Empirical Inadequacy of the *Functional Head Constraint*: Evidence from Urdu/English Code-switching

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Abstract

Employing both naturalistic and elicited Urdu/English code-switching (CS) data, this paper attempts to expose the empirical inadequacy of the Functional Head Constraint (FHC) which, Belazi, Rubin and Toribio (1994) claim, is supposed to make valid empirical predictions across different language-pairs. Following Abney's (1987) distinction between functional and lexical categories and Chomsky's (1993) f-selection as one of a group of feature checking processes, Belazi et al., (1994) posit that since functional heads and their f-selected complements must have a matching language feature, CS between functional heads and their f-selected complements is disallowed. Formalized as the FHC, this structural relation between functional heads and their complements, according to Belazi et al., (1994), restricts CS between C and TP, T and vP, v and VP, and D and NP. However, the FHC has been found to make inconsistent empirical predictions regarding CS between different functional heads and their complements in the context of Urdu/English CS. Not only does the FHC predict certain grammatical sentences to be ungrammatical, it also licenses certain ungrammatical sentences. It is found to incorrectly predict CS between D and its f-selected complement NP as demonstrated by the data (8)-(12), C and its f-selected complement TP as demonstrated by the data (13)-(18), and v and its f-selected complement VP as demonstrated by the data (19)-(22). Like the FHC, its addendum the Word Grammar Integrity Corollary (WGIC) has also been found to be empirically inadequate; the placement of English Adjs at positions which are not licensed by English as documented in the data (23)-(26) constitute counter-examples and expose the empirical inadequacy of the WGIC

Keywords: Intrasentential code-switching, language-feature, functional heads, f-selected complements.

1. Introduction

1.1 Purpose of the study

With empirical evidence from naturalistic and elicited Urdu/English code-switching (CS) data, the paper attempts to expose the empirical inadequacy of the Functional Head Constraint (FHC) which,according to Belazi, Rubin and Toribio (1994)*, is supposed to make valid empirical predictions about CS data across different language-pairs.*Following Abney's (1987) distinction between functional and lexical categories and Chomsky's (1993) *f*-selection as one of a group of feature checking processes, *Belazi et al.,* (1994) posit that since functional heads and their *f*-selected complements must have a matching language-feature, CS between functional heads and their f-selected complements must be disallowed. Formalized as the FHC, this structural relation between functional heads and their complements restricts CS *between C and TP, T and vP, v and VP, and D and NP.* However, Urdu /English CS data documented in the study pose different challenges for the FHC and offer multiple instances of CS between different functional heads and their complements in clear violation of the FHC. Both positive and negative data in the form of

grammaticality judgements from the competent Urdu/English bilinguals suggest that the FHC cannot account for the full range of CS patterns found in the data, and is, therefore, found to be empirically inadequate. Along with the FHC, its addendum WGIC which is proposed to account for CS between Adj and N also fails in making correct empirical predictions in the context of Urdu/English CS data.

1.2 Background to the study

Generally, CS is defined as the ability of bilinguals to switch between two languages either at clause boundary (intersentential CS) or within a single clause (intrasentential CS) (cf. Gumpers, 1976; Kachru, 1978, 1983). Involvement of two distinct languages in the production of a well-formed sentence generally referred to as intra-sentential code-switching i.e., mixing of two distinct languages within the boundary of single sentence, has received a lot of scholarly attention in the last forty years. According to Bullock and Toribio (2009), CS, as a term covers, a broad range of contact phenomena difficult to be characterized in definitive terms for a variety of reasons. In fact, "there exists debate in the literature concerning the precise characterization of CS and how various kinds of language contact varieties are to be classified". (Bullock and Toribio, 2009: p.2). Maintaining a clear-cut distinction between CS and other contact phenomena such as code-mixing and borrowing appears to be a highly complicated task; such distinctions have been conceived of and understood differently by different scholars, posing challenges to any proposed distinction between CS and other contact phenomena.

The ability of the speakers to switch between two languages known as CS has been the main focus of research on bilingualism. A variety of studies exploring different dimensions of this phenomenon have been carried out in the last three decades (Bullock and Toribio, 2009). CS has been investigated from two different perspectives. Intersentential code-switching has generally been investigated from a sociolinguistic point of view. Sociolinguistic approach to CS focuses upon the speakers who code-switch, social functions of CS and the factors which motivate the speakers to indulge in CS etc. Unlike Intersentential CS, intrasentential code-switching has been studied in order to determine the grammatical mechanism involved in the mixing of two distinct grammars within the boundary of a single sentence.

Although earliest of the studies considered CS ungrammatical, just a random collection of items of two languages, and a mark of confusion on the part of bilinguals (cf. Espinoza, 1917; Weinrich, Labov and Herzog,1978; Labov, 1971, 1972), the later studies fully exposed the systematic nature of intrasentential CS and established that CS is indeed constrained by grammatical rules (cf. among others, Timm 1975; Poplack, 1980, 1981; Di Sciullo, Muysken and Singh., 1986; Meyers-Scotton,1993); Belazi *et al.,* 1994). Along with exposing the grammatical nature of CS, these studies also attempted at describing and theorizing the nature of the grammatical restrictions which govern the mixing of two independent grammatical systems with the objective of making "independent and objective evidence possible, which is not driven by the switches themselves, and hence is not redundant" (Cantone, 2007, p. 61). However, the researchers do not commonly agree with each other regarding the nature of the grammatical restrictions which regulate the mixing of two different languages within the boundary of single sentence. The primary interest lies in discerning such grammatical rules and constraints which may accurately account for the CS data across different language pairs.

All the different studies dedicated to the investigation of grammatical aspects of CS may be divided into two broad categories: constraint-based and constraint-free (MacSwan, 2010). Constraint-based models of CS attempt to describe and explain the process of mixing of two independent grammatical systems in terms of grammatical constraints which are specifically available only to bilinguals (cf., among others, Timm, 1975; Pffaf, 1979; Poplack, 1980, 1981; Joshi 1985). Appeal to such CS-specific grammatical constraints constitutes what has come to be known as 'third' grammar (MacSwan, 2010) – a grammar which is the result of the mixing of distinct grammatical systems. Constraint-free models of CS, on the other hand, admit no essential difference between monolingual and bilingual data and, therefore, attempt to account for CS data with the existing grammatical apparatus used to account for monolingual linguistic capacity (cf. Woolford 1983; Mahootian 1993; MacSwan 1999).

The constraints-based models of CS have been found to suffer from both theoretical and empirical weaknesses. Empirically, different CS-specific constraints have been found to consistently fail in predicting different switching patterns across different language-pairs. The empirical inadequacy of such constraints is caused by the limited data they are based upon. Formulated on the basis of data from a particular language-pair, such constraints, when employed to account for CS patterns across different language pairs, have been found to make invalid empirical predictions regarding the data (Gardener-Chloros 2009). Not only do these proposals suffer from empirical inconsistencies, they have also been rejected on theoretical grounds. If the primary objective of a research program is to provide an account of CS in the most economical way, such CS-specific constraints must be resisted because they make an explicit appeal to such grammatical mechanisms which are alien to monolingual lingual competence. Since there does not appear to be any valid reason for assuming that bilingual and monolingual linguistic capacity should differ from each other, all such CS-specific grammatical postulates to account for CS data are redundant and, therefore, should not be admitted, unless compelled by evidence (MacSwan 2000).

Unlike the constraint-based models, constraint-free models, couched in different grammatical framework, are built upon fundamental premise that there are no CS-specific constraints to regulate mixing of two independent grammatical systems. Instead of offering any CS-specific postulates like the Equivalence Constraint (EC) and the Free Morpheme Constraint (FMC), they believe that the general syntagmatic coherence Principle of traditional grammar and of recent generative tradition is enough to describe the permissible switching sites.Woolford's (1983) Aspect era approach rejects CS-specific constraints and attempts to account for her data within the grammatical provisions of her preferred grammatical framework. Although the approach fails in achieving the desired objectives, her approach remains successful in ruling out the possibility of any grammatical mechanisms exclusively meant for bilinguals. Following her footsteps, Di Sciullo *et al.,* (1986) also attempt to account for their data within the grammatical provision of the Government and Binding (GB) theory.Instead of focusing on the code-switched items themselves, they posit that CS is controlled by structural relation of *government* among the elements of two lexicons involved in CS. Formally termed as the *Government Constraint* (GC), it stipulates that a governed category and its governor must share the same language-index for a code-switched sentence to be well-formed.Both governor and the governed element, therefore, must come from the same language to satisfy the constraints. However, restricting CS through structural relationships of *government* has been found to be problematic on both empirical and theoretical grounds. MacSwan (2000) argues that the GC fails in providing valid empirical predictions

involving different language-pairs. For MacSwan (2000), since the relationship of *government* has been abandoned in the recent developments made in syntactic theory collectively referred to as the Minimalist Program (MP), the GC should be questioned on theoretical grounds too. With evidence from Urdu/English CS data, Malik (2015) also exposes empirically inadequacy of the GC and documents multiple instances of CS between N and PP, C and IP and V and V and DP from the data which run contrary to what the GC stipulates.

1.3 The Functional Head Constraint

As a substitute to the empirically inadequate GC proposed by Di Sciullo *et. al.,* (1986), Belazi *et.al.,*(1994) attempt to provide an alternative which, according to them, overcomes the empirical weaknesses of the GC without positing any CS-specific constraints like the EC and the FMC. Instead of exploiting the structural relation of government among the code-switched items in a constituent like Di Sciullo *et. al.,* (1986), Belazi *et al.,*(1994) invoke checking of an abstract language-feature to restrict CS. Based on Abney's (1987) distinction between functional and lexical categories and Chomsky's (1993) proposal of *f*-selection as one of a group of feature checking processes, Belazi, *et al.,* (1994) argue that since functional heads, rather than lexical heads, select their complements, CS between functional heads and their *f*-selected complements must be restricted as the language-feature of functional heads and their *f*-selected complements must be similar. "By language feature, the authors mean a label identifying the language from which an item was contributed, such as [+Spanish] or [+English]" (MacSwan 2009: p.317) In case of mismatch between language-feature of functional head and its *f*-selected complement, the language feature would not be checked and will consequently make the sentence ill-formed. Thus, CS between the functional head and its *f*-selected complement should be restricted. Belazi *et al.,* (1994) argue that since the language-features of functional head and its *f*-selected complements must match each other in every monolingual and code-switched sentence, the restriction on CS between functional head and its *f*-selected complements, formalized as the FHC, do not invoke any grammatical mechanisms which are external to monolingual linguistic competence. They argue that the FHC is operative in all speech and, hence, is part of monolingual linguistic capacity too though the effects of the checking of language-feature becomes more visible between functional heads and their complements in CS.

Thus, CS should be blocked if there is no agreement between language-features of the functional head and its *f*-selected complement. However, switching between lexical heads and complements should not be constrained by the FHC because it is applied only to *f*-selected configurations i.e., a complement selected by a functional head. Belazi *et al.,* (1994) offer (1) and (2) as evidence of code-switching between lexical heads and their respective complements- type of CS which is restricted by the GC.

(1) **Spanish/**English
They used to serve **bebidas alcoholicas en ese restaurante.**
they used to serve drinks alcoholic in that restaurant '
They used to serve alcoholic beverages in that restaurant. (Belazi *et al.,* 1994: 23)

(2) **SaVae:t ni-tkalmu Lal** l'anemie.
sometimes we-speak about the anemia
Sometimes we speak about anemia (Belazi *et al.,* 1994)

The possibility of CS between a verb and its complement is demonstrated by (1) while the possibility of CS between a preposition and its complement is demonstrated by (2). All these switches are licensed by the FHC because they do not involve any mismatch in the language-feature of the functional heads and their *f*-selected complements.

The data in (3)-(5), offered by Belazi *et al.,* in support of their proposal, demonstrate ill-formedness caused by mismatch in the language-feature of functional head and its *f*-selected complement.

(3) Spanish/English
El profesor dijo quethe student had received an A.
'The professor said that the student had received an A.'
(4) Arabic/French
*Le médicament que ***''tɕa-hu:li ma hu-s# baehi***.
the medicine that gave.he-it-me NEG it-NEG good
'The medicine that he gave me is not good.
(5). Spanish/English
*He is a ***demonio***.
'He is a devil.' (Belazi *et al.,* 1994: p. 225, 227)

Belazi *et al*., argue that the ungrammaticality of the data (3)-(5) is caused by the mismatch in language-features of the functional heads and their respective *f*-selected complements
The FHC predicts (3) and (4) to be ungrammatical because of CS between C (head) and TP (complement) while the ungrammaticality of (5) is due to CS between D (head) and NP (complement) – precisely the types of switches the FHC restricts.

To further extend the scope of their constraint, Belazi *et al.,* (1994) offer an addendum which governs switching between heads and modifiers particularly between Ns and their modifying Adjs which tend to pose challenge to the FHC. Belazi *et al.,* (1994) maintain that though the languages that were involved in the CS data, they investigated, differ from each other in the placement of Adjs, CS between Ns and Adjs is permissible only at the points where the placement of adjectives satisfies the constraints imposed by the language which supplies the item. On the basis of the evidence from the data they examined, Belazi *et al.,* (1994: 232) propose the Word Grammar Integrity Corollary (WGIC) which stipulates that a word of language X, with grammar GX, must obey grammar GX.

The support for the WGIC comes from the assumption based on Chomsky's (1993) proposal that that all lexical entries are associated with morphological and syntactic features. Consider the contrasts given in (6) and (7) which are offered by Belazi *et al.,* to demonstrate the working of the WGIC.

(6) **Spanish/**English
a.***la mujer** proud
the woman proud
'the proud woman.
b.*the woman **orgullosa**

the woman proud
'the proud woman'
(7) a. **Ia mujer** proud of her position
the woman proud of her position
'the woman proud of her position'
b. the woman **orgullosa de su puesto**
the woman proud of her position
'the woman proud of her position' (Belazi *et al.,* 1994: 29, 30)

According to Belazi *et al.,* the ungrammaticality of (6a) is due to a conflict in the requirements of the grammars of Spanish and English. The Spanish grammar requires that Adj should be placed on the right side of the Spanish N; this requirement is met but the grammatical requirement of English which needs English Adj to be placed pre-nominally is not satisfied. The mixed DP in (6b) is also considered to be ill-formed because of a conflict in the grammatical requirements of Spanish and English regarding the placements of switched items. Unlike (6a) and (6b), (7a) and (7b) are considered well-formed code-switched sentences as the switches respect the grammars of the languages which contribute them.

However, the proposal of the FHC and its corollary WGIC has been questioned on both theoretical and empirical grounds. Muysken (2000) finds Belazi *et al*.'s FHC to be a further elaboration of the GC, doing no better than the GC in accounting for the CS-data from different language pairs. According to MacSwan (2009), although the GC and the FHC do make appeal to an independently motivated principle of grammar, their weakness is caused by incorporation of language-specific identifiers i.e., the *q*-feature of the GC and the *f*-feature of the FHC are not found to be independently motivated. Hence, the FHC itself becomes a CS-specific constraint because of its reliance on an *f*-feature which has not been found to be independently motivated by monolingual data (MacSwan 2009). Like the FHC, the WGIC also becomes a CS-specific constraint for not being the natural consequence of the FHC (MacSwan 2009). It does no better than the FHC in accounting for the switching patterns found in different language-pairs. It makes the specific claim that a code-switched item must respect the grammatical requirements of the language it belongs to. According to Bhatt (1997), the WGIC, like Pfaff's EC (1979), is also based on equivalence in the surface order of the constituents in both grammars and fails in predicting the data across different language-pairs.

In her recent work, Toribio (2001) once again argues that CS between functional head and *f*-selected complement is indeed disallowed. She attempts to defend the FHC against the counter-evidence offered by different studies by arguing that such apparent counter-examples are actually due to the methodological differences. She argues that grammaticality judgment should also be rigorously used along with the naturalistic data. However, since grammaticality judgments may be affected by subjective opinions, behavior and performance, she advocates the intelligent use of created examples to determine the grammaticality of certain switches. While defending the theoretical objections leveled against the FHC by MacSwan (1999), she argues that the FHC is in line with the MP in "that a functional head share the language-index of the projection with which it merges" (Toribio 2001, p.215). But, in spite of her defense, the FHC has been found to lack descriptive adequacy, providing incorrect empirical predictions regarding CS data from different language pairs (cf. MacSwan, 1999; Bhatt, 1997).

2. The data and the participants

The present study employs both elicited and naturalistic data in exposing the descriptive inadequacy of the FHC. One dataset consists of sample sentences taken from a corpus of naturalistic Urdu/English CS developed for the study while the second dataset consists of elicited data employed as negative evidence i.e., what is not possible.

2.1 Naturalistic Urdu-English code-switching data

Bilinguals tend to vary from each other in their command of two languages. Different types of bilinguals can be identified on the basis of different factors like exposure and command of both languages, the age at which the bilinguals were exposed to two languages etc. The degree of command of both languages might serve as a basis for a distinction among CS and other contact phenomena (cf. Poplack, 1981). Since most of the studies on the subject support the selection of only 'balanced'bilinguals for CS data (cf. Poplack, 1981; MacSwan, 2000, among others), the present study also takes only 'balanced' Urdu-English bilinguals as the participants and the consultants whose judgments have been used for obtaining 'negative' evidence. The study follows MacSwan's (2000) suggestion and, therefore, selects only exceptionally good young bilinguals with almost equal command of and exposure to both English and Urdu for both negative and positive data. In order to select only the participants with maximum exposure to and command of English with a positive attitude towards mixing of Urdu and English, the researchers employ the following criteria based on the information regarding the socio-economic background of the participants. The profiles of the participants were developed on the basis of the following information:

- Schooling of the participants
- The age at which the participants got exposure to English
- Educational qualifications of both parents of the participants
- Socio-economic status

The undergraduate students of the University of Management and Technology (UMT), Lahore, Pakistan are selected on the basis of the criteria mentioned above. The preliminary selection of 121 students was made on the basis of the data provided by each of the students in their admission forms. The researchers'personal acquaintance with the participants also helped in making the preliminary selection. After the initial selection, the participants were asked tofill 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 as the bilinguals to participate in the interactions to be recorded for the corpus.

In the corpus of the study, there are 29 interactions. Each interaction involved 4-7 participants with total recording time of 4.5 hours. In each interaction, the participants talked to each other on variety of topics in an on-campus setting. In each interaction, one of the participants is involved as one of the researcher's associate who is selected from among the participants of the interactions recorded for the study. Their presence has been instrumental in achieving the maximally natural conversation in natural setting.

The corpus of Urdu/English CS, the present study is based on, consists of 1767 sentences with 1487 mixed sentences and 280 unmixed sentences. The statistical information regarding the corpus and the participants are given in Table 1 below:

Total recording time	4.5 hours
Number of interactions	29
Number of participants	42
Number of Participants in each interaction	4-7
Number of sentences in the corpus	1767
Number of mixed sentences in the corpus	1487
Number of unmixed sentences in the corpus	280

Table 1: Detail of the corpus of the study

2.2. Elicited Data

Scholars take different positions regarding the use of types of data for studies on grammatical aspects of CS. Arguments have been advanced in favor of both naturalistic (Mahootian, 1993) and elicited data (Toribio & Rubin, 1996 & MacSwan, 1999). The present study adopts a mixed approach, using both elicited (negative) and naturalistic (positive) evidence to assess the descriptive adequacy of the FHC. The second dataset, employed by the present study, consists of elicited data in the form of grammaticality judgments about the grammaticality of the data presented to them. These judgments have been obtained from competent bilinguals with sound academic background and maximum exposure to English.

Grammaticality judgments are obtained only from those bilinguals who have a positive attitude towards CS because negative attitude towards mixing of two languages may interfere into the grammaticality judgment they pass on the constructed code-switched sentences. It is important to note that Pakistani community as a whole has a positive attitude towards free mixing of Urdu and English. It must also be noted that although mixing of any other regional language into Urdu is viewed negatively, mixing of Urdu into regional or provincial languages is evaluated positively and generally appreciated. Therefore, all the bilinguals selected as consultants for the elicited data positively evaluate CS between Urdu and English. This positive attitude ensures maximally accurate responses from the consultants. In fact, the consultants do not show any 'shyness' regarding the mixing of Urdu and English; rather the mixing of Urdu and English is considered a symbol of being 'well educated' with a higher socio-economic status. All the participants freely mix Urdu and English and consider it a socially preferred variety.

Grammaticality judgments used by the present study have been elicited from 20 students who were selected as consultants (these 20 students are part of the 42 students selected from UMT as the participants of the corpus of the study). Some sample sentences selected from the naturalistic data are reconstructed by using different grammatical substitutes from either of the languages involved in CS. The sentences are constructed in such a way as to determine the grammaticality of code-switching between different functional heads and their *f*-selected complements. The main objective of using the grammaticality judgments is to understand what is not possible in Urdu-English CS.

A questionnaire was prepared to get the responses of the consultants as judgments on the grammatical status of different possibilities of switching at different sites. Each of the constructed sentences received 20 grammaticality judgments. All the consultants were initially debriefed by the researchers. The questionnaires containing the constructed sentences were then distributed among the consultants. The constructed sentences were first read aloud by the researchers and then the consultants were asked to pass a judgment about the grammatical status of each of the recited. For each item in the questionnaire, the consultants were asked to mark them as either grammatical or ungrammatical. These judgments play major role in evaluating the universal applicability of the FHC. In the following section, we demonstrate the descriptive inadequacy of the FHC with positive and negative evidence of CS between different functional heads and their f-selected complements.

3. Urdu/English code-switching and the *Functional Head Constraint*

Urdu/English CS data demonstrate that switching between all heads (both functional and lexical) and their complements except T and its vP and P/Post and DP is permissible. In fact, the whole of the corpus do not provide a single instance of CS between T and vP and P/Post and DP. However, the naturalistic data provide numerous instances of CS between functional heads and their complements in clear violation of what the FHC stipulates. Let us first consider the case of CS between D and its f-selected complement DP documented in naturalistic and elicited Urdu/English CS data (8)-(10) below:

(8) *Ye* basic problem*hey.*
this^{D}*be*^{T}
SG *Pre/SG*
This is the basic problem.

(9) **Ye a*basic problem*hey.*
this^{D}*be*^{T}
SG *Pre/SG*
This is the basic problem.

(10) *Ye aik*basic problem*hey.*
this^{D}*be*^{T}
SG *Pre/SG*
This is the basic problem.

The complement DP [basic problem] in naturally-occurring data (8) lacks an overt functional head and appears to be headed by a null D which selects an unmixed English NP as its complement. However, it is difficult to determine the language which should provide null D in the context of CS. In order to determine the D-providing lexicon, two different versions of naturally-occurring data (9) are constructed. The elicited data (9) which is constructed by replacing null D with an overt English D whereas the elicited data (10) is constructed by replacing the null D with its overt counterpart from Urdu. The replacement of null D with its overt counterpart from English is in line with the stipulation of the FHC as both the functional head D and its f-selected complement NP are uniformly contributed by English and therefore, involve no conflict in their language-feature. In spite of the shared language-feature of functional head and its complement in (9), it is readily judged to be ungrammatical by the consultants. The elicited data (10), on the other hand, is judged to be well-formed even though the Urdu D and its f-selected complement English NP do

not share language-feature. Thus, the FHC wrongly predicts the ungrammatical elicited data (9) to be grammatical whereas the grammatical elicited data (10) is wrongly predicted to be ill-formed.

Now consider the contrast between naturally-occurring data (11) and elicited data (12) which further elaborate the incorrect empirical predictions made by the FHC.

(11) *Ye* ***gold minediscover****huwi* *hey.*
this^{D}*be*^{v} *be*^{T}
SG *Asp/SG/Fem* *Pre/SG*
This gold mine has been discovered.
(12) ** This****gold mine discover****huwi* *hey.*
be^{v} *be*^{T}
Asp/SG/Fem *Pre/SG*
This gold mine has been discovered.

The naturally-occurring data (11) documents an instance of a subject DP in which an overt Urdu pre-nominal D selects an unmixed English NP as its complement. The FHC again wrongly predicts the naturally-occurring data (11) to be ungrammatical because there is a conflict in the language-feature of the Urdu D and its f-selected English complement NP. Even more interesting is the fact that a match between language-feature of D and its f-selected complement NP, as documented in the elicited data (12), rather leads to ungrammaticality. Although language-feature of D and its f-selected complement NP match in the constructed subject DP in (12), the consultants uniformly judged (12) to be ill-formed. The FHC, thus, wrongly predicts the well-formed data (11) to be ill-formed and the ill-formed data (12) to be well-formed. Thus, the positive and negative evidence from the data support switching between D and its f-selected complement NP in clear violation of the FHC. The FHC, thus, appears to be highly inconsistent in predicting CS between D and its f-selected complement NP.

Let us now turn to CS between another functional and its f-selected complement i.e. C and its f-selected complement TP. Like CS between D and NP, CS between C and its complement TP is also restricted by the FHC because the switch involves a conflict in language-feature of C and its f-selected complement TP. However, the naturalistic Urdu/English CS data provide multiple instances of CS between Urdu C and English TP or vice versa. The naturally-occurring data (13) and (14) below further expose the descriptive inadequacy of the FHC.

(13) I thinkke you should wear some kind of Victorian type dress.
that^{C}
Fin/Dec
I think that you should wear some kind of Victorian type dress.
(14) ... ***that woh answerable naheen heyn.***
they^{D} ***not***^{NEG} ***be***^{T}
3/PL/Nom ***Pre/PL***
..... that they are not answerable.

The naturally-occurring data (13) and (14) provide evidence of switching between C and its complement TP – a switch involving a functional head and its f-selected complement. One of a

frequently-occurring switch in Urdu/English CS-data is the insertion of a C from one language in an otherwise unmixed CP of the other language. Thus the complement CP selected by V [think] in (13) is headed by a finite declarative Urdu C [ke] which selects an unmixed English TP as its complement. This switch results in mismatch in the language-feature of C and its f-selected complement English TP. On the other hand, the sentence in (14) demonstrates an English C selecting a mixed TP as its complement. However, the language feature of the mixed TP in (14) should be Urdu as T, v and D of argument DPs are supplied by Urdu. The switch in (14) involving English C and a mixed Urdu TP involves a mismatch in language-feature. Because of this mismatch of language-feature, the FHC judges naturally-occurring (13) and (14) to be ill-formed. However, in spite of the mismatch in language feature of C and TP, both (13) and (14) are well-formed sentences acceptable to Urdu/English bilinguals. The positive data provide multiple instances in which the functional head of CP is contributed by one lexicon while the functional heads of other projections are uniformly contributed by the other lexicon involved in CS. Further consider the naturally-occurring data (15) and (16) below:

(15) He said that uss-ney kuch kiya naheen tha assignmentsmein.
he^{D}-Erg something^{D} do^{v} not^{Neg} be^{T} in^{Ad}
3/SG Asp/SG/Mas Pst/SG/Mas
He said that he did nothing in the assignments.

(16) Sub ye keh-tay heyn ke this is not possible.
Everyone this^{D} say^{V} be^{T} that^{C}
3/PL SG Asp/PL/Mas Pre/PL Fin/Dec
Everyone says that this is not possible.

The heads of the embedded CPs in (15) and (16) offer an interesting contrast. In (15), an English C selects a mixed TP as its complement in which D, T and v are contributed by Urdu. On the other hand, (16) offers an instance of Urdu C selecting an unmixed English TP as its complement. The FHC, on the contrary, wrongly predicts well-formed data (15) and (16) to be ill-formed because there is a conflict in the language-feature of the C and its complement.

Further confirmation of CS between C and its f-selected complement TP comes from the elicited data. Consider the elicited data (17) and (18) below which are constructed versions of (15) and (16):

(17) He said ***ke*** *uss-ney kuch kiya naheen tha assignmentsmein.*
that he^{D} -^{Erg}something^{D} do^{v+T} not^{Neg} be^{Aux} in^{Ad}
Fin/Dec 3/SG Asp/SG/Mas Pst/SG/Mas
He said that he did nothing in the assignments.

(18) Sub ye keh-tay heyn thatthis is not possible.
Everyone this^{D} say^{V} be^{T}
3/PL SG Asp/PL/Mas Pre/PL
Everyone says that this is not possible.

Note that replacing an English C with its Urdu counterpart or vice versa leaves no impact on the well-formedness of the code-switched sentences. Thus, both negative and positive evidence clearly indicate that CS between C and its complement TP is permissible. The FHC, on the other hand, wrongly predicts all such instances to be ill-formed because of the mismatch in the

language-feature of C and its complement TP.

Like CS between D and its complement NP and C and its complement TP, CS between v and VP is also incorrectly predicted by the FHC to be ill-formed. Naturalistic Urdu/English CS data provide multiple instances of CS between v and its complement VP. Consider the naturalistic data (19)and (20) below:

(19) kitni dafa alternate kar - rahee hey?
How^{Adv} many times^{N} do-ing^{v} be^{T}
Asp/SG/Fem Pre/SG/Fem
How many times (it) is alternating?

(20) Ye concept clearly understandnaheen kar sakay woh.
this^{D} not^{Neg} do^{v} can^{T} they^{D}
SG Pst/PL/Mas 3/PL
They could not understand this concept clearly.

(21)Aap kis party-ko supportkar-rahay heyn?
you^{D} which$^{D\text{-}Acc}$ do^{v} -ingbe^{T}
2/PL SG Asp/PL/Mas Pre/ PL/Mas
Which (political) party are you supporting?

(22) Mein-ne woh first vote cast karna tha last time.
I$^{D\text{-}Erg}$ that ^{D} do^{v} be^{T}
1/SG SG INF/Mas/SG Pst/SG/Mas
It was my first vote ever that I was to cast last time.

Assuming a double layered vP (Larson 1988; Chomsky 1995), the inner VP in each of the data (19)-(22) is headed by an English V. Each of the VP headed by English V is selected by a token of Urdu agentive v [kar] in (19)-(22). The FHC restricts CS between v and VP as the language-feature of the complement VPs and v does not match. Since each VP in (19)-(22) are headed by English Vs, the language-feature of each VP must be + English. These VPs are selected by Urdu v whose language index is -English. However, in spite of mismatch in language feature of head and complement, CS between v and VP does not have any impact on the well-formedness of the data. The FHC, on the contrary, predicts each of the data (19)-(22) to be ill-formed. Thus, like CS between D and NP and C and TP, CS between v and VP is also incorrectly predicted by the FHC to be ill-formed.

To augment the FHC, Belazi et al., (1994) further introduces the WGIC which stipulates that the grammatical constraints imposed by the language which contributes the item must be satisfied. Thus an English Adj which occurs in Urdu/English CS must satisfy the grammatical requirements of English. But it is not the FHC only which fails in predicting CS between functional heads and their respective f-selected complements; the WGIC also fails in the same way in making valid empirical predictions. The evidence from naturally-occurring Urdu/English CS-data runs contrary to what the WGIC stipulates. If English Adjs were to satisfy the constraints imposed by English, they should have been placed before N. Consider the naturally-occurring data (23) and *(24) below:*

(23) Paon black or chehra white.
Feet^{N} and^{Conj}face^{N}
Mas/SG

Black feet and white face.

(24) Image worst k sath aisi position.

With^{Ad} *such*^{adv}

Such position with worst image.

Let us first focus on the placement of English Adjs in the NPs [paon black] and [chehra white] in the data (23). In both the NPs under consideration, the modifying Adjs are contributed by English. English requires Adjs to be placed at pre-nominal position. However, it is interesting to note that the placement of Adjs in (23) clearly violates the grammatical requirements of English which contributes it. The placement of Adjs in the NP under consideration, thus, clearly runs contrary to what the WGIC stipulates. In the same way, the NP [image worst] in the data (24) pose challenge to the WGIC as the pre-nominal placement of Adj clearly violates the grammatical requirements of English which contributes it. The pre-head placement of the complements in (23) and (24) runs contrary to what the WGIC stipulates. Thus, the WGIC wrongly predicts the naturalistic data (23) and (24) to be ungrammatical. Further consider the inconsistency of the WGIC in predicting the data by focussing on naturally-occurring data (25) and (26) below.

(25) Woh polite heyn.

very^{Adv} *be*^{T}

Pre/SG

They are very polite.

(26) Phir be students mei popular heyn

Still^{Adv} *among*^{Ad} *be*^{T}

Pre/PL

(They) are still popular among students.

English requires the predicative Adjs to be placed before copulative verb. Thus, for an Adj to conform to the grammatical requirements of English, they must be placed before the copulative verb as stipulated by the WGIC. However, the English predicative Adjs in both the data (25) and (26) are placed before the copulative verb in clear violation of the grammatical requirements of English. Thus, the placement of English Adjs in (25) and (26) clearly expose the empirical inadequacy of the WGIC as it predicts them to be ungrammatical which is contrary to the fact.

The naturalistic data (23)-(26) is enough to make it clear that the placement of Adjs does not necessarily conform to the grammatical requirements of the language which contributes them even if the both the languages canonically place Adjs at same position. The WGIC wrongly predicts each of the data (23)-(27) to be ungrammatical. Hence, the data (23)-(27) constitute counter-examples to the WGIC as the grammar of the language providing N is not respected.

4. Conclusion

Both the naturalistic and the elicited Urdu/English CS data, documented in the study, clearly expose the inherent inconsistency of both the FHC and its corollary WGIC in making empirical predictions. The evidence from Urdu/English CS documented in the present study makes it amply clear that the matching f-feature of functional head and its complement cannot serve as the universal restriction on CS across different language-pairs as claimed by Belazi et al., (1994). Not only does the FHC predict certain grammatical sentences to be ungrammatical, it also licenses

certain ungrammatical sentences. The study clearly shows that the FHC consistently makes inconsistent empirical predictions regarding CS between different functional heads and their complements when it comes to deal with Urdu/English CS data. From the analysis of Urdu/English CS data, it becomes quite apparent that CS between functional heads and their f-selected complements which the FHC restricts is possible. The FHC incorrectly predicts the data (8)-(12) to be ungrammatical because these data involve CS between D and its f-selected complement. In spite of CS between D and its f-selected complement, all the sentences are judged to grammatical by the consultants. In the same way, the data (13)-(18) have wrongly been predicted by the FHC to be ungrammatical which is contrary to the fact as the consultants of the study unanimously judged these sentences to be ungrammatical even though each of these data involves CS between C and its f-selected complement TP- precisely the type of CS restricted by the FHC. Likewise, even though CS between v and its f-selected complement VP is restricted by the FHC, the data (19)-(22) remain fully grammatical even though each data presents an instance of CS between v and its f-selected complement VP. Thus, the data documented in the present study clearly shows that the FHC is descriptively inadequate and cannot be claimed to be a universal restriction on CS. Like the FHC, the WGIC has also been found to be empirically inadequate and has been found to wrongly predict fully grammatical sentences to be ungrammatical. The placement of English predicative and attributive Adjs in the data (23)-(26) runs contrary to the grammatical requirements of the language which happens to contribute them as these Adjs are placed at positions which are not licensed by English. Thus, the WGIC like the FHC also badly fails in predicting Urdu/English CS data and should, therefore, be discarded for being descriptively inadequate.

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