Heads and Placement of Complements in Intra-Sentential Code-Switching

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Abstract
With negative and positive evidence from Urdu/English intra-sentential code-switching data, the paper attempts to determine the empirical adequacy of two contrasting proposals regarding the placement of complements in mixed sentences. Although Mahootian and Santorini (1996) and Chan (2008) employ different theoretical frameworks, they uniformly reject the possibility of a ‘third’ grammar and attempt to account for the data in terms of existing apparatus. Employing Tree Adjoining Grammar as framework, Mahootian and Santorini (1996) claim that lexical categories as heads of elementary trees determine the position of their complements whereas Chan (2008), working in Principle and Parameters Theory, proposes that functional categories being associated with a particular value of head-parameter determine placement of their respective complements. The paper rejects both the proposals with counter-evidence from the corpus of Urdu/English code-switching. The pre-head placement of complements selected by English Vs and Ns in mixed sentences contradiect Mahootian and Santorini’s (1996) proposal regarding lexical heads whereas post-head placement of complement TPs and placement of complement PPs/PosPs in projections without overt functional heads pose challenges to Chan’s proposal regarding the distinction between lexical and functional categories. Thus, with empirical evidence, the paper rejects both the proposals regarding placement of complements in code-switched data.

Keywords: Functional categories, lexical categories, complements, Tree Adjoining Grammar, head-parameter, parameter-value

I. Introduction
The study attempts to determine the empirical adequacy of two contrasting proposals regarding head/complement order in mixed sentences. With empirical evidence from positive and negative Urdu/English code-switching (hereafter CS) data, it discredits both the claims regarding the placement of complements in mixed data on empirical grounds.

Contact among languages and the outcomes of such contact have attracted a lot of scholarly attention in recent times. A considerable amount of research has been dedicated to the study of different contact phenomena. Among all contact phenomena, CS has been the centre of this scholarly attention. In fact, research on CS has increased manifold in both quality and quantity since the last four decades. The term CS is commonly used to
refer to the phenomenon in which two or more languages are used by a bilingual alternately either at clause boundary or within a clause (Kachru 1983; Singh 1985). Formally known as intra-sentential CS, switching within a clause boundary has been studied from a grammatical point of view whereas switching among clauses known as inter-sentential CS has been studied from a sociolinguistic point of view.

Though the earliest of the approaches to CS considered it random and unsystematic (see Espinoza 1917; Labov 1971; Lance 1975), later studies considered it a grammatical phenomenon worthy of serious investigation. Based on fundamental assumption that mixing of two languages is highly systematic, different studies on grammatical aspects of CS attempt to find out the grammatical constraints which govern the process of mixing of two independent grammatical systems (see, among others, Poplack, 1980, 1981; Joshi, 1985; Di Sciullo, Muysken and Singh 1986; Myers-Scotton 1993; Belazi, Rubin and Toribio, 1994; Mahootian and Santorini, 1996; MacSwan, 1999; Jake, Myers-Scotton, and Gross, 2002; Chan 2008). However, there appears to be no common agreement among scholars regarding the nature of constraints which govern CS.

In order to deal with recurring CS patterns, scholars adopt different techniques and methodology, employing different grammatical frameworks to deal with such data. On one hand, there are researchers who propose grammatical postulates which are available only to bilinguals, thereby implying a ‘third’ grammar – the grammar which is the result of the mixing of two independent grammatical systems, available only to the speakers who have command of two independently grammatical systems (see Poplack 1980, Jake, Myers-Scotton, and Gross, 2002). The other group of researchers categorically rejects such proposals which are specifically meant for CS, and argue that the grammar of code-switched sentences should be accounted for through existing set of grammatical tools which are employed to account for the well-formedness of ‘pure’ sentences; hence no CS-specific constraints are needed to deal with CS data (see Di Sciullo, Muysken and Singh 1986; Mahootian and Santorini 1996; MacSwan 1999, Chan 2008, among others).

One of the central issues in Null theories of intra-sentential CS proposed by Mahootian and Santorini (1996), and Chan (2003 and 2008) has been the structural relation between heads and complements in mixed constituents. However, there appears to be no agreement among scholars regarding the types of heads which determine placement of their respective complements. The constraint-based models attempt to account for head/complement order on the basis of either equivalence in surface word-order of the languages involved (see Poplack 1980, 1981) or through dominance of one language which determines the morpho-syntactic frame of mixed sentence (Myers-Scotton, 1993; Jake, Myers-Scotton, and Gross 2002; Meyers-Scotton and Jake 2009). The studies which assume Null Theory perspective, on the other hand, account for the head/complement order in terms of grammatical mechanisms which also determine placement of complements in monolingual sentences. (Di Sciullo et al. 1986; Mahootian and Santorini 1996; MacSwan 1999; Belazi et al. 1994; Chan 2008).

II. The data and the participants

Studies on formal aspects of CS differ a lot from one another due to the types of CS-data they use as evidence. Some of studies are based on grammatical judgments as contrasted to others which are based on the analysis of naturally-occurring recorded speech while certain others use both negative and positive data. Scholars take different
positions regarding use of type of data for studies on grammatical aspects of CS. Arguments have been advanced in favor of both naturalistic (Mahootian, 1993) and elicited (Toribio & Rubin 1996 & MacSwan 1999) CS data and most of the discussion on opposing theories has been devoted to discrediting one another. The present study adopts a mixed approach, employing both negative and positive evidence to evaluate empirical adequacy of the two proposals under examination.

The selection of bilinguals who participated in the study is made on the basis of criteria which consist of information regarding the socio-economic background of the participants. The undergraduate students of the University of Management and Technology (UMT), Lahore, Pakistan are selected on the basis of the criteria consisting of schooling of participants, age at which participants got exposure to English, educational qualifications of both parents of the participants and socio-economic status. The required information was collected through a questionnaire which was distributed among 121 students of graduate and undergraduate programs. The researcher’s personal acquaintance with participants also helped in making the preliminary selection. After the initial selection, the participants were asked to fill in a social background questionnaire. The information collected through the questionnaires was used to identify the potential participants of the study. On the basis of the information in the questionnaire, 42 students were selected.

The corpus consists of 29 interactions each involving 4-7 participants each, with a total recording time of 4.5 hours. The corpus consists of 1767 sentences. There are 1487 mixed sentences while there are only 280 sentences which are purely either Urdu or English. A natural conversation among participants is recorded by one of the participants working as the researcher’s associate. The associates are selected from among the participants of the interactions. They were present on the spot and actively participated in the interaction. They ensured the natural interactions as all the associates are close friends of the participants who took part in the interactions.

The elicited data are in the form of grammaticality judgments obtained from competent bilinguals who have maximum exposure to English with sound academic background for reasons explained earlier. Most of the students at UMT are Urdu/English bilinguals, with Punjabi as their native language. Almost all of them have a very positive attitude towards Urdu/English CS and consider it a symbol of good schooling and membership of an affluent social class. The positive attitude of bilinguals towards Urdu/English CS plays an important role in the elicited data. Out of 42 participants of the corpus, 20 students were further selected as the consultants to provide grammatical judgments on different constructed versions of naturally-occurring data presented to them consultants.

III. Lexical heads and placement of complements

Mahootian and Santorini (1996) propose a model of CS which is based on Joshi’s (1985) TAG which views sentences as the result of assembling partial trees. TAG builds up a sentence through a set of lexical items encoding partial tree structure; the trees are built by assembling various partial tree structures through substitution and adjunction. The partial tree structures encoded by lexical items are specified in the lexicon. Thus position of complements is determined within the lexicon through partial tree structure headed by a lexical head. Mahootian and Santorini (1996) maintain that CS does not
violates the lexical insertion rules of either language nor is there any CS-specific constraint to govern such interaction. They note that since structures are encoded in the lexicon, no intervening control mechanism is needed to pair up lexical insertion rules with terminal nodes in a phrase marker. They posit that these are lexical heads which control grammatical properties and placement of complements in the tree assembled through substitution in monolingual and bilingual contexts alike. They further note that the trees which are assembled through adjunction differ from the trees which are assembled through substitution. In fact, the use of substitution or adjunction to assemble partial trees crucially determines the control of head over complement. The trees which are assembled through substitution are considered complements while the trees which are assembled through adjunction are considered adjuncts. According to Mahootian and Santorini (1996), the distinction between complements and adjuncts rests upon the degree of control of respective head of partial tree over its complement.

With evidence from Farsi/English CS, Mahootian and Santorini demonstrate the role of the ‘surface’ ordering of constituents, and explicate that certain potential switches will never appear because both English with VO order and Farsi with OV order have different phrase structure rules which will disallow switching at these points. For example, they observe that in the whole corpus of Farsi-English CS, there is not a single instance of a Farsi object preceding an English V or an English object preceding a Farsi V. They argue that the absence of these potential switches is due to differences in their phrase structure rules.

However, the switching patterns found in Urdu/English CS data pose empirical challenges to the proposal. In fact, overwhelming majority of switches in Urdu/English CS data violate Mahootian and Santorini’s (1996) claim that lexical heads determine placement of complement in the trees they are substituted into. Thus, an English V in Urdu/English CS should result in post-head placement of their respective complements. However, as demonstrated by the data examined, none of the English Vs determine pre-head placement of their respective complements.

(1) Aap kis party ko support kar rahay heyn?
(2) Mein ne woh first vote karna tha last time.
(3) Iss attempt mein loag wrong sentences use keratay heyn.

In this attempt, people use wrong sentences.
placed before English V cast in (2) The complement DP [wrong sentence] in (3) containing a null D and an unmixed English NP as its complement is also placed before English V use, thereby resulting in OV order. The complement DP in each of the data (1)-(3) does not appear to be licensed by V as proposed by Mahootian and Santorini.

Consider further the naturally occurring data (3)-(6) below:

(4) Meyn directing field se ziyada impress huwi thee.
\[ I/\text{SG/Fem} \quad \text{Asp} /\text{SG/Fem} \quad \text{Pst}/\text{SG/Fem} \]
I was more impressed by field of directing.

(5) Hum-ne kuch new concepts iss mein add kieye heyn.
\[ 1/\text{PL} \quad \text{PL} \quad I/\text{SG} \quad \text{Asp}/\text{PL/Mas} \quad \text{Pre}/\text{PL} \]
We added some new concepts in i.

(6) Islamabad mein kai security equipments install kiey heyn.
\[ 3/\text{SG} \quad \text{PL} \quad \text{Asp}/\text{PL} \quad \text{Pre}/\text{PL} \]
(They) have installed much security equipment in Islamabad.

All tokens of English Vs as documented in the positive data (4)-(6) appear to be syntactically inactive roots stripped of all morphological properties, playing no role in placement of its complement. The complement DPs in each of the data (4)-(6) are placed at pre-head positions, thereby resulting in OV order. Contrary to central role of V in determining its complement, complement DPs in the data appear to be placed at positions which are not apparently licensed by Vs.

To provide further support to the finding obtained from the positive data (1)-(6), the technique of reconstructing some naturally occurring sample sentences by substituting switched items with their equivalents from the other language is also employed. The items substituted with their counterparts from the other language constructed version of the naturally-occurring sentences are capitalised. These constructed sentences are presented and are asked to pass judgment regarding their grammaticality.

Let us now consider the negative data (7)-(10) below which are constructed versions of the naturally occurring data (3)-(6) respectively.

(7) Iss koshish mein loag wrong sentences ISTAMAAL kertay heyn.
\[ SG \quad 3/\text{SG/Fem} \quad 3/\text{PL/Mas} \quad \text{Asp}/\text{Mas} \quad \text{Pre}/\text{PL} \]
In this attempt, people use wrong sentences.

(8) Meyn directing field se ziyada MUTAASIR huwi thee.
\[ I/\text{SG/Fem} \quad \text{Asp} /\text{SG/Fem} \quad \text{Pst}/\text{SG/Fem} \]
I was more impressed by the field of directing.

(9) **Hum**-ne kuch new concepts iss mein SHAAMIL kieye heyn. We added some new concepts in it.

(10) Islamabad mein kai security equipments NASAB kiey heyn. (They) have installed much security equipment in Islamabad.

Though the consultants slightly differed regarding grammaticality of (7)-(10), they largely agreed upon the grammaticality of the constructed data. Each of the instances is constructed by replacing token of English V with token of Urdu V. This acceptance of constructed data (7)-(10) by the consultants further confirms that V has no role in the placement of complements. As demonstrated by the negative data (7)-(10), replacement of English Vs with their equivalent Urdu Vs does not have any impact upon grammaticality of the constructed sentences. Thus, contrary to what Mahootian and Santorini (1996) propose, position of complement DPs stands independent of V and replacing an English V with its equivalent Urdu V is inconsequential for the placement of complement DPs.

It is not V only which appears to play no role in determining position of complement DPs in VPs; position of complement PP/PostP selected by N in NPs also appears to be independent of N. Consider the positive data (11) and (12) below:

(11) **Students-ke names enrol huway?**

Names of the students were enrolled?

(12) **Aap unn -ko daily life ki examples deyn.**

You give them examples from daily life.

The complement PostP in the subject NP [students ke names] in (11) is placed before the head in clear violation of grammatical requirements of English N. The complement PostP in the object NP [daily life ki examples] in (12) is also placed before the switched English N [examples]. Thus (11) and (12) and many other instances documented in the study constitute counter-examples to the claim that lexical categories being heads of partial trees (the complements are substituted into) determine the placement of complement on either their left or right side. *Recurring instances of pre-head placement of complement PPs selected by English Ns in mixed NPs indicate that position of complements in a partial tree is not determined by lexical head which selects.*
them. Since N also serves as head of elementary tree PP/PostP is substituted into, position of the complement PP/PostP should be determined by N. However, the positive data provide multiple instances where pre-head placement of complement PPs/PostPs is not licensed by English N. Further consider the naturally occurring mixed Urdu/English NPs in (13)-(15).

(13) oil ki puraani companies
\begin{verbatim}
of^ad old^adj
Fem
\end{verbatim}
Old oil companies

(14) Gas load-shedding ka issue
\begin{verbatim}
of^ad
Mas
\end{verbatim}
Issue of gas load-shedding.

(15) Puraanay style ki building
\begin{verbatim}
of^ad old^adj
Fem
\end{verbatim}
Building of old style

The complement PostPs in each of the naturally-occurring NPs (13)-(15) are placed at positions which are not licensed by Ns; each of the complement PostP is placed in clear violation of grammatical requirement of English N.

To further explicate that N like V plays no role in placement of its complement projection, constructed versions of the naturally-occurring NPs (13)-(15) were presented to the consultants of the study to seek their judgments. The negative data (16)-(18) are judged to be grammatical by the consultants. This acceptance further reinforces the claim that lexical heads do not play any role in placing complements in their respective projections. Although Urdu and English Ns have contrasting requirements regarding position of complement projections, replacing English N with its counterpart from Urdu N demonstrated in the elicited data is inconsequential.

(16) oil ki puraani COMPANIYAAN
\begin{verbatim}
of^ad old^adj companies^N
Fem
\end{verbatim}
Old oil companies

(17) Gas load-shedding ka MASLA
\begin{verbatim}
of^ad issue^N
Mas
\end{verbatim}
Issue of gas load-shedding

(18) puranay style ki AMAARAT
\begin{verbatim}
of^ad building^N
Fem
\end{verbatim}
Building of old style.
The replacement of English with Urdu Ns with no accompanying change in placement of the complement projections in the data (16)-(18) does not affect grammaticality of the constructed NPs and are unanimously accepted by the consultants.

Thus, the empirical evidence from naturally-occurring and elicited Urdu/English CS-data (1)-(18) documented in the study contradicts Mahootian and Santorini’s (1996) proposal that lexical categories being heads of partial trees determine placement of their complements. As documented in the data, the placement of the complements selected by English Vs and Ns in both VPs and NPs respectively in positive data is not licensed by V or N. The acceptance of the negative data by the consultants further confirms that lexical heads are inconsequential in the placement of complements. Thus, the empirical evidence from naturally-occurring and elicited Urdu/English CS-data (1)-(18) documented in the study contradicts Mahootian and Santorini’s (1996) proposal that lexical categories being heads of partial trees determine placement of their complements. As documented in the data, the placement of the complements selected by English Vs and Ns in both VPs and NPs respectively in positive data is not licensed by V or N. The acceptance of the negative data by the consultants further confirms that lexical heads are inconsequential in the placement of complements. In Urdu/English CS, mixed VPs may be headed by English or Urdu V but placement of complement DPs in the data (1)-(8) stands independent of both Urdu and English V. In the same way, the placement of complement PPs in the data stands independent of N which heads the partial tree as documented in positive and negative data (11)-(18). As demonstrated by the data, linear order of constituents never follows the requirement of language which supplies lexical heads; they do not appear to have any role in determining grammatical properties including placement of their respective complements as claimed by Mahootian and Santorini (1996).

IV. Functional categories and placement of complements

Unlike Mahootian and Santorini, Chan (2008) assigns crucial role of placing their complements to functional categories I, D and C. He argues that lexical categories differ from functional categories in that lexical categories do not determine placement of their respective complements but functional categories always do so. He reports that the examination of the data from different language-pairs suggests a fundamental distinction between lexical and functional categories and argues that this distinction is clearly determinable in placement of their complements selected by lexical and functional categories.

The data offered by Chan (2008) in support of his argument offer different code-switched sentences from different language pairs which show the placement of complements in clear violation of the grammatical requirements of Vs and Ns. According to Chan, the placement of complement does not necessarily follow the requirement of the lexical heads if the languages involved in CS follow different word orders. He argues that although the data do provide evidence of the complements being placed at positions as required by lexical heads, it should not be taken as evidence of lexical heads determining position of their complements. The data (1)-(10) support Chan’s (2008) claim that V does not determine placement of its complements as V is taken form an VO language in each case and yet the code-switched sentence follows an OV order. Thus, inclusion of V from an OV language leaves no impact upon the placement of complements. Likewise, N also has no role in placement of its complement PP/PostP. As documented in the data (11)-(18), the complement projections are placed in such positions as are not licensed by English Ns.

On the other hand, functional categories, according to Chan (2008), stand in a sharp contrast to lexical categories. The data, he examines, explicate that functional categories invariably determine placement of their complements. He argues that
complements may or may not be placed in such positions as required by lexical heads but complements are always placed in positions determined by respective functional heads which select them. “Functional categories are thus different from lexical categories, as the latter do not always determine the position of their code-switched complements” (Chan 2008: p.796).

Chan (2008) attempts to account for this distinction between lexical and functional categories within a Null Theory perspective by invoking Saito and Fukui’s (1998) proposal that linear order is achieved through directionality parameters and agreement. In Saito and Fukui’s (1998) framework, the direction Merge takes in course of a derivation is determined by directionality parameters while agreement triggered by different functional heads determines the direction of Move. By invoking this proposal, Chan (2008) claims that head/complement order is determined as a ‘parameter value’ instead of being encoded as lexical property; thus VO or OV or any other word order is realized as a parameter value. Chan (2008) attempts to justify the claim that it is possible because in Levelt’s (1989) model, the parameter is set before the head is drawn from one of the two lexicons. Bilinguals may freely select a lexical head and yet this selection will not leave any impact on parameter value already set as either head-first or head-last. Parameter value is associated with functional categories for which the head-complement order is specified lexically. Lexical heads, on the other hand, do not play any role in placing complements as they are drawn after the parameter value is set (Chan 2008).

The proposal, Chan (1996) offers, correctly predicts that lexical categories N and V play no role in determining placement of their respective complements in Urdu/English CS data as documented in the data (1)-(18) which provide multiple instances of placement of complements in clear violation of grammatical requirement of the language which provides lexical heads. However, his claim regarding placement of complement projection by functional categories needs careful examination. Urdu/English CS data pose two challenges to the claim that placement of complements is invariably determined by functional categories. Invariant post-head placement of TPs which are selected by C (no matter Urdu or English) in Urdu/English CS data pose the first challenge whereas placement of complement PPs/PostPs in NPs with no functional head associated to particular parameter-value pose the second challenge.

Firstly, Chan’s (2008) proposal wrongly predicts that C being associated to head-first (in case of English) and head-last (in case of Urdu) determines placement of its complement TPs. The data documented in the study indicate that C plays no role in placement of its complement TP. The data provide multiple instances of mixed or unmixed TPs whose placement cannot be ascribed to a particular parameter-value associated to C. In Chan’s (2008) terms, an Urdu C should place its complement TP at pre-head position because Urdu is a head-last language. In a similar way, since English is a head-first language, complement TPs in code-switched sentences should be placed after the head if C is supplied by English. The data such as (19)-(21), however, provide contradictory evidence as complement TPs are placed after the head no matter C is contributed by English or Urdu.

(19) mazay ki baat ye hey ke now they are available.

Fem 3/SG/Fem SG Pre/SG/Fem Fin/Dec

interesting of this be that

Adj of N Prep Aux N Dec
Interesting thing is this that now they are available’.

(20) He said that uss-ney kuch kiya naheen tha assignments mein.

heD-Erg somethingD doN neg beAux inAd
3/SG Asp/SG/Mas Pst/SG/Mas
He said that he did nothing in the assignments’.

(21) Sub ye keh-tay heyn ke this is not possible.

Everyone thisD sayVv beAux thatC
3/PL SG Asp/PL/Mas Pre/PL Fin/Dec
Everyone says that this is not possible.

No matter C is provided by Urdu as in (19) and (21) or English as in (20), the complement TP is placed after C. This evidence runs contrary to Chan’s claim that C being functional category associated with a particular parameter value should place the respective complement TP.

Not only do the positive data offer multiple instances of placement of TP at position not licensed by C, the negative data also provide empirical evidence. Consider the elicited data (22)-(24) below which are constructed versions of the data (19)-(21):

(22) mazay ki baat ye hey THAT now they are available.

interestingD ofAd thingN thisD beAux
Fem 3/SG/Fem SG Pre/SG/Fem
Interesting thing is this that now they are available.

(23) He said KE uss -ney kuch kiya naheen tha assignments mein.

ThatC heD-Erg somethingD doN neg beAux inAd
Fin/Dec 3/SG Asp/SG/Mas Pst/SG/Mas
He said that he did nothing in the assignments.

(24) Sub ye keh-tay heyn THAT this is not possible.

Everyone thisD sayVv beE
3/PL SG Asp/PL/Mas Pre/PL
Everyone says that this is not possible.

The code-switched sentence in (22) and (24) are constructed by replacing overt Urdu C [ke] with its equivalent English C [that]. In a similar way, English C is replaced with its equivalent Urdu C in (23). However, it should be noted that these replacements do not have any impact upon the position of complement TPs. The replacement of Urdu C with English C with no change in the position of complement TPs in the data (22) and (24) does not leave any impact on well-formedness of the constructed sentence; the consultants unanimously judged them to be grammatical. In a similar way, the constructed data (23) is also fully acceptable to Urdu/English bilinguals. Thus, the replacement of English C with Urdu C or vice versa appears to have no impact upon the placement of complement TP. Contrary to what Chan proposes, the complement TPs are
placed after the head in CPs in Urdu/English CS-data documented in the study no matter C is associated with head-first or head-last parameter-value i.e., the complement TP is always placed after C in the data.

Secondly, Chan’s (2008) proposal also faces challenge when it comes to deal with placements of complements in projections which lack overt functional heads associated with a particular parameter-value. As already noted, the placement of code-switched complement PostPs in the NPs in (11) and (12) is not determined by English Ns. Neither there is functional head to determine the position of complements nor do the lexical head appear to determine this position of complements in the data under examination. There appears to be no such item having a particular parameter-value to determine the position of the complements PostPs in mixed subject NP in (11) and object NP in (12). To further elaborate the argument, let us consider the naturally-occurring data (25) and (26) below:

(25) Uss mein company-ka background matter naheen kerta.
    that\(^D\) in\(^Ad\) of\(^Ad\) not\(^Neg\) do\(^v\)
    SG  SG/Mas       Pre/SG/Mas
    In that, background of the company doesn’t matter’.

(26) Chapter-ka concept clear naheen ho-ga.
    of\(^Ad\) not\(^NE\) be\(^v\) will\(^Mod\)
    SG/Fem  SG/Mas/Fut

Concept of chapter will not be clear.

The mixed subject NP in (25) poses challenge to Chan’s proposal for placing its mixed complement PostP at a position which is not licensed by any item available in the projection. The mixed subject NP in (26) also poses the same problem as it lacks a functional head being associated with a particular parameter value to determine the position of mixed complement PostP. The position of the complement PostPs in both NPs in (25) and (26) appears to be licensed neither by a functional head nor by a lexical head. However, Chan’s proposal has nothing to offer regarding the placement of complements when there is no item in the projection to license such placement.

If we assume that the subject NPs in (25) and (26) are actually DPs headed by null Ds, it becomes even more difficult to determine the lexicon whose null D determines the position of complement PostPs in Chan’s terms. Consider the contrast in the elicited data (27) and (28) below which are constructed versions of (25).

(31)*Uss mein company-ka THIS background matter naheen kerta.
    that\(^D\) in\(^Ad\) of\(^Ad\) not\(^Neg\) do\(^v\)
    SG  SG/Mas       Pre/SG/Mas
    In that, background of the company doesn’t matter’.

(32) Uss mein company-ka ye background matter naheen kerta.
    that\(^D\) in\(^Ad\) of\(^Ad\) this\(^D\) not\(^Neg\) do\(^v\)
    SG  SG/Mas  SG       Pre/SG/Mas

In that, background of the company doesn’t matter.
If we assume that the functional head D is actually contributed by English and we fill the null D with its overt counterpart from English, the sentence becomes ungrammatical. The consultants readily rejected (27) which has been reconstructed by replacing null D with overt English D. However, the addition of an overt Urdu D produces different results. The data constructed with the addition of an Urdu D in (28) is judged to be well-formed by the consultants; the mixed subject NP in (28) follows the grammatical requirement of Urdu even though there appears to be no such item in the subject NP in (32). However, Chan’s proposal has nothing to offer as to why the addition of overt English D in (27) is judged to be ungrammatical by the consultants whereas addition of overt Urdu D does not lead to ungrammaticality as in (28). Thus, both positive and negative data (25)-(28) indicate that head-complement order in mixed NPs is not determined by a particular parameter-value because such an order is detectable even where there is no such (overt) D associated with a particular parameter value. However, Chan’s proposal fails to take into account the placement of complement when there appears to be no functional or lexical head to license such position.

The evidence documented in the paper, thus, clearly falsifies Chan’s proposal that functional categories being associated with a particular value of head-parameter always determine placement of their complements in their respective projections. The complement TPs in (19)-(21) and their naturally-occurring versions (22)-(24) respectively are placed at post-head positions even though parameter value of C requires it to be at pre-head position. The placement of complements in mixed NPs in (25)-(28) does not appear to be licensed by a functional head associated to a particular parameter-value. Hence, the placement of complements is not determined by association of functional categories with a particular value of head-parameter. Chan’s proposal, thus, makes invalid empirical predictions regarding the recurring switching patterns in the naturally-occurring and elicited data documented in the paper.

V. Conclusion

Negative and positive Urdu/English CS-data documented in the paper provide sufficient contradictory evidence to reject both Mahootian and Santorini’s (1996) and Chan’s (2008) proposals regarding placement of complements. The data provide multiple instances of complement projections whose placement is not licensed by lexical head in clear violation of Mahootian and Santorini’s (1996) proposal that lexical categories being heads of elementary tress determine placement of their respective complements. Chan’s (2008) proposal correctly predicts that lexical categories do not determine placement of complements. However, his claim that functional categories being associated with a particular parameter-value, determine the position of their respective complements fails on two grounds. Firstly, the placement of complement TPs in CPs do not appear to be licensed by C. The data documented in the paper demonstrate that complement TPs are placed at post-head position no matter C is associated with head-last value in case of Urdu C or with head-first value in case of English C. Secondly, Chan’s proposal fails in accounting for the placement of complement PPs/PostPs in projections which lack overt functional heads associated with a particular parameter-value.

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**List of Abbreviations**