

Original Paper

Competing Activation of L1 and L2 in L3

Production—Evidence from a Case Study of Mongolian Native College Students from the Perspective of Think-aloud Approach

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Abstract

This article presents six case studies of L3 production performed by trilinguals in China, aiming to explore the activation status of L1 and L2 during L3 production. Six Mongolian native college students participated as research subjects, and qualitative and quantitative research methods including a think-aloud writing test and interviews, were adopted to examine which language, Mongolian L1 or Chinese L2, were more readily activated in the process of English L3 production, as well as, what roles L1 and L2 play in the process of L3 production and what factors contribute to the activation of L1 and L2.

The findings show that Mongolian L1 and Chinese L2 are activated competitively in the process of English L3 production, but for different learners, they are activated to different levels and play different roles. The recency use of background languages, language proficiency and the medium of instruction are decisive factors in determining the activation levels of Mongolian L1 and Chinese L2 for Mongolian native college students in China. Language proficiency, the type and amount of exposure to L3 and the perceived language distance are the factors that contribute the most to activation of L1 and L2 during L3 production.

Keywords

L3 production, competing activation, Mongolian native college students, L1, L2

1. Introduction

A large number of studies have been carried out on Third Language Acquisition (TLA) over the past two decades (De Angelis, 2007). Most of the studies have focused on different perspectives towards language acquisition. Cross-linguistic influence (CLI) on TLA from the perspective of psycholinguistics has drawn much attention (Cenoz, Hufeison, & Jessner, 2001). Research in recent years on this area has shown that all the previously learned/acquired languages tend to be activated in the production of an additional language. For example, studies have shown that the background languages appear to be activated competitively and play different roles (Williams & Hammarberg, 1998; Lindqvist, 2009, 2010; Hammarberg, 2009). However, most of those studies are based on different languages from the same language family, and very few studies (for example, Hammarberg, 2001) have involved languages from different language families.

With the spread of English as a world language (Feng & Adamson, 2015), English is a compulsory course for Chinese minority college students whose mother tongue is not Chinese, their second and English their third language.

Mongolian is one of the 55 ethnic minorities in China, with the population of 5,981,840 according to the census in 2010. In China, nearly 70% of Mongolians live in the Inner Mongolia Autonomous Region. All Mongolian national schools in the Inner Mongolia Region offered bilingual education to the Mongolian minority students from primary to tertiary level until the end of 20th century, with Mongolian as their first language and Chinese as second language. In the early 21st century, some Mongolian national schools started to offer trilingual education with English as a third language. So the past two decades have witnessed the growing proficiency from bilingualism to trilingualism among Mongolian ethnic groups (Dong, 2015). Now English has become a compulsory course for Mongolian native students in Inner Mongolia, from primary to tertiary education.

However, their English learning experience is different and more complex than that of other Chinese bilingual learners due to the fact that Mongolian, English and Chinese are very different systems with their own writing forms. Chinese is a branch of the Sino-Tibetan phylum, Mongolian is a sub-phylum of the Altaic phylum, and English belongs to a west-Germanic sub-phylum of the Indo-European language. This has added difficulties to Mongolian native college students learning English. In addition, there seems to be a consensus in the literature that the majority of Mongolian native college students are often disadvantaged in English learning, because most of them live in rural, herding, desert or mountainous areas. Many minority schools, therefore, lack basic resources, such as teacher resources, teaching aids, teaching equipments. Without access to modern facilities and qualified teachers, minority students are usually found to be poorer performers in English when compared to Han majority counterparts (Hu, 2007; Tsung, 2009), and their dropout rate is usually higher. Therefore, the aim of this research study is to understand the impact of English learning for Mongolian native college students.

2. Literature Reviews

2.1 *The Roles of the Background Languages in L3 Production*

The roles of background languages in third language acquisition have been studied in depth by Williams and Hammarberg (1998) and Hammarberg (2001). In their studies, non-adapted language switches in Sarah's oral production of Swedish L3, are examined. Their study concludes that the two background languages English L1 and German L2 clearly play different roles in Sarah's conversation in Swedish L3. English L1 is mainly used for eliciting words and commenting on production; German L2 is used unconsciously with no clear communication aim. Based on this result, Williams and Hammarberg (1998) propose the notions of instrumental role for the language used for eliciting and metalinguistic functions, and supplier role for the language used more automatically. In 2006, Hammarberg conducts a study comparing the case of Sarah with another L3 learner, EE, whose L1 is German, L2 is English. The results confirm the previous findings that background languages play different roles. But in EE's case, English L2 seems to play an instrument role whereas German L1 a supplier one.

Trevisiol (2006) applies the Williams and Hammarberg's model to analyze Japanese learner's code switches and word constructions in French L3. His findings show that Japanese L1 plays an instrument role and the supplier role is much less prominent.

Christina Lindqvist (2009) investigates the roles of L1 and L2 in L3 oral production and decisive factors in a case study, in which he applies Williams and Hammarberg's model, examining cross-linguistic lexeme production by six individual learners. The result shows Swedish L1/ L2 and English L1 are used as instrumental language, which is due to the interlocutors' common access to these languages. She concludes that it does not seem to matter if the instrumental language represents a learner's L1 or L2 though. The supplier language varies between individuals, and is less clear.

In conclusion, the model proposed by Williams and Hammarberg has been very useful in explaining the roles of background languages in the process of L3 production. But in other studies, the distinction between instrumental and supplier language are not as clear-cut as in Williams and Hammarberg (1998) and Hammarberg (2009). Therefore, more case studies, with different language combinations from other multilingual learners are necessary.

2.2 *Factors Affecting Cross-linguistic Influence over L3 Production*

Many factors are believed to influence Cross-Linguistic Influence (CLI). Researchers have reached different conclusions about which factors can condition the CLI.

Research on TLA and CLI has already identified many factors that affect learners' reliance on previously learned/ acquired languages and constrain the type and amount of influence on the target language. Jarvis (2000) assumes that several factors can be controlled in CLI studies such as age, motivation, personality, language aptitude; social, educational and cultural background; language background; type and amount of target language exposure; target language proficiency; language distance; task type area of language use; prototypically and markedness of linguistic feature. In L3

research, four factors (proficiency, typology, L2 status and recency) have often been discussed by researchers, such as De Angelis and Selinker (2001), Hammarberg (2009) and Bardel and Lindqvist (2006). In addition, there are other factors that affect cross-linguistic influence over L3 production, such as language mode, personal language identity (Hammarberg, 2009) and interlocuter's common language access to certain languages (Lindqvist, 2010).

However, the influences of these factors may vary according to factors, such as type of task, language background and level of proficiency.

In the current study, the impact of language proficiency, type and amount of exposure to the target language and as well the perceived language distance will be examined in detail and in what follows these factors will be reviewed.

2.2.1 Proficiency Factor

In the field of cross-linguistic influences, language proficiency refers to proficiency in the target language and proficiency in background languages.

A notable point is that the level of proficiency in the target language is one of the most important elements for CLI. Many studies have shown that CLI decreases as the proficiency in the target language increases (Singleton, 1987; Hammarberg, 2009; Lindqvist, 2009). Most researchers maintain that CLI is more likely to occur at the early stages of acquisition, when learners' knowledge of the target language is still weak and fragmentary and the need to fill knowledge gaps in the target language is more pressing (Singleton, 1987; Taylor, 1975; Williams & Hammarberg, 1998).

According to the above-mentioned studies, language switches, foreignizations and word construction seem to be frequent phenomena at earlier stages of acquisition, when learners are not fluent in the target language.

Not all kinds of CLI will occur at all stages of learning, though. Other kinds of influence might appear in later stages of acquisition. Ringbom (1987) and De Angelis (45) found that meaning-based CLI is more important in advanced learners.

On the other hand, if the learner has already studied other languages, in general the highest level of language proficiency has the greatest impact on the target language. For instance, Ringbom (2001) examined the differences between CLI from the L1 and L2 in L3 use. His results show that meaning based CLI would only occur from languages in which the learner has native-like or very advanced proficiency. In Hammarberg's study (2009), the learner has acquired German, French and Italian before learning Swedish. Among these three foreign languages, the level of German is highest. German is most frequently used. His results show that a large amount of language switches into German appear in Swedish L3 acquisition. In addition, Ringbom (2001) notes that if the learner's second language level is high, even if it does not have formal similarity with the target language, it will influence the target language learning and become the source language of CLI. Therefore, it can be concluded that proficiency in background languages have an impact on CLI.

2.2.2 The Type and Amount of Target Language Exposure Factor

The type and amount of target language exposure is considered as another factor that influences the occurrence of CLI. Although it has not been discussed a lot, some researchers have studied it, such as Fouser (2001), Hoffman (1999). Hoffman examines the phenomenon that individual language learner psychologically relies on their learned/acquired languages. He notes that the time and place of using language play critical role to fluency and importance. Fouser also studies two learners one of whom is a Korean learner of English, who has lived in Japan for 5 years. In his interview, the learner reports that he tends to think in Japanese, when he speaks Korean.

2.2.3 Language Distance Factor

Cenoz, Hufeison and Jessner (2001) believe that learning a third language which is similar to the native language or the second language can promote the process of acquisition and make language switches happen easily. Therefore, language distance becomes a very important factor in TLA. Language distance refers two notions: the distance that a linguist can objectively and formally define and identify between languages and language families and the notion of perceived language distance that is the distance that learners perceive to exist between languages that may, or may not, correspond to the distance that actually exists between them.

The notion of perceived language distance was proposed by Kellerman in the 1970s motivating many studies on perceived language distance after that. For instance, Ringbom's (2001) study sufficiently proves that perceived language distance plays very important role in CLI. He studies English L3 learners of Finnish and Swedish. His findings indicate that the informants' judgment of language distance between English, Swedish, and Finnish is different from each other. Although, Finnish and English do not belong to the same language family, the Finnish learner assumes that they have many commons, especially in semantic agreement. Thus, the learner activates Finnish frequently in their English L3 essays.

In sum, the learner's perceived language distance can affect CLI, even more than the actual language distance, especially at the semantic and functional transfer level. Even the learner's L1 or other higher-level language is irrelevant to the target language in terms of typology and CLI may occur.

3. Methodology

3.1 Research Questions

The present study aims to investigate the following three questions:

- 1) Which language, L1 or L2, is more readily activated in L3 production?
- 2) What roles does L1/L2 play in the process of L3 production?
- 3) What factors contribute to the activation of L1 and L2 in the process of L3 production?

3.2 Participants

The participants of the present study are 6 female university students aged between 20 to 25 from Chi Feng University. Because this was a qualitative study with a small number of participants, the

purposive sampling technique is used to select research participants. All participants are speakers of Mongolian L1, Chinese L2, English L3. All participants were born and raised in Inner Mongolia, but they are from two different leagues (prefecture) of Inner Mongolia. All subjects speak Mongolian and Chinese in their daily life. Ten students were asked to perform the test but two were eliminated when audio indicated that their silence pauses were of time takes up more than 20% of total writing time, and two others were excluded because their voice is too low. Table 1 shows the information of the six participants.

Table 1. Information about the Six Subjects

	Chun	Qing	Hu	Wu	Ha	Ao
Age	19	23	20	20	23	20
Place	Tongliao	Tongliao	Tongliao	Tongliao	Xilingol	Xilingol
Grade	Freshman (Non-English Major)	Sophomore (English Major)	Freshman (Non-English Major)	Freshman (Non-English Major)	Sophomore (English Major)	Freshman (Non-English Major)
L3 Proficiency	Pre-inter	Pre-advanced	Pre-inter	Pre-inter	Pre-advanced	Pre-inter
L2 Proficiency	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate	Intermediate
L1 Proficiency	Fluency	Fluency	Fluency	Fluency	Fluency	Fluency

Hai Mei (2019)

3.3 Instruments

The instruments of data collection were a think-aloud protocol writing test, interviews and audio-recordings of think-aloud protocol.

Writing task: Descriptive writing task is often used for elicitation by many researchers for example Mayer (1969), Kellerman (2001) and Cenoz (2001). In order to measure non-target language activation in L3 production, the researcher used a wordless picture story called “Snowman’s story” by Will Hillenbrand. The book has a series of 30 pictures without any word in it. All the subjects are asked to narrate the picture story in English with think-aloud protocol.

Think-aloud protocol: Think-aloud protocol is an approach used to gather data in usability testing in product design and development in psychology and in social science, such as writing, reading, translation research, decision making, and process tracing. It is introduced by Clayton Lewis, which is developed by Ericsson and Simon later (Guo, 2007). Think-aloud protocol requires the subjects to say whatever comes into their mind while they are performing a certain task. It may contain what they are thinking and feeling and doing. This will show the cognitive process of subjects, and thought formation as explicit as possible.

Individual interview: For the sake of getting the related language background information and find the

factors that influence background language activation in the process of L3 production, an open-ended interview is conducted just after each subject finishes the writing.

Both think-aloud test and interview are recorded so that the researcher can go back and refer to how they behave when doing the task.

3.4 Procedures of Data Collection

Four steps were employed in the procedure of data collection in this study. First, the subjects in this study were strictly selected from Mongolian native college students, and they were technically trained before the test in order to get valid data. Second, the participants were asked to narrate the wordless picture story in English in a way of think-aloud, with about 150 words. Each participant was tested individually in a classroom. When students were doing the think-aloud task, the role of researcher was to keep silent and keep distance from the participants to serve as an observer who hints the students to speak out aloud what they are thinking about. The think-aloud writing process of each participant was recorded by the researcher with an audio-recorder as data base for describing the activation of non-target language. Third, an open-ended interview was conducted with each of participant right after their think-aloud writing. The interview included two parts. The first part of questions were based on language background. The second part of questions were used to get their opinions about activation of L1 and L2 occurring in L3 production. The interview was also recorded. The six participants were further selected out of the 10 for the final data analysis, because their silence time was less than 20% of the total writing time. Finally, all the audiotapes of the six participants were transcribed into text by the researcher for further statistical analysis.

3.5 Data Analysis

When the data collection is complete, the author starts to analyze the data in relation to the three research questions. In transcriptions of the recordings, one kind of cross-linguistic influence, non-adapted language switches, has been identified. It is proposed by Williams and Hammarberg in 1998. Non-adapted language switches refer to utterances of previously learned languages, usually a word or a short sentence, which are not adapted to the target language in any way. All the language switches occurring in the data, are examined.

The study begins with the first research questions. All the non-adapted language switches from L3 to L1 and from L3 to L2 are selected in order to see which language, L1 or L2, is activated more readily in L3 production.

To answer the second research question, non-adapted language switches occurring in the data are further classified into four types depending on which functions the switch to have in L3 production, according to Williams and Hammarberg's (1998) categorization. Below are definitions of four types, followed by examples and keys from the data of this study.

The first type is EDIT. It contains terms, such as "no, sorry", which are used to introduce a self-repair and also includes interactive feedback signals such as <yeah, what >.

e.g.,

Hu : ...when they read, < ᠪᠠᠭᠠᠨ > (Mongolian), finish reading...

Key: ...when they read, <No>...when they finish reading...

Wu: ...then mummy rabbit, <哦, 不是> (Chinese), the snowman...

Key: ...then mummy rabbit, <Oh, no>, the snowman...

The second one is META. It includes two types: META COMMENT, which is used by learner to comment on communicative situation or text itself, and META FRAME, which usually refers to questions used by learner to ask for target word.

e.g.,

Hu: ...< 我觉得这应该是兔子在帽子里。 > (Chinese) (META COMMENT)

Key: ...< I think the rabbit is in the hat.>.....

Qing: < ᠬᠤᠠᠵᠤᠰᠢᠨᠢᠨᠢ > : ᠣᠲᠠᠨᠢ ᠰᠢ ᠬᠠᠭᠠᠨ ᠪᠠᠭᠠᠨ ᠣᠲᠠᠨ ᠮᠠᠨ ᠠᠨᠢᠨᠢᠨᠢ (Mongolian) (META FRAME)

Key: ...< How do you say > “return”< in English? >)...

The third one is referred to as INSERT. It is sub-divided into three: ELICIT EXPLICIT, ELICIT IMPLICIT and NON-ELICIT. ELICIT EXPLICIT is accompanied by META FRAME, as “return” in (How do you say “return” in English?). IMPLICIT ELICIT are pronounced with rising intonation, lacking of a meta frame. The two kinds of INSERT are used to elicit target language expressions. Another INSERT appears without a frame or questioning intonation.

e.g.,

Hu : ...< ᠰᠤᠷᠠᠭᠠᠨ > : ᠣᠲᠠᠨᠢ ᠰᠢ ᠬᠠᠭᠠᠨ ᠪᠠᠭᠠᠨ ᠣᠲᠠᠨ ᠮᠠᠨ ᠠᠨᠢᠨᠢᠨᠢ (Mongolian)

Key: ...How do you say <“run after” > in English?... (ELICIT EXPLICIT)

Ao: ...<她在路上滑倒了?> (Chinese) (ELICIT IMPLICIT)

Key: ...<she slipped on the way? >...

Ha: ...They jumped the... 悬崖... (Chinese) (NON-ELICIT)

Key: ...They jumped the <cliff>...

All of the three categories above-mentioned have pragmatic purpose. There is another category which seems to have no identifiable pragmatic purposes. This category is defined as Without Identified Pragmatic Purpose (shortened as WIPP). The switch itself does not seem to have any function of its own. So WIPP elements are short and most often contain grammatical function words such as conjunctions, pronouns, prepositions, connective adverbs, rather than content words.

Ha: <然后> (Chinese), then snowman is telling the story...

Key: <then>, then snowman is telling the story...

In order to answer the third research question 3, the transcriptions of interview is analyzed. The interview focuses on the factors affecting the activation of background languages, such as language learning experience, language proficiency, language distance, the type and amount of target language exposure, etc.

4. Results and Discussion

4.1 Result and Discussion of Research Question 1

Table 2. Distribution of Chun and Qing's Language Switches across Languages

Subjects	Chun		Qing	
	N	%	N	%
Switch into Mongolian L1	9	15%	4	13%
Switch into Chinese L2	52	85%	27	87%
Total	61		31	

Table 2 presents the frequency of language switches occurring in Chun and Qing's cases. It can be seen that switches into Chinese L2 occur in high frequency in both cases, with a range of 85% to 87%. While switches into L1 occur in a very low frequency, with a range of 13% to 15%. It indicates that Chinese L2 is more readily activated in these two cases.

Table 3. Distribution of Hu and Wu's Language Switches across Languages

Subjects	Hu		Wu	
	N	%	N	%
Switch into Mongolian L1	20	26%	24	37%
Switch into Chinese L2	56	74%	40	63%
Total	76		64	

As can be seen in Table 3, in the cases of Hu and Wu, switches into Mongolian L1 are not as frequent as Chinese L2, ranging from 26% to 37%; switches into Chinese L2 is much more frequent, covering from 63% to 74% of the occurrences. This result resembles in Hu and Qing's cases, that Chinese L2 is readily activated too in the process of their English L3 production.

Table 4. Distribution of Ha and Ao's Language Switches across Languages

Subjects	Ha		Ao	
	N	%	N	%
Switch into Mongolian L1	26	93%	53	91%
Switch into Chinese L2	2	7%	5	9%
Total	28		58	

The frequency of switches in cases of Ha and Ao are presented in Table 4. The results of them appear to differ remarkably from the other four informants. Switches preferably go towards Mongolian L1, with

a range from 91% to 93%. Switches into Chinese L2 rarely occur in their cases, taking up very low percentage (7% to 9%). It suggests that Mongolian L1 is more readily activated when they produce English.

To sum up, non-adapted language switches of both Mongolian L1 and Chinese L2 appear during the speech production of English L3. It confirms the findings from other L3 studies that the background languages of learners are activated when the learner attempts to learn additional language. But the results also show that language switches into Mongolian L1 and Chinese L2 respectively occur in different levels. It can be concluded that L1 tends to be readily activated in cases of Ha and Ao, while L2 is more readily activated in the cases of the other four informants.

According to De Bot's Model (1992), he believes that the language choice is made at conceptual level based on the speaker's intention. Then it is transmitted to a component of lexical concept and particular language node. Language node monitors and controls the choice of language at the levels of lemma, syntactic formulation and the phonological-phonetic, with which language node can communicate directly. The elements of different language constitute language-specific subsets at each level. But if there are some similarities in lemmas or word forms or phonology across languages, it can cause activation to spread between languages. The information about which language they belong to is based on the lemmas of lexicon. As for how words are stored in lexicon, De Bot also supports the non-selective view. According to language non-selective view, the words in speakers' different languages are stored in one lexicon that can be searched in parallel and compete with each other for activation. The different language has a default level of activation. The level of activation depends on various factors, such as how often the speaker exposes to the language, and how much the speaker uses it recently. In addition, teaching method and age of acquisition all affect the levels of activation. This can explain why the six subjects activate L1 and L2 at different levels.

Then, how can the six subjects' language switches be related to the production of L3? According to De Bot model, the language choice is made at the conceptual level and is governed by language node, but the activation of element from another language occurs at different stages of production process. For these six subjects, of course, English L3 is the most highly activated as their selected language. But during English L3 production, both Mongolian L1 and Chinese L2 are activated as selected language at different degree. In order to ask questions, give comments, and identify wanted lemmas, switches of EDIT, META, INSERT are used by the subjects, which are not produced in English L3, but form instances of a temporary change-over to Mongolian L1 or Chinese L2. Their language selection is made in the conceptualizer, under their control.

WIPP switches often contain grammatical function words, such as conjunctions, pronouns, prepositions, connective adverbs. The subjects know those words in English L3, because they correct them in L3 immediately. Mongolian L1 or Chinese L2 is readily activated at this point. Therefore, WIPP switches occur without any control in the process of syntactic formulation.

It is interesting to note that L1 is activated readily by Ha and Ao, while Hu, Wu, Qing and Chun tend to

activate L2 more readily. It depends on default level of activation of different language. In order to find specific answer, the researcher analyzes the data of interview. It is known that Ha and Ao are from pastral area of Inner Mongolia, Xilingol League, a grazing land. People there live on herding and do not speak Chinese as often as people from other part of Inner Mongolia in their daily life, though they learn it at school. Another important factor that differs from the other informants is that Ha and Ao learn English through medium of their L1 from primary school to high school. However, the other four are all from Tongliao City, where some people live on both farming and animal husbandry. People there speak Mongolian with strong accent and with mixture of Chinese. They learn English through the medium of L2 from primary school to high school, so Hu, Wu, Qing and Chun, speak Chinese more often than Mongolian in their daily life. Therefore, the recency of use, medium language of learning and instruction are decisive factors that make one of the background languages activate more readily than the other.

4.2 Result and Discussion of Research Question 2

In order to test what roles L1 and L2 play in L3 production, language switches produced by six participants are examined in more details.

As to what roles these non-adapted language switches play in L3 production, Hammarberg and Williams (1998) divides them into two categories. They propose that the switches of EDIT, META and INSERT types are made to complement and support the speech production of L3, they are playing the role of instrument; WIPP switches are produced more automatically on the basis of supplier role. The results provided below follow this category.

The Tables 5 and 6 show distribution of Chun and Qing's language switches across functional types and languages.

Table 5. Distribution of Chun's Languages Switches across Functional Types and Languages

Functions	Chun: switch into						Total N
	Mongolian L1		Chinese L2		Ambiguous Mon/Chi		
	N	%	N	%	N	%	
EDIT	1	20	4	80	0	0	5
META COMMENT	1	11	6	67	2	22	9
META FRAME	0	0	4	80	1	20	5
INSERT EXPLICIT ELICIT	0	0	4	80	1	20	5
INSERT IMPLICIT ELICIT	0	0	6	100	0	0	6
INSERT NON-ELICIT	4	67	0	0	2	33	6
WIPP	1	3	30	91	2	6	33
Total	7	10	54	78	8	12	69

Table 6. Distribution of Qing's Languages Switches across Functional Types and Languages

Functions	<u>Qing: switch into</u>		Chinese L2		Ambiguous Mon/Chi		<u>Total</u>
	Mongolian L1		N	%	N	%	N
	N	%					
EDIT	2	63	6	37	0	0	8
META COMMENT	1	17	4	66	1	17	6
META FRAME	1	25	3	75	0	0	4
INSERT EXPLICIT ELICIT	0	0	3	100	0	0	3
INSERT IMPLICIT ELICIT	0	0	0	0	1	100	1
INSERT NON-ELICIT	0	0	0	0	0	0	0
WIPP	2	20	7	70	1	10	10
Total	6	13	23	76	3	10	32

Chun's switches involve Chinese L2 for most part of 78% in all instances, and involve Mongolian L1 to some extent of 10%. So, what functions do they play in English L3 production? Chinese L2 is dominant in META and INSERT functions. Mongolian L1 is a slightly used in EDIT and META functions. According to Williams and Hammarberg's (1998) attribution of different roles, the results indicate that Chinese L2 is predominant in instrument role. In WIPP functions, Chinese is also mostly used with percentage of 91%, which shows that L2 is activated as a supplier.

It can be seen that both switches into L1 and L2 occur in Qing's L3 production. It means both L1 and L2 are activated in the process of her L3 production. But Chinese L2 is more frequently used than Mongolian L1 (76 percent verses 13 percent respectively). Specifically, the first five categories are mainly towards Chinese L2, Mongolian L1 is less used in these functions. It seems that Chinese L2 dominates the instrumental role. As to the last category, WIPP, 70% of all switches are Chinese with only 20% from Mongolian. Thus, Chinese dominates WIPP functions in her L3 production. Overall, L2 appears to be predominant both in instrumental and supplier role.

Tables 7 and 8 show the distribution of Hu and Wu's languages switches across functional types and languages.

Table 7. Distribution of Hu's Languages Switches across Functional Types and Languages

Functions	<u>Hu: Switch into</u>		Chinese L2		Ambiguous Mon/Chi		<u>Total</u>
	Mongolian L1		N	%	N	%	N
	N	%					
EDIT	5	63	2	25	1	12	8
META COMMENT	4	67	1	17	1	17	6
META FRAME	5	56	2	22	2	22	9

INSERT EXPLICIT ELICIT	3	50	1	16	2	33	6
INSERT IMPLICIT ELICIT	2	67	0	0	1	33	3
INSERT NON-ELICIT	1	33	2	67	0	0	3
WIPP	0	0	48	98	1	2	49
Total	20	23	56	67	8	10	84

Table 8. Distribution of Wu's Languages Switches across Functional Types and Languages

Functions	Wu: Switch into		Chinese L2		Ambiguous		<u>Total</u>
	Mongolian L1		Chinese L2		Mon/Chi		
	N	%	N	%	N	%	N
EDIT	5	83	1	17	0	0	6
META COMMENT	4	67	1	0	1	33	6
META FRAME	4	57	1	14	2	29	7
INSERT EXPLICIT ELICIT	5	71	2	29	0	0	7
INSERT IMPLICIT ELICIT	4	80	0	0	1	20	5
INSERT NON-ELICIT	2	50	2	50	0	0	4
WIPP	0	0	33	97	1	3	34
Total	24	35	40	58	5	7	69

Table 7 shows that Chinese L2 mostly occurs in Hu's case as well. As regards EDIT function, more Mongolian L1 is used than Chinese L2. In function of META, INSERT EXPLICIT, both Mongolian L1 and Chinese L2 are used, but Mongolian is more used in these functions. In function of INSERT IMPLICIT ELICIT, only Mongolian L1 is used. In function of INSERT NON-ELICIT, Chinese is used one more time than Mongolian. As to WIPP function, only Chinese is activated. The data indicates that Mongolian L1 is predominant in instrumental role, whereas Chinese L2 clearly plays as a supplier.

Wu's switches show that both L1 and L2 are activated in her L3 production. Chinese L2 is a bit more activated than Mongolian L1. In functions of EDIT and META COMMENT, META FRAME and INSERT ELICIT EXPLICIT, both Mongolian and Chinese are activated, but Mongolian L1 is activated more often. As regards INSERT IMPLICIT ELICIT functions, only Mongolian is used. In NON-ELICIT function, Chinese and Mongolian are used similarly. From this data, it can be concluded that Mongolian dominates in EDIT, META and INSERT functions. On the other hand, in function of WIPP, only Chinese is used. So Mongolian L1 and Chinese L2 play clearly two different roles in her L3 production: L1 plays an instrumental role; whereas L2 plays as a supplier. The finding is similar with the previous findings of Hammarberg and William (2009).

Tables 9 and 10 show the distribution of Ha and Ao's languages switches across functional types and languages.

Table 9. Distribution of Ha's Languages Switches across Functional Types and Languages

Functions	Ha: Switch into		Chinese L2		Ambiguous Mon/Chi		Total N
	Mongolian L1		N	%	N	%	
	N	%					
EDIT	3	75	1	25	0	0	4
META COMMENT	2	67	0	0	1	33	3
META FRAME	2	100	0	0	0	0	2
INSERT EXPLICIT ELICIT	2	100	0	0	0	0	2
INSERT IMPLICIT ELICIT	10	100	0	0	0	0	10
INSERT NON-ELICIT	0	0	1	100	0	0	1
WIPP	7	100	0	0	0	0	7
Total	26	90	2	7	1	3	29

Table 10. Distribution of Ao's Languages Switches Functional Types and Languages

Functions	Ao: Switch into		Chinese L2		Ambiguous Mon and Chi		Total N
	Mongolian L1		N	%	N	%	
	N	%					
EDIT	7	100	0	0	0	0	7
META COMMENT	5	83	1	17	0	0	6
META FRAME	13	86	1	7	1	7	15
INSERT EXPLICIT ELICIT	13	93	1	7	0	0	14
INSERT IMPLICIT ELICIT	2	50	1	25	1	0	4
INSERT NON-ELICIT	7	88	1	13	0	0	8
WIPP	6	100	0	0	0	0	6
Total	53	88	5	8	2	4	60

The results of Ha and Ao appear remarkably different from the former four participants. The table shows that in Ha's switches, Mongolian L1 is highly activated with a percentage of 90%. Switches are overwhelmingly occur towards MongolianL1; switches into Chinese L2 occur only twice in her whole procedure of her English L3 writing. As regards of META, INSERT, and WIPP functions, Mongolian L1 is used. In function of EDIT, both Mongolian L1 and Chinese L2 are used. Overall, Chinese L2 is rarely used, Mongolian L1 appears to be predominant in both instrument and supplier during her L3 production.

In Ao's switches, Mongolian L1 occurs most frequently as well, with percentage of 88. Switches into Chinese L2 occurs occasionally. Ao makes use of her Chinese L2 a slight more than Ha's. In all functions of META, EDIT, INSERT and WIPP, Mongolian is used with a high frequency, while L2 is used with a very low frequency, only five times. This finding is similar with Ha's case that L1 is

activated as both instrument and supplier language.

From the results of these cases, it can be concluded that to the four subjects of Chun, Qing, Hu and Wu, both their Mongolian L1 and Chinese L2 are activated in English L3 production. In aspect of instrumental role, with Chun and Qing, L2 seems to dominate the instrumental role. In case of Wu and Hu, Mongolian L1 dominates the instrumental role in English L3 writing. In aspect of supplier role, four of them make use of their Chinese L2 frequently, which is in line with many previous findings from other studies, by Hammarberg and Williams (2009).

But in the cases of Ha and Ao, the result turns out to be much different from the other four subjects. The former four subjects activate their Chinese L2 in a higher frequency, whereas Ha and Ao always activate their Mongolian L1 in a higher frequency. The result also shows that Mongolian L1 is used both as instrumental and supplier language in Ha and Ao.

Therefore, L1 and L2 play different roles for different learners.

With Chun and Qing, Chinese L2 is more readily activated as instrument. It is apparent in META and INSERT switches. While to Hu, Wu, Ao and Ha, Mongolian L1 is readily activated in an instrumental role. It is apparent in all types of switches. This different choice for instrumental language can be explained by many interacting factors.

As to factors affecting the choice of instrumental language, there are many factors that appear in the literature, such as the learners' knowledge about the interlocutor and her/his linguistic competence, language mode, proficiency in the target language, personal identification, the status of language as a contact language, and the language that has been established as a language for communication. In Hammarberg's study (2009), for the two participants, English is most frequently activated as an instrument language. The factors seems susceptible of activating instrumental language are the learners' knowledge about the interlocutor and her/his linguistic competence, trilingual mode that they adopt in the project, and the learners' proficiency in target language in his study.

But in present study, all the participants are set in monolingual mode that they are tested individually in a classroom. There is no interlocutor to communicate with. Therefore, the factors concerning interlocutors are excluded in this study. The most crucial factor seems to be the medium language used for learning English. Because, in China, a major chance for students to expose to English is the classroom. And they tend to depend strongly on a medium language. This medium language serves as an instrument in learning English. For Chun and Qing, Chinese L2, which is used as a medium language for their English learning, serves as instrument in L3 production. They all learn English through medium of Chinese L2. They tend to think in Chinese as they speak English. It seems that English learning have no relation with Mongolian for them. But for Wu, Ao and Ha, Mongolian is used as medium language in their English classes from primary school to high school. Thus, they are accustomed of using Mongolian as instrument in learning English. They tend to resort to both Mongolian L1 and Chinese L2, when they have difficulties in expressing in English. The additional factor is personal identity towards language and culture. For Wu, Ao and Ha, it points to Mongolian

language and culture. Since they had a strong identity towards their mother tongue and culture, despite they are able to express themselves fluently in Chinese. Because they three are all from Xilingol. They have strong awareness of protecting their mother language and their culture. While, Chun, Hu and Qing have no strong Mongolian identity.

The interactive effect of these two factors makes Chinese or Mongolian become activated as an instrumental language, regardless of L1 or L2.

With respect to the activation of the supplier language, four factors including learner's proficiency, recency, typology, and L2 status, have been mostly discussed in the literature (De Angelis & Selinker, 2001; Hammarberg, 2009; Lindqvist, 2009). Hammarberg and Williams propose that interaction of these four factors determine the activation of a supplier language in Multilingual learners' L3 production. Meanwhile, they point out that the impact of these factors may change according to different situations of learners. In their case studies, the decisive factor is its L2 status, because the fact that the learner consider German L2 as a "foreign language" in her mind. So she prefers using German L2 to make up the L3 words that she does not know.

In current study, with Chun, Hu, Wu, and Qing, Chinese L2 dominance is very strong as a supplier, which is in line with the findings of Williams and Hammarberg (2009 [1998]), De Angelis and Selinker (2001). In aspect of recency effect of background languages, they all learn Mongolian and Chinese within both natural and school context, and both are often used in their daily life. But Chinese is more closely related to English for them, because they learn English with the help of Chinese, rather than Mongolian. In the aspect of proficiency, their Chinese competence is stronger than Mongolian, though Mongolian is their mother tongue. They are from Tongliao City, and they speak Mongolian, which is strongly assimilated by Chinese. In aspect of typology, although Mongolian, Chinese, English belongs to different language phylums, another kind of typology called psychotypology, proposed by Kellerman (1983), which refers to the learner's perception of distance between languages. Many studies have shown that psychotypology is an important factor for cross-linguistic influences. In this study, Chun, Hu, Qing and Wu consider that L2 Chinese is more similar to English. They know that both Chinese and English share some similarities in sentence structure and word order. But Mongolian follows SOV order. Therefore, in the case of Chun, Hu, Wu and Qing, psychotypology, proficiency and recency interacts and makes Chinese L2 frequently activated as a supplier.

But with Ha and Ao, Mongolian L1 is readily activated as a supplier. The proficiency level of Mongolian L1 is much higher than in Chinese L2, because Mongolian is the most frequently used in their daily life. Also Mongolian L1 is used as media language in their English class, and they both think that Mongolian is close to English. Thus, the proficiency, recency and psychotypology of Mongolian L1 scores high for Ha and Ao, which makes Mongolian L1 activated as a supplier.

4.3 Result and Discussion of Research Question 3

The results show that the proficiency of target language, type and amount of exposure to the target language, perceived language distance are the main factors that contribute to the activation of

Mongolian L1 and Chinese L2. The results will be presented below.

4.3.1 Language Proficiency

The information about the six subjects (Table 1) shows that the proficiency in target language (English L3) of Chun, Hu, Wu and Ao is at the pre-intermediate level, Ha and Qing are at pre-advanced level. The different level of proficiency in the target language cause different degree of activation, which had been shown by other researches as well. In this study, the researcher compares the amount of background language activation in English L3 production (See Table 11). The result shows that Ha and Qing, whose English proficiency is at pre-advanced level, has less frequency than the other four participants. The finding suggests that the activation of background languages (Mongolian L1 and Chinese L2) decreases as proficiency in the target language (English L3) increases.

Table 11. L3 Proficiency and the Amount of L1 and L2 Activation

Subjects	Chun	Hu	Wu	Ao	Ha	Qing
Level of L3	Pre-inter	Pre-inter	Pre-inter	Pre-inter	Pre-advanced	Pre-advanced
The amount of L1 and L2 activation	69	84	69	60	29	30

As to the proficiency in background languages, the result shows that the level of proficiency of all the subjects' L1 and L2 is much higher than their target language, English. In specific, with Chun, Hu, Wu and Qing, their proficiency level in Chinese L2 is higher than that in Mongolian L1. But to the other subjects, like Ha and Ao, their Mongolian L1 proficiency is higher than that of Chinese L2. In addition, they all think that the most important factor activating L1 and L2 is the higher proficiency in L1 and L2. All these data shows that proficiency is the decisive factor of activation of L1 and L2.

Language switches, as a type of CLI, occur frequently at earlier stages of acquisition, when learner is not fluent in target language (Lindqvist, 2009). On the other hand, only the strongest background languages seem to be activated easily. Learners' high level of proficiency in L3 makes them continue their production in L3, but if learners are at low level of proficiency in L3, when they meet lexical difficulties, they always turn to resort to one or two background languages, since they require all possible resources when speaking their L3 (Lingqvist, 2009). Chun, Hu, Wu and Ao have many lexical difficulties in their English writing, because of low proficiency in English, they eagerly want to fill in the knowledge vacancy of related English. In this case, they tend to resort to their L2, sometimes their L1. While Ha and Qing activate their background languages much less than the other 4 participants, in that their higher proficiency in English keep them continue producing English L3. When they confront difficulties, they are inclined to resort their Mongolian L1, occasionally Chinese L2. This can explain why language switches occur in their L3 production. Therefore, the findings of this study also provide support to the previous studies.

4.3.2 Type and Amount of Target Language Exposure

The result shows that Chun, Hu, Wu and Ao can mainly expose to target language in their English classroom, only about three hours in a week. Since they are non-English majors, their English class is too big to have chances to practice in class. They also mention that, because of students low proficiency in English, their English teacher often switches into Chinese, sometimes into Mongolian during English class. So when the learners speak English, they often think in Chinese or Mongolian.

But with Ha and Qing, the situation is different. Ha and Qing are English Majors. According to the data from the interview, they have at least twelve English classes each week. So they expose to English more often, as least 10 hours each week. They report that in their English classes, their teacher does not often switch into Mongolian or Chinese when he/she speaks English.

On the other hand, all the participants mainly expose to English in their classrooms, where their English teachers closely connect his or her English to Chinese or Mongolian. Therefore, when they speak or write in English, they are accustomed of thinking in the similar way as they do in the classroom.

4.3.3 Perceived Language Distance

In present study, the data from interview indicates that all the subjects do not know that English, Mongolian and Chinese respectively belong to different language family. But they perceive that there exist some similarities and relatedness between these languages. Chun, Hu, and Qing think English is much closer to Chinese since they have common in word order in a sentence, while Mongolian is not perceived as very close to English. To Wu, both Mongolian and Chinese are perceived to be close to English. She thinks that Chinese and English have similarities in word order, while Mongolian and Chinese also have some similarities in tense, word-formation, etc. Ha and Ao believes firmly that Mongolian is closer to English. They think there are many similarities between Mongolian and English, from phonetic characteristics to word-formation of derivation. That is why they often activate their background languages in L3 production.

In addition, this study suggests that cross-linguistic influences can also occur between languages that are more distant in terms of language family.

5. Conclusion

This study confirms the findings from other L3 research that background languages have great influences on L3 learning. First of all, Mongolian L1 and Chinese L2 are activated competitively in the process of English production, but for different learners, they are activated to different levels. The findings can be explained by their different language learning background.

Moreover, L1 and L2 play different roles for different learners. The roles L1 and L2 play depend on the factors of medium language of instruction and identity of language and culture, level of proficiency in background language, recency and typology. Therefore it is not proper to say that L1 always plays as an instrument, while L2 always a supplier role in all cases.

In fact, many factors condition the activation of L1 and L2, but the main contributing factors to the activation of background languages are the language proficiency, the type and amount of exposure of target language and perceived language distance.

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References

- Anwei Feng, & Bob Adamson. (2015). Trilingualism in Education in China: Models and Challenges. *Multilingual Education*, 12. Springer. https://doi.org/10.1007/978-94-017-9352-0_1
- Bardel, & Lindqvist. (2006). The role of proficiency and psychotypology in lexical cross-linguistic influence, A study of a multilingual learner of Italian L3. In Marina Chini, Paola Desideri, M. Elena Favilla, & Gabriele Pallotti (Eds.), *Atti del VI Congresso di Studidell'Associazione Italiana di Linguistica Applicata, Napoli* (pp. 123-145).
- Cenoz, J. (2001). The effect of linguistic distance, L2 status and age on cross-linguistic influence in third language acquisition. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*. Clevedon: Multilingual Matters.
- De Anglis, G. (2007). *Third or Additional Language Acquisition*. Toronto: Multilingual Matters Ltd.
- De Bot. (1992). A bilingual production model: Levelt's speaking model adapted. *Applied Linguistics*, 13(1), 1-24. <https://doi.org/10.1093/applin/13.1.1>
- Fang Dong et al. (2015). Four Models of Mongolian Nationality Schools in the Inner Mongolian Autonomous Region. In Anwei Feng, & Bob Adamson (Eds.), *Trilingualism in Education in China: Models and Challenges. Multilingual Education*, 12. Springer. https://doi.org/10.1007/978-94-017-9352-0_2
- Fouser, R. J. (2001). Too close for comfort? Sociolinguistic transfer from Japanese into Korean as an L3. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*. Clevedon: Multilingual Matters.
- Gessica De Angelis, & Larry Selinker. (2001). Interlanguage Transfer and Competing Linguistic Systems, In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 42-59). Clevedon: Multilingual Matters.
- Guo Chunjie. (2007). *Think Aloud Protocols*. Foreign Language Teaching and Research Press.
- Hammarberg, B. (2001). Roles of L1 and L2 in L3 production and acquisition. In J. Cenoz, B. Hufeisen, & U. Jessner (Eds.), *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives* (pp. 21-42). Clevedon: Multilingual Matters.

- Hammarberg, B. (Ed.). (2009). Activation of L1 and L2 in L3 production: A comparison of two case studies. *Processes in third language acquisition* (pp. 101-126). Edinburgh: Edinburgh University Press.
- Hoffmann, C. (2001). The status of trilingualism in bilingualism studies. In J. Cenoz, U. Jessner, & B. Hufeisen (Eds.), *Looking beyond second language acquisition: studies in trilingualism and multilingualism*. Tübingen: Stauffenburg Verlag.
- Hu, D. Y. (2007). *Trilingual education of members from ethnic minority nationalities in Yunnan*. Kunming: Yunnan University Press.
- Jarves, S. (2000). Methodological rigor in the study of transfer: Identifying L1 influence in the interlanguage lexicon. *Language Learning*, 50. <https://doi.org/10.1111/0023-8333.00118>
- Jasone Cenoz, Britta Hufeisen, & Ulrike Jessner. (2001). *Cross-linguistic Influence in Third Language Acquisition: Psycholinguistic Perspectives*. Clevedon: Multilingual Matters.
- Kellerman, E. (1983). Now you see it, now you don't. In S. Gass, & L. Selinker (Eds.), *Language transfer in language learning*. Rowley: Newbury House,
- Kellerman, E. (2001). New uses for old language: cross-linguistic and cross-gestural influence in the narratives of non-native speakers. In J. Cenoz, B. Hufeisen, & U. Jessener (Eds.), *Crosslinguistic Influence in Third Language Acquisition: Psycholinguistic perspectives* (pp. 170-191). Clevedon: Multilingual Matters.
- Lindqvist, Christina. (2009). The use of the L1 and the L2 in French L3. Examining cross-linguistic lexemes in multilingual learners' oral production. *International Journal of Multilingualism*, 6(3), 281-297. <https://doi.org/10.1080/14790710902812022>
- Lindqvist, Christina. (2010). *Inter-and intralingual lexical influences in advanced learners' French L3 oral production*, 007, 131-157. <https://doi.org/10.1515/iral.2010.007>
- Mayer, M. (1969). *Frog, Where Are You?* New York: Puffin Pied Piper.
- Ringbom, H. (1987). *The Role of the First Language in Foreign Language Learning*. Clevedon: Multilingual Matters.
- Singleton, D. (1987). Mother and other tongue influence on learner French: A case study. *Studies in Second Language Acquisition*. <https://doi.org/10.1017/S0272263100006719>
- Taylor, B. (1975). The use of overgeneralization and transfer learning strategies by elementary and intermediate students of ESL. *Language Learning*. <https://doi.org/10.1111/j.1467-1770.1975.tb00110.x>
- Tre ́visiol, P. (2006). Influence translinguistique et alternance codique en franc ęais L3. Ro ˆles des L1 et L2 dans la production orale d'apprenants japonais. *AILE*, 24.
- Tsung, L. (2009). *Minority languages, education and communities in China*. Basingstoke: Palgrave Macmillan.
- Williams, & Hammarberg. (1998). Language Switches in L3 Production: Implications for a Polyglot Speaking Model. *Applied Linguistics*, 19(3), 295-333. <https://doi.org/10.1093/applin/19.3.295>