SCRAMBLING, LF LOWERING, AND OPTIONALITY

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Thıs paper presents empırıcal data from Japanese, Turkısh and Hındı whıch show that an analysıs of scramblıng allowıng phrases to freely surface base generate and subsequently lower to a VP-ınternal theta posıtıon at LF (Boškovıc and Takahashı 1998, B&T henceforth) ıs crosslınguıstıcally ınadequate Under the assumptıon that 'scrambled' phrases are freely base generated, ıt becomes mysterıous that some phrases cannot scramble Moreover, some observed LF lowerıng ıs not motıvated by the requırement of the scrambled phrase to have ıts theta features checked but rather ıs motıvated by the requırement that some operators must remaın clause bounded at the relevant level of representatıon, presumably LF Thıs correctly captures the dıfference ın ınterpretatıon between two scope takıng elements dependıng on whether or not they are clausemates Addıtıonally, data on WCO (weak crossover) and bındıng ın Hındı and Turkısh clearly exhıbıt counterexamples to the proposed LF lowerıng of 'scrambled' phrases

1 Tradıtıonal Analysıs

Scramblıng, be ıt short dıstance or long dıstance, has been vıewed to be an optıonal overt S-structure adjunctıon operatıon (Hoji 1985, Saıto 1985, among others) Thıs ınstance of Move α moves a constituent from ıts D-structure theta posıtıon and adjoıns ıt to the IP of the root clause (1), for ınstance, ıllustrates an example of short dıstance scramblıng The dırect object whıch ıs base generated ın ıts canonıcal posıtıon, (1a), has been moved to sentence ınıtıal posıtıon where ıt ıs IP-adjoıned (1c) The resultıng structure ıs gıven ın (1c) Examples (1)-(4) are from Saıto 1989

1 a Mary-ga sono hon-o yonda (koto)
Mary-NOM that book-ACC read fact
'Mary read that book '
b sono hon-o Mary-ga yonda (koto)
c [$_S$ sono hon-o$_i$ [$_S$ Mary-ga [$_{VP}$ t$_i$ yonda]]] (koto)

(2) ıllustrates a case of long dıstance scramblıng ın whıch a constıtuent of the embedded clause, here the dırect object *sono hon-o*, ıs scrambled to the sentence ınıtıal posıtıon [1][2]

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[1] Sınce the cıted Japanese, Hındı and Turkısh examples appear ın theır orıgınal notatıon, some notatıonal ınconsıstencıes are observable ın thıs paper I would lıke to thank the audıence at the 1999 MALC for theır comments I also thank Kyle Johnson for dıscussıng some ıssues related to the topıc covered ın thıs paper

[2] In Japanese multıple scramblıng ıs possıble (e g , Harada 1977, Saıto 1989) Moreover, not only NPs but also CPs can be scrambled as shown ın (ı) from Saıto 1989)
(ı) [$_S$ [$_S$ Mary-ga sono hon-o yonda to]$_i$ [$_S$ John-ga t$_i$ ıtta]] (koto)

2 a [$_S$ John-ga [$_S$ Mary-ga sono hon-o yonda to] itta] (koto)
John-NOM Marry-NOM that book-ACC read COMP said fact
'John said that Mary read that book'
b [$_S$ sono hon-o$_i$ [$_S$ John-ga [$_{S'}$ Mary-ga t_i yonda to] itta]] (koto)

In the literature, the IP-adjoined position of the scrambled phrase is considered an A' position in long distance scrambling (Hoji 1985, Saito 1985, Mahajan 1990), but an A or an A' position in short distance scrambling (e g , Saito 1985, 1989, also cf Webelhuth 1989)

Another property associated with scrambling, given the Japanese data, relates to the contention that this optional S-structure movement can be undone at LF (Saito 1989) The ungrammaticality of (3a) is attributed to the fact that a wh-phrase, here *dare-ni* of the matrix clause, is outside the c-commanding domain of the question morpheme *ka* in the embedded clause

3 a * [$_S$ John- ga dare-ni [$_S$ [$_S$ Mary-ga kuru] ka] osieta] koto
John-NOM who-to Mary-NOM come Q taught fact
'the fact that John told who Q Mary is coming'

In contrast, the wh-phrase in (3b) is within the same clause as the question morpheme, and therefore within the c-commanding domain of *ka*

b [$_S$ John-ga Mary-ni [$_S$ [$_S$ dare-ga kuru] ka] osieta] koto
John-NOM Mary-to who-NOM come Q taught fact
'the fact that John told Mary Q who is coming'

Consequently, when a wh-phrase of the embedded clause scrambles to sentence initial position outside the c-commanding domain of the question morpheme as in (4b), the requirement that the wh-phrase be c-commanded by the question morpheme will be met only if the wh-phrase lowers at LF This yields an LF representation as in (4a)

4 a [$_S$ Mary-ga [$_S$ [$_S$ John-ga dono hon-o tosyokan-kara karidasita] ka]
Mary-NOM John-NOM which book-ACC library-from checked-out Q

siritagatteiru] koto
want-to-know fact
'the fact that Mary wants to know Q John checked out which book from the library'
b ? [$_S$ dono hon-o [$_S$ Mary-ga [$_{S'}$ [$_S$ John-ga t_i tosyokan-kara karidasita] ka]
siritagatteiru] koto

In conclusion, the optional S-structure adjunction operation of scrambling can be undone at LF with no consequences since unlike wh-movement and topicalization in English, scrambling does not form an operator-variable structure at LF (Saito 1989)

2 LF lowering analysis of scrambling

Bošković and Takahashi (1998) propose an alternative account of scrambling, which is claimed to be conceptually superior because the mysterious property of being undone at LF becomes an obligatory LF lowering operation in scrambling In B&T, 'scrambled' phrases do not start out in their canonical theta position (but cf Saito and Fukui 1998, Miyagawa 1997) Rather, they are freely surface base generated at IP as in (5a=(2)) and are subsequently LF lowered to a VP-internal theta position to have their theta features checked as shown in (5b) [3]

5 a [$_{IP}$ sono hon-o [$_{IP}$ John-ga [$_{CP}$ Mary-ga yonda to] itta]] (koto)
At LF
b [$_{IP}$ John-ga [$_{CP}$ Mary-ga sono hon-o yonda to] itta] (koto)

This operation triggered by the requirement to have theta features checked complies with Last Resort whereas in the traditional analysis scrambling is an optional operation not complying with any known principle(s) in the grammar A further desirable consequence of this analysis, according to B&T, is that it renders the debate concerning the type of the adjoined position in scrambling irrelevant

Given this set of assumptions the grammaticality of (6) becomes straightforward since the freely surface base generated direct object of the embedded clause, (6a), must LF lower for the checking of its theta features (6b) When it LF lowers to a theta position inside the embedded VP, it will necessarily fall within the c-commanding domain of the question morpheme Examples (6)-(12) are from B&T 1998

6 a Nani-o$_i$ John-ga [Mary-ga t$_i$ katta ka] sitteiru
What-ACC John-NOM Mary-NOM bought Q knows
'John knows what Mary bought '
At LF
b John-ga [Mary-ga nani-o katta ka] sitteiru

Similarly, the universal quantifier in (7a), being a constituent of the embedded clause, must LF lower to a VP-internal theta position of the embedded clause, as in (7b) As a result, it will be c-commanded by the existential quantifier in the subject position of the matrix clause Hence B&T's analysis makes correct predictions as far as long distance scrambling in Japanese is concerned

7 a Daremo-ni [dareka-ga [Mary-ga atta to] omotteiru]
everyone-DAT someone-NOM Mary-NOM met that thinks

= from some x, x a person, x thinks that for every y, y a person, Mary met y
≠ for every y, y a person, there is some x, x a person, such that x thinks that Mary met y

[3] Following Lasnik and Saito (1992), B&T assume that LF lowering need not leave a trace if it is not required by some principle of grammar Based on Lasnik (1995) and Chomsky (1994) they also assume that theta roles are formal features

b dareka-ga [Mary-ga daremo-ni atta to] omotteiru

The same reasoning correctly accounts for the ungrammaticality of (8) as a violation of Principle A of the binding theory

8 a * [Mary to Pam]$_i$-ni [otagai$_i$-no hahaoya]-ga [John-ga t_i atta to] omotteiru
Mary and Pam-DAT each other-GEN mother-NOM John-NOM met that think
'Mary and Pam, each other's mothers think that John met '

At LF

b *[Otagai$_i$-no hahoya]-ga [John-ga [Mary to Pam]$_i$ -ni atta to] omotteiru
(Each other's mothers thing that John met Mary and Pam)

When considering short distance 'scrambling', B&T resort to optionality, a property which made the traditional analysis conceptually unappealing in their view Assuming that all freely surface base generated constituents must LF lower to a theta position at LF, examples (10) and (11),unlike (9), become problematic

9 Zibunzisin-o John-ga semeta
Himself-ACC John-NOM blamed
'John blamed himself '

10 Daremo$_i$-ni dareka-ga t_i atta
everyone-DAT someone-NOM met
'Everyone, someone met '

In (10), the indirect object universal quantifier, once LF lowered, ends up within the c-commanding domain of the subject quantifier, yielding a reading where the subject quantifier takes scope over the indirect object However, as B&T note, (10) is in fact ambiguous, suggesting that the universal quantifier remains in its 'scrambled' position Similarly, if the indirect object in (11) were to lower to a VP-internal theta position at LF, it would fail to c-command the reciprocal in the subject of the clause, resulting in a violation of the binding theory

11 [Mary to Pam]$_i$ -ni [[otagai$_i$- ni hahaoya]- ga t_i atta]
Mary and Pam –DAT each other-GEN mother-NOM met
'Mary and Pam, each other's mothers met '

In short, B&T conclude that short distance scrambling differs from long distance scrambling [4] The freely surface base generated constituent must LF lower in the latter whereas it may or may not LF lower in the former LF lowering must remain optional in short distance 'scrambling' since otherwise, as B&T point out, (12) would not be

[4] Properties of long distance and short distance scrambling have always been shown to differ within the theoretical assumptions assumed by the traditional analysis (see text for relevant references)

expected to show Condition C-type reconstruction effects Examples (6-12) are from Bošković and Takahashi 1998

12 * [$_{IP}$ [John$_i$-no hahaoya]-o [$_{IP}$ kare$_i$-ga semeta]]
John-GEN mother-ACC he-NOM blamed
' John' s mother, he blamed '

Unlike in the traditional analysis, optionality is not inherent to the scrambling operation itself but rather is relegated to the availability of language-specific mechanisms More explicitly, LF lowering is a must unless language specific mechanisms permit otherwise One such language-specific mechanism in Japanese, is the option of reanalyzing an IP-adjoined position into an additional specifier position of the IP (Kuroda 1988, Saito 1992) A correlation is drawn between the availability of such reanalysis in this structural configuration and the grammaticality of multiple subject construction in Japanese (Kuno 1973) Hence, scrambling languages without the multiple subject construction are expected to obligatorily LF lower a 'scrambled' phrase to a VP-internal theta position even in short distance scrambling Therefore, long and short distance scrambling is not expected to differ in these languages with respect to LF lowering However, this expectation is not borne out as illustrated by Hindi and Turkish in the next section

3 Empirical weakness of the LF analysis

This section presents data from Japanese, Hindi, and Turkish that clearly illustrate that a free base generation of 'scrambled' elements cannot account for all instances of scrambling Moreover, the LF lowering aspect of this novel analysis makes empirically wrong predictions if 'scrambled' phrases were to LF lower to their respective theta positions Data from WCO and binding theory illustrate this point And finally, although a 'scrambled' phrase of an embedded clause takes narrow scope with respect to a quantifier in the matrix clause after it LF lowers, the desired scope relations do not obtain when the 'scrambled' phrase and the other quantifier are constituents of the same clause

3 1 Free base generation

Even in languages such as Japanese, and Turkish, which readily allow scrambling, some constituents cannot scramble freely For instance, subjects in Japanese cannot scramble, as shown in (13,14) from Saito 1985 This is unexpected under the freely surface base generation analysis of scrambling

13 *Sono okasi–ga$_i$ John-ga [$_S$ t$_i$ oisii to] omotte iru (koto)
that candy-Nom John-Nom tasty COMP think fact
(John thinks that the candy is tasty)

14 * Sono hon-ga$_i$ John-ga [$_S$ t$_i$ yoku urete iru to] omotte iru (koto)
that book-Nom John-Nom well selling COMP think fact
(John thinks that that book is selling well)

As was shown previously, in contrast to subjects objects scramble freely Saito (1985) attributes this observed subject/object asymmetry to Case theoretic considerations, and considers nominative Case in Japanese not to be structural Case There does seem to be a correlation between the overt realization of structural Case and the ability of an element to scramble, though I will not consider this issue here

The Turkish examples in (15-18) illustrate embedded clauses with different properties In (15), the embedded clause is verbal in nature whereas in (17) it is nominal (Kornfilt 1984) [5]

15 [pro [Ahmet-in Berna-ya t_i vermes-i-ni] istiyorum] bu kitab-i_i
Ahmet-GEN Berna-DAT to give-agr-ACC want-agr this book-ACC
'I want Ahmet to give this book to Berna'

16 [pro [Ahmet'in t_i bu kitab-i vermes-i-ni] istiyorum] Berna'ya$_i$

(15) and (16) show that a direct object and an indirect object of an embedded clause, respectively, can scramble In contrast, a constituent of an embedded clause that is nominal in nature does not allow scrambling as shown in (17) and (18)

17 Ahmet [[Berna-nin ban-a verdiği] kitab-i biliyorum
Ahmet-NOM Berna-GEN I-DAT gave-nom-agr book-ACC know-agr
'Ahmet knows the book that Berna gave to me '

18 * Ahmet [[Berna-nin t_i verdiği] kitab-i] biliyorum ban-a$_i$

If 'scrambled' phrases are truly freely surface base generated and then LF lowered, there should be no difference between the embedded clauses above The difference between (17) and (18) in Turkish and the above mentioned subject/object in Japanese is not taken into consideration in the freely surface base generation analysis

3 2 LF lowering

This subsection presents data that examines the LF lowering aspect of B&T's novel analysis of scrambling Recall that B&T claim that LF lowering of a freely surface base generated expression is a must in long distance scrambling but that it is optional in short distance scrambling if the language, like Japanese, allows for reanalysis Neither Hindi nor Turkish has the multiple subject construction Therefore these languages, unlike Japanese, are assumed to lack the language-specific mechanism of reanalyzing an IP-adjoined position into an additional specifier of the IP Consequently, LF lowering becomes unexceptionally a must in these languages even in short distance scrambling

[5] Turkish examples (15-23) and (34) are from Kural 1992 Examples (25,26,30, 31) are from Kural 1997, and all are claimed to be uttered with neutral intonation Abbreviations used in the Turkish exmaples ACC=accusative, NOM=nominative, DAT=dative, GEN=genitive, agr-agreement, sg=singular,

(19) shows a Turkish sentence with a reciprocal in direct object position, which is bound by a c-commanding plural NP in subject position

19 Adamlar$_i$ birbirlerin-i$_i$ gormuş
men each other-Acc saw
'The men saw each other'

If the direct object were to scramble, the sentence becomes ungrammatical

20 * Birbirlerini$_i$ adamlar$_i$ t$_i$ gormuş

This outcome is unexpected under B&T's analysis of scrambling according to which the direct object in (20) would be freely surface base generated at IP, (21a), and subsequently lowered to the VP-internal theta position, (21b), at LF

21 a [$_{IP}$ Birbirlerini$_i$ [$_{IP}$ adamlar$_i$ t$_i$ gormuş]]
At LF
b [adamlar birbirlerini gormuş]

Although the resulting LF representation is identical to (19), (19) and (20) differ in grammaticality with respect to the binding theory

Given the assigned indexing, (22a) yields a WCO configuration at LF after the universal quantifier in direct object position raises at LF The pronoun contained in the subject cannot receive a bound interpretation

22 a * [pro$_i$ sekreteri] herkesi$_i$ aramış
3sg secretary-agr-Nom everybody-Acc call-past-agr
'His$_i$ secretary called everybody$_i$'

However, unlike quantifier raising at LF, if the universal quantifier in direct object position were to scramble to sentence initial position, as shown in (22b), WCO effects disappear, and the sentence improves dramatically

b ? herkesi$_i$ [pro$_i$ sekreteri] t$_i$ aramış

Again, this is unexpected if the scrambled direct object LF lowers to its VP-internal theta position, since the resulting configuration at LF would be identical to the one that gave rise to WCO in (22a) Similarly, (23b) is incorrectly predicted to be on a par with unscrambled (23a) with respect to binding once the scrambled constituent LF lowers in (23b)

23 a Herkes$_i$ [pro$_i$ sekreter-i-ni]$_j$ aramış
everybody-NOM 3sg secretary-agr-ACC called-agr
'Everybody$_i$ called his$_i$ secretary'
b *[pro$_i$ sekreterini]$_j$ herkes$_i$ t$_j$ aramış

The same situation arises in Hindi (24a) shows that a wh-phrase direct object in Hindi, scrambled to the left of the sentence, can bind a pronoun contained in the subject NP [6]

24 a kis-ko$_i$ uskii$_i$ maaN-ne ghar se nikaal diyaa
who (DO) his mother-erg home from threw out
Who$_i$ did his$_i$ mother throw out of the house?
b * uskii$_i$ maaN-ne kis-ko$_i$ ghar se nikaal diyaa

However, when the direct object appears in its canonical position as shown in (24b), the pronoun contained in the subject no longer has a bound reading, a WCO configuration

As in the Turkish examples above, if the 'scrambled' direct object in (24a) were to LF lower, the resulting representation would be identical to unscrambled (24b) Therefore, at LF the pronoun would not be c-commanded by the direct object, failing to meet the structural requirement for binding The outcome is an ungrammatical sentence However, note that the pronoun in (24a) has a bound reading unlike the pronoun in (24b)

In long distance scrambling, B&T's analysis makes the correct predictions with respect to scope interactions in the Turkish and Hindi examples which correspond to the Japanese examples that they discuss In these instances, a quantifier in the matrix clause takes wide scope with respect to a scrambled constituent of the embedded clause As shown in (25) and (26), the rightward scrambled phrase takes narrow scope with respect to the quantifier in the matrix clause

25 a [Herkes [pro t_i dun aradığım]-ı sanıyor] uç kişi-yi$_i$
everybody-NOM 1sg yesterday called-agr-ACC think-agr three person-ACC
'Everyone thinks I called three people yesterday '
b [$\forall_x$ 3_y [x thinks I called y yesterday]]
c * [3_y $\forall_x$ [x thinks I called y yesterday]]

26 a [Uç kişi [pro t_i dun aradığım]-ı sanıyor] herkes-i$_i$
'Three people think I called everyone yesterday '
b * [$\forall_y$ 3_x [x thinks I called y yesterday]]
c [3_x $\forall_y$ [x thinks I called y yesterday]]

Turning to Hindi, (27a) illustrates that long distance scrambling is possible in Hindi (27b) shows the ordering of constituent after the scrambled embedded direct object in (27a) lowers at LF

27 a Mohan-ko$_i$ raam –ne socaa [ki sitaa-ne t_i dekhaa thaa]
Mohan (EDO) Ram(SUB) thought that Sita (SUB) seen be-past
(lit) Mohan, Ram thought that Sita had seen

[6] Hindi examples in text are from Mahajan 1990 The following abbreviations are used in the Hindi examples SUB=subject, DO=direct object, IO=indirect object, ESUB=embedded subject, EDO=embedded direct object, perf-perfect, f=feminine

At LF
b raam –ne socaa [kı sıitaa-ne mohan-ko dekhaa thaa]

(28b) ıllustrates that a scrambled embedded dırect object cannot bınd a reflexıve contaıned ın the subject of the matrıx subject Thıs ıs expected ıf the scrambled embedded dırect object LF lowers to a structural posıtıon from whıch ıt cannot c-command the reflexıve (28a), where scramblıng has not taken place, ıs ungrammatıcal for the same reason

28 a * apnıı bahın-ne socaa [kı raam-ne mohan-ko dekhaa]
self's sıster (SUB) thought that Ram (ESUB) Mohan (EDO) saw
(lıt) self's sıster thought that Ram saw Mohan

b * mohan-ko$_i$ apnıı$_i$ bahın-ne socaa [kı raam-ne t_i dekhaa]

The same reasonıng accounts for the ungrammatıcalıty of (29a) where a unıversal quantıfier scrambled out of the embedded clause faıls to bınd a pronoun ınsıde the subject of the matrıx clause

29 a * sab-ko$_i$ uskıı$_i$ bahın-ne socaa [$_{CP}$ (kı) raam-ne t_i dekhaa]
everyone (EDO) hıs sıster (SUB) thought (that) Ram (ESUB) saw
*Hıs$_i$ sıster thought that Ram saw everyone$_i$
At LF
b ' uskıı bahın-ne socaa [$_{CP}$ (kı) raam-ne sab-ko dekhaa]

B&T's analysıs, however, makes ıncorrect predıctıons when the scrambled element enters ınto scope relatıons wıth a subject quantıfier of ıts own clause, or enters ınto bındıng relatıons wıth elements of the same clause Fırst consıder the Turkısh examples ın (30) and (31) ın whıch an embedded constıtuent ıs scrambled rıghtward

30 a [pro [herkes-ın t_i dun aradığ-ı]-nı sanıyor-um] uç kışı-yı$_i$
1sg everybody-GEN yesterday called-agr-ACC thınk-1sg three people-ACC
'I thınk everyone called three people yesterday '
b I thınk [3_y $\forall_x$ [x called y yesterday]]
c *I thınk [$\forall_x$ 3_y [x called y yesterday]]

31 a [pro [uç kışı-nın t_i dun aradığ-ı]-nı sanıyor-um] herkes-ı$_i$
1sg three people yesterday called-agr-ACC thınk-1sg everybody-ACC
'I thınk three people called everybody yesterday '
b I thınk [$\forall_y$ 3_x [x called y yesterday]]
c *I thınk [3_x $\forall_y$ [x called y yesterday]]

In both ınstances the rıghtward scrambled element takes wıde scope wıth respect to the quantıfıcatıonal expressıon ın subject posıtıon of the embedded clause Thıs ıs certaınly unexpected ıf the scrambled element LF lowers to a VP-ınternal posıtıon for theta feature checkıng Even ıf the subject of the embedded clause were to remaın ın sıtu

in the specifier of the embedded VP, rather than having moved to the specifier of the embedded IP, the latter still c-commands the LF lowered object and hence should take scope over it As the readings in (30b,c) and (31b,c) clearly show the scrambled phrases also take narrow scope with respect to the matrix predicate, suggesting that some lowering is taking place

Similarly in Hindi, when a wh-phrase or a quantifier of the embedded clause is scrambled leftward to sentence initial position as shown in (32), the scrambled element can bind a pronoun contained in the embedded subject

32 a kis-ko$_i$ / sab-ko$_i$ raam-ne socaa [ki uskii$_i$ bahin-ne t$_i$ dekhaa thaa]
who/everyone (EDO) Ram (SUB) thought that his sister (ESUB) seen be-past
'Who$_i$ did Ram think that his$_i$ sister had seen?'
'Everyone$_i$, Ram thought that his$_i$ sister had seen'

This contrasts with the Hindi example in (29) and the Turkish examples in (25c) and (26c) (32a) is intriguing in another way If LF lowering of scrambled elements is a must, as claimed by B&T, then the LF representation of (32a) will look like in (32b)

At LF
b raam-ne socaa [ki uskii bahin-ne kis-ko / sab-ko dekhaa thaa]

(32b) will correctly predict the absence of WCO violation, a welcome result However, note that it incorrectly rules out the bound variable reading of the pronoun as is clearly possible in (32a)

The data presented above strongly suggest that some LF lowering does take place, though not necessarily to the claimed VP-internal theta position An alternative to lowering is possible if quantifiers, including wh-phrases, are required to be clause bound (cf May 1977, 1985, among others) In other words, in order to yield a licit LF representation, these elements cannot take scope beyond the clause of which they are a constituent This wellformedness condition on quantifiers is what forces the lowering, particularly to a position that excludes a syntactic domain that is structurally higher than their own clause As far as the LF lowering analysis of scrambling is concerned, scrambled expressions other than quantifiers and wh-phrases could still be predicted to lower to their respective VP-internal theta position [7] However, there is evidence that LF lowering may be to a position other than the VP-internal theta position

[7] One could assume that even the quantificational expressions LF lower to a VP-internal position and then quantifier raise to meet wellformedness Economy considerations would disfavor such a derivation Alternatively, one could assume that these expressions are theta marked in their LF lowered IP adjoined position This strategy could account for the Japanese facts since such a position will be reanalyzed as an additional specifier of the IP which the raised verbal complex can then theta mark However, note that such a strategy is untenable in Hindi and Turkish since such reanalysis is not possible in these languages due to the absence of the multiple subject construction Bošković (p c) suggests that even in Turkish the scrambled phrase could LF

4 Even if a 'scrambled' phrase were to lower at LF, it is not necessarily to a theta position

Consider the canonical order of constituents in a simple declarative sentence in Hindi shown in (33a) As (33a) clearly indicates an anaphor contained in the direct object can be bound by a nominal expression in the subject position and the indirect object position

33 a raam-ne$_i$ mohan-ko$_j$ apnii $_{i/j}$ kitaab lOTaaii
Ram(SUB) Mohan (IO) self's book-f (DO) return-perf-f
'Ram$_i$ returned self's $_{i/j}$ book to Mohan'

Accordingly, the sentence above is ambiguous because either the subject NP or the indirect object NP can be the antecedent of the reflexive Once the direct object NP containing the reflexive moves to a position to the left of the indirect object but still to the right of the subject, binding by the subject NP is still possible while binding by the NP in indirect object position is no longer possible This is shown in (33b)

b raam-ne$_i$ apnii $_{i/*j}$ kitaab mohan-ko$_j$ lOTaaii
Ram (SUB) self's book-f (DO) Mohan(IO) return-perf-f
'Ram$_i$ returned self's $_{i/*j}$ book to Mohan$_j$'

If LF lowering is obligatory in long distance as well as short distance scrambling, then the scrambled NP in (33b) should lower to its canonical position yielding the alignment of arguments in (33a) However, unlike in (33a), the reflexive contained in the NP in direct object position can no longer be bound by the indirect object NP This is unexpected

Assume that the NP containing the reflexive is scrambled to sentence initial position as shown in (33c)

c apnii $_{i/*j}$ kitaab raam-ne$_i$ mohan-ko$_j$ lOTaaii
self's book-f (DO) Ram (SUB) Mohan(IO) return-perf-f
'Ram$_i$ returned self's $_{i/*j}$ book to Mohan$_j$'

Again, if LF lowering were a must, the binding possibilities in (33c) are expected to be like those in (33a) The prediction is not borne out More interestingly, as the indexing in (33c) shows the subject can still bind the reflexive but the indirect object cannot This suggests that the scrambled phrase has lowered to a position that is c-commanded by the subject but not the indirect object This outcome indicates that LF lowering might target a

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lower to IP and adjoin to it since, assuming Chomsky (1993, 1995), the verbal complex is situated in I at LF crosslinguistically This, however, would predict that Case features must be weak and hence checked at LF in Turkish as well There is evidence that is not the case I leave this issue for further research

position other than the VP-internal theta position The Turkish data below collaborates the possibility of additional positions to which a scrambled phrase can LF lower Thus the reciprocal in (34a) may be appear in a position as in (34a), (34b) or (34c)

34 a Adamlar$_i$ Ahmet'i birbirleri-ne$_i$ gosterdi
Men-NOM Ahmet-ACC each other-DAT showed-agr
'The men showed Ahmet to each other'
b Adamlar$_i$ birbirlerine$_i$ Ahmet'i gosterdi
c Birbirlerine$_i$ adamlar$_i$ Ahmet'i gosterdi

If the scrambled reciprocal in (34c) were to LF lower, it could target a position it occupied in (34a) or (34b), leading to the contention that more than one position is available to LF lowering The binding facts of (33) in Hindi, then, come as no surprise In short, in cases where there is evidence that the scrambled phrase has lowered, there is also evidence suggesting that the lowering is not necessarily to a VP-internal theta position

5 Conclusion

This paper provided crosslinguistic evidence that not all 'scrambled' phrases can be freely surface base generated after all Moreover, some observed LF lowering is not motivated by the requirement of the scrambled phrase to have its theta features checked but rather is motivated by the requirement that some operators must remain clause bounded at the relevant level of representation, presumably LF Moreover, since scrambled phrases may LF lower to a position other than the VP-internal theta position, it can no longer be argued that the LF lowering of scrambled phrases is motivated by the principle of Last Resort This somewhat weakens the claim that the novel analysis is conceptually superior to the traditional analysis of scrambling

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