common property associated with scrambling (see Karimi 2005 and Dayal 1994). WCO, originally referred to as the Leftness Condition (Chomsky 1976), is observed when a variable (represented by a movement trace) is co-indexed with a pronoun to its left which fails to c-command the variable/trace:

- (18) a. *Who_i does his_i mother like *t*?
 b. *His_i mother likes everyone_i.

Mahajan (1990) uses the absence of WCO effects as evidence for A-movement in Hindi scrambling. Still, given that WCO is not an invariant property of A-bar movement, it may not necessarily be a reliable test to determine the kind of movement involved in scrambling. For instance, Lasnik & Stowell (1991) shows that even in English, some instances of A-bar movement, including tough movement, parasitic gap and topicalization do not trigger WCO effects:

- (19) Who_i *t_i* will be easy for us [to get [his_i mother] to talk to *e_i*?
 (20) Who_i did you stay with *t_i* before [his_i wife] had spoken to *e_i*?
 (21) This book_i, I expect [its_i author] to buy *e_i*.

Thus, the absence of WCO effects in object scrambling, cross-linguistically a common property associated with scrambling, may not weaken its A-bar movement analysis. As Dayal (1994) rightly suggests, it will only show that the kind of A-bar movement involved in scrambling is different from English wh-movement which is characterized by WCO effects.

Thus, empirical evidence from binding, reconstruction, parasitic gaps favors a conclusion that so-called local object scrambling in Sinhala undergoes A-bar movement. Even though the absence of WCO is generally associated with A-movement, cross-linguistic evidence shows that it is not an invariant property of A- or A-bar movement.

3.2 Scrambling as Topic/Focus Movement

In contrast to semantically vacuous Long Distance Scrambling (LDS) (see Saito 2004), local scrambling is generally assumed to be feature-driven (e.g., Bailyn 2001, Karimi 2005, Miyagawa 2003, 2006, and 2009). For instance, Miyagawa 2009 analyzes local object scrambling in Japanese as topic/focus driven A-movement. Following Miyagawa (2009), in this section, I provide empirical evidence to show that so-called object (local) scrambling in Sinhala is also driven by topic/focus features in the C-domain. Still, Sinhala is crucially different from Japanese in the sense that such movement in Sinhala is characterized by A-bar properties. Hence, in order to account for the Sinhala facts, I adopt Rizzi’s (1997 & 2004) split CP hypothesis, the notion that the complementizer system consists of several independent functional projections. This is illustrated in (22) below:

- (22) [CP [ForceP [TopP* [FocP [TopP* [FinP [IP]

Out of the projections illustrated in (22), the most relevant to our discussion are TopP and FocP because they are directly associated with object scrambling in Sinhala, as I will argue below. Following Chomsky (1995 and subsequent work), I assume that in each phrase, the relevant head, *Top* or *Foc* carries an uninterpretable feature which probes to locate the matching goal in its c-command domain. Feature valuation happens through the operation of Agree and the edge feature

on the relevant functional head drives the goal to its Spec-position (see Chomsky 2005).

3.2.1 Topic/Focus in Sinhala

Before I argue that Sinhala object scrambling is indeed topic/focus driven A-bar movement, I review some basic facts about topic and focus constructions in the language which are crucial for the proposed analysis. Once these facts are established, I extend them to scrambling cases.

Topic and focus are two notions commonly associated with information structure in current syntactic theory (e.g., Rizzi 1997, 2004 and refs. therein). Though there are different notions of Topic (e.g. sentence topic, discourse topic etc.), in this study, I use the term to refer to ‘aboutness topic’ in the sense of Reinhart (1981): ‘a referent which denotes what the rest of the sentence is about.’ As Reinhart illustrates, if *Max saw Rosa yesterday* is used to answer the question (a) *Who did Max see yesterday?* Max is the topic of the sentence. But if it is used to answer the question, (b) *Has anybody seen Rosa yesterday*, Rosa becomes the topic of the sentence. Focus, meanwhile, is defined as highlighted information with regard to the rest of the sentence (Vermeulen 2010). It could also be identified as the answer to the wh-phrase of a question. For instance, in (23) Mary receives the focus of the sentence.

- (23) A. Who did Sara invite to the party? B: Sara invited MARY to the party.

Finally, contrastive topic “implies the negation of at least one alternative utterance” in a given context (Vermeulen 2010:3).

Focus and *Topic* have distinct properties in Sinhala. They can be clearly distinguished based on both (a) the grammatical particles attached to an XP and (b) morphological marking on the verb (Gair & Sumangala 1991 and Kariyakarawana 1998). These properties are illustrated via (24) (neutral sentence), (25) (focus construction), and (26) (topic construction).

- (24) sarath kawayak liyuw-a.
Sarath.NOM poem.ACC write.PST-A
‘Sarath wrote a poem.’
- (25) sarath tamai kawayak liyuw-e
Sarath.NOM FOC poem.ACC write.PST-E
‘It is Sarath who wrote a poem.’
- (26) sarath-nan kawayak liyuw-a.
Sarath.NOM-TOP poem.ACC write-PST-A
‘As for Sarath, he wrote a poem.’

Among these examples, (24) is a neutral sentence in which the nuclear stress naturally falls on the object. Notice that the verb is marked by the *-a* affix here which is characteristic of neutral finite clauses in Sinhala. In (25), the focus particle *tamai* is attached to the subject. *tamai* is one of the many focus particles that can be attached to a focused XP in Sinhala. Other common particles include *newei*, *yi* and *də* (Gair and Sumangala 1991). Note that focus in Sinhala is also clearly indicated by the morphological *-e* marking on the verb glossed as *E* in (25). This *-e* affix in Sinhala is structure-specific in the sense that it ‘cannot occur unless some constituent not including the verb is focused’ (Gair and Sumangala 1991). In the topicalized (26), the subject is marked by the morphological topic marker *-nan*, which can be attached as a suffix to any topicalized phrase. Also, the verb of a topic construction takes the neutral *-a* affix. As first noted by Kariyakarawana (1998:63), subjects in verbless (*-v*) predicates generate an optional topic reading even in the absence of the morphological topic marker *-nan*, implying that in Sinhala, the topic marker is not obligatory to denote topic.

- (27) gunapala guruwaraye-k.
Gunapala .NOM teacher.ACC-INDEF
‘Gunapala is a teacher’ (or As for Gunapala, he is a teacher).

However, in the discussion below regarding scrambling cases, I will show that this possibility

is not limited to verbless constructions in Sinhala: even in +*v* predicates, a topic interpretation can be obtained in the absence of the overt morphological topic marker *-nan*.

The three sentences in (24), (25) and (26), in addition to their morpho-syntactic differences, also differ in terms of what can be the focus set or topic of each sentence. Let's first focus on the derivations in (24) and (25). According to Neeleman & Reinhart's (1998) focus rule, each syntactic derivation is associated with a distinct focus set. The rule that determines the focus set of a given derivation is given in (28).

- (28) The focus set of IP consists of the constituents containing the main stress of IP.

Thus, if the object receives nuclear stress in a sentence, its focus set can be [IP, VP, and Object]: starting from the constituent that receives nuclear stress, focus shows an upward projection (see also Miyagawa 2003). Even though any member of the set has the potential to be the focus of the derivation, at the interface, one member of the set gets selected as its 'actual focus' (p.328).

The example in (24) shows this possibility. The natural way to produce (24) in Sinhala would be to place the nuclear stress on the object. Thus, its focus set includes [IP, VP and Object]. As a result, the sentence can be used to answer any question targeting the object (*What did Sarath write?*), VP (*What did Sarath do?*) or the entire IP (*What happened?*). But in (25), when the subject is focalized, the focus set of the sentence has a single member: [Subject]. Therefore, it cannot be used to answer the same questions as in (24). Following Neeleman and Reinhart (1998: 20), I assume that the 'marked' focus set in the case of (25) is obtained by undoing the outcome of the nuclear stress rule observed in (28). Thus, in (25), the subject with the focus particle *-thamai* invariably becomes the only candidate for actual focus at the interface. But this contrasts with (24) in which any member of its focus set [IP, VP and Object] has the potential to be the actual focus of the sentence at the interface. The change in the focus potential in (25) is also obvious in the fact that there is an element of presupposition associated with it, making it an awkward discourse initiator (See Kidwai 2000 for the same observation in Hindi-Urdu).

Finally, (26) is a case of topicalization in Sinhala. If it receives a contrastive topic interpretation, which is the most natural interpretation when the topic marker *-nan* is present, the entire clause can be an answer to the following question:

- (29) A: Did anyone do anything today?
B: Sarath wrote a poem (But not anyone else).

If the subject receives 'aboutness topic' interpretation, it can simply be the answer to X in the request, tell me about x (Reinhart 1991):

- (30) A: Tell me about Sarath?
B: Well, Sarath wrote a poem.

3.2.2 Scrambling and Topic/focus in Sinhala

The discussion in the previous section indicates that topic/focus constructions in Sinhala have distinct semantic properties. Hence, if movement in object scrambling is driven by topic/focus features, not only scrambled sentences are expected to show similar properties but also those should be different from their non-scrambled counterparts. This, indeed, is the observation that we make regarding object scrambling in Sinhala. The following examples illustrate this: (31) shows the canonical word order, while (32) and (33) show its scrambled word order:

- (31) sarath kawiyak liyuw-a.
Sarath.NOM poem.ACC write.PST-A
'Sarath wrote a poem.'
(32) kawiyak_i sarath t_i liyuw-e.
poem-ACC Sarath.NOM write-PST-E
(33) kawiyak_i sarath t_i liyuw-a.
poem.ACC Sarath.NOM write.PST-A

Sinhala undergoes overt syntactic movement to either the Spec-TopP or Spec-FocP, depending on whether the movement is motivated by the topic or focus feature in the CP domain. The specific nature of site of the movement is denoted by *-e* versus *-a* morphology on the verb.

4 Concluding Remarks

This paper analyzed the prevailing assumption in Sinhala syntactic literature that the OSV word order in the language is derived by constituent scrambling. Even though the scrambling literature in generative syntax is extremely rich, to my knowledge, this is the first detailed formal analysis of this phenomenon in Sinhala. Contra the general assumption, I have argued that (i) the OSV word order in Sinhala is derived by feature-driven A-bar movement of the object into the ‘Left periphery’ and (ii) this movement in Sinhala is triggered by either a Topic or Focus feature in the CP domain. The landing site of the object in a given derivation is further indicated by verb final morphology, *e* (focus) vs. *a* (topic). Based on this evidence, I conclude that the proposed topic/focus driven A-bar movement analysis could readily account for the OSV word order in Sinhala without appealing to ‘scrambling,’ cross-linguistic a phenomenon that has remained problematic for different theoretical approaches.

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