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Possible effects of previously-acquired languages on L3 learning: A study of Northern Sotho at a university of technology in Pretoria

Abstract

This study investigates the manifestation of Transfer or Cross-Linguistic Influence (CLI) from language learners' previously-known languages in the learning of a third language, Northern Sotho, by examining errors identified in their written productions in the target language. Data for the study was gathered from first year university students learning Northern Sotho L3, with a roughly homogeneous language background of isiZulu L1 and English L2 (elicitation tasks and questionnaires), and from three of their lecturers (interviews). The focus of the study was to determine whether the subjects produced patterns in their interlanguage that could be traced to one or both of their previously-known languages. Contrastive Analysis (CA)

and Error Analysis (EA) techniques were used in the analyses of the learners' interlanguage (IL), to identify and quantify the errors, as well as to compare and contrast the three language systems at play in the learners' minds, so as to pinpoint the possible source languages of the transfer. The findings indicate that most errors relating to spelling, vocabulary, and grammar, in general, showed evidence of prevalent influence from the language learners' previously-known Black South African language (isiZulu L1), with no visible evidence of influence from English L2.

Keywords: third language learning; language transfer; Northern Sotho; university first year students

1. Introduction

This is a study on Third Language (L3) Acquisition/Learning by adult language learners at university level. Modirkhamene and Mann (2010: 47) refer to Third Language Learning as the learning/acquisition of a non-native language – English in most cases - by learners who had previously learned/acquired two other languages. The focus of the research is on the extent and instances of manifestations of Language Transfer or Cross-Linguistic Influence (CLI) in L3 learning. The distinction between *acquiring* and *learning* a language is, as explained by Krashen and Terrell (1983: 18), that acquiring a language happens when one develops the ability to communicate in it through using natural communicative situations that may mostly be informal, while learning a language involves the conscious act of learning the rules that apply in that language (usually in a classroom situation). Our understanding of *language transfer*, or *cross-linguistic influence* (CLI), or simply *transfer*, in this study, is based on De Angelis' (2007: 19) definition, which explains it broadly as the influence of prior linguistic knowledge on the development of the target language - in this case, Northern Sotho.

The study sample comprised university students learning Northern Sotho L3 as a subject, and who had isiZulu as their L1, as well as English L2, the language of learning and teaching (LoLT). It was in the process of teaching them Northern Sotho L3 that one observed from their regular errors in the target language (TL) written productions, manifestations of language transfer (or CLI) from the Black South African language (BSAL) they already knew. (In this study, the written productions were examined for manifestations of transfer.)

The teaching and research process applied, among other perspectives, Contrastive Analysis (CA) - a comparison between the two (or more) linguistic systems at play, with a view to pre-determining similarities and differences (assumed problem areas for the learners) (Lado, 1957); Error Analysis (EA) - which seeks to determine types, frequencies, and causes of particular errors (Odlin, 1989: 166); and, Interlanguage (IL) - the language learners' 'imperfect', attempted productions of the target language orally, or in writing (Selinker, 1972).

The study aims to create awareness of the extent of manifestations of transfer, which should lead to a better understanding by teachers of the role it plays as one of the cognitive processes in the language learner's mind. It is also significant in relation to curriculum and teaching materials development in third language teaching and learning, as well as highlighting the need for more research on transfer in the context of BSALs, and language teaching techniques, in general.

2. Transfer in Third Language Learning

The term, *Third Language Learning*, for the purposes of this study, is used to refer to the language (L3) a person learns subsequent to the L2, while L1 is used to refer to the

first language acquired by the speaker, from a chronological perspective, even if this language is no longer the speaker's dominant language (Jarvis & Pavlenko, 2008: 4).

Researchers, such as Van Els, Bongaerts, Extra, Os, and Dieten (1984: 38, 44), explain Contrastive Analysis (CA) as a systematic comparison of specific linguistic characteristics of two or more languages, while earlier proponents of CA, such as Weinreich (1953), and Lado (1957), suggested that its objective is to discover and describe problems that speakers of one of the languages would have in learning the other. A later version of CA suggested that learning difficulties on the basis of transfer can only be explained after-the-fact, and not *a priori* (Wardhaugh, 1970, in Brown, 2007: 252). CA, as it is applied in this study, was not used to predict errors that learners would make, but to identify possible sources of transfer/CLI, i.e., "the effect that previously learnt languages can have on the learning of a new language" (Llama, Cardoso & Collins, 2010: 39).

A brief analysis of the similarities and differences between the three language systems at play in the learner's mind is given here on orthography, focusing on spelling (and way of writing), lexicon/vocabulary (word knowledge), and morpho-syntax (word formation and use), and sentence formation in the three languages.

To start with, the three language systems use the Roman alphabet, but with different spelling rules, and different ways of writing, with isiZulu orthography being primarily *conjunctive*, while Northern Sotho and English being *disjunctive*. IsiZulu and Northern Sotho have a number of cognates, due to their common ancestry, which means that they have a number of similarities in words or lexical items, while no cognates exist between English and the two BSALs.

Regarding the morphology and sentence structure rules of the three language systems, isiZulu and Northern Sotho belong to the Bantu languages (the South-Eastern zone cluster) (Taljaard & Bosch, 1988: 1; Poulos & Louwrens, 1994) - a fact which means that they are rather more closely-related, as compared to English, although the two belong to different sub-groups, the Nguni and Sotho languages, respectively. The BSALs have a number of similarities in morphology, word categories, and in syntax, and they exhibit, in general, a uniform grammatical or linguistic system.

To cite just a few examples, isiZulu and Northern Sotho have a noun class system peculiar to African languages, and an agreement system between noun and adjuncts, while English, on the other hand, uses articles and prepositions, which the former two do not use. The differences that exist between the two BSALs are with regard to the finer details than with general characteristics. All three languages, in any case, have a similar simple sentence structure (S-V-O).

As a result of the realisation that many aspects of learners' language could not be explained by CA, a number of researchers began to take a different approach to analysing learners' errors. This approach, which developed during the 1970s, became known as Error Analysis (EA), and involved a detailed description and analysis of the kinds of errors L2 learners make. The goal of EA was to discover what learners really know

about the language, in an effort to understand how learners process L2 data (Lightbown & Spada, 2006: 79-81). EA is used, in this study, to identify, describe, and explain the errors in the learners' written productions of their IL.

In cases where there is more than one language that a learner knows, scholars of Transfer/CLI have already identified factors that affect learners' reliance on a certain language as the source over the other languages (De Angelis, 2007: 21). These factors include, among others, language distance; target language proficiency and source language proficiency; order of acquisition, and, formality of context. For the purposes of this study, only the language distance factor is explored.

First, there are two terms, *language distance*, and *perceived language distance* (psychotypology), which refer to the degree of similarity that exists between languages. One is an objective similarity that can be proved linguistically, while the other refers to similarities, as seen subjectively by language learners. An inclusive definition is offered by De Angelis (2007: 22-26), who explains language distance as the distance that a linguist can objectively and formally define and identify between languages and language families. She adds that there is wide agreement among researchers that transfer is most likely to occur between languages that are closely-related to one another than between languages that are distantly-related.

It may be useful to mention some relevant and significant models and views of multilingual processing here, since they may be examined against this study's findings later on:

Herdina and Jessner's (2002) Dynamic Systems Theory Model of Multilingualism, which posits that interactions between subsystems of a complex system should be seen as non-additive ways of influencing overall and individual development, and that:

Multilingual Proficiency (MP) = $LS_1, LS_2, L_3, L_n + CLIN + M\text{-Factor}$,

where CLIN is *cross linguistic interaction*, and M, *multilingualism* (e.g., metalinguistic awareness).

Meißner's (2004, in Jessner, 2008: 24) *Multilingual Processing Model*, which suggests that:

“During the language learning process the spontaneous grammar is continuously revised and developed towards the structures and lexicon of the target language. The previously learned foreign language being closest to the new target language takes over the role of a bridge language and functions as a kind of matrix against which the new structures and lexicon are compared and contrasted.” (e.g., Basque and French)

Finally, Cenoz (2003a), in an overview of studies on the impact of bilinguality on L3 learning, suggests that most studies showed a positive effect, linked to: metalinguistic awareness, language learning strategies, and communicative ability, especially in the case of typologically close languages.

3. Which linguistic structures can be affected by CLI?

There are different types of linguistic information that can be transferred from one language to another, such as orthography, lexis, morphology, and syntax.

3.1. Orthographic transfer

Orthographic transfer manifests in writing, and involves the spelling of words and ways of writing (visual representation), in general. The term is used by Jarvis and Pavlenko (2008: 70-72) to refer to a phenomenon that might more appropriately be referred to as *writing system transfer*. Their documented research findings, with regard to spelling - an area in which CLI effects are widespread, suggests that, most fundamentally, learners from different L1 backgrounds produce different types of spelling errors that are traceable to the L1 influence.

3.2 Lexical transfer

Jarvis and Pavlenko (2008: 72, 75, 81) define *lexical transfer* as the influence of word knowledge in one language on a person's knowledge or use of words in another language. Although lexical errors do not necessarily entail transfer, and although transfer does not necessarily result in errors, most of the cases of lexical transfer discussed in the literature do involve either an *error of form*, or an *error of meaning*.

According to Ringbom (2001: 60), in no other area is the importance of psycho-typological factors, or perceived similarities, more in the foreground than in lexis. L3 learners, in an early stage of learning, will frequently make use of L2 words in their L3 production, if the L2 and the L3 are related, and have a number of common cognates.

3.3 Morphological and Syntactic transfers

Jarvis and Pavlenko (2008: 92, 94), based on results from a number of research findings, with regard to morphological transfer, surmise that the transfer of morphemes, especially bound morphemes, though highly restricted, does occur frequently in cases where the source and target languages are lexically- and morphologically-related. Several other scholars (in De Angelis, 2007: 54-57) also agree that morphemes of all types can be transferred under structural conditions, such as similarity in patterns between languages.

Dewaele (2001: 78) distinguished classes of morphological errors, among them: violation of gender and number; and, for verbs, violation of tense and aspect, mode, and person. Taken into account at the lexical level were: lexical inventions - words that were superficially right, but did not fit in the context (semantic errors), the absence of a word in an obligatory context, and the supplying of a word where it was not required.

Jarvis and Pavlenko (2008: 96, 99, 102) state that, although syntax, like morphology, has been widely assumed to be immune to CLI effects, recent studies have documented ample instances of syntactic transfer in various types of data. Syntactic transfer encompasses not only word order but also an entire gamut of well-formedness constraints, and it has been found in both reception and production.

4. The Study

This is a cross-sectional study of transfer/CLI, i.e., a study in which performance data were collected at a single point, without keeping track of how transfer might change in relation to changes in the development of the learners' proficiency in the target language (TL).

This study investigated whether learners of Northern Sotho L3, indeed, produced patterns that could be traced back to their L1 and/or L2, and also tries to show unequivocally, patterns in the interlanguage of the learners that have their roots in their L1 and/or L2. The investigation focused on specified linguistic structures in the learners' interlanguage of the target language, Northern Sotho, observed in a relatively large, well-defined group of individual language learners, at a single point in time (only at the end of their first year), without tracking changes over a long period (i.e., three years of study).

Since this is L3 acquisition research, designs used in applied linguistics and second language acquisition research were considered appropriate. Bachman and Cohen (1999: 2-3) contend that SLA research has historically utilised the linguistic analysis of learners' interlanguage utterances, descriptive case studies, ethnographic research, and experimental and quasi-experimental designs. What is done in this research is linguistic analysis of learners' interlanguage productions to investigate manifestations of transfer, using CA and EA. CA is used not to predict areas of difficulty for the learners, but to explain the identified learning difficulties on the basis of transfer, and understand the sources of errors by comparing chosen linguistic structures of the target language, and the two previously-known languages in the subjects' repertoire, while EA is used to identify, measure frequencies, describe, and explain the errors.

Most psycholinguistic studies combine qualitative and quantitative approaches in that the qualitative descriptions explain how and why certain patterns occur, while quantitative information addresses how frequent these patterns are, and how likely they are to occur in different contexts (Jarvis & Pavlenko, 2008: 33). A mixed approach was used for this study as well, since both questionnaires and personal interviews were some of the methods adopted. The study is also descriptive and explanatory, as it analyses learners' target language productions, which involves describing errors, and then explaining why they occurred, and determining their source.

4.1 Data collection methods and instruments

A set of linguistic elicitation tasks were used to obtain samples of learner language for linguistic analyses. The elicitation technique comprised of four standardised Northern Sotho L3 learning tasks. The said tasks focused on linguistic features, such as lexicon, orthography, and the use of certain grammatical morphemes, such as the negative morpheme (**ga**), and the past and future tense morphemes (**-ile**, **-e**, **-itše**, **tla**). Nunan (1992: 136-137) explains that elicitation techniques “include studies which obtain their data by means of a stimulus, such as a picture, diagram, or standardised test, as well as those based on questionnaire, survey, and interview data”.

Questionnaires were used to gather demographic data from the respondents, while interviews were conducted with individual lecturers offering Northern Sotho L3 on the different programmes, to get information on their L3 teaching experiences, especially shedding light on linguistic aspects that their learners struggled with.

4.2 Subjects' Profiles

The Learners

The study sample was made up of 35 learners chosen from a population of first year students at a university in Pretoria learning a BSAL as a third language, from the Departments of Applied Languages, Education, and Journalism. These students had, as their language background, isiZulu as their L1 - which they had also studied at school, and English L2 - the language of teaching and learning, and a language subject.

Of the total learner sample, fifty-seven percent claimed not to have ever been exposed to Northern Sotho before they came to university, i.e., they were *true beginners*.

The Lecturers

The three female lecturer participants offered Northern Sotho L3 on various programmes in the university to students at Levels 1 to 3. They ranged in ages from 40 to 57 years, and had university teaching experience of 2 to 19 years, with qualifications at levels of Honours to Doctoral degrees in languages.

4.3 Tasks and Procedures

The collection of data was done over a period of five days, almost at the end of the academic year. Questionnaires were distributed to the identified population sample to gather demographic information, their language backgrounds and language uses in the past and present, their exposure to Northern Sotho before enrolling to learn it, as well as their Northern Sotho L3 learning experiences.

Task 1 was a word recall in which the 35 first year students registered for Northern Sotho L3 translated lexical items from Northern Sotho into English, and another set of words from English into Northern Sotho. The second task consisted of sentence construction, in which the subjects were requested to use selected words to construct short sentences, from which the researcher could assess word order, grammatical concord, and lexical knowledge. To provide more data for investigations that would focus on the target language form, or grammar rules, elicitation tasks (Tasks 3 and 4) on chunk translation and re-writing of statements in the negative, as well as in different tenses, were included. The learners' interlanguage utterances, as elicited in the learning tasks, were assessed by a Northern Sotho L1 native speaker teacher, who, at the same time, identified all the errors. Then, only transfer-related errors were highlighted, quantified and described, and possible causes and/or sources of the errors were determined, using CA, EA, and IL, as stated earlier.

Lastly, interviews were conducted with three individual female lecturers offering Northern Sotho L3 on the different programmes, to get information on their L3 teaching experiences, and their views on L3 acquisition processes, as exhibited by their students. The procedure involved voice recording the interviews with three lecturers, who offered Northern Sotho L3 to students at Level 1, right up to the third level, followed by transcriptions of the interviews by the researcher.

4.4 Data analysis

The analysis of the data entailed the assessment of tasks, and filtering out manifestations of CLI in the subjects' interlanguage productions of the target language, Northern Sotho, using CA, EA, and IL. The subjects' written productions in Northern Sotho L3 were examined to identify errors, which were then quantified and classified into categories of sources of error, such as, *interlingual* or *intra lingual*, and further sub-categorised into error types, such as orthographic, lexical, or morpho-syntactic, as manifested in the various linguistic elements. The classification was followed by a description of the errors, and an explanation of their possible sources, which was done by comparing the subjects' IL productions with productions of the same ideas by a native user of the target language, and the subjects' productions of the equivalents in their isiZulu L1. The focus of the study, as explained previously, was only on errors attributable to CLI. Data from the interview transcripts were analysed, and a summary of the lecturers' experiences is presented in the findings of the study.

4.5 Ethics

Ethical clearance and permission for the study were sought, and obtained, from the Department in which the study was conducted, as well as from the Faculty of Humanities and University Central Ethics Committees, after the volunteer learners had read and signed information leaflets and consent forms.

5. Findings

Findings from the quantitative and qualitative analyses of errors are presented and discussed below, specifically only those errors related to CLI, some quantitative findings from the questionnaire, as well as findings from interviews with the lecturers.

5.1 Tasks data

Tables 1 and 2 present data from elicitation Tasks 1 and 2, in which subjects were requested to translate a list of words from Northern Sotho L3 into English L2, and another list from English into Northern Sotho, as a vocabulary test.

The data displayed on Table 1 comprise of sample errors from the subjects' IL in their production of the L3 vocabulary taken from Task 1. The most prevalent errors identified in this task were spelling errors, or what some scholars, like Jarvis & Pavlenko (2008: 70-72), refer to as "orthographic errors". These errors occur as a result of the subjects' spelling rules in isiZulu, whereby the letters, 'u' and 'i', are used, in instances where Northern Sotho L3 uses the letters, 'o' and 'e', respectively.

Table 1: Orthographic/Spelling errors

(Task 1: English-Northern Sotho word translations)

L3 word	Subjects' answers	Description of error	Explanation of source
Motho (person) Mosadi (woman) Tsoga (wake up) Bolela (Speak, talk) Botšiša (ask a question)	Muthu, mothu Musadi Tsuga Bulela butšiša (42)	u (instead of o)	In isiZulu orthography, the correct letter is u (and not o), as is the case with Northern Sotho
Fase (down) Bophelo (life) Eja (eat)	Fatsi, fasi Buphilo, bophilo, bopilo lja (39)	i (instead of e)	In isiZulu orthography, the correct letter is i (and not e), as is the case with Northern Sotho

On Table 2, the data comprise of IL samples of vocabulary production elicited by a word translation task in which words were translated from the target language into English to assess vocabulary. The most common error in this task was the production of the wrong English equivalent, the source of which could be traced to isiZulu words which were more or less similar in form to the given Northern Sotho words, but different in meaning. The type of transfer that leads to this kind of errors, is called *lexical transfer*, and usually occurs between related languages, which, in most cases, also share a number of cognates (Ringbom, 2001: 60). It is the similarity between languages, and the presence of cognates, that give rise to the use of 'false friends' or 'deceptive cognates'.

Table 2: Lexical errors

(Task 2: Northern Sotho-English word translations)

English word/ Given Northern Sotho word	Subjects' answers and frequencies	Description of error	Explanation of source (isiZulu lexicon and meaning)
wipe (phumula)	relax, rest (25)	'phumula' means 'wipe' (not 'rest' or 'relax')	-phumula= to rest
tell (botša)	ask (19)	'botša' means 'tell' (not 'ask a question')	-buza= ask a question
divorce (hlala)	sit, seat, stay (19)	'hlala' means 'divorce' (not 'sit' or 'stay')	-hlala = to sit, stay
tired (lapile)	hungry (11)	'lapile' in Northern Sotho means 'tired' (not 'to be hungry')	-lambile = to be hungry
river (noka)	snake (7)	'noka' means 'river' (not 'snake')	Inyoka= snake

The task which elicited data presented in Table 3 required subjects to use given target language words to construct sentences. Displayed on the table are samples of error sentences in Northern Sotho L3 as constructed by the subjects. The particular errors recorded here supposedly emanate from isiZulu, due to the subjects' knowledge and use of their L1 linguistic rules. The most prevalent errors identified from the texts included: the use of the subject concord, '**u**' (instead of '**o**'); conjunctive writing of subject concord and verb stem, as in '**oapea**' (instead of '**o apea**'), and in '**Kinyaka**' (instead of '**Ke nyaka**'); and of the possessive particle and possessive pronoun, as in '**laka**' (instead of '**la ka**'); and wrong use of words, due to the formal similarity that exists between the isiZulu word and the Northern Sotho word, such as when the word, '**lapile**', is used to mean '**being hungry**', when it actually means '**being tired**'.

Table 3: Morpho-syntactic, lexical, and orthographic errors

(Task 3.1: Sentence construction)

L3 sentence	Subjects' answers	Description of error	Explanation of source
Mme o apea nama (Mother cooks/ is cooking meat)	Mme uapea nama Wrong concord (11) Conjunctive writing (31)	In Northern Sotho, the subject concord is not written conjunctively with the verb stem, as in ' o apea ', and the correct concord is ' o ' (not ' u ')	'Umama upheka inyama'. In isiZulu, the subject concord is written conjunctively with the verb stem (as in ' upheka '), and the concord is ' u '.
Leleme la ka le bohloko (My tongue is painful)	Leleme laka lebohloko (10)	In Northern Sotho, the possessive particle, -la- , is not joined to the possessive pronoun, or the possessive noun, as in ' la ka ', and the copulative particle -le- is also not joined to the copulative complement -bohloko- , as in ' le bohloko '	'Ulimi lwami lubuhlungu .' In isiZulu, the possessive particle and the possessive pronoun or noun are written conjunctively, as in ' lwami ', and the copulative particle and complement are conjunctive, as in ' lubuhlungu '
Reka borotho nna ke swerwe ke tlala (Buy bread, I am hungry)	Reka borotho nna ke lapile (Buy bread, I am tired)	The phrase, 'ke lapile', in Northern Sotho, means ' I am tired '	'Thenga isinkwa mina ngilambile ', in isiZulu, ' ngilambile ' means ' I am hungry '
Ngwaga o a fela lehono (The year ends today)	Nyaka iyafela kajeko	The word, ' nyaka ', in Northern Sotho, means ' want '	'Inyaka uyaphela namhlanje'. The word, ' inyaka ', in isiZulu, means ' year '
Ke nyaka meetse (I want water)	Kinyaka meetse (12)	The conjunctive writing of the subject concord and verb stem, as in ' Kinyaka ' (instead of ' Ke nyaka ')	' Ngifuna amanzi .' In isiZulu, the subject concord and verb stem are written conjunctively (as in ' Ngifuna ')

Displayed on Table 4 are transfer-related errors identified from a translation task, in which common social phrases were translated from English L2 into Northern Sotho L3. More recurrent errors involved: the conjunctive writing of, otherwise disjunctive, phrases in Northern Sotho, such as '**Nkagothuša?**', instead of ('**Nka go thuša?**'); the use of the tense marker, '**ya**' (instead of '**a**'); the use of the connective particle, '**na le**' (instead of '**le**'); and, the use of subject concord, '**u**' (instead of '**o**').

Table 4: Orthographic and morpho-syntactic errors

(Task 3.2: Translation of chunks and phrases)

Northern Sotho sentence	Subjects' answers	Description of error	Explanation of source
(Can I help you?) Nka go thuša?	Nkagothuša? (31)	In Northern Sotho, the sentence is written disjunctively	' Ngingakusiza? ' In isiZulu, the sentence is written conjunctively
(I am talking to you) Ke bolela le wena	Ke bolela naliwena Ke bolela na le wena (14)	In Northern Sotho, the connective particle is -le- (not -na le-)	'Ngikhuluma nawe '. In isiZulu, the correct connective particle is -na-
(Thank you) Ke a leboga	Keyaleboga (28)	The use of ' ya ', (instead of the imperfect tense morpheme ' a '), and the expression should be written disjunctively	' Ngiyabonga '. In isiZulu, the present tense marker is ' ya ', while the whole expression is written conjunctively
(How are you?) O kae? / Le kae?	U kae? Ukayi? (15)	The Northern Sotho subject concord is ' o ' (not ' u '), and the writing should be disjunctive	' Unjani? '/' Ninjani? ' The isiZulu subject concord is ' u ', and the expression is written conjunctively

The aim of the fourth task was to assess the subjects' knowledge and use of Northern Sotho rules, regarding verb tense and sentential negation. For this purpose, the elicitation task consisted of short sentences, which the subjects had to rewrite in the past and future tenses, as well as in the negative.

Table 5: Morpho-syntactic errors

(Task 4: Rewriting sentences in past and future tenses, and in the negative)

Northern Sotho sentence	Subjects' answers	Description of error	Explanation of source
1. Ke hlatswitše dibjana (I washed the dishes) 2. Lehodu le bone tšhelete ya koko	1. Ke hlatswe dibjana 2. Lehodu le bonile tšhelete ya koko (21)	The Northern Sotho past tense form of the verb, 'hlatswa', is 'hlatswitše', using the past tense morpheme -ile (not -e), while the past tense morpheme for the verb, 'bona', is -e (not -ile)	' Ngigeze isitsha ' In isiZulu, the past tense morpheme can be -e , because the verb has an adjunct, which is an object
Bana ba tlo raloka ka kgwele (Children will play with the ball)	Bana batlo raloka kakgwele (6)	In Northern Sotho orthography, the subject concord, -ba- , is written separately from the future tense morpheme -tlo- , as in ' ba tlo ', so is the case with the instrumental particle -ka- , and the instrument, ' kgwele '	' Abantwana bazodlala ngebhola .' In isiZulu, ' bazo- ' is written conjunctively, and so is ' ngebhola '
Ga ke bolele le wena (I am not talking to you)	A ke bolele le wena (30)	The use of ' a- ' (instead of ' ga ') as the negative morpheme	' Angikhulumi nawe .' The isiZulu negative morpheme is ' a- ' (not ' ga '), as in Northern Sotho
Bana ga ba raloke ka kgwele. (Children do not play with the ball/ Children are not playing with the ball.)	Bana gaba raloki ka kgwele (26)	The conjunctive writing of the negative morpheme and the subject concord ' gaba- ' The use of the verb ending, -i (instead of -e), at the end of the verb in the negative statement	' Abantwana abadlali ngebhola .' In isiZulu, the negative morpheme, a- , and the subject concord, -ba- , are written conjunctively, and the verb ending is -i (not -e)

The IL in this section shows errors relating to verb tenses, especially the past tense, where the Northern Sotho past tense morphemes, **-ile** and **-e**, are not used correctly, as in '**hlatswe**' (instead of '**hlatswitše**'), and '**bonile**' (instead of '**bone**'). The other prevalent

errors are with regard to the negative morpheme, in which case, the subjects used ‘a-’ (instead of the Northern Sotho morpheme ‘ga’), as in ‘A ke bolele le wena’ (instead of ‘Ga ke bolele le wena’); and the negative verb ending ‘-e’, in which case, they used ‘-i’, as in ‘...ga ba raloki...’ (instead of ‘...ga ba raloke...’).

Table 6 presents a general overview of errors, classified into transfer-related/interlingual, and non-transfer-related/intralingual errors, according to error sources, types, and their relative frequencies of occurrence.

Displayed on this table are errors identified in the subjects’ written IL productions, and the frequencies with which the errors occurred. The data show that transfer-related errors displayed in various categories, according to linguistic structures, appeared 1,047 times in the learners’ texts, compared to non-transfer-related errors, which appeared 538 times. Interlingual or transfer-related errors refer to those errors that appear to emanate from the subjects’ prior knowledge and use of their isiZulu L1. Errors in the intralingual category did not result from transfer, but from overgeneralisations of target language rules, and incorrect or incomplete mastery of information and rules in the target language, Northern Sotho. A total of 10 error types, and 1,047 individual CLI-induced errors, were identified from the writing corpus, comprising of 4 learning tasks, targeting vocabulary and morpho-syntactic and grammar knowledge.

Table 6: Classification of error types, frequencies and percentages (overall findings)

Error type and exemplification	Frequencies	%
Interlingual or transfer-related errors		
1. Orthographic errors		
1.1 Spelling (Muthu > motho)	257	
1.2 Writing system (kealeboga > Ke a leboga)	212	
2. Lexical errors (noka – snake > noka – river)	317	
3. Morpho-syntactic and Grammatical errors		
3.1 Word order	0	
3.2 Concordial agreement (Mma u pea nama >Mma o apea nama)	69	
3.3 Verb forms (tense) (Ke hlatswe dibjana > Ke hlatswit še dibjana)	87	
3.4 Verb forms (negation) (Ga ke boleli le wena > Ga ke bolele le wena)]	45	
3.5 Negation morpheme (A re ye sekolong > Ga re ye sekolong)	17	
3.6 Interrogative (Ke ka go thuša? > Nka go thuša?)	22	
3.7 Imperfect tense marker (Ke ya ja > Ke a ja)		
Total errors	1,047	56

Error type and exemplification	Frequencies	%
Intralingual or non-transfer-related errors		
1. Overgeneralization		
1.1 Orthographic errors		
1.1.1 Spelling (meets > meetse)	45	
1.1.2 Writing system (di tsotsi > ditsotsi)	7	
1.2 Lexical errors	1	
1.3 Morpho-syntactic errors	0	
1.3.1 Verb forms (tense) (Molemi o lemitše > lemile)	2	
2. Incorrect or incomplete mastery		
2.2 Orthographic errors		
2.2.1 Spelling (mmabane > maabane)	240	
2.2.2 Writing system	0	
2.2 Lexical errors (dumela = agree > dumediša = greet)	72	
2.3 Morpho-syntactic errors		
2.3.1 Word order (Bana ba ga raloke > Bana ga ba raloke)	7	
2.3.2 Concordial agreement (Lehodu o bona....> lehodu le)	20	
2.3.3 Tense (wrong tense or aspect) (O tlo re fa > O re file)	52	
2.3.4 Verb forms (tense) (Malose o gane > Malose o ganne)	26	
2.3.5 Verb forms (negation) (... ga ba raloka > ... ga ba raloke)	66	
Total errors	538	29
Addition and omission (ke o re hlatswa dibjana)	55	3
• Untraceable words (theeletša = hurry > theeletša > listen)	127	7
• Incomprehensible sentences (Apea ya rasa)	100	5
Total number of errors	1,867	

5.2 Interview data

In addition to the students' questionnaires and elicitation tasks, lecturers offering Northern Sotho L3 were interviewed by the researcher. The subjects were asked questions about their observations, regarding their students' challenges in learning the language. The questions aimed to get data on issues, such as students' motivation to study an L3, students' home languages, linguistic difficulties that students came across commonly, what appeared to be the causes of such difficulties, whether the said difficulties persisted into the second and third years of study, and if they thought that the learners' errors may fossilise.

The analysis of interview responses reveal that, though the students were highly motivated to learn the L3, they experienced difficulties, with regard to spelling, manifesting almost always in the use of the letters, 'u' and 'i', (instead of 'o' and 'e'). Mentioned in the responses as well was the challenge in sentence construction, evidenced in the frequent erroneous use of the subject concord, 'u', (instead of 'o'), and the conjoining of words which, in Northern Sotho, should be written separately. The problem with verb tenses, especially the past tense form, was also mentioned, even though, unlike the already mentioned error types, it was not referred to by all the respondents.

6. Discussion

In an attempt to answer the first research question in this study, which was: "What is the extent of CLI in the learners' interlanguage?", errors were identified, and the frequencies with which transfer-related or interlingual errors occurred were recorded and compared to other types of errors. The hypothesis, in this regard, that "Most errors in the learners' interlanguage are a result of influence from prior language knowledge", was supported by the findings, as the number of errors that could be traced back to structures in isiZulu amounted to 56% of the total number of errors committed.

A major part of the findings in this study answered the research question: "Which aspects of language are mostly affected by Cross Linguistic Influence?", by providing evidence of CLI in the subjects' IL. The responsive hypothesis, in this regard, states that "Transfer to the L3 is mostly evident in orthography or spelling, lexicon and morpho-syntax". Evidence relating to linguistic aspects that are mostly affected by CLI is presented in Tables 1-5, according to the task sequence.

The findings gathered from the first task (Table 1) reflect spelling errors, or what other scholars refer to as "orthographic errors". It is clearly visible from the data on Table 1 that spelling errors (totalling 257) recorded the second highest prevalence in the categories of interlingual errors identified from the subjects' IL. The cause of these spelling errors appears to be cross-linguistic influence or transfer that can be traced back to the isiZulu spelling rules, as illustrated in detail on Table 2, and in the explanation following it, as well as in the data from the interview with Northern Sotho L3 lecturers. This type of error is said to be the result of orthographic transfer, and similar evidence of spelling errors resulting from CLI is recorded by Olsen (1999: 195-196) in research where Norwegian letters and spelling rules were found in English words.

Another error type manifested as a product of orthographic or writing system transfer, presented in the transfer of isiZulu orthography (which is conjunctive), in the subjects' writing of Northern Sotho (which is, fundamentally, disjunctive).

Evidence of transfer effects were also found in the area of lexis, as presented on Table 2, and manifests in the form of 'false friends', whereby the word produced is a Northern

Sotho word, but with a different meaning (Olsen, 1999: 199). These errors are a result of lexical transfers from isiZulu, the subjects' L1, and the data indicate the word that could be the possible source of influence. Lexical transfer, as defined by Jarvis and Pavlenko (2008: 72), refers to the influence of a person's word knowledge and use in one language on their use of words in another language. The error in this type of transfer occurs especially when the source and recipient languages share a number of cognates, and it involves the use of a word from one language that is more or less similar in form to a word in the target language, but with a different meaning from what that word means in the target language. Data from this study presented the highest frequency of occurrence of errors (totalling 317) induced by this type of transfer as displayed on Table 1, and given in more detail on Table 3, and a few more occurrences displayed on Table 4.

Morpho-syntactic errors were also identified in the texts which were meant to elicit production that would show the subjects' knowledge and use of Northern Sotho morphemes in verb tenses, concord, negation, as well as word order, and sentence structure. Evidence on Tables 3, 4, and 5 present data attesting to the influence of isiZulu grammatical rules on the subjects' knowledge and use of Northern Sotho morpho-syntactic rules. The existence of CLI, in this linguistic aspect, has been documented in earlier studies (see Jarvis & Pavlenko, 2008: 94, 96). Their investigations into a number of studies concluded that learners' L1 bound and free grammatical morphology affects the way they use their second language, more so when the source and target languages are related, in terms of their lexicon and morphology, because learners then recognise corresponding structures between the languages. The evidence in the aforementioned tables present, and explain, morpho-syntactic errors, relating to the transfer of both bound and free grammatical morphemes from isiZulu into Northern Sotho in cases, such as - to name the most prevalent - subject concords, past tense morphemes, negative morphemes, and imperfect tense morpheme.

- 1). Evidence presented in this study suggests that isiZulu orthography, relating to spelling rules and writing systems, affects the learners' spelling of Northern Sotho words, and the way they write words in a sentence, judging from the high prevalence of spelling errors, and the conjunctive writing of words that should normally be written disjunctively. The presence of a number of cognates between isiZulu and Northern Sotho encourages learners to think that similarities in meaning presuppose similarities in spelling, while, in actual fact, the two languages follow different spelling rules. If we compare and contrast a word that means 'person' in the source language, 'umuntu', in the target language, 'motho', and in the IL, 'mutho', we find the cause of the error in spelling is possibly the complete similarity of the words in meaning, and the partial similarity in form, leading to an end product that combines spelling rules from both the source and target languages. The other orthographic challenge relates to writing systems in the two languages, with Northern Sotho being fundamentally disjunctive, and isiZulu, conjunctive. Once again, the difficulties that learners face result from similarities, or subtle differences, as demonstrated when we compare and contrast sentences in the source language, the target language, and the IL.

- 2) Another prevalent error occurred in the area of the lexicon, where it was demonstrated that similarity in form between isiZulu and Northern Sotho words led to subjects using deceptive cognates in their Northern Sotho IL.
- 3) The third aspect affected by CLI manifested in the subjects' use of isiZulu morphemes in Northern Sotho sentences, evidenced by the recurring use of isiZulu subject concord, past tense morpheme, imperfect tense marker, and the negation morpheme. All this evidence serves to indicate the linguistic structures affected by CLI presented on Tables 1-5, in analyses which include identification and quantification of certain features in the subjects' IL. Then, a comparison of the IL with both the source and recipient languages to determine whether certain features in the IL are motivated by certain structures used in the same context in the source language, complies with the requirement for *crosslinguistic performance congruity* (CPC), as evidence for CLI. *Crosslinguistic performance congruity*, as defined by Jarvis and Pavlenko (2008: 47), "involves showing more explicitly what it is in the language users' source language knowledge (and performance) that has brought about the observed patterns in their recipient-language performance".
- 4) Regarding the hypothesis that it is the linguistic distance between the subjects' isiZulu L1 and their Northern Sotho L3 that motivates the use of isiZulu as the source language, and not their English L2, there is general agreement among CLI scholars, such as De Angelis (2007: 22-32), Cenoz (2001: 16-18), to name a few, that transfer is more likely to take place between languages that are closely-related than between those that are distantly-related. Findings in this study clearly suggest that subjects were influenced by similarities that exist between isiZulu and Northern Sotho, and their relatedness, as compared with the relatedness between Northern Sotho and English. It is evident that all the errors attributable to transfer could be traced back to structures in isiZulu that might have had an influence in the making of the error due to similarities that the particular structures have with the target language, such as the use of a subject concord between subject and verb, a feature that the English language does not operate, though all the three languages have an S-V-O sentence structure. The constituents of isiZulu, Northern Sotho and English sentences are, for demonstration purposes: subject + predicate, but unlike English, the VP in isiZulu and Northern Sotho is made up of subject concord + verb stem (as in 'o apea'/'upheka').
- 5) Other findings in this study relate to data on the subjects' demographics and language backgrounds, as well as information on their L3 learning experiences. These data served to meet one of the requirements of investigating CLI, which is that evidence for CLI should rest upon *intragroup homogeneity*, defined by Jarvis and Pavlenko (2008: 41) as "a phenomenon that exists whenever a group of language users, who have the same proficiency of the source language, and the same proficiency of the target/recipient language, behave in a similar way in the recipient language". It is clear from these data, that the subjects are isiZulu

L1 and English L2 speakers, with more or less the same level of proficiency in both these languages, and almost the same level of exposure to the L3, Northern Sotho. It is also clear from data presented on the sample errors tables that the subjects made similar errors using isiZulu structures in their Northern Sotho IL.

Looking at the overall findings, it appears that CLI-induced errors constitute a significant part of all errors that were identified in the subjects' IL. In addition, qualitative analyses of those errors identified as transfer-related strongly suggest that the subjects' isiZulu L1 had a lot of influence on their knowledge and application of linguistic rules in Northern Sotho L3.

7. Conclusions

The conclusions drawn, on the basis of the findings, indicate a significant presence of transfer from the learners' isiZulu L1 into their Northern Sotho L3 IL (see Table 6), a finding which agrees with scholars in second and third language learning, that cross-linguistic influence (CLI) has an impact on additional language learning, although, as explained by Jarvis and Pavlenko (2008: 10-13), it interacts with other factors, that, together, determine not only the likelihood of its manifestation, but also, the transferability of a given structure in a given context.

The findings indicate also that transfer is evident in orthography, vocabulary and morpho-syntactic elements of the languages involved, with most errors manifesting in orthography at 45%, followed by lexical errors at 30%, and morpho-syntactic errors at 25%. As the findings show, the occurrence of spelling errors, in particular, and orthographic errors, in general, recorded higher than other types of errors. This fact was alluded to by Jarvis and Pavlenko (2008: 70-72), who state that previous research findings had shown that CLI effects were widespread in the area of spelling, and learners from different language backgrounds exhibited different types of spelling errors traceable to the L1 influence.

Lexical errors emanating from lexical transfer referred to on Table 6 as inter-lingual, or transfer-related errors, also indicate a prevalence of occurrence at a total of 317 against lexical errors emanating from non-transfer, or intra-lingual factors, such as incorrect or incomplete mastery of words, and overgeneralisation, totalling 73.

In the study, morpho-syntactic errors related to CLI presented at a lower rate than orthographic and lexical errors, but they still occurred at a higher rate than errors not related to CLI, at a total of 261 (against 171). The conclusion here is that morpho-syntactic transfer does take place in L3 learning, although at a lower rate than in orthography and lexis. In the earlier phases of research in language transfer, researchers initially did not acknowledge the impact of CLI in morphology and syntax, but, debates, regarding whether free or bound morphemes transfer, have converged on the finding

that one's L1 grammatical morphology, both free and bound, could impact on how they use a second language, especially when the source and target languages are lexically and morphologically related (Jarvis & Pavlenko, 2008: 92, 94).

The lack of visible evidence of transfer from English L2 proves what scholars of second and third language learning had observed previously on the effect of typological proximity between languages, i.e., that transfer is more likely to occur between closely-related languages than between distantly-related ones. The tendency of L3 learners to 'prefer' one of their languages as a source language for transfer is explained by Chandrasekhar (1978, in De Angelis, 2007: 26) with the 'base language' hypothesis, which posits that learners are, in the main, influenced by the language that most resembles the target language – contrary to the principle of recency of acquisition.

An understanding of the importance of learner errors by the teacher, and knowledge of causes and sources of errors, can contribute positively towards an understanding of the cognitive processes in L3 learning, which would lead to the development of better teaching materials, methods, and error treatments, or remedies. Teachers would also fare better in their task, if they acquainted themselves with error analyses approaches, such as CA, EA, and IL, as, according to researchers, such as Corder (1981: 10-11), errors are useful evidence of how learners go about the task of learning, and the making of errors is, therefore, unavoidable, and necessary, for the learning process.

The fact only 56% of the subjects claimed to be true beginners, in terms of the homogeneity of the sample, as well as the fact that the study was a one-time sampling could be regarded as possible limitations to the findings of the study.

It is suggested that future research be carried out involving different pairs of languages to shed more light on the manifestations and impact of CLI, and factors affecting it in L3 learning. Longitudinal studies to find out whether transfer decreases or increases with the improvement of proficiency in the target language should also be carried out in furtherance of CLI research.

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