

## Clausal-Internal Switching in Urdu-English: An Evaluation of the Matrix Language Frame Model

Asad Ali, Qaisar Jabbar, Nazir Ahmad Malik, Zumra Noreen, Humayun Kiani & Ly Ngoc Toan

University of Lahore, Punjab, Pakistan  
masad7721@gmail.com

### ARTICLE HISTORY

Received : 2021-05-11

Revised : 2021-06-04

Accepted : 2021-11-06

### KEYWORDS

Matrix language

Code-switching

Naturalistic

Bilingualism

System morphemes

### ABSTRACT

The core of this paper is to employ the Matrix Language Frame (MLF) model on Urdu-English clausal-internal switching to identify whether the Matrix Language Frame model potentially accounts for the bilingual linguistic competence efficiently. For this, a qualitative methodology has been adopted for this study. For empirical evidence, data has been taken from eighty Urdu-English bilinguals within a naturalistic setting after categorizing them into four groups, and each group has 20 participants. After conducting audio-recording through non-participant interviews in an informal setting, the collected data was transcribed. The MLF model posited that two languages are fused in a single Intra-CP of a mixed string. The linearly dominant language is Matrix language (ML) that incorporates only *late outsider system morphemes*. Odd is Embedded language (EL) that supplies *content morphemes* satisfying the system morpheme principle (SMP) uniformly and morpheme order principle (MOP). The present study ubiquitously scrutinizes that naturalistic data of Urdu-English bilinguals highlights the innovative results: it predicts that Matrix language (ML) is unidentified in intra-CP, no late outsider system morphemes linearize a code-switched sentence, unparalleled constituent and clausal structure, System Morpheme Principle (SMP) and Morpheme Order Principle (SMP) provides the illegitimate output and computes ungrammatical sentences hence; the Matrix Language Frame model redundantly and inconsistently accounts for Urdu-English naturalistic data and its principles have failed to compute Urdu-English naturalistic data.



### 1. Introduction

The study's primary aim is to evaluate Urdu-English clausal-internal switching, theoretically employing the Matrix Language Frame model (Myers-Scotton & Jake, 2015; Myers-Scotton & Jake, 2017). The MLF model roughly posits those two paralleled languages— Matrix vs Embedded are involved in Code-switching sentences within the clausal domain, pursuing Uniformity Condition. For evaluating the Uniformity Condition and Asymmetrical hypothesis (Matrix vs Embedded), this study takes Urdu-English intrasentential Code-switching data. The MLF model will be applied to the Urdu-English corpus as Urdu is the head-last language with SOV word order while English is the head-first language with SVO word order. It is crucial to account for both languages whose word order is entirely contradictory in one sentence. Both differ based on their formal properties, such as word order, typological structure, case-marking, and phonological representation.

It is very significant to conduct in this domain of study to explore the formal properties of languages, even in code-switching domains. Language mixing/switching is also the product of human beings and is conceived to be a natural expression, systemic, and fully convergent with the human cognitive faculty of language (Chomsky, 2021). This study externalizes the exact internal operative mechanism that regulates Urdu-English Bilinguals under the Matrix Language Frame model (Myers-Scotton & Jake, 2017) as bilinguals are diverse individuals in nature. They develop their multiple-contact nature by conceiving mixed input simultaneously within a natural setting. It is the flexibility of human cognition and the universal process to integrate the items of two languages in a single CP.

Myers-Scotton (2015) articulated the Uniform Structure Principle (USP) to account for bilingual linguistic competence's uniformity and asymmetrical nature. She and her associates have tested several languages. According to Myers-Scotton (2017), this is a "Production-based and comprehensive" model that

regulates the clausal structure, constructs constituent structure. Myers-Scotton (2002) claimed that any segment of language from constituent to clausal level must be uniform and well-formed, as she postulated that “A given constituent type in any language has a uniform abstract structure, and the requirements of well-formedness for this constituent type must be observed whenever the constituent appears. In a bilingual speech, the structures of the matrix language are always preferred.” (Jake, Myers-Scotton, & Gross, 2005).

Asymmetrical hypothesis posited that two linearly contrary languages involved within a single CP and process paralleled each other. Therefore, Myers-Scotton (2015) clearly distinguished between two paralleled languages calling one Matrix Language (ML). It is the most dominant language. It provides a critical and significant role within a code-switched sentence, while the other is Embedded Language (EL), as it is considered less dominant. Its only function within the CP is to insert contentive materials to fill the empty slots. Still, the universal abstract morphosyntactic frame of the sentence is formulated by only one language, Myers-Scotton (2017), called ML.

Further, under the matrix language frame model (Myers-Scotton & Jake, 2017), morphemes are categorized into different domains—Content and System morphemes that operate within monolingual competence and bilingual linguistic competence within the CP as well as intra-CP layers. All those morphemes that assign and receive theta roles (Thematic roles) are called content morphemes, and those that do not assign and receive theta roles are called system morphemes. Nouns, Verbs, Adjectives, prepositions, and some Adverbs are content morphemes, while some functional material like tense inflexions and some functional words are examples of system morphemes. For conjoining the morphemes together, Myers-Scotton (2002) proposed some universal principles—Morpheme Order Principle (MOP) and System Morpheme Principle (SMP).

The Morpheme Order Principle (MOP) has typically been designed to order the morphemes within the constituents and clauses. It predicts that morphemes within a bilingual constituent and clause must follow the Matrix Language (ML) order at any cost. The second core of the MLF model is System Morpheme Principle (SMP), and it ascertains that one type of morpheme, system morpheme with “grammatical relations outside the maximal projections of their head,” is inserted from the only one language, i.e., Matrix Language (ML) within a bilingual constituent (Myers-Scotton, 1997, p. 83)

Many studies have been dedicated in this line of inquiry to evaluate the Matrix Language Frame model (1993; 1997; 2013 and 2017) to test the validity and compatibility of the model within various domains of

language. The recent studies conducted on, Igbo-English by Ihemere (2017), Cree-English by Al-Bataineh, Hussein (2019), Spanish –English by Balam, Parafita Couto & Stadthagen-González (2020), and Pashto-English by Aslam, Saleem & Afridi (2020) all fully support the assumptions and stipulations of the Matrix Language Frame model within nominal and verbal domains. Still, the current study is different in nature of code-switching. The primary aim of this study is to scrutinize the clausal-internal switching that is frequently observed in Urdu-English interactions within a formal and informal setting of everyday routine.

After inspecting several CS literatures on diverse language, pairs instigate to scrutinize the Asian language pairs—Urdu-English clausal-internal switching under the most influential model—Matrix Language Frame model (Jake & Myers-Scotton, 1997; 2005; Myers-Scotton, 1992; C. Myers-Scotton & Jake, 1995; Myers-Scotton & Jake, 2017). The naturalistic data predicts that the MLF model generates ungrammatical sentences, but its principles are fully satisfied. The principles do not restrict and control the code-switching in Urdu-English. The most active language is Matrix Language (ML), and the rest of the language is Embedded Language (EL). However, both are identified through the pre-determined Principles of the MLF model, and the most critical item is the clausal head of (CP) is  $C_0$ . It is called late outsider system morphemes as it has “grammatical relations outside the maximal projections of their heads”. The maximal projections are redundant according to Urdu-English Code-switching data. Hence, later outsider system morphemes do not linearize Urdu-English clausal-internal switching’s typological structure.

## 2. Literature Review

Code-switching (CS) is an exciting line of inquiry to formulate the formal properties of the languages that participate in a code-switched sentence. This nature of speaking and communicating among individuals, and communities was observed by Myers-Scotton and her associates (1992; 1998). Contact phenomenon frequently occurs in language switching and mixing among individuals and communities. Unlike borrowing conceived to satisfy the grammatical integration (phonological, morphological, and syntactical) of a single word from one language into another language. Code-switching (CS) involves the co-occurrence of elements from one language into another instead of phonological integration, only fulfilling another type of integrations—syntactic and morphological. It is what we call Code-switching (CS). This Integration Criterions (IC) was primarily proposed by Shan Poplack (1998).

The term Code Switching (CS) was initially coined by Haugen at the Thirteenth Annual Round Table Meeting on Linguistics and Languages at Georgetown University, held in 1962. The research in

Code-switching (CS) did not emerge until the late 1960s and early 1970s. It was primarily considered an absurd, haphazard, and misused form of language. Then, many scholars tried to construct the formal properties of the two languages that take part in a sentence. Many researchers formulated their assumptions and stipulations in various frameworks and language pairs. However, the researchers, i.e., Al-Bataineh & Abdelhady, 2019; Ali, Jabbar & Malik, 2020; Aslam, Saleem, & Afridi, 2021; Balam, Parafita Couto, & Stadthagen-González, 2020; González-Vilbazo & López, 2011, 2012; Khan & Khalid, 2018; MacSwan, 2005a; MacSwan, 2019; Malik, 2017; Maqsood, Saleem, Aziz, & Azam, 2019; Shim, 2016; Van Gelderen & MacSwan, 2008; Zahra et al., 2021, agreed on one core dictum that no additional mechanism that is external to human cognition is a —CS-specific Constraint. However, empirically, all support such external mechanisms on their respective models except Malik (2017) and Ali, Jabbar & Malik (2020), and they have empathetically and vehemently claimed that no additional toolkit[s] is necessary to account for CS data except two halves of discrete lexicon[s]. The end product of human cognition is only one expression, even in monolingual or bilingual linguistic competence. It is the core theoretical assumption because of the isolable nature of the computational system of human language as presented within the minimalist program (Chomsky, 2021).

Shim (2016) studied Code-switching patterns in two typologically different languages— Korean-English and Japanese-English to determine the placement of objects and verbs. Suggesting the results that the placement of complement is constrained by the roles of heavy vs light verbs ‘as some parametric variation is encoded to functional categories according to the Minimalist Framework (Chomsky, 2021), which determines the placement of complement in mixed data.

González-Vilbazo & Lopez (2011; 2012) suggested that neither the claim of Myers-Scotton (1995) nor MacSwan (2008) is persuasive and posited Narrow hypothesis (NH) according to NH, —v hypothesis v determines at least three crucial grammatical properties of the selected VP: linearization, Focus/Background, and prosodic structure. So, the light verb possesses some properties— word order, prosody, and feature spreading —the light verb is little v, and as a phase head, it controls the grammatical properties of its phase. (P. 848). Little v has a conjugation feature according to the Chomskyian Framework (1995); features must be matched and valued before being spelt out. So, if the feature of little v has been checked and deleted even in monolingual and bilingual data, the derivation must be successfully converged.

López et al. (2012), working on phase theory, suggested that a phase-headedness property in sentential level constrains code-switching, but

—code-switching within the word is possible. We have also shown that the phase system explains how it can happen (p. 15). According to them, Complementizers (C) And light verbs (v) are the phase heads, and one phase is completed on one stage, and after this, the first phase will be converted into the upper second phase satisfying features and operations within phase theory.

Khan and Khalid (2018) tried to apply the Matrix Language Frame model on Pashto-English to test this model. He has ascertained that the model thoroughly explains and delineates bilingual linguistic competence because two languages have interacted in one sentence. These two languages must be separated. They also claimed that English-Pashto bilingual data is fully compatible with the Matrix Language Frame model (Khan & Khalid, 2018, p. 13).

Forker (2019) tested the Matrix Language Frame model on Snazhi-Russian intrasentential code-switching data and postulated that —ML and EL are straightforwardly identified in the Snazhi-Russian code-switching (p. 18). Balam, Parafita Couto & Stadthagen-González (2020) studied Spanish-English code-switching in bilingual communities and explored that—bilingual compound verbs are consistently preferred over *estar* bilingual compound verbs (Balam, Parafita Couto & Stadthagen-González, 2020, p. 1–16). Balam, Parafita Couto & Stadthagen-González (2020) methodologically used the acceptability task and language background questionnaire for conducting the study. However, this study focused on pure natural data from Urdu-English bilinguals.

Zahra et al. (2021) endeavoured to test the matrix language frame model on Urdu- English online news. They claimed that “code-switching was permissible even when it led to structural asymmetry” (Zahra et al., 2021, p. 265). Zahra et al. (2021) furthermore predicted that —the data supported matrix language frame's Morpheme Order Principle (M and System Morpheme Principle (SMP), and no counter-example appeared against MLF model (Zahra et al., 2021, p. 265). Nevertheless, one point to keep in mind is that Zahra et al. (2021) did not take raw data of Urdu-English. As linguistics is a natural science, we must deal with the scientific method.

In this study, the researchers only take Urdu-English naturalistic data within an informal setting so that natural speech can be evaluated to externalize the exact operative mechanism of bilingual linguistic competency. Ali, Jabbar & Malik (2020) tried to account for bilingual data under the theoretical tent of Functional Head Constraint (Belazi, Rubin & Toribio., 2011, p. 222–237). They suggested that the model presented by Belazi, Rubin & Toribio (2011) is inconsistent if Urdu-English data is tested. The functional heads are unrestrictive to linearize a code-switched sentence. Hence, the model proposed by

Belazi, Rubin & Toribio (2011) generates ungrammatical sentences. In this way, the minimalist constraints-free model is also empirically incompatible with Urdu-English bilingual linguistic competence. In short, it can be suggested that the models developed to account for the bilingual data are inconsistent in various pairs of languages. The issue of data, the researchers, apply, or the principles of the model are not fully established.

Urdu is a vibrant language regarding its Case marking system, the flexibility of word order, and phonological matrices. This study, however, takes Urdu-English raw data to test the validity of the most influential model—the Matrix Language Frame model (C. M. Myers-Scotton & Jake, 2017, pp. 340–366). It is essential to present the core and basic interpretation of the Matrix Language Frame model (2017). For this, see the preceding section.

## 2.1 Theoretical Framework

This section briefly constitutes the Matrix Language Frame (MLF) model proposed by Myers-Scotton (Jake et al., 2002; Myers-Scotton & Jake, 2000; Myers-Scotton & Jake, 2015; 2017).

## 2.2 Matrix Language Frame Model

The MLF model is typically designed to account for bilingual clauses' basic grammaticality that reveals CS (mixed clauses). In 1993, Myers-Scotton criticized the previous studies on linguistic constraint imposed on code-switching (CS) on two grounds, i.e., either these studies are theoretically redundant, or their mechanism is too much dependent on existing monolingual syntactic models. In her book *Duelling Languages*, Myers-Scotton (1992) proposed the Matrix Language Frame model (hereafter MLF) as a bilingual production and comprehensive approach in code-switching. This model is too much distinct from previous linguistics models—a descriptive and only close to surface level.

Nevertheless, the MLF model is dedicated with its explanatory power and provides the periphrastical solution for how language is accessed and retrieved before it takes the final form (Myers-Scotton & Jake, 1995, p. 47). The properties of structural conflicts are handled to favour only one of the participating languages. According to Jake and her associates (2002, p. 72), this model intensively highlights generalization on theoretical prospective regarding the nature of linguistic competence and also about operations, from input to output, that occurred in language production and comprehension processes. This view is conceptually termed the Uniform Structure Principle (USP) and its corresponding asymmetrical hierarchies that show how the linguistic model fits linguistic competence.

## 2.3 The Uniform Structure Principle

It states as “A given constituent type in any language has a uniform abstract structure, and the requirements of well-formedness for this type must be observed whenever the constituent appears. In a bilingual speech, the structures of the ML are always preferred, but some embedded structures are allowed if ML clause structure is observed (Jake et al., 2002, p. 8–9). When the uniform structure principle (USP) is applied to bilingual speech, it provides insight to the first hierarchy, which puts that both the languages involved in bilingual speech do not participate equally; one language crucially sets the morphosyntactic frame. This frame is called the Matrix Language (ML). At the same time, the second hierarchy is the distinction between the roles of content morphemes (similar to lexical elements) and system morphemes (similar to functional elements). The language that provides content morphemes is embedded language (EL). The above-mentioned Matrix Language hypothesis (Jake & Myers-Scotton, 1997, p. 83), which structurally follows two principles in code-switching to determine the uniform abstract structure of intrasentential Code Switching (CS) given below:

## 2.4 The Morpheme Order Principle

It states that mixed constituent consists of Matrix Language + Embedded Language lexemes. This constituent consisting of singly occurring Embedded Language lexemes and any Number of Matrix Language morphemes, surface morpheme order (reflecting syntactic surface relations) will be that of the Matrix Language.

## 2.5 The System Morpheme Principle

It predicts that the constituent all system Morphemes which have grammatical relations external to their head constituent” (i.e., which participate in the sentence's thematic role grid) will come from the Matrix language. (C. Myers-Scotton & Jake, 1995) these principles are the hypothesis to determine the ML vs EL in an intra-CP. Matrix Language (ML) intensively ensures the morphosyntactic frame of the Complementizer Phrase (CP). The role of Matrix Language is significantly very ostensive. The remnant contributions of the ML and EL in mixed CP are articulated in place of morpheme type and order systematically following the two testable principles- MOP and SMP stated above.

Further explication of mixed CP, EL islands can occur in the bilingual CP; EL islands are structurally grammatical at phrasal level constituents in the EL. Though EL morphemes entirely construct EL Islands, its position in mixed constituent is under ML control. Moreover, the Matrix Language (ML) structurally frames the entire bilingual CP. So, the Matrix Language provides the abstract grammatical frame of a bilingual CP.

## 2.6 4-M Model

The Matrix Language Frame (MLF) model primarily accounts for the division of various morpheme types-Content vs system demarcating the participating languages- Matrix vs Embedded uniformly. However, it does not entirely handle them in mixed data. The new model is reformulated within the 4 M model because it divides four morphemes' types and clearly distinguishes them at abstract levels. Envisaging briefly, the 4-M model gives the unified classification of morphemes into four types—content, system morphemes, early system morphemes, late bridge system morphemes, and late outsider system morphemes. The 4-M model additionally provides two other features to classify morphemes.

- (1) [ $\pm$ thematic role assignment],
- (2) [ $\pm$ Conceptually activated]
- (3)[ $\pm$ Referring to grammatical information outside of its XMax]

Following the Matrix Language construct of the MLF model, the 4-M model unveils the distribution of morphemes in classic Code-switching. Fortuitously, the 4-M model also explains the distribution of morphemes in many other language contact phenomena and is also typically applicable to monolingual data, for instance, in aphasia and speech error. The 4-M model maintains all the previous characteristics, i.e., classification of inserting morphemes and the participating languages—ML vs EL along with the same principles-SMP vs MOP. However, a slight modification has been reconstructed that is late outsider system morphemes must come from ML instead of all system morphemes. 4-M model re-classifies the morphemes into four categories- content and system. Further system morphemes can be sub-divided into three types early system morphemes, bridge system morphemes, and late outsider system morphemes.

## 3. Method

For methodological purposes, this study adopts qualitative methodology because it is a theoretical study, and for this, all the data has been collected within a naturalistic setting (Chomsky, 2021). For data collection, eighty competent, balanced bilingual

speakers have been selected. For the selection of Bilingual speakers, a Scale of Balanced Bilingual Speakers (BBS) has been adopted from MacSwan (2005). The speakers have been put into four groups, and each group consists of 20 participants. Their natural speech has been recorded in a casual setting outside the classroom in the University of Lahore (Chenab Campus), Gujrat because the students use informal language in a casual setting, so we have to get a pure expression. Their speech has been recorded in the audio-recording form. The collected data is in audio-recording forms, and after that, it has been transcribed to get a CP layer.

The population of data collection is Gujrat and its surrounding areas. People of this area are highly qualified as this city has a highly developed system of Education. A Public University—the University of Gujrat and various private university campuses have been launched to educate the people. Many reputed school systems have been established at the lower level in Gujrat. Due to this, students have mixed input and develop bilingual linguistics competency at the initial level. The parents of the children are mostly educated and qualified. Our participants are University students from Graduate level, and they efficiently speak Urdu and English as well. Four hours of conversational data in the audio-recording form was taken from 80 bilingual Urdu- English speakers. The conversations were recorded in the University of Lahore Gujrat campus. All participants involved were adults, enrolled in the Graduate Department in Arts and Social Sciences, ranging in age from about 22 to 26, and both boys and girls were included.

The unit of analysis in this study is intrasentential code-switching. Intrasentential switching is a contradictory term with intersentential switching: the former hinges on switching between languages within the clause, while the latter involves switching between clauses or sentences. In this study, we will focus on intrasentential switches within the clause and take intra-CP as our unit of analysis. It will be explained as a clause consisting of linguistic items (Content vs System) of both language morphemes within a single CP. The following are examples of utterances containing bilingual clauses from Urdu- English code-switching given below.

**Table 3.1.** Data Collection and its interpretation

Sr. No	Naturalistic Datasets	Figure
1	Total Recording time	4h
2	Total sentences	1728
3	Total unmixed sentences	925
4	Total unmixed sentences	803

## 4. Findings

In this section, all the study's significant findings have been reported and presented. This research study has employed, scrutinized, and tested the Matrix Language Frame model on Urdu-English clausal-internal switching corpus. The study predicts that

Matrix Language Frame model (2017) is descriptively, empirically, and theoretically inadequate, invalid and redundant, taking evidence from Urdu-English mixed datasets.

### 4.1 Switching within Complementizer and Nominal layers

---

(1) SHE SAID THAT APP THE METHOD OF CHOMSKY-KOISS THESIS MEIAPPLY KAR-IN GYE.

You/2P/PL -ERG This In v-INF Will

*She said that you would apply this method of Chomsky in this thesis.*

---

In (1), we have an interesting example from Urdu-English data. It consists of two CPs: the matrix and the other are embedded. The embedded CP is purely Urdu as the late outsider system morphemes come from the matrix and linearize the whole CP. The clausal head C is taken from English. It is neither preposition in Urdu nor is it bridge system morpheme. It is a system morpheme-late outsider system morpheme. It heads the whole CP.

So, we can say that all the constituents and principles are fully satisfied, but the sentence is Grammatical. If we take that as a system morpheme, the linear order of the whole CP is that of English, but the embedded CP is purely Urdu, and the late outsider system morphemes and light verb are derived from Matrix language. It is very tough to identify the Matrix language in this mixed sentence. We, therefore, predict that the system morphemes do not linearize the whole CP as a grammatical layer within clausal-internal switching of Urdu-English.

---

(2) AFSHAN-NE KAHA KEH HER PATIENT IS SEVERELY VOMITING

Afshan-ERG said That

*Afshan said that her patient is severely vomiting.*

---

In (2), we have a mixed sentence; the CP is confined into two clauses--Matrix and Embedded, but the embedded clause is purely English as Matrix Language supplies the late outsider system morpheme and linear order. The embedded clause is that of English, not Urdu. In this intra-CP, Urdu's clausal head is supplied, i.e., Keh (That). Here Keh is neither preposition nor bridge system morphemes as it is the outsider of the maximal projection. According to the definition of Myers Scotton (2017) of late outsider system morphemes, they are external to maximal projection. The clausal head, -"Keh" 'is taken from Urdu. However, contrary clausal head selects embedded language TP how it can be matched, and valued features as languages have their distinct and

parametric properties that map the typology of the language.

Therefore, the issue of example (2) is crucial. The Matrix Language frame model generates grammatical sentences as ungrammatical. According to the Matrix Language Frame model, example (2) must be ungrammatical but fully grammatical and natural expression, taken from the bilingual community and spoken by a bilingual speaker[s]. It is forcefully predicted that identifying the matrix language in Urdu-English is a very tough task; the data gives us a new horizon in code-switching, not matrix language universal, and two languages did not systemize parallels within Intra-CP.

---

(3) THE SINDHI SHALWAR-KAMEEZ HUMARA NATIONAL DRESS HAI.

Sindhi shirt-trouser/3P/SG Our Is/3P/SG

*The Sindhi shirt and trouser is our national dress.*

---

In (3), two languages are participating. However, one is dominating according to the potential assumption of MLF, that language is labelled as ML language, and it is the requirement of the nature of human cognition as every human being possesses one and only one Computational System of Human Language (C<sub>HL</sub>). It is the language supplies the Late Outsider System morphemes, according to the MLF model; in this sentence, our focus is not the clause structure; we only focus on the nominal phrase that is The Sindhi Shalwar-Kameez. It is subject to DP, and

it is fascinating to note the internal structure of this mixed DP. Shalwar-Kameez is a compound noun, Sindhi is an adjective, and it is projected NP, but a purely Urdu NP is merged with purely English DP---The. In this nominal phrase, the ' is not an adjective, preposition, or bridge system morpheme; it is external to maximal projection, so it falls into late outsider system morphemes. Now, the issue is that the nominal phrase is purely English word order typologically, but the clause structure is purely hinges on Urdu. What is the matrix language in this intra-CP?

Nevertheless, the sentence is grammatical. The structure of phase—THE SINDHI SHALWAR-KAMEEZ and clause—THE SINDHI SHALWAR-KAMEEZ HUMARA NATIONAL DRESS HAI, is contrary. The Matrix language is English at the phrasal level, while the matrix language is Urdu at the clausal level. Despite this contrary structural mapping, the sentence is fully grammatical. The phrasal and clausal structure is unparalleled.

The linear order of all the constituents must be uniform and under the control of the matrix language only. However, in this sentence (3), the matrix language is English at the phrasal level, and at the clausal level, the matrix language is Urdu. The very tough task is identifying the matrix language as all principles formulated by Myers Scotton (1992) are satisfied.

---

(4) I HOPE THAT APP IN SAB STUDENTOO-KO ENGLISH PARHA-EE GYE.

You/2P/PL These/PL All -ACC Teach-INF Will

*I hope that you will teach English to all these students.*

---

In (4) cited above, we have a sentence in which two CPs are involved one CP-I HOPE is purely English while the second is mixed one, but our concern is to analyse the mixed Intra-CP in which items of two languages are involved. The embedded CP—APP IN SAB STUDENT-O—KO ENGLISH PARHA-EE GYE (You will teach English to all these students) is a mixed one, and it has the items of both the participating languages, but the clausal head is

purely inserted from English, and it selects the purely Urdu TP as a complement. Myers Scotton (2017) has postulated that the morphemes external to the maximal projection are poked into late outsider system morphemes slots but here, C, that is supplied by English, and the rest of the clause belongs to Urdu; hence no ungrammaticality is noticed, and matrix language is not well defined in this CP.

---

(5) APP APNE KNOWLEDGE-KO APPLY KAR-IEN.

You/2P/PL Your/2P/PL -ERG v-INF

*You should apply your knowledge.*

---

In (5), let us have another mixed sentence from Urdu-English CS data. It is a purely natural sentence and spoken in a natural setting. In this sentence, tense inflexion IEN and *'do'* construction verb *'Kar'* is inserted by one language, i.e., an ML and the rest of the language is EL that is supplying content morphemes-lexical verb APPLY it has been inflected into ML frame set by the ML. This sentence is fully grammatical and fulfils the descriptive requirement of the MLF model. The non-finite verbs are the better candidates that freely occur in the ML frame with the *'do'* verb strategy.

case assigner *'ko'*, but according to the 4 M model preposition, it is a bridge system morpheme it makes a bridge between two items. However, how are the Urdu preposition “Ko” constructs a bridge in this constituent? The documented example is a counter-example to the bridges system morphemes. It has some ambiguities. If we take the “Ko” as a case marker, it is the late outsider system morpheme, and in Pro-drop languages, Celtic is used to mark the case. If we take “Ko” as a case marker or preposition, the MLF and 4-M model does not account for the data documented in this study. In this sentence, the status of “Ko” is not fully determinable and predictable if we apply the MLF.

Here, we have another interesting point to reveal that the constituent APNY KNOWLEDGE KO is a whole DP but has English—Knowledge N and the

---

(6) COVID-19-KI SITUATION-MEI ALL THE BUSINESS CRASHED ALL OVER THE WORLD

-Acc -In

*In the COVID-19 situation, all the businesses crashed all over the world.*

---

In (6), we have another exciting example to evaluate the potential postulation of the matrix language frame model. In the above-stated example, the linear order of the sentence is that of English. We noticed a chunk COVID-19 *ki* situation *mei* it is fully grammatical, and the order of this constituent is that of Urdu it is contrary to a clausal linear order of the sentence. Myers Scotton claimed this is called EL Islands, and they must be under the control of the matrix order. In example no (6), we observe COVID-19 *ki* situation *'mei'*, as an adjunct and is under control of English

word order, but the issue is that the order of the morphemes of this constituent is not that of English, but it consists of Urdu linear order. The crucial items—*ki* and *mei* are taken from Urdu. The accusative case marker other is the preposition. It is the apparent violation of the Morpheme Order Principle and System Morpheme Principle. It is also noticed that two contrary systems operate within a constituent level and clausal level. In this way, the Uniform Structure Principle (USP) has been violated.

*-Acc during*

*During the study, some students have to support their families.*

---

The above-cited example (7) is noted as a mixed CP of some adjunct. In this CP, we have an adjunct—‘Study-K duran’ it is a very interesting constituent. Its linear order shows an Urdu constituent but can be embedded into English matrix CP. In this CP, the clausal structure of the whole CP is that of English, but one adjunct whose word order is that of Urdu has been embedded into this matrix CP. It is a clear violation of the Morpheme Order Principle, System Morpheme Principle, and Uniform Structure Principle. The Matrix language is unidentified in the clausal structure.

## 5. Discussion

Code-switching within the Matrix Language Frame model (Myers-Scotton & Jake, 2017) is a contested research domain, but a little focus has been paid to deal with Asian language pairs. Being Indo-Aryan Languages in Asia, Urdu is a dynamic language in lieu of its Case-marking system, phonological matrices, morphological layers, and Syntactic pattern. Code-switching and language contact phenomenon emerged in (Sankoff, 1998) within the ground-breaking research articles published by Sankoff (1998) and her associates (Belazi, Rubin & Toribio, 2011; Myers-Scotton & Jake, 2000; Sankoff, 1998; Sobin, 1984). The research on the contact phenomenon has claimed that language mixing/switching is not haphazard use of language, but it must be as systemic and unified as monolingual speech. Myers Scotton (1995) proposed a unified language production and processing model with structurally converging two languages into one sentence. She first claimed that mixing is uniform, secondly categorized the participating languages on the involvement within the sentence, and thirdly classified the linguistic items—content and system morphemes of the participating languages. She always posited that one language is linearly superior in mixing/switching phenomenon what Myers-Scotton predicted Matrix Language (ML) and other is less dominant, i.e., Embedded Language (EL).

Every model is based on empirical evidence in natural science, and the empirical data to evaluate the matrix language frame model has been presented in the previous section. The real Urdu-English dataset reveals that the assumption of the matrix language frame model to generate, produce, and process the language[s] in a unified way fails and generates some ungrammatical strings. At the same time, the core principles (SMP and MOP) are fully satisfied. The data demonstrated that clausal head complementizer (C) is free being a late outsider system morpheme, and it did not control the whole Intra-CP layer. The clausal head from Urdu freely and flexibly selects

either English TP or Urdu TP. However, it did not control the whole CP. At the same time, the results of the most recent studies predict that the Matrix Language Frame model (2017) fully posits fruitful results. It applies to all the human cognitive domains like psychology, psycho-linguistics, socio-linguistics, second language acquisition, and bio-linguistics. Ali (2020) predicts that human language regulates an involuntary action like heart-beating, winking of eyes, and naturally growing hair. Code-switching (CS), however, falls in the domain of involuntary potential of putting linguistic items in such a distinctive fashion to construct a meaningful expression constituting content vs system morphemes from diverse languages.

The matrix language frame model (1997) postulated that system morphemes linearize the whole CP. However, many counter-examples have been reported in a considerable amount of data within many languages like Spanish-English. MacSwan (2005) has postulated on theoretical as well as empirical grounds that no additional mechanism is necessary to regulate the bilingual linguistic competence and no ML construct is universal to account for switching at the word level. Late outsider system morphemes did not potentially linearize the mixed CP of any language. However, MacSwan (2005b) did not ever deal with Urdu-English code-switching data. The matrix language (ML) is not superior within Urdu-English as it is unidentified within the clausal and constituent levels. The data of this study reveals that no late outsider system morphemes map the structure and word order of the whole CP.

The assumptions and argumentations presented by Themere (2017), Al-Bataineh and Abdelhady (2019), Balam, Parafita Couto & Stadthagen-González (2020), and Sanwal (2020) conducted under the Matrix Language Frame model fully support the postulation of the Matrix Language Frame model (2017). The principles—System Morpheme, Morpheme Order, Uniformity, and Asymmetry formulated within Matrix Language Frame model (2017) are fully testable and evaluated within various language pairs, i.e., Spanish-English, Pashto-English, Snazhi-Russian, so forth. They posited that the Matrix Language Frame model is consistent and utterly compatible with intrasentential code-switching. The clause is headed by some morpheme in monolingual and bilingual speech. The issue is to determine the clausal head of a code-switched sentence. The head of the clause determines the word order of the language. If any language inserts a clausal head, that language must construct the morphosyntactic frame of the whole intra-CP. The rest of the language supplies the content morphemes to provide the semantic



interpretation of the languages. In this way, two participating languages have been separated within a bilingual CP, and two languages must be identified as Matrix Language (ML) vs Embedded language (EL).

Within the clausal level, it can be observed the constituent level, the same pattern of switching is observed in the whole clause from constituent level to clausal. The clausal level is a fascinating domain in code-switching. Many scholars have presented their assumptions on the clausal level in Urdu-English under the theoretical tent of the minimalist program (1995). Ali, Jabbar & Malik. (2020) have posited that Code-switching is unrestrictive, and no functional material fully linearizes the order of a code-switched sentence. The fusion of two participating languages within a CP layer did not constitute paralleled typological order of the sentence, but only a single linear order of every mixed sentence is observed in any language pair. Ali, Jabbar & Kiani (2021) postulated that the Uniformity of Clausal internal layer is controlled by phase heads C and v as both is the phase heads within Phase Theory (Chomsky, 2021). Maqsood et al. (2019) claimed light verb only constrains verbal borrowing under the theoretical tent of the Minimalist Program (1995). She also claimed that nominal borrowing is irrestrictive of any external constraints. However, as a whole, she and her associates ascertained that borrowing is all and only accounted for if grammatical constraints are imposed on the verbs borrowing.

This study potentially accounts for the data presented by Maqsood et al. (2019), as when we talk about borrowing; it means the fusion of two linguistic items in a single distinct domain like verbal, nominal, or any other layer. Matrix language (ML) and Embedded Language (EL) are identified in borrowing as the influence of the Matrix Language is dominant on Embedded Language (EL), so the system morphemes determine the strategies of borrowing. According to Myers-Scotton (2013), verbal borrowing/mixing adopts do-verb construction to incorporate the content morpheme into the Matrix Language. Do-verbs constructions must be taken from ML.

Based on empirical evidence from Urdu-English naturalistic data, this study predicts that whatever the concurrent models presented, the languages roles within an internal layer of sentence and morphemes participation within the morphosyntactic frame of intra-CP do not appear sufficient to account for Urdu-English data. Urdu Complementizer being the clausal head freely and flexibly selects with contrary *phi-feature* TP of English language is the legitimate violation of SMP and MOP. On the constituent level, many internal layers of Urdu-English switching also predict that similar issues have been reported. Determiner head (D) from English selects with pure Urdu NP. Both are a legitimate violation of the Matrix Language Frame model (2017). This model is

considered the most influential model that descriptively represents the abstract level of bilingual linguistic competence.

With concrete and unbound arguments from Urdu-English clausal switching, this research study claims that the Matrix language frame model (2017) is neither productive nor processing. Its principles are redundant and inconsistent with human language faculty. Therefore, the MLF model generates grammatical sentences as ungrammatical and ungrammatical sentences as grammatical within Urdu-English clausal-internal switching. The crucial morpheme, i.e., late outsider system, does not potentially linearize the CP layer of the mixed sentence; hence, no matrix language is universal at the constituent level and in clausal construction. Unparalleled constituent and clausal constructions are observed in Urdu-English clausal-switching.

## 6. Conclusion

With solid empirical evidence and arguments from naturalistic data of Urdu-English, this study vehemently predicts that the bilingual linguistic competency cannot uniformly be accounted for employing the Matrix Language Frame (Myers-Scotton & Jake, 2015; Myers-Scotton & Jake, 2017; Myers-Scotton, 2013). The Matrix Language Frame model's hypotheses and principles are inconsistently impermissible to predict a fruitful result in Urdu-English clausal-internal switching. The principles and hypotheses are invalid and redundant to generate a fully convergent derivation inserting content and system morphemes from two diverse languages. The invalidity and inconsistency have been noticed in Urdu-English naturalistic data's constituent and clausal-internal levels. The head (system morpheme) of the constituent and head (system morpheme) of the clause are contradictory to embedded language, so it is very uncertain about identifying the matrix language (ML) and embedded language (EL) within clausal-internal switching of Urdu-English naturalistic data.

## 7. Recommendation

Many studies have been dedicated to testing the Matrix Language Frame model (Myers-Scotton & Jake, 2017). Various language pairs have been reported unprecedented results in various domains and aspects. Many languages have supported the assumption and principles formulated to test and identify the two participating languages. However, a few language pair reports that the MLF model is inconsistent with mixed dataset and bilingual linguistic competence. For recommendations to future researchers, this study provides a framework and guideline to pursue in various languages pairs other than Urdu-English naturalistic data. Theoretically, this model is considered redundant because it demarcated

the human linguistic competency into two impressive halves.

Future researchers tried to develop or modify the Matrix Language Frame Model based on empirical data from diverse language pairs from different aspects. This study is limited to only one pair of languages, so future scholars must follow other language pairs to point out the principled violation of the Matrix Language Frame model. Clausal-switching is an exhilarating domain to evaluate bilingual linguistic competence and the descriptive apparatus that is adapted to account for linguistic unmixed and mixed data. Future researchers may notice and explore the scrambling (Ali, Jabbar, & Kiani, 2021, p. 52–60) of constituents within the clausal domain applying the Matrix Language Frame model.

## 8. Acknowledgement

I want to thank my ever-supporting love-Aqsa Shahzadi and the anonymous reviewers who helped, guided, and supported me in conducting this research study. Their arguments are constructive and motivating for me.

## References

- Al-Bataineh, H., & Abdelhady, S. (2019). Cree-English intrasentential code-switching: Testing the morphosyntactic constraints of the Matrix Language Frame model. *Open Linguistics*, 5(1), 706-728.
- Ali, A., Jabbar, Q., Malik, N. A. (2020). No Functional Restriction, No Fusion Linearization on intrasentential Code Switching: A Minimalist Explanation. *International of English and Education*, 9(4), 130–145.
- Ali, A., Jabbar, Q., & Kiani, H. (2021). Clausal-Internal Scrambling in Urdu Language: A Derivation by Phases. *REiLA: Journal of Research and Innovation in Language*, 3(1), 52–60. <https://doi.org/10.31849/reila.v3i1.5968>
- Aslam, S., Saleem, T., & Afridi, M. S. (2021). Syntactic dominance in Pashto-English bilinguals: An application of Mayer-Scotton's matrix language frame model. *Ilkogretim Online*, 20(5), 1319–1341. <https://doi.org/10.17051/ilkonline.2021.05.147>
- Balam, O., Parafita Couto, M. D. C., & Stadthagen-González, H. (2020). Bilingual verbs in three Spanish/English code-switching communities. *International Journal of Bilingualism*, 24(5-6), 952-967. <https://doi.org/10.1177/1367006920911449>
- Belazi, H. M., Rubin, E. J., Toribio, A. (2011). Code-Switching and X-Bar Theory: The Functional Head Constraint. *Linguistic Inquiry*, 25(2), 221–237.
- Chomsky, N. (2021). Linguistics Then and Now: Some Personal Reflections. *Annual Review of Linguistics*, 7, 1-11.
- Forker, D. (2019). Sanzhi–Russian code switching and the Matrix Language Frame model. *International Journal of Bilingualism*, 23(6), 1448-1468, <https://doi.org/10.1177/1367006918798971>.
- González-Vilbazo, K., & López, L. (2011). Some properties of light verbs in code-switching. *Lingua*, 121(5), 832–850. <https://doi.org/10.1016/j.lingua.2010.11.011>.
- González-Vilbazo, K., & López, L. (2012). Little v and parametric variation. *Natural Language and Linguistic Theory*, 30(1), 33–77. <https://doi.org/10.1007/s11049-011-9141-5>.
- Ihemere, K. (2017, January). Igbo-English intrasentential codeswitching and the Matrix Language Frame model. In *46th Annual Conference on African Linguistics* (pp. 539-558). Language Science Press.
- Jake, J. L., & Myers-Scotton, C. (1997). Codeswitching and compromise strategies: Implications for lexical structure. *International Journal of Bilingualism*, 1(1), 25–39. <https://doi.org/10.1177/136700699700100103>.
- Jake, J. L., Myers-Scotton, C., & Gross, S. (2002). Making a minimalist approach to codeswitching work: Adding the Matrix Language. *Bilingualism: Language and Cognition*, 5(01), 69–91. <https://doi.org/10.1017/s1366728902000147>.
- Jake, J. L., Myers-Scotton, C., & Gross, S. (2005). A response to MacSwan (2005): Keeping the Matrix Language. *Bilingualism*, 8(3), 271–276. <https://doi.org/10.1017/S1366728905002300>
- Khan, A. A., & Khalid, A. (2018). Pashto-English codeswitching: Testing the morphosyntactic constraints of the MLF model. *Lingua*, 201, 78-91. <https://doi.org/10.1016/j.lingua.2017.09.002>
- MacSwan, J. (2005a). Codeswitching and generative grammar: A critique of the MLF model and some remarks on “modified minimalism”. *Bilingualism: language and cognition*, 8(1), 1-22. <https://doi.org/10.1017/S1366728904002068>
- Macswan, J. (2005b). Remarks on Jake, Myers-Scotton and Gross's response: There is no—matrix language. *Bilingualism: Language and cognition*, 8(3), 277-284 <https://doi.org/10.1017/S1366728905002312>
- MacSwan, J. (2019). A reply to Malik. *Lingua: International review of general linguistics*, (217), 101-108. <https://doi.org/10.1016/j.lingua.2018.10.014>

- Malik, N. A. (2017). No mixed grammars, no phonological disjunction: A new perspective on intra-sentential code-switching. *Lingua*, 194, 51-66. <https://doi.org/10.1016/j.lingua.2017.05.002>
- Maqsood, B., Saleem, T., Aziz, A., & Azam, S. (2019). Grammatical constraints on the borrowing of nouns and verbs in urdu and english. *SAGE Open*, 9(2), 2158244019853469. <https://doi.org/10.1177/2158244019853469>
- Myers-Scotton, C. (1992). Comparing codeswitching and borrowing. *Journal of Multilingual and Multicultural Development*, 13(1-2), 19-39. <https://doi.org/10.1080/01434632.1992.9994481>
- Myers-Scotton, C., & Jake, J. L. (2000). Testing the 4-M model: An introduction. *International journal of bilingualism*, 4(1), 1-8.
- Myers-Scotton, C., & Jake, J. L. (1995). Matching lemmas in a bilingual language competence and production model: Evidence from intrasentential code-switching. *Linguistics*, 33(5), 981-1024. <https://doi.org/10.1515/ling.1995.33.5.981>
- Myers-Scotton, C., & Jake, J. L. (2000). Four types of morphemes: Evidence from aphasia, code-switching, and second-language acquisition. *Linguistics*, 38(370), 1053-1100. <https://doi.org/10.1515/ling.2000.021>
- Myers-Scotton, C. M., & Jake, J. L. (2017). Revisiting the 4-M model: Codeswitching and morpheme election at the abstract level. *International Journal of Bilingualism*, 21(3), 340-366. <https://doi.org/10.1177/1367006915626588>.
- Myers-Scotton, J. J. (2013). Non-finite verbs and negotiating bilingualism in codeswitching: Implications for a language production model. *Bilingualism: Language and Cognition*, 1-15. <https://doi.org/10.1017/S1366728913000758>.
- Sankoff, D. (1998). A formal production-based explanation of the facts of code-switching. *Bilingualism: language and cognition*, 1(1), 39-50.
- Shim, J. Y. (2016). Mixed verbs in code-switching: The syntax of light verbs. *Languages*, 1(1), 8. <https://doi.org/10.3390/languages1010008>.
- Sobin, N. J. (1984). On code-switching inside NP. *Applied Psycholinguistics*, 5(4), 293-303. <https://doi.org/10.1017/S0142716400005191>.
- Van Gelderen, E., & MacSwan, J. (2008). Interface conditions and code-switching: Pronouns, lexical DPs, and checking theory. *Lingua*, 118(6), 765-776. <https://doi.org/10.1016/j.lingua.2007.05.003>.
- Zahra, F. T., Saleem, T., Abdullah, A. F., & Khan, M. A. (2021). Testing Matrix Language Framework Model On Urdu-English Online News Entity: A Creative Approach. *Multicultural Education*, 7(1). <https://doi.org/10.5281/zenodo.4460350>.