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We would like to thank all the authors for their thoughtful contributions to this volume in honour of Professor Leslie Saxon. We also thank the reviewers of this edition for their time and contributions, as well as Dr. Sonya Bird for her generous assistance and guidance to the review team in putting this volume together.

We would also like to express our appreciation for the roles that the Department of Linguistics and the UVic Libraries Office of Scholarly Communications played in making this digital edition a reality. We would also like to extend our special thanks to our copy editor Chloë Farr for her dedicated work. Of course, this issue would not have been possible without the UVic Work Study program and their continued support of WPLC.

Preface to the 31st volume

This volume is dedicated to Professor Saxon on the occasion of her retirement, and to honour her significant contributions to our department as well as to the fields of formal syntax, community-based research, and Indigenous Language Revitalization. Many contributors to this volume have had the privilege of knowing Leslie as a colleague, supervisor, teacher, student, and friend. We also received submissions from a wider range of people - a real testament to the impact Leslie has had on us all and to her spirit of inclusivity reaching far and wide.

Professor Saxon received both a BA and an MA from the University of Toronto and a PhD from the University of California, San Diego. Before joining the Linguistics department at the University of Victoria in 1991, she taught at Memorial University of Newfoundland. At UVic, Prof. Saxon has mentored and supervised a great many research assistants, teaching assistants, honours students, graduate students, and post-doctoral fellows. She has also been involved in the development of several successful academic programs, namely the Applied Linguistics program, the Certificate in Indigenous Language Revitalization (CILR), and the Master's in Indigenous Language Revitalization (MILR) programs. In academic circles, Prof. Saxon's most notable contribution is without a doubt her work in community-based research. For almost 40 years, Prof. Saxon has advocated with Indigenous communities in the Northwest Territories for the revitalization of endangered languages. Having a close relationship with the Tłı̨chǫ Nation, Prof. Saxon has worked collaboratively with Tłı̨chǫ linguists and teachers on several community projects, including as co-editor with Mary Siemens of a dictionary of Tłı̨cho Yatıì (1996) and a digital version of the same dictionary in 2005. Besides her community involvement, Prof. Saxon has also authored a great number of articles and book chapters in theoretical research, including the syntax of pronouns and other noun phrases, clause structure, morphology, and historical linguistics.

Once again, we would like to thank everyone for their participation in this special volume of WPLC and for joining us in celebrating Professor Saxon and her outstanding contributions to our community and to the fields of Linguistics and Language Revitalization. Leslie, we hope you enjoy this volume!

Editorial Committee
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Editorial Committee

Notes to Leslie

My first encounters with Leslie Saxon were second-hand, through her former students Heidi Harley, now a professor at the University of Arizona, and Nick Welch, now an associate professor and Canada Research Choir at Memorial University. Both of these outstanding linguists expressed the highest praise and warmest affection for their former professor, so I knew before I ever met Leslie that she was someone special.

Most of my work with Leslie has been on honours and graduate committees, where she has been a reliable source of the kinds of insights and questions that send students in valuable research directions. Our research tends to approach similar issues from different directions, so I've always greatly benefited from her feedback on my work as well. I've also learned a great deal from her work and that of her students, which tends to be rich with intriguing empirical observations.

Leslie's long-standing research with speakers of Tłı̨cho Yatıì is an outstanding model of respectful collaboration. Her work, and her way of going about it, have earned the recognition and respect of colleagues across Canada and around the world.

It has truly been an honour to work with her, and I'm grateful to her for continuing to serve on my students' committees despite having retired! Thank you for everything, Leslie, and all the very best.

Dr. Martha McGinnis
Chair, Department of Linguistics
University of Victoria

Chère Leslie,

Tu as été une collègue très précieuse, pleine d'amabilité et de bienveillance, toujours à l'écoute des autres et avec un sens de l'équité hors pair. Tu es incontestablement un exemple à suivre. Je souhaite que ce nouveau chapitre de ta vie soit empli de belles surprises et de bonheur.

Amicalement,

Dr. Catherine Léger
Département de Français
University of Victoria

Notes to Leslie

I write this from the Acting Chair's office on the occasion of this WPLC in honour of Leslie Saxon. Let me say straight off that I work in neither syntax nor Indigenous Language Revitalization. That being said, as a Canadian linguist I am well aware of the myriad contributions that Leslie has made to our field. She has supported many students along their journeys from Newfoundland to Victoria to Yellowknife. Her research has advanced our understandings of syntax, and of indigenous language revitalization, reclamation, and documentation. She has been President of the Canadian Linguistic Association, and Chair of our own department. She is now Professor Emerita in our department but still a presence working with students, and post-docs, and, of course, other faculty members. Leslie, on behalf of the department, thank you so much for all you have given over your career here at UVic. I look forward to reading this collection in your honour.

Dr. John Archibald, FRSC
Acting Chair, Department of Linguistics
University of Victoria

Dear Leslie,
I still remember the day I first met you, with Keren, in the social sciences computer lab adjacent to the Linguistics department at the University of Arizona. I don't remember the occasion – likely we were hosting a conference? I remember being awestruck though, in the presence of giants :) A few of years later, you welcomed me as chair to the UVic Linguistics department. I still can't quite believe how lucky I was to land at UVic, with you as my colleague and first Chair. I'm so grateful, and always will be, for the mentorship you've offered me over the years, starting with negotiating my position at UVic, to finding my place as a linguist doing community-based research, to supporting graduate students, and in particular Indigenous students in the MILR program. I would not be the person I am today – personally or professionally – without your guidance and friendship through the years. It has been a real honour working with this year's WPLC editorial board to put this volume together for you. Masi cho, HÍ,SW̱K̲E SIÁM, merci, thank you!

Dr. Sonya Bird
Department of Linguistics
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Multifunctionality of *le* in Nepali

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This paper studies the use of *le*, a unit of language (UoL) in Nepali, and its multifunctionality. As a UoL, *le* denotes one single lexical item that demonstrates different functions, depending upon the syntactic contexts *le* is used in. The study discusses four different functions of *le*: *le*-ergative, *le*-instrumental, *le*-reason, and *le*-verb. As an ergative marker, *le* is a suffix on the subject of a transitive verb. However, as an instrumental marker, *le* is attached to an object that the subject uses to perform an action. The UoL *le* is attached to past participle forms of the verb, and it shows a reason as a reason-clause marker. In addition, *le* can also be used as a lexical verb. After these four functions are discussed, the paper attempts to associate the multifunctionality of *le* with four domains of Wiltschko's (2014) Universal Spine Hypothesis (USH): classification, point-of-view, anchoring, and linking.
Keywords: le in Nepali; multifunctionality; Universal Spine Hypothesis

1 Introduction

Nepali, which is the major lingua franca and national language of Nepal, belongs to the Indo-Aryan branch of the Indo-European family (Acharya, 1991; Verbeke, 2013). People from some parts of India, Bhutan, and Burma also speak this language (Paudyal, 2009). The present study investigates the multifunctionality of *le* in Nepali and its potential association with four domains of Wiltschko's (2014) Universal Spine Hypothesis (USH): *classification*, *point-of-view*, *anchoring*, and *linking*.

This study is an analysis of *le* in Nepali. Since Nepali is my native language, and I have grown up with speaking and studying this language, all of the data I am going to provide to support my arguments in this paper will be from my judgements as a native speaker. They are not drawn from any sources, and no other human beings are involved in the collection of the data for this study.

Before I further discuss the topic of my investigation, I would like to briefly explain what I mean by multifunctionality. It is the feature that a linguistic element, including a word or a morpheme, carries with it such that it can appear in different syntactic contexts and represent different functions or interpretations in use of each of these contexts (Hachem, 2015). An example of *have*'s multifunctionality in English can be seen in the examples below:

a. They *have* a book

b. They *h*ave done their homework

These examples show that *have* can be used in two different ways: one as a main verb (a), and the other as an auxiliary verb (b). When used as a main verb, it possibly indicates 'possession' whereas as an auxiliary it shows a 'grammatical' *function* in constructing a complex tense structure: present perfect tense here (Wiltschko, 2014, p. 3). This is how I am defining multifunctionality for the purpose of my paper, and this is exactly the way I will be discussing multifunctional behaviors of *le* in Nepali here.

In addition to the term multifunctionality, I will briefly provide some reasons for calling *le* a UoL in this paper. Here I use the term UoL, which stands for 'unit of language', a language-specific lexical form referring to words, morphemes, features (that may include tense, number or case), or phrase- or clause-types (Wiltschko, 2014, p. 1). Similarly, I use the term UoL to cover all of the functions of *le*, and thus remain neutral about its categorial, semantic or functional behavior (Hachem, 2015). As a polysemous UoL, the UoL *le* represents one single lexical item that serves different functions, depending upon the syntactic contexts this particular UoL is used in. In this paper, the different functions I am going to investigate include *le*-ergative, *le*-instrumental, *le*-reason, and *le*-verb. From now on, I refer to *le*-ergative, *le*-instrumental and *le*-reason markers as *le*-marked phrases, as we can distinguish the function of *le*, whether it be ergative, instrumental, or reason, only when *le* is attached to an agent, instrument, or reason. However, I refer to *le*-verb as *le*, as this form of *le* can stand on its own. As an ergative[1] marker, *le* is obligatorily used with the subject (A) of a transitive verb in past or perfective tenses, and its use demonstrates the completion of the action in such Nepali clauses. Refer to example[2] (1):

(1)	Tom-**le**	griha-karya	vidhyalaya-ma	gar-yo
	Tom-ERG	home-work	school-at	do-PST.3P.S.M
	'Tom did the homework at school.'			

The UoL *le* is also used as an instrumental marker, as illustrated in example (2):

[1] A language is considered as an ergative language if a transitive subject is treated differently from an intransitive subject, and an intransitive subject and a transitive object are treated in the same manner (Dixon, 1979). Ergativity is generally defined "in terms of case marking" (Moghaddam, 2016, p. 9). *le*, which is a suffix on the subject of the Nepali clause (1), is an ergative marker.

[2] Abbreviations used are: ART = Article; ERG = Ergative; INS = Instrumental; REASON = Reason phrase/marker; COM = Command; F = Feminine; M = Masculine; NEG = Negative; INF = Infinitive; PST = Past; PP = Past Participle; 1/2/3P = First/Second/Third Person; S = Singular; PL = Plural

(2)	Usa-**le**	Tina-ko	kalam-**le**	euta	patra	lekhe-ko
	3P.S.M-ERG	Tina-POSS	pen-INS	a	letter	write-PP
	chha					
	have.3P.S.M					
	'He has written a letter with Tina's pen.'					

Just as with an instrument, *le* is also used as a reason marker:

(3)	bibah-huna-**le**	Cathy	bidhyalaya
	marriage-happen.INF-REASON	Cathy	school
	aai-nan		
	come.PST-3P.S.F.NEG		
	'Cathy didn't come to school because of the marriage's taking place.'		

As demonstrated in examples (1-3), *le* functions as a case marker. In addition, *le*[3] also functions as a lexical verb. As a verb, *le* means 'bring', and it is used by an older person when he or she asks a younger one to bring something for him or her. To illustrate this, I provide a couple of examples below:

Mother asks her son:

(4)	Tyo	kachaura	**le**
	that	bowl	bring.COM
	'Bring that bowl.'		

(5)	**le**	tyo	kachaura
	Bring.COM	that	bowl
	'Bring that bowl.'		

Several studies have explored the *le* UoL in Nepali (e.g., Acharya, 1991; Butt & Poudel, 2007; Poudel, 2008; Paudyal, 2009; Verbeke, 2013; Chadra, & Udaar, 2015). Most of these scholars have discussed this UoL in terms of ergativity only. Butt and Poudel (2007) presented the use of *le* as instrumental and reason markers; however, they did not discuss these functions of *le* in detail. To the best of my knowledge, studies, such as these, have neither related themselves to the multifunctional nature of *le* nor presented detailed syntactic analyses of *le*.

To relate the use of the UoL *le* in Nepali to Wiltschko's USH, it is important

[3] I speculate here that although it thus demonstrates its multifunctional nature, *le* still means 'bring', which is retained as its core meaning. I again assume that in the process of grammaticalization, *le* as a lexical verb is grammaticalized such that it starts to function as *le* as an ergative, instrumental and reason marker, as it has lost its core meaning. However, I will not discuss *le*'s core meaning and grammaticalization further here, as it is beyond the scope of this paper.

to see how this unit of language *le* or *le*-marked phrases associate with the spine (Wiltschko, 2014, pp. 86-88). It is thus essential that the UoL *le* be identified with respect to the assumption that "categories are constructed" (Wiltschko, 2014, p. 95). Having said this, it is important to see how *le* or *le*-marked phrases fall in the domains in the spine. With respect to Wiltschko's USH, the present paper thus aims to answer the following research questions:

1. What are the multifunctional behaviors of the UoL *le* or *le*-marked phrases in Nepali?
2. How can the multifunctionality of the UoL *le* or *le*-marked phrases in Nepali be associated with domains of Wiltchko's (2014) Universal Spine Hypothesis?

I will keep the first half of the paper relatively descriptive in the sense that it will be data-driven and theory-neutral. I will then use the second half of the paper to discuss theoretical issues so that a reader first has an overview of the data that I will bring in from Nepali and connect the data with the theoretical presentation I will make later in the paper.

I provide an overall outline of the paper in the following way. In the following or second section, I will explore and analyze data for different functions, what might be called different 'syntactic footprints' or distinct syntactic behaviors, of the UoL *le* or *le*-marked phrases. Then I will provide detailed syntactic analysis for these functions on the use of *le* in Nepali. The third section lays out *le* or *le*-marked phrases' distributional patterns in Nepali clause structures. With such discussions on *le* or *le*-marked phrases' distributions in Nepali, theoretical issues about *le*'s use with respect to the USH will be presented in the fourth section of this paper. I will associate the UoL *le* with domains on the spine. Finally, the fifth or final section will conclude the paper.

2 *le* and its Multifunctionality

As a marker in Nepali, *le* has widely been studied (see Verbeke, 2013; Chadra, & Udaar, 2015). Several scholars (Paudyal, 2009; Verbeke, 2013; Chadra, & Udaar, 2015) described *le* as an ergative marker, just as *-ne* as an ergative marker in Hindi (Pandharipande & Kachru, 1977; Mahajan, 2012). Among these and many other scholars, some described Nepali as an ergative language, and some others considered it as a split-ergative[4] language (Li, 2007). However, Wiltschko (2006, p. 198), who has worked on various ergative or absolutive languages, considered that ergativity is not a uniform phenomenon. It, therefore, seems reasonable to some extent that scholars have differed in their opinion of Nepali as an ergative or split-ergative language. My point does not lie here in arguing whether Nepali is an ergative language or split-ergative language. Instead, I simply intend to briefly

[4] When a language demonstrates ergative behavior partially, it is called a split-ergative language (Sheehan, 2016). Nepali is ergative in the presence of perfective aspect whereas it usually does not appear to be ergative in imperfective constructions.

discuss the use of *le* in Nepali and its characteristics associated with ergativity as only one of *le*'s functions. Paudyal (2009) claimed that in Nepali the agent (A) of a transitive clause is always marked with the ergative marker *le* in perfective constructions or in the past tense. However, this marker can also be used with various Nepali tenses, with varying frequency of occurrence (Li, 2007; Verbeke, 2013). In addition, Paudyal (2009) discussed *le* and other markers along with the role of animacy in Nepali; however, Chadra and Udaar (2015) presented ergative patterns with respect to verbal agreement paradigms in Nepali spoken in Darjeeling. Although *le* as an ergative marker in Nepali is thus extensively discussed, none of the aforesaid or other studies, to the best of my knowledge, have carried out an in-depth study of the multifunctional nature of *le*.

Before I further discuss the multifunctionality of *le*, I will shed light on phrase and clause structures in Nepali. I assume that Nepali, with its SOV order, is a strongly head-final language with respect to both phrase and clause structures. In (1), [*vidhyalaya-ma*] 'school-at' is a postpositional phrase, in which *ma* 'at' is the head of the phrase. The head follows its complement NP *vidhyalaya* 'school' in the phrase. Similarly, the data in (2) contain PPs [*Tina-ko*] 'Tina-of' and [*kalam-le*] 'pen-with'. Within the PPs, *ko* 'of' and *le* 'with' function as the head of the phrase and appear after their complement NPs *Tina* and *kalam* respectively. [*patra lekh-yo*] 'letter wrote' in (2) is a VP, and *lekh-yo* 'wrote' is the head of the VP. Switching the order to [*lekh-yo patra*] would be ungrammatical in Nepali. In (2), the complement *patra* 'letter' precedes the verb, thus presenting a complement-head order. This pattern, verb appearing after its complements, is consistent in Nepali clause structures.

Sentences in Nepali show a number of word-order possibilities. I will discuss some of these possibilities below, starting with Object Shift – a phenomenon that involves word order change. Understanding Object Shift will be helpful in identifying syntactic domains in Nepali clause structure. Object Shift is extensively defined and studied by many scholars, including Diesing (1992, 1997), Karimi (2003), and Sells (1998). For this paper, I will limit its definition to a narrow one due to the nature and the length of the paper. Object Shift is a syntactic phenomenon discussed in a number of languages that moves direct objects out of the VP, which leaves the object in a higher position than it was previously (Diesing, 1992, 1997; Sells, 1998; Karimi, 2003). With the data (6-9), I plan to briefly show how Object Shift works in Nepali clause structure.

(6) harek.jana-**le** saptah.antya-ma chalchitra her-e
Every.one-ERG week.end-on movie watch-PST.3P.P.
'Everyone saw a/the movie on the weekend.'

(7) harek.jana-**le** saptah.antya-ma euta chalchitra her-e
Every.one-ERG week.end-on a movie watch-PST.3P.P.
'Everyone saw a movie on the weekend.'

(8) *harek.jana-**le** euta chalchitra saptah.antya-ma her-e
Every.one-ERG a movie week.end-on watch-PST.3P.P.
(Everyone saw a movie on the weekend.)

(9) harek.jana-**le** chalchitra saptah.antya-ma her-e
Every.one-ERG movie week.end-on watch-PST.3P.P.
'Everyone saw the movie on the weekend.'

The examples (6-9) show an interesting alternation in Nepali. The example (6) indicates the more unmarked order of elements in Nepali, with the object position *in situ*. In example (6), the object NP *chalchitra* 'movie' appears between the time adjunct *saptah.anthya-ma* 'on the weekend' and the verb *here* 'watched'. In (6), *chalchitra* 'movie' without the use of the article *a* or *the* can be treated as either an indefinite object or a definite one in Nepali, which depends upon the context *chalchitra* 'movie' is used in. However, the article *euta* 'a' is used for the object NP *chalchitra* 'movie' in example (7). Assuming that complements of the verb, such as the direct object *chalchitra* 'movie' appear hierarchically (and therefore linearly) closer to the verb than an adjunct, such as the prepositional phrase *saptah.anthya-ma* 'on the weekend' in Nepali, the object NP is inside the VP in both examples (6) and (7), and, thus, in both sentences, the direct object *chalchitra* 'movie' can be interpreted as indefinite, with or without *euta* 'a' in Nepali. As soon as the object is shifted to the left of the PP (8, 9), arguably outside of the VP, only a definite interpretation is possible. The data in example (8), which includes the indefinite article *euta* 'a', is ungrammtical. The definiteness of the object thus depends upon its syntactic position. These are the characteristics that have been observed in the earlier discussions of Object Shift cited above, and therefore I assume that the phenomena we are observing in Nepali reflect Object Shift as well.

This conclusion is important because these facts about Object Shift and the relative order of the direct object and adverbial PPs allow us to know the extent of the VP, and thus help us to identify the hierarchical domains within Nepali sentences. This is essential to my analysis of the multifunctionality of *le* UoL.

In the subsections that follow, I plan to discuss four different categorical identities of the UoL *le* and *le*-marked phrases in Nepali. I begin my discussion with *le* as an ergative marker in Nepali.

2.1 *le* as the Ergative Marker in Nepali

In this subsection, I plan to briefly discuss the use of *le* as an ergative marker in Nepali. I do not intend to provide avery detailed discussion and analysis of *le* as an ergative marker. My plan here is to explore the data that demonstrate one of the functions of *le*, which is ergativity, and thus abstract away from the contrasts in the use of *le* as an ergative marker, as several scholars (Paudyal, 2009; Verbeke, 2013; Chadra, & Udaar, 2015) presented. I refrain myself from discussing ergative

markers in detail here, as it is outside the scope of my paper.

As an ergative marker, *le* is obligatorily used with the subject of a transitive verb in past and perfective tenses, and its use demonstrates the completion of the action in such clauses in Nepali. It is used with the subject, irrespective of gender, number, or pronominal status. This is illustrated in examples (10-15):

(10) Tom-**le** euta patra lekh-yo
Tom-ERG a-ART letter write-PST.3P.S.M
'Tom wrote a letter.'

(11) Sheila-**le** aaphno khana khai
Sheila-ERG her meal eat-PST.3P.S.F
'Sheila ate her meal.'

(12) us-**le** grihakarya gare-ko chha
3P.S.M-ERG homework do-PP.3P.S.F have-3P.S.M
'He has done homework.'

(13) uni-haru-**le** tyo kaam shuru-gareka chhan
3P.PL-ERG that work start-PP.3P.PL have-3P.PL
'They have started that work.'

(14) mai-**le** agawai mero ghar banaye-ko thi-ye
1P.S-ERG already my house build-PP.1P.S have-PP.1P.S
'I had already built my house.'

(15) tai-**le** kaam agadinai sidhya-eko thi-yis
2P.S-ERG work already complete-PP.2P.S have-PST.2P.S
'You had already completed the work.'

The examples (10-15) above show the use of *le* as an ergative marker. I have shown the use of *le* as a marker with singular (*Tom* – male, *Sheila* – female) and plural (*uni-haru* 'they') subjects and both nouns and pronouns. These examples include all persons as well. All of these examples use *le* as an ergative marker in perfectives, and they all are declarative statements. The grammaticality of sentences with *le* as an ergative marker is unchanged in questions or negative sentences. Examples are not provided for reasons of space.

In fact, the ergative NP is a grammatical subject rather than an agent. The examples (16-17) help to establish this function. Both examples (16) and (17) below have transitive subjects *yi baarharu* 'these fences' and *Rekha* 'a proper noun'. However, these subjects do not act as agents. While *yi baarharu* 'these fences' is an instrument subject, Rekha 'a proper noun' strictly speaking is an experiencer subject. In addition, forms of the verbs *ghere-ka* 'surrounded' in example (16) and *gar-thin* 'did' in example (17) are dependent upon these grammatical subjects.

(16) Yi baar-haru-**le** hamro bagaicha ghere-ka
These fence-PL-ERG our garden surround-PPT.3P.S chhan
have.3P.PL
'These fences have surrounded our garden.'

(17) Rekha-**le** una-ko hajur-buba-lai maya gar-thin
Rekha-ERG she-POSS grand-father-DAT love do-PST.3P.S.F
'Rekha loved her grandfather.'

All data in examples (10-17) demonstrate that subjects of transitive verbs are marked with *le* in perfective constructions. However, *le* is also optionally used with the subject of a transitive verb in the imperfective aspect, as given in the following examples:

(18) Rita-(**le**) geet gau-chhe
Rita-ERG song sing-3P.S.F
'Rita sings a song.'

(19) Simon-(**le**) kitab pad.dai-chha
Simon-ERG book read.PROG-be-3P.S.M
'Simon is reading a book.'

(20) hami-haru-(**le**) nibandh lekhi-rahe-thiyeu
1P-PL-ERG essay write-PROG-PST
'We were writing an essay.'

I do not plan to argue why *le* is optional in imperfective constructions and abstract away from my main purpose of discussion, which is about the multifunctionality of *le* in Nepali constructions. These data thus provide an overview of one of the functions of *le* in Nepali.

2.2 *le* as the instrumental marker

In Nepali, *le* is also used as the instrumental marker, as illustrated in examples (21-23)[5]. The form of *le* remains the same irrespective of the number or gender of the noun it is attached to.

[5] The direct objects in (21-23) are interpreted as definite or indefinite, depending upon the context. Nepali does not have a dedicated UoL or a definite article *the* to introduce nominal phrases. Noun phrases in Nepali are not explicitly marked by lexical items for definite interpretation, although demonstrative pronouns, such as this or that, may be used sometimes for this purpose.

(21) u-le kalam-**le** nibandha lekh-yo
3P.S.M-ERG pen-INS essay write-PST. 3P.S.M
'He wrote an/the essay with a/the pen.'

(22) Larry-le laura-**le** gai-lai kut-in
Larry-ERG stick-INS cow-DAT beat-PST.3P.S.F
'Larry beat a/the cow with a/the stick.'

(23) tini-haru-le dhunga-**le** dulo pure
3P.PL-ERG stone-INS hole cover-PST.3P.PL
'They covered a/the hole with a/the stone.'

In examples (21-23), *le* is marked as an instrumental (INS) marker, unlike an ergative marker in examples (10-20). While *le* when used as an ergative marker is attached to subjects as in examples (10-20), the same *le* when used as an instrumental marker is attached to an object as illustrated in examples (21-23). In addition to *le*'s use as an ergative marker, the use of *le* with an instrument, thus, shows another identity of the UoL *le*, which is important evidence of multifunctionality of *le* in Nepali.

In addition to the use of *le* as an instrumental, I want to draw reader's attention to the phenomenon of Object Shift, which I discussed earlier in the data (6-9) in the beginning of section 2. The data in (21-23) show the more unmarked order of elements in Nepali, as opposed to the data in (8) or (9), where the object is arguably outside of the VP. As discussed earlier in section 2, since in examples (21-23), the objects *nibandh* 'essay', *gai* 'cow', and *dulo* 'hole' appear between the instrumental and the verb, the object without the use of the article *a* or *the* can either be considered indefinite or definite. Similarly, *kalam* 'pen' in example (21), *laura* 'stick' in example (22), and *dhunga* 'stone' in example (23) can either be definte or indefinite. That is why I am using the article *a* and *the* in the translation so that readers know that the object can be indefinite or definite, depending upon the context, which I have already discussed in brief in section 2.

2.3 *le* as the Reason-Clause Marker

Just as with instruments, *le* is also used as a reason marker. To clarify this, I provide the following data from Nepali:

(24) Mero didi-le bibah-gare-ko-**le**
1P.POSS sister-ERG marriage-do-PP-REASON
Ma khushi chhu
I happy am
'Because of my sister's getting married, I am happy.'

(25) bas durghatana-bhaye-ko-**le** ma aspatal gay-e
bus accident-happen-PP-REASON 1P.S hospital go-PST.1P.S
'I went to hospital, because of the bus accident's taking place.'

The data (24-25) above demonstrate the use of *le* as a reason marker[6]. *Mero didi-le bibah-gare-ko-**le*** 'because of my sister's getting married' and *bas durghatana-bhayeko-**le*** 'because of the bus accident's taking place' are the clauses that show the reasons and are thus marked with *le*. In such circumstances, *le* is attached to past participle forms of the verb in Nepali clauses and demonstrates its multifunctionality nature.

2.4 *le* as the Lexical Verb Meaning 'bring'

While the data (5-25) show *le* as a case marker, this subsection provides specific data that demonstrate the use of *le* as a lexical verb in Nepali. However, *le*'s function as a lexical verb is interesting. When an older person orders a younger one to 'bring' something for him or her, the former uses *le*, which means 'bring' in Nepali. To illustrate this, I provide the following data from Nepali.

(26) Mother asks her son or daughter:

a. Tyo kachaura **le**
that bowl bring.COM
'Bring that bowl.'

b. le tyo kachaura
bring.COM that bowl
'Bring that bowl.'

(27) An older brother to a younger brother or sister:

a. 2kilo masu **le**
2kg meat bring.COM
'Bring 2 kgs of meat.'

b. **le** 2kilo masu
bring.COM 2kg meat
'Bring 2 kgs of meat.'

[6] In Nepali, the reason can also be expressed as a noun phrase: .
bibah-**le** Cathy bidhyalaya aai-nan
marriage-REASON Cathy school come-PST.3P.S.NEG
'Cathy didn't come to school because of the marriage.'
However, I do not intend to discuss this here, as this is outside the purview of my paper.

(28) Father to his son or daughter:

a. ek gilas pani **le**
a glass water bring.COM
'Bring a glass of water.'

b. **le** ek gilas pani
bring.COM a glass water
'Bring a glass of water.'

(29) a. tero grihkarya **le**
2PS.-POSS homework bring.COM
'Bring your homework.'

b. **le** tero grihkarya
bring.COM 2P.S.-POSS homework
'Bring your homework.'

As can be noticed from examples (26-29), as a lexical verb, *le* occurs in imperative statements. As opposed to what I assumed initially, the above data exhibit how imperatives in Nepali exhibit both head-final and head-initial patterns, thus suggesting a process of verb movement restricted to imperatives.

However, *le* is not used as a lexical verb this way among speakers in all families in Nepali, as such a use of *le* is considered impolite. Some might argue that such use of *le* is prevalent among people in Nepal who are not educated. However, as a speaker of Nepali, I have noticed such uses of *le* in imperative sentences in Nepal.

More interestingly, as a request, the word *kripaya* 'please' can not be used together with *le*. However, there is also a polite version of *le*, which is *leu* 'bring', and this polite version is widely used among people in Nepal. If it is a request, the word *kripaya* 'please' can be added to the statement with *leu*, as opposed to the use of *kripaya* 'please' with *le* as a lexical verb. The following data verify my claim.

(30) An older sister to a younger one:

a * kripaya tyo kalam **le**
please that pen bring.COM
'Please bring that pen.'

b.

i. kripaya tyo kalam **leu**
please that pen Bring.COM
'Please bring that pen.'

ii. **leu** tyo kalam kripaya
bring.COM that pen please
'Please bring that pen.'

The data (30a) contains both *kripaya* 'please' and *le*, which is ungrammatical, as both can not be used in the same sentence. However, when *leu* occurs in stead of *le*, the use of *kripaya* 'please' is grammatical, as in examples (30 b: i, ii). Such uses of *le* as in examples (26-30) is prevalent among Nepali people when commanding or ordering someone to do something. This is still another interesting illustration of the multifunctional nature of *le*.

The UoL *le* thus bears multifunctional behaviors in Nepali, and these behaviors are clearly observable in the data provided above. The uses of the UoL *le*, whether it be as an ergative, instrumental, or reason marker or as a lexical verb, are *le*'s multifunctional behaviors, which is the research question (1) this study thus attempts to answer.

The syntactic distributional pattern of *le* or *le*-marked phrases differs in each of the above functional uses of *le*, and this determines interpretational differences. As an ergative marker, *le* is used with subjects; however, as an instrumental, it marks instruments or objects with the help of which something is done. While *le* is attached to clauses to show reasons when it is used as a reason marker, it also stands alone when used as a lexical verb, meaning 'bring'. Therefore, *le* is thus treated as an ergative, instrumental or reason marker or lexical verb based on syntactic distribution. I will now show *le*'s association with different domains in the universal spine.

3 Distribution of *le*

In this section, I explore further into the data the of *le* as ergative, instrumental, and reason markers as well as its use as a lexical verb. I extend my consideration of the use of *le* with respect to various word order possibilities, including Object Shift. With different word orders, I plan to demonstrate whether these word orders, including Object Shift, are revealing of syntactic contrasts when using *le* for four different interpretations. An additional interpretation I like to include here is marked and unmarked word orders in Nepali. While different word orders in a clause may denote different interpretations in Nepali (see 6, 9 above), this may sometimes make no difference in interpretations, especially in imperative constructions in Nepali (46 a-f, 47 a-f).

As illustrated in the discussions below, I find that *le*-reason phrases in most unmarked positions are merged higher in clause structure than *le*-ergative phrases, which in turn stay higher than *le*-instrumental phrases.

3.1 *le* and Different Interpretations

In this subsection, I plan to discuss *le* and *le*-marked phrases that include different interpretations of *le*, such as *le* as ergative, instrumental and reason markers as well as *le* as a lexical verb.

3.1.1 le *as the ergative marker in Nepali*

In this subsection, I have chosen to work with *praya-jaso* 'usually' as a habitual adverb and *hijo* 'yesterday' as a time adverb. In fact, both are time adverbials. Later in the subsection, I want to see how replacing one adverb with the other affects the use of *le* or *le*-marked phrases in Nepali clause structure. The same constituents occur in different positions in examples (31-34) and show their (un)grammaticality.

(31)	Rita-**le**	praya-jaso	griha-karya	gar-chhin
	Rita-ERG	usually	home-work	do-3P.S.F
	'Rita usually does homework.'			

(32)	praya-jaso	Rita-**le**	griha-karya	gar-chhin
	usually	Rita-ERG	home-work	do-3P.S.F
	'Rita usually does homework.'			

(33)	*praya-jaso	griha-karya	Rita-**le**	gar-chhin
	usually	home-work	Rita-ERG	do-3P.S.F
	'Rita usually does homework.'			

(34)	*praya-jaso	griha-karya	gar-chhin	Rita-**le**
	usually	home-work	do-3P.S.F	Rita-ERG
	'Rita usually does homework.'			

I assume that the clauses with the most unmarked options consist of the base position of the subject, adverbs and objects. The example (31), which is the most unmarked, consists of the base position of the subject *Rita* with *le* to the left of the adverb *praya-jaso. Rita-le* appears to the right of the adverb *praya-jaso* in example (32). Both of these word orders in examples (31-32) are grammatical, as opposed to examples (33) and (34), which are ungrammatical. In example (33), the subject *Rita-le* follows the direct object *griha-karya*, which does not align with the SOV structure in Nepali. Example (34) is ungrammatical with the subject following the verb. In fact, no *le*-marked phrases can grammatically follow the verb in Nepali, no matter what their interpretation. For this reason I will not include such examples in this paper.

Making standard assumptions about how grammatical relations are mapped to tree structures, the above data (31-34) show that the subject with *le* as the ergative marker occurs structurally higher than the VP. Such a subject can either precede the adverbial as in example (31) or follow the adverbial as in example (32). However, it always remains to the left of the object NP in Nepali clause structures.

(35)	Kate-**le**	hijo	kaam	sak-in
	Kate-ERG	yesterday	work	finish-3P.S.F
	'Kate finished work yesterday.'			

(36) hijo Kate-**le** kaam sak-in
yesterday Kate-ERG work finish-3P.S.F
'Kate finished work yesterday.'

(37) *hijo kaam Kate-**le** sak-in
yesterday work Kate-ERG finish-3P.S.F
'Kate finished work yesterday.'

(38) *hijo kaam sak-in Kate-**le**
yesterday work finish-3P.S.F Kate-ERG
'Kate finished work yesterday.'

The above data (35-38) replace *praya-jaso* 'usually' with *hijo* 'yesterday'. However, the pattern in both set of data (31-34), and (35-38) remains the same. It shows that this pattern works with other adverbs and is not specific to *praya-jaso* 'usually'.

3.1.2 le *as the instrumental marker in Nepali*

The NP with the UoL *le* appears in different positions in examples (39-41). In these data, I am only considering the NPs which *le* as an instrumental marker is attached to.

(39) *bancharo-**le** Tina-le rukh kat-eki chhan
axe-INS Tina-ERG tree cut-PPT.3P.S.F have.3P.S.F.
'Tina has cut a/the tree with an axe.'

(40) Tina-le bancharo-**le** rukh kat-eki chhan

Tina-ERG axe-INS tree cut-PPT.3P.S.F have.3P.S.F.
'Tina has cut a/the tree with an axe.'

(41) Tina-le rukh bancharo-**le** kat-eki chhan
Tina-ERG tree axe-INS cut-PPT.3P.S.F. have.3P.S.F
'Tina has cut the tree with an axe.'

Making standard assumptions about the representation of grammatical relations in clause structure, the above data (39-41) confirm that the *le*-instrumental phrase occupies a place that is structurally lower than the *le*-marked subject. Particularly significant is the ungrammaticality of example (39), in which the instrumental *le* in *bancharo-le* 'axe-INS' appears higher than the subject. I assume for now that the instrumental phrase is a constituent of the VP, and I provide justification for this assumption in section 3.3. However, in both the circumstances as in examples (40-41), the use of the *le*-instrumental is grammatical. When the *le*-instrumental occupies the place structurally higher than the subject, as in example (39), it is then ungrammatical.

I want to draw the readers' attention to the positions of the object NP *rukh* 'tree' in examples (40-41) and remind them of the data I provided in examples (6-9) in the beginning of the section 2. The explanation I gave for those data earlier was about Object Shift. The same is taking place here. In example (40), the object NP *rukh* 'tree' means either indefinite or definite without the use of the article *euta* 'a' or 'the'. However, as soon as the object *rukh* 'tree' moves to the left of the *le*-instrumental, it falls outside of the VP's scope. As a result, the object turns out to have a definite interpretation although there is no use of the definite article 'the' or demonstrative pronouns in example (41), which again supports my claim that the interpretation of the object relies on where it lies because of Object Shift – outside or inside of the VP.

3.1.3 le as the reason marker

In examples (42-45), I extend the consideration of the placement of the NPs attached to *le* as a reason marker in different positions in the sentences.

(42)

kehi	mahatwa purna	kaam-haru	pare-ko-**le**
some	important	task-PL	happen-PPT-REASON
Rita-le	yatra	radda-garin	
Rita-ERG	trip	cancel-PST.3P.S.F	

'Rita canceled a/the trip because of some important tasks' taking place.'

(43)

Rita-**le**	kehi	mahatwapurna	kaam-haru
Rita-ERG	some	important	task-PL
pare-ko-**le**	yatra	radda-garin	
happen-PPT-REASON	trip	cancel-PST.3P.S.F	

'Rita canceled a/the trip because of some important tasks' taking place.'

(44)

Rita-**le**	yatra	kehi	mahatwapurna
Rita-ERG	trip	some	important
kaam-haru	pare-ko-**le**	radda-garin	
task-PL	happen-PPT-REASON	cancel-PST.3P.S.F	

'Rita canceled the trip because of some important tasks' taking place.'

(45)

*Rita-**le**	yatra	radda-garin	
Rita-ERG	trip	cancel-PST.3P.S.F	
kehi	mahatwapurna	kaam-haru	pare-ko-**le**
some	important	task-PL	happen-PPT-REASON

(Rita canceled a/the trip because of some important tasks taking place.)

It can be seen from the data above that *le* as a reason marker can occur structurally higher as in example (42) or lower as in example (43) than the subject with *le*. As well, *le*-reason can appear lower than the direct object *yatra* 'trip' as in example (44). However, such a placement is not possible with *le*-marked ergative phrases. That shows that the two *le*-marked phrases, *le*-ergative and *le*-reason, exhibit different placements options.

3.1.4 *le* as the lexical verb, meaning 'bring'

The use of *le* as a lexical verb is different from the uses of *le* as case markers that I have discussed thus far. I use *le* as a lexical verb in different positions in examples (46 a-f) and (47 a-f). I want to point out that I am using a different semantic type of adverbial in this subection, as 'usually' and 'yesterday' are semantically incompatible with imperatives.

(46) Older sister asks a younger one:

a. **le** chhittai bhai-lai
bring quickly younger brother-DAT
'Bring younger brother quickly.'

b. chhittai **le** bhai-lai
quickly bring younger brother-DAT
'Bring younger brother quickly.'

c. chhittai bhai-lai **le**
quickly younger brother-DAT bring
'Bring younger brother quickly.'

d. **le** bhai-lai chhittai
bring younger brother-DAT quickly
'Bring younger brother quickly.'

e. bhai-lai **le** chhittai
younger brother-DAT bring quickly
'Bring younger brother quickly.'

f. bhai-lai chhittai **le**
younger brother-DAT quickly bring
'Bring younger brother quickly.'

The data in (46) confirm that *le* as a lexical verb occupies several places in the same imperative clause, just as other ordinary verbs (*padh* 'read' in example 47 below) do. There is no debate among scholars that Nepali is SOV, except in imperatives, as observed in examples (46-47).

(47) Older sister asks a younger one:

a. **padh** katha bistarai
read story slowly
'Read the story slowly.'

b. katha **padh** bistarai
story read slowly
Read the story slowly.

c. katha bistarai **padh**
story slowly read
Read the story slowly.

d. **padh** bistarai katha
read slowly story
'Read the story slowly.'

e. bistarai **padh** katha
slowly read story
'Read the story slowly.'

f. bistarai **katha** **padh**
slowly story read
Read the story slowly.

The data in (47 a-f) show the use of an ordinary verb *padh* 'read' in imperatives in Nepali. When the use of *le* as a lexical verb in the data in (46 a-f) is compared with the use of an ordinary verb *padh* 'read' in Nepali, it is clearly observed that the pattern remains the same. *le* in examples (46 a-f) is used just as *path* 'read' is used in examples (47 a-f). Both *le* 'bring' and *padh* 'read' as lexical verbs can occupy different positions in imperative clauses in Nepali, without the change in interpretations.

The UoL *le* is available in all of these syntactic contexts (31-47). However, its interpretation as an ergative marker in examples (31-38) is different from its interpretation as instrumental in examples (39-41), or reason in examples (42-45), or as a lexical verb in examples (46-47). It is apparent here that the use of *le* and *le*-marked phrases in one syntactic context differs from another in its distributional patterns, which shows that these different syntactic interpretations do not "instantiate the same category" (Wiltschko, 2014, p. 16). In addition to the data above, *le* from all four interpretations can be used in one single sentence as in example (48), which creates a complex expression as below:

(48) rukh thulo bhaye-ko-**le** Harry-**le**
tree huge be-PPT-REASON Harry-ERG
usa-ko banchara-**le** rukh kat-yo
he-POSS axe-INS tree cut-PST.3P.S.M

ra	usa-ko	chhora-lai	rukh-ko
and	he-POSS	son-DAT	tree-POSS
shakha-haru	ghar	**le**	bhan-yo
branch-PL	home	bring	say-PST.3P.S.M.

'Because of the tree's growing huge, Harry cut down the tree with his axe and asked his son to bring home the branches of the tree.'

All four functions of *le*, ergative marker, instrumental marker, reason marker, and a lexical verb appear in a single Nepali clause as in example (48). As these four uses of *le* with different functions in a single clause yields grammaticality, it shows the multifunctionality of *le* as a UoL. This analysis of the data thus far shows that the use of *le* and *le*-marked phrases differs in their distributional properties depending upon the syntactic environment they are used in. These differences occur in different syntactic contexts.

Adverbs have been the subject of grammatical as well as semantic discussion and analysis for a long time (Wyner, 2008). Adverbs "are treated as an important window into the universal functional architecture" (Wiltschko, 2014, p. 73). However, due to the limited space, I will not be able to establish the relative order of *le*-marked phrases and some adverbs in Nepali.

4 Theoretical Discussion

The present paper on the multifunctionality of *le* in Nepali explores the phenomenon in the context of Wiltschko's (2014) Universal Spine Hypothesis (USH) and discusses both the multifunctionalty of the UoL *le* as well as the USH postulation. What follows in this section is a brief introduction to the postulation of the USH. I then discuss how different functions of *le* and *le*-marked phrases associate with the domains of the USH.

4.1 The Universal Spine Hypothesis (USH)

The USH postulates a universal syntactic spine with a hierarchical organization of a set of limited universal categories defined by the function wherein the UoLs of languages merge in order for expressions to take place (Wiltschko, 2014, p. 24). The USH, as Wiltschko claimed, fills the middle ground between the Universal Base Hypothesis' (UBH) claimed universality of categorical properties and the No Base Hypothesis' (NBH) rejection of a universal set of categories in favor of language-specific set categories (Wiltschko, 2014, pp. 10-28).

The UBH, which draws on the works of generativist linguists, including Chomsky (1965) and Ross (1970) and many subsequent authors, assumes the same functional or universal structure across languages in the world. The clausal architecture is identical across languages (Cinque, 1999). Universal Grammar (UG) is "conceived of as a repository of categories available to individual languages" (Wiltschko, 2014, pp. 10-11). However, according to Wiltschko (2014, pp. 12-13), tense and number that are usually considered to be universal according

to the UBH are not, in fact, universal. While tense is not among the morpho-syntactic categories in Blackfoot, an Algonquian language, number marking does not either form a morpho-syntactic category in Mandarin. In addition, Blackfoot does not have any UoLs or morphemes for introducing complement clauses, although the UBH claims that languages share categories such as complementizer and determiner. Similarly, using illustrations from English and Halkomelem, Wiltschko (2014) showed that UoLs or morphemes that stand for the same content, such as temporality or plurality, do not behave in a universal or identical way either. Wiltschko, thus, challenged the UBH on the grounds of its problems, such as the lack of some categories in some languages and different distributional properties of the same categories in different languages. Similarly, Wiltschko (2014) refused to accept the postulation put forward by scholars, including Joos (1957) and Haspelmath (2007), against the UBH – the postulation that she called the No Base Hypothesis (NBH). Scholars favouring the NBH have denied the universality of categories. However, with data from English and Blackfoot, Wiltschko (2014) claimed that there exist universal ordering effects as well as universal categorical patterns, such as patterns of multifunctionality and contrast, which are not acknowledged by the NBH scholars (p. 22). Because she saw the "tension between the observed universality of categorical properties on the one hand and their variability on the other", Wiltschko (2014, pp. 23-24) proposed the USH, as per the following two claims:

i) Language-specific categories (*c*) are constructed from a small set of universal categories *K* and language-specific UoLs

ii) The set of universal categories *K* is hierarchically organized where each layer of *K* is defined by a unique function.

> "The central thesis behind the USH is that the language-specific categories (c) are constructed out of language-specific Units of Language (UoL) and a limited set of universal categories (*K*) as in *c* = *K* + UoL…the set of universal categories C_{UG} does not serve as a repository for language-specific categories… it serves as the basis for the construction of categories, as a universal categorizer. (Wiltschko, 2014, p. 24)

When a category, such as tense, is missing in a language, it does not mean that there is no temporal content in that particular language. As Wiltschko claimed, tense is constructed out of an abstract *K* and a language-specific UoL that supplies the specific temporal content.

According to the USH, to provide a (complex) expression, different UoLs combine together in a hierarchically order, forming a universal syntactic spine where the set of universal categories are hierarchically placed. The spine is category-neutral. The USH assumes four layers as such on the spine: C_{UG} = *K:linking* > *K:anchoring* > *K:point-of-view* > *K:classification*, wherein C_{UG} denotes the set of universal categories and *K* stands for a limited set of universal categories (Wiltschko, 2014, p. 24). *K:classification* is the lowest layer on the spine

and related to classification of events or individuals; the second from the bottom is the *K:point-of-view* layer that determines a viewpoint with which the event or individual is presented; higher than this layer is *K:anchoring*, which helps anchor events or individuals to the utterance; on the top is the layer called *K:linking*, which demonstrates a relationship existing between the ongoing discourse and the proposition (Wiltschko, 2014, p. 28).

Wiltschko (2014) argued that each domain is associated with specific roles that the "nominal arguments introduced in the VP may bear" (p. 72). Therefore, Wiltschko illustrated that in addition to bearing the thematic roles, arguments may also play grammatical roles, such as subject and object, and discourse roles, such as topic and focus. The IP-projection here corresponds to IP: anchoring and AspP: point-of-view domains in the spine.

4.2 Parameters for the Association with the USH

It is now important that I illustrate where on the spine the given UoL *le* and *le*-marked phrases associate with *K*. The universal spine contains a small number of *K*s wherein each *K* is associated with an abstract and distinct function. These *K*s are *K*:classification, *K*:point-of-view, *K*:anchoring, and *K*:linking, as just noted above.

4.3 *le*'s Association with the USH

Now I turn to associating the four different functions of *le* and *le*-marked phrases in Nepali with the USH. When associating the *le* UoL with Wiltschko's (2014) USH, I am considering *le*-ergative, *le*-instrumental, and *le*-reason phrases, and *le*-verb as various functions or categorial identities of the *le* UoL under the patterns of its multifunctionality (p. 3). As Wiltschko (2014) explained, "…the presence of a categorial identity mediates the relation between UoLs and their interpretation" (p. 9), and "the presence of categories is reflected in the pattern of multifunctionality..." (p. 20), there is thus one multifunctional UoL with four distinct identities, and interpretations, depending on how these UoLs are used in a syntactic context.

Here I argue that *le* or *le*-marked phrases associate to different domains of Wiltschko's universal spine. In the earlier sections, I showed that *le* is in fact a complex UoL, as it serves different functions depending upon the syntactic environment it is used in. When analyzing *le* and *le*-marked phrases in terms of the USH, it is important that we know where on the spine it sits. Therefore, in the following paragraphs, I provide some motivation for associating *le* with the spine in different ways, depending upon its use in various syntactic contexts.

I begin my discussion on *le* and *le*-marked phrases' association with *le*'s use as an ergative marker. In this syntactic context, I claim that the *le*-ergative phrase associates with *K*:*anchoring*. According to Wiltschko (2014), "The anchoring domain is a core grammatical domain. It is where the grammatical subject-relation is introduced and it serves to relate the reported event to the ongoing discourse"

(p. 98). Similarly, "…*K*:anchoring hosts grammatical subjects" (Wiltschko, 2016, p. 157).
In 2.1, I illustrated that *le*-ergative phrases are grammatical subjects rather than agents.

(49) Yi baar-haru-le hamro bagaicha ghere-ka
These fence-PL-ERG our garden surround-PPT.3P.S
chhan
have.3P.PL
'These fences have surrounded our garden.'

(50) Rekha-le una-ko hajur-buba-lai maya gar-thin
Rekha-ERG she-POSS grand-father-DAT love do-PST.3P.S.F
'Rekha loved her grandfather.'

In examples (49-50) (repeated from 16-17 above), *baar* 'fence' and *Rekha* 'a proper noun', which *le*-ergative is attached to, act as grammatical subjects; these subjects are not agents. Since grammatical subjects are hosted in *K*:*anchoring* according to Wiltschko, I claim that *le*-ergative phrase, too, associates with *K*:*anchoring* in the spine.

Considering linear ordering, the *le*-marked ergative phrase obligatorily precedes the object and the verb in Nepali, as seen in all preceding examples. This positioning may be analyzed as scoping over all categories with which objects are associated, such as the aspectual information, i.e., *K:point-of-view*. Thus the linear ordering is found to be consistent with the conclusion based on grammatical function, supporting *le*-ergative's associating with *K*:*anchoring* on the spine.

Now I turn to providing explanation on the *le*-marked phrase's association with the spine when it is used as an instrumental in Nepali. Structurally, as an instrumental, *le*-marked phrase occupies the position lower than the *le*-marked subject phrase (see 10-15, 31-38, and 21-23, 39-41). Evidence for this claim comes from the fact that it necessarily follows the subject, or it may also follow the object in Nepali. However, it can not precede the subject. As can be seen, the instrumental is mostly considered as impersonal or it means an object which is used to do something, as in *bancharo* 'axe' in examples (39-41) and is in use with verbal expressions involving personal agency. Sentences are still complete without the use of noun phrases with instrumentals. The data (51), which is repeated from example (40) above, is missing *le*-instrumental *bancharo-le* 'axe-INS'. However, it is still grammatically correct in Nepali.

(51) Tina-**le** rukh kat-eki chhan
Tina-ERG tree cut-PPT.3P.S.F have. 3P.S.F
'Tina has cut the tree.'

However, the *le*-instrumental can not exist in a Nepali clause in the absence of an agent. The data (52, which is repeated from 17 above and modified) is missing an agent in the form of *le*-ergative NP and is ungrammatical in Nepali.

(52) *Rekha-le una-ko hajur-buba-lai
Rekha-ERG she-POSS grand-father-DAT
geet-le maya gar-thin
song-INS love do-PST.3P.S.F
'Rekha loved her grandfather with a song.'

I thus argue that the agent and the *le*-instrumental thus are necessarily linked together. The *le*-instrumental can not exist if there is no agent in Nepali clause structure. I assume that the instrumental is within the vP based on its connection with agency, which I showed just above. Agents define the class of agentive verbs, and as *le*-instrumental is dependent on agency, this leads me to say that *le*-instrumental is associated with agent. By Wiltschko's characterization, agent lies within the vP which introduces and classifies events, so I claim that *le*-instrumental is associated with *K:classification* in the spine.

With regards to the use of *le* as a reason marker, the data, including in examples (24-25), and (42-45) clearly show that it creates a link and establishes relationships between events, circumstances, or discourse patterns. The *le*-reason phrase can appear in a higher position within the clause in Nepali than subjects, suggesting that it belongs in a higher domain. The use of this type of *le*-marked phrases is independent of tense or aspect (see examples 21, 40) or the nature of the subject: singular, plural, pronouns or nouns (see examples 21, 22, 23). Similarly, the use of *le*-reason phrase is also independent of transitivity as well as thematic relations (see examples 24, 25), such as agent that shows characteristics of the classification domain. Therefore, I conclude that *le*-reason phrase belongs to the *K:linking* domain in the spine.

When used as a lexical verb, I assume *le* is of a category V and does not belong to the USH, as the spine is a functional architecture, not a lexical one.
These explanations thus provide an answer to the research question (2) above. In Nepali, language-specific categories are thus constructed from the small repository of universal categories. This is the way that the multifunctionality of *le* UoL in Nepali can be associated with different domains of Wiltchko's USH, depending upon the syntactic environments it is used in.

5. Conclusion

In this paper I have shown the multifunctional behaviors of the *le*-UoL and its association at different levels of the spine of the USH. *Le* can be used as an ergative marker, as an instrumental marker, as a reason-clause marker, and also as a lexical verb. Depending upon the syntactic context, *le* may be used as a verb or simply as a marker, either ergative, instrumental, or reason, which means *le* is "intrinsically associated with categorical identity (Wiltschko, 2014, p. 94). This shows that *le* remains category-neutral until the syntactic environment it is used in is known. The meaning of *le* cannot be interpreted appropriately until it is used in a syntactic environment, as its behaviors are not associated with any substantive content. Depending upon its syntactic use on different environments, the *le* UoL

has different interpretations, and different categorial identities as constructed from the small repository of the universal categories. As it has been noticed earlier, depending upon these categorial identities and interpretations, *le* fulfills a particular function at a particular syntactic environment. Therefore, the *le*-marked phrase UoL is either placed on the *K:linking, K:anchoring, or K:classification* domain on Wiltschko's (2014) functional architecture. Specifically, the *le*-ergative phrase associates with *K*:anchoring in the spine while the *le*-instrumental phrase is associated with *K:classification*. Similarly, the *le*-reason phrase belongs to the *K:linking* domain in the spine. However, as a lexical verb, *le* is not associated with the USH and is of a category V. Based on the syntactic footprint of *le*'s use, *le* may lie on the USH's domain. This paper thus demonstrates the multifunctionality of *le* in Nepali and *le*'s association on the USH. However, more research is warranted in order to discuss the use of *le* in contexts that involve additional adverbials and UoLs and to illustrate *le*'s association on the spine in relation to those UoLs.

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The syntax and discourse function of *you see*

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This study of the syntax-discourse interface investigates the form and function of *you see*, which has been analyzed as a fixed and movable expression displaying discourse functions in spoken English (Erman, 1987; Fitzmaurice, 2004; Hale, 1999; Ranger, 2010). Based on the data excerpted from British National Corpus (BNC), the primary discourse function of *you see* is to manage common ground (CG). Specifically, the function of *you see* as an agreement seeker is available at both sentence peripheries, but the sentence-initial *you see* co-occurs with a phonological unit such a stress. Sentence-medial *you see* serves to check mutual knowledge. Following the Universal Spine Hypothesis (USH) (Wiltschko, 2014), two functions involved in the use of *you see* are *grounding* and *responding* (Wiltschko & Heim, 2016). It is shown that sentence-initial *you see* and the phonological unit it co-occurs with are linked to different layers in the spine. In this context, *you see* is associated with the *grounding layer* (GroundP) involving Speaker's (S) and Addressee's (A) commitment (Ground-S and Ground-A) to the proposition (p) (Thoma, 2016), and the phonological unit is associated with the *responding layer* (RespP), requesting a response from A. The sentence-final *you see* is dedicated to *grounding* and *responding layers* independent of the co-occurrence of phonological elements. *You see* in medial and negation contexts is less related to the A's propositional attitude and solely accesses to S's ground. Specifically, the negation *not* values the coincidence feature [*u*coin] associated with GroundP as [-coin] (Wiltschko, 2018), thereby illustrating that p is not in S's set of beliefs. The results suggest that the syntactic positions of *you see* can be organized on a continuum, each showing a different degree of intersubjectivity.
Keywords: Discourse marker; spoken English; Universal Spine Hypothesis

1 Introduction

In this paper, I explore the syntax of the discourse marker *you see* in British spoken English. *You see* has been analyzed as a fixed and movable expression displaying discourse functions in spoken English and has often been considered as a grammatically optional and semantically empty property (Erman,1987; Fitzmaurice, 2004; Hale, 1999; Ranger, 2010). Given its movability within a sentence, as shown in (1), (2), and (3), which are data from BNC Corpus, the

question is raised regarding whether different syntactic positions are related to different discourse functions.

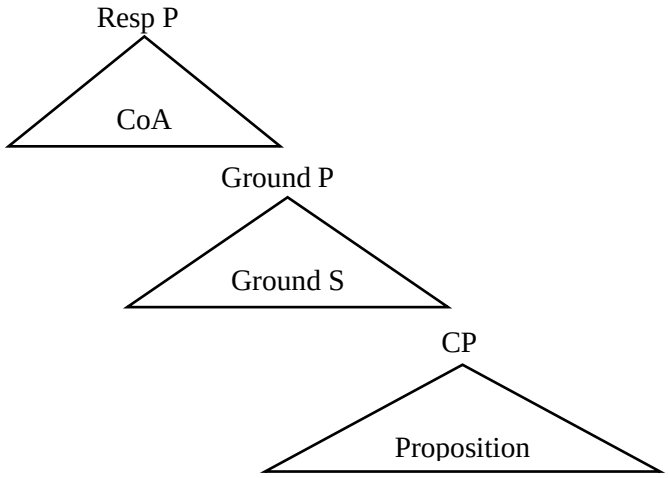
(1) A: ***You see***, the only trouble with building societies is, it's the same when you buy a pigging house, they put the money on what you've actually borrowed every year.
B: Yeah.

(2) A: And that's what spurs her to get up and flee Thornfield Hall. that's ***you see***, this is one of the things that contemporary critics, some contemporary critics couldn't take, that Jane wanted Rochester
as much as Rochester wanted Jane.

(3) A: Yeah, he's wanting his own independence ***you see***.
B: Yeah, that's right yeah.

These examples have shown that *you see* functions to establish common ground (henceforth CG) which is a set of shared beliefs between a speaker (S) and an addressee (A), but the difference in positions reflects a difference in the degree to which A is engaged in the conversation. Following Wiltschko and Heim's (2016) assumption that discourse markers encoding the interaction between S and A should be analyzed within the generative framework, where discourse is projected in a higher position above a traditional clause CP, I argue that *you see* serves to engage A independently of its position in a sentence. The diagram (4) shows that two functions associated with the positions of *you see* are *grounding* and *responding*. More specifically, the highest functional projection of a clause is linked to a 'grounding' layer (Ground P), which involves a speaker-oriented and an addressee-oriented structure. The topmost layer is dedicated to a 'responding' layer and consists of a position that encodes the call on the addressee (CoA). Thus, I propose that *you see* is dedicated to different layers depending on its discourse function as determined by its position in a sentence.

(4) *you see* within generative framework



The goal of this paper is to explore the distributional properties and function of *you see* and establish a formal syntactic analysis of this particular discourse marker from a perspective of generative syntax.

This paper is structured as follows. In Section 2, a review of how previous studies approached the functions of discourse marker *you see* will be given. Following that, I will introduce the core set of data that forms that basis of the analysis (Section 3). In Section 4, I introduce the framework within which the data is applied. In Section 5, I introduce more detailed analysis for the functions of you see in relation to different positions. In Section 6, I conclude and provide suggestions for future study.

2 Literature Review

This section provides a review of how previous studies have investigated discourse functions of *you see*. Very little attention has been paid to the syntactic properties of *you see*, and research has not gone beyond the word order when discussing its syntactic environment.

Erman (1987) has conducted a large-scale corpus study exploring the pragmatic functions of *you see* as a pragmatic expression, where he finds that *you see* has addressee-oriented function and occurs in sentence-initial, medial, and final position. He concludes that the three pragmatic expressions exhibit multiple functions and can be used as fillers, turn-holders, softeners, discourse markers, and punctuates. He provides a rather complete theoretical view of pragmatic expressions of *you know*, *you see*, and *I mean* from perspectives of syntax, phonology, semantics, and interaction with addressees, and explains how these factors interrelated with each other to yield various interpretations of linguistic expressions. For example, sentence-initial *you see* co-occurring with pauses functions as a rhetorical device to draw an addresses' attention. Although Erman manages to discuss the three positions of *you see* within a sentence, he mainly

focuses on the syntactic environment where *you see* is placed, such as between verbs and nouns and word order. As a result, Erman has made the pioneering work in the pragmatics of *you see* by classifying its discourse functions.

A later large-scale corpus study conducted by Fitzmaurice (2004) discusses the grammaticalization of *you see* that shifts from subjectivity complement clauses (e.g., *I see that*) to intersubjectivity comment clause, where intersubjectivity is defined as the extent to which S's attitude and stance represents or is shared with A's knowledge (e.g., *you see*). She focuses on the interactive relationship these selected epistemic stance phrases with *you* exhibit between S and A in a given discourse, where *you see* is analyzed as an unanalyzable whole unite which gradually loses its full lexical meanings and receives interactive meanings as a discourse marker. She further argues that the comment clause *you see* functions to invite A to join the common ground and maintain the flow of the conversation.

Following Fitzmaurice's (2004) idea that *you see* displays interactive function between speakers, Ranger (2010) further examines the relation between utterances and the relation between proposition (p) and A. From an enunciative perspective, Ranger further proposes that there is an inferential relationship among propositions signalled by *you see*, involving the interaction between S and A and their attitudes towards p. In his enunciation approach, Ranger argues that *you see* naturally marks an inferential relationship between two propositions, and S utters *you see* to localize this propositional relation to A. The two propositions are p1 and p2, where p1 is viewed as representation including all instances from the prior context. The p2 either following or preceding *you see* serves as an explanation or justification for p1. In other words, p2 is located and determined by *you see*, and at the same time, it locates and determines p1, as shown in (5).

(5) A: When I arrived last night, all the lights were on.
B: Were they? It must've been Helga. She's new, ***you see***. I haven't trained her yet.

(Ranger, 2010, p. 118)

In line with Erman's study (1987), although the function of *you see* in association with the syntactic positions has been analyzed in Ranger's study (2010), he primarily considers that there is a difference between the sentence-initial and sentence-final position. The positions of *you see* are related to its localization of propositions where the linking of p1 and p2 occurs in different stages. When *you see* is in the sentence-final position, the inferential relation between the uttered p1 and p2 is established only after the final *you see* is produced, where *you see* post determine p2. In contrast, there is a priming effect when uttering sentence-initial *you see* which predetermines the status of p2 as providing explanation or justification for p1 before it is announced. In his analysis, Ranger fails to make a clear boundary between the difference of *you see* in the sentence middle and initial position, and he views the two positions of *you see* equally in terms of showing the same discourse behaviours.

In addition, a further distinction between initial and final *you see* was made by the triumphant use which is restricted to sentence-initial position, where S produces a stressed *you see* to force A to accept his argument since both speakers hold opposing views towards p (proposed by Quirk, 1991, then updated by Ranger, 2010), as illustrated in (6).

(6) A: ***You see***, same words, different meanings.
The doctor could be innocent. (said triumphantly)
B: I Know.

(Ranger, 2010, p. 121)

In sum, although previous studies have touched on discourse functions of *you see* in association with word order, the distinction between these syntactic positions have not been made yet. In spite of most syntactic views of sentence-periphery discourse particles showing few syntactic behaviours such as their inability to be modified, there is assumption supporting that the functions of discourse particles are associated with syntactic hierarchy structures and are projected in the higher position above CP. Thus, a call for a more in-depth syntactic analysis that accounts for the discourse functions in relation to its syntactic positions is demanding.

3 Methodology and Data

The data in this study is excerpted from British National Corpus (BNC). In line with previous studies of *you see* as a discourse marker, my observations of *you see* in dialogic contexts exhibit intersubjective functions by signalling an interactive relationship between speakers. The following data show that the main purpose of *you see* is to manage CG between speakers in addition to marking an inferential relationship between propositions. Additionally, syntactic positions of *you see* reflect a difference in S's knowledge regarding the relation between the A and the proposition (P) and the extent to which the hearers are engaged in conversation.

3.1 Sentence-initial position

It is commonly agreed that sentence-initial markers are often linked to subjective meanings, signalling S's certainty towards the state of affairs and their expectation of their addressees viewing it in a similar way (Haselow, 2012; Heim, 2019; Rozumko, 2019). In examples (7)-(9), it can clearly be seen that a positive response showing agreement with S is expected to elicit from A. Therefore, in the example of (7), *you see* is used to activate mutual knowledge about the rate and mortgage issues with both big and small building societies. S assumes that A would agree with his proposition that the money that needs to be paid includes interest in addition to the money borrowed from a financial institution, regardless of the institution's size. In this case, the declarative sentence *they put the money on what you've actually borrowed every year* corresponds to the illocutionary force of

assertion. In addition, in order for this conversation to be well-formed, S would hold an assumption that A has less knowledge in this financial topic and would accept his argument as shared beliefs since here S provides strong evidence for the information that A may have previously ignored or had no access to.

(7) A: We borrowed that four thousand pounds. We started out with Key Finance and we ended up with Mercantile Credit, didn't we?
B: Yeah.
C: You told me about that, yeah. Well said that it will be a small- a really small building society. He says, that, it's not big.
B: Well.
C: Big building societies are not prepared to give you rates, and small building societies are wanting to get going.
B: ***You see***, the only trouble with building societies is, it's the Same when you buy a pigging house, they put the money on what you've actually borrowed every year.
C: Yeah.

(8) A: oh well they'd got it, then aren't they? Had they got it through a Council then?
B: ***You see*** he's got a choice, he got three weeks to move in make his mind up.
A: Yeah must have done, he got up to three weeks to move in.

(9) A: Oh she'll be coming at thirty this year, won't she?
B: ***You see***, she's just coming into her prime, and now he's just leaving it.
A: Yeah.

Examples (10)-(12) show triumphant use of *you see* that co-occurs with a stress. In example (10), where S and A hold opposing views about the p1 (*someone might have just come in the dark yard*), S uttered p2 (*if somebody just come to that corner, it picks it up. And they go and walk back, and you wouldn't know they were there*) as an explanation for p1. Here, *you see* functions to force A to accept p1. The triumphant *you see* is limited to the use at the beginning of a sentence, co-occurring with the phonological unit, stress (Ranger, 2010). In this context, S is fully committed to p1 based on the evidence uttered by p2 and assumes that the knowledge would be acknowledged by A with a previously incorrect attitude towards p. The stress is associated with calling A to respond to the host utterance by providing a positive response to p, which is not limited to *yes*. The conversation would be ill-formed if both speakers view p in the same way or share similar attitudes towards p. In that case, *you see* loses its triumphant effect and functions as a regular initial *you see* by updating information to CG. Additionally, based on Ranger (2010), triumphant *you see* occurring at initial position might be due to the

fact that correcting someone should be more explicit, while this effect is not existent at sentence-final position.

(10) A: it's only last night, I didn't know if you could hear, it come on three times and they were nobody there!
B: Probably rain dripping down in front of it.
A: I were right here and I'd got that light out.
B: You never know somebody might have just come in dark yard.
A: And I thought and it's light out there. And three times it come on and off!
B: ***You see***, if somebody just come to that corner, it picks it up. And they go and walk back, and you wouldn't know they were there.
A: Yeah.

(11) A: Well they'll all be fighting for life all of a sudden.
B: ***You see*** they're not gonna get a lot of chance though because we get a lot of sun here.
A: Where?
B: Here

(12) A: ***You see***, if that didn't go, I'd say Gerry try it there, not don't do that, try it. Well you can't do that, and he'd do this like that!
B: I know! Yeah.

3.2 Sentence-medial position

In the following dataset (13-16), sentence-medial *you see* is shown to be similar to the initial position, as it marks a coming explanation for a previous proposition. As mentioned earlier, *you see* also establishes CG between speakers. In this case, *you see* functions to trigger a mutual background environment, and S intends to invite the hearer to join his or her set of beliefs. As in (13), establishing CG enables S to proceed with his own talk and provide a justification for the person being discussed *fleeing the Thornfield Hall*. In this context, S and A may or may not share common knowledge about this topic, but S encourages A to accept his proposition as mutual knowledge. However, unlike the sentence-initial *you see*, medial *you see* does not request a positive response from A to show agreement since S is uncertain about how much background information is in A's knowledge. Therefore, the sentence-medial variant does not engage A about the propositional content. Instead its ground-checking function is to ensure that A is receiving the information assumed to be shared (Heim, 2019). It has been argued that this checking function happens during the presentation phase in a conversation, rather than the acceptance phase where a shared belief is accepted (Heim, 2019).

(13) A: Now whether it's meant to be really her mother, or in a sense that one might call women of the generation before yours mother, I'm not sure.
B: Mm.
A: And that's what spurs her to get up and flee Thornfield Hall. And that's ***you see***, this is one of the things that contemporary critics, some contemporary critics couldn't take, that Jane wanted Rochester as much as Rochester wanted Jane. small building societies are wanting to get going.

(14) A: You have to get him wound down a bit, you have to do it, you know of a about half an hour or so ask him for the proper name! It's absolutely brilliant! He goes mad!
B: He's ***you see***, but after about twenty minutes or so he loses touch with what's you're actually doing and if, if you catch him just right, he goes berserk! It's really funny!

(15) A: That's possibly what?
B: One of the nightmares he's having.
A: What when he's on the drugs, some of these painkillers?
C: Oh yeah, He's get-- he's reliving this.
B: he's, he's ***you see***, he, of course that's what he does, you see him do it, oh yeah when daddy's not.

(16) A: Mummy!
B: What he was doing too.
A: If you look after these, and I
B: I'll look after those.
A: with the bin.
B: And while you're at it with the bin get yourself a tissue as well, to wipe your nose. The trouble is, ***you see***, if Christopher's doing what he wants to do, you're doing what you all want to and then both both of you crash in the middle it's nobody's fault particularly is it?
A: It didn't go like that.

3.3 Sentence-final position

As suggested by Ranger (2010), the inferential relationship between proceeding propositions and the proposition marked by *you see* is only established when *you see* is uttered sentence finally. As illustrated by examples of (17)-(20), the primary purpose of *you see* in this position is to update CG by seeking a confirmation concerning whether a belief assumed to be shared is accepted by A. In the example of (18), S provides A with a justification regarding the behaviour of not bringing gloves. Similar to sentence-initial *you see*, with final *you see*, S establishes CG by

assuming the hearer would understand his reason. Thus, final *you see* initiates a request to confirm that A's belief towards p is identical to S's attitudes towards p. The most distinguishable feature between initial and final *you see* is that the final variant is not accompanied by any other phonological units to yield a response from A. Instead, it naturally marks an agreement-seeking function at the end of a turn.

(17) A: And I say to him you're always smiling
B: Yeah
A: you'd think he'd be the last one to smile, but he's always smiling int he, lovely.
B: Yeah, he is yeah.
A: I think he's a lovely lad
B: Yeah.
A: Yeah, he's wanting his own independence ***you see***.
B: Yeah, that's right yeah.

(18) A: That's rubbish that.
B: Well I thought it was, but who knows (you never know which way they're going here
A: No, well you watch the indicator.
B: Yeah, but sometimes people don't use them do they? Ah? I did tell him it was.
A: I know
B: what's name didn't I? I didn't bring my gloves.
A: Well done.
B: cos I had a cigarette in one pocket and this thing in the other ***you see***.
A: Yeah.

(19) A: Has he got a Volvo Robert's car?
B: Er, well both Robert and David have got Volvos, so er, if, if it was, if it was the last few days it was probably David.
A: Yes, I think it might of been Wednesday.
B: Er, yes that was David, Robert hasn't, Robert's coming next weekend, but he hasn't been here for a few weeks.
A: Yes, I just saw you at the crossroads ***you see***.
B: Mm and I was sort of concentrating.

(20) A: She doesn't know we're going so don't let it slip.
B: No
A: There's a place where they go for lunch ***you see.***
B: Yeah.

3.4 Final *you see* following negation

Sentence-final *you see* sometimes co-occurs with negation, leading to a contradictory interpretation. In the examples of (21)-(23) below, *you see* following negation indicates a contrast between the two propositions. In (21), this occurs when an expected behaviour of the speaker's occupation (nursing) conflicts with the actual behaviour of teaching. In this context, S would assume that A shares no mutual knowledge with her about her job, and S encourages A to accept her proposition by providing A with the justification that she is not a teacher but only teaches for this semester. In order for this conversation to be well formed, A's attitudes towards p regarding teaching would be opposed to the S's propositional attitude. The conversation would be infelicitous if A's commitment to the truth condition of the proposition is identical to S's belief about the proposition. Thus, *you see* would fail to show a contrast if the A has the knowledge of the speakers' real job.

(21) A: Okay? So that's that, but he's not going to interfere with us talking, let's carry on, at about ten o'clock Graham is coming who is, I'm, as you know I'm doing erm, er a teaching course, I'm not a teacher ***you see***, I'm a, I'm a nurse, he's coming to assess me on er, this is a teaching practice for me, alright, so he will come in and I think he'll sit over there and we'll just get on. Right last, last week we did erm cold injury in the newborn, didn't we? We'll just recap briefly on what we did. Thank you, fine.

(22) A: Er, it's fairly obvious why you want to bake a quiche or a flan, it's fairly obvious, is it, why you want to play the clarinet? Why?
B: For pleasure.
A: And the work one, there's a definite incentive of work. Now why are you doing A Level English? might want to talk that through.
C: biology.
A: And an answer has come up, with no, because they wouldn't let me do biology, ***you see***. You could tell each other about this, you don't have to tell me. I'm pretty aware of it. I was under the impression that we could choose our books. Okay, have you had long enough to.
C: Eh?
A: So you've got an idea
C: Yeah.

(23) A: They, they left her erm about half past eight, twenty to nine and they got to about half way they hadn't been gone twenty minutes and I thought, oh she's left her photographs, she had to get four passport photographs and she'd left them here and I thought we'd send them, send them to her and she didn't like them ***you see***, but she'd have them. So, I phoned Derek on the car phone and erm he says oh we'll get some taken elsewhere. So, when they left Bristol, they went to find a place that takes, then they took the wrong turning off the motorway.

3.5 Interrogative clause with *you see*

Alongside the occurrence of *you see* in the declarative clauses as discussed above, *you see* has also been found in interrogative clauses. As the following dataset (24-27) shown, *you see* occurs sentence-finally to seek a confirmation from A by checking whether p is added to A's set of beliefs. In this context, S and A may or may not share common knowledge in the topic, but S is certainly a more reliable source of information than A. As can be seen in (24), speaker A is the only source of the information concerning people suffering from dyslexia receive high quality jobs. It is obvious that the addressee B has no access to the knowledge of what speaker A is referring to by making no content contribution to the conversation.

(24) A: So it was quite, and er then they, they, well they weren't learning very well at all.
B: Oh.
A: They always seemed backward, they found that they took them to different specialist and the truth is, they've both left schools now and got jobs, but they were er, dyslexia.
B: Oh goodness.
A: They found out both of them.
B: Oh.
A: But they got jobs, quite good jobs, and the fella who it is employing them, he's one himself, so he employs that sort of people ***you see***?
B: Mm.

(25) A: One of my Jean, my cousin about ten months younger than I said, can I have a go Mollie? And I said, yes ***you see***, gave her a try and so she went if you know Frinton you could go, in those days.
B: Yes, I know it.
A: You could go round, well it's the same now, but in those days you could go round, past the summer theatre and down Old Road where we were staying and on to a and do a circle ***you see***?
B: Yeah.

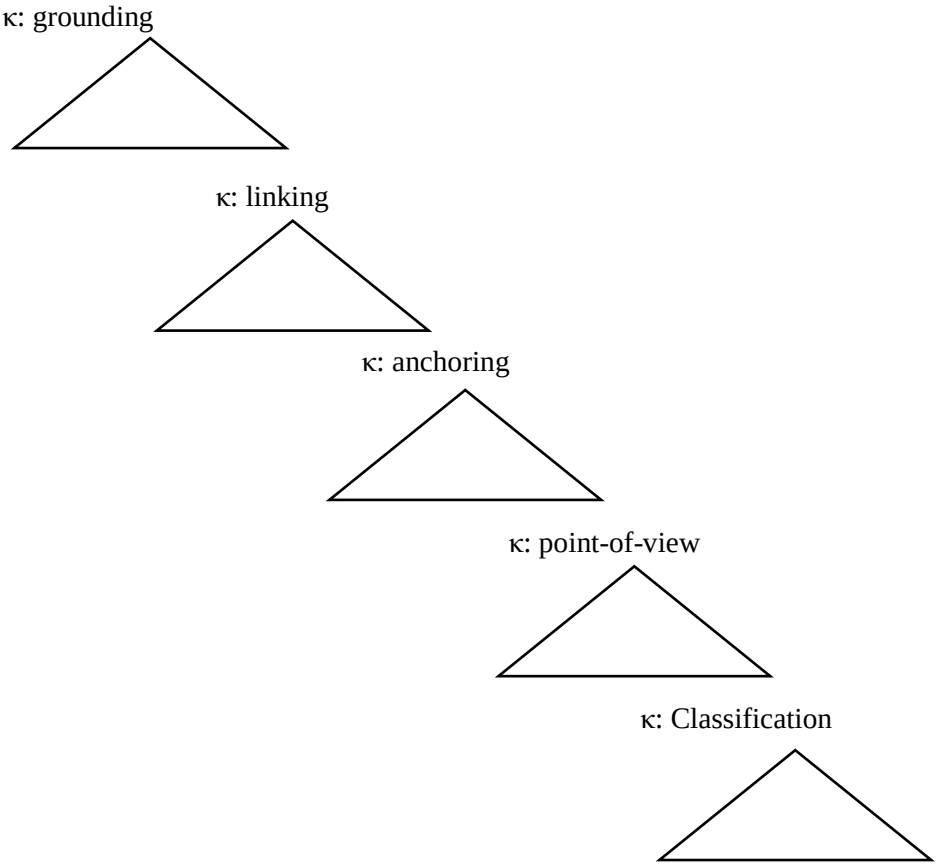
(26) A: You get an extra certain amount, ten pound a week, cos you're going through the job centre.
B: Mm.
A: But you got to have been out of work six months, so I said well I've been out of work six months, so she, I've got that to do tomorrow, so I get up the firm this Spinny Hill, Northampton, that's an adult education centre where you can go and learn the skills of your trade, but she said that might not not start until September on the course ***you see***?
B: Yeah.

(27) A: You can't get them back.
B: Erm, what else can I put there?
A: What?
B: We was at home having tea then what can I put?
A: No good on there, you told them off.
C: Walking from work.
B: Yeah but that that is the Sunday thing that's how I get muddled up with the date, but that's on the same tape ***you see***?
C: Yeah.

4 Theoretical Framework

In this paper, I adopt the Universal Spine Hypothesis (USP) proposed by Wiltschko (2014) to develop a formal analysis of *you see* in dialogic contexts. According to Wiltschko (2014) and Thoma (2016), the universal syntactic spine consists of a set of functional categories κ which are hierarchically organized. Each functional category κ is associated with an abstract grammatical function, including *linking, anchoring, introducing a point of view* and *classifying.* Moreover, it is claimed that form and meaning do not always follow one-one mapping, while USH is able to mediate the relation between form and meaning, suggesting different positions of a form result in different interpretations or functions through association with a given category κ (Wiltschko, 2014; Thoma, 2016). Therefore, Thoma (2016) further argued for an extended spine which accounts for the discourse concerning the relation between speech acts participants and their attitudes towards the host utterance. Hence, the universal syntactic spine is extended to include a *grounding layer* (known as GroundP) which occupies the higher position above CP and is responsible for encoding beliefs shared between S and A, as in (28).

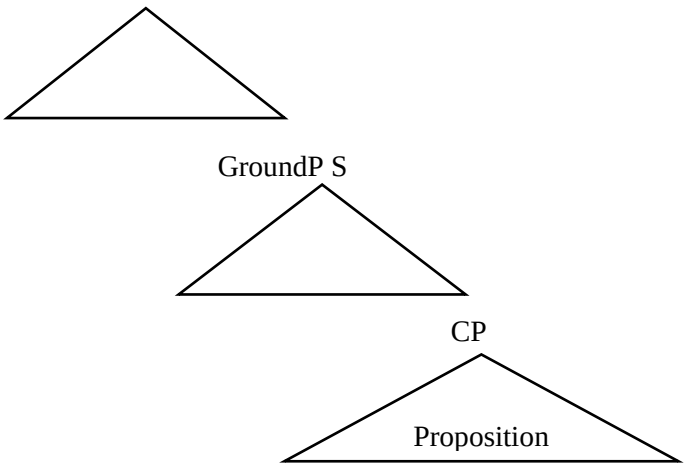
(28) Extended Universal Spine



(Thoma, 2016, p. 244)

More specifically, GroundP is further divided into individualized projections. A higher ranked position is called GroundP A, involving A's commitment towards p, and a lower positioned projection is referred to as GroundP S and is associated with S's belief, as in (29) (Thoma, 2016).

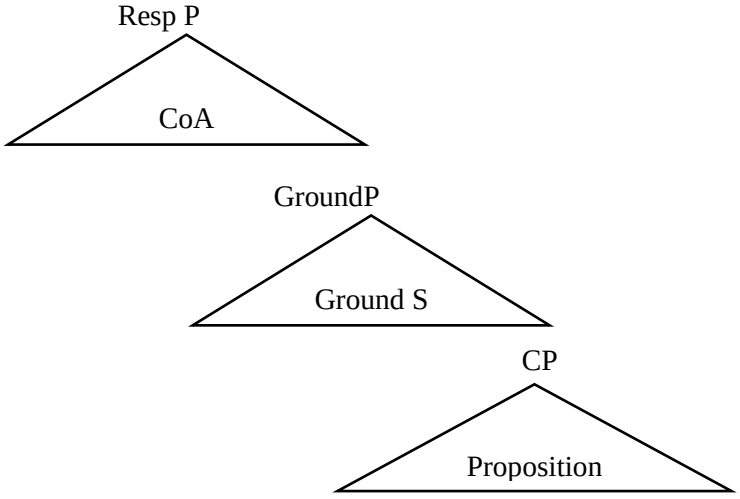
(29) GroundP is divided into GroundP S and GroundP A



(Thoma, 2016, p. 245)

Building on Thoma's (2016) extended spine, Heim and Wiltschko (2016) further proposed a functional architecture that consists of the interaction between S and A by extending the spine to include a layer that is projected higher than the *grounding layer*, which is known as the *responding layer*. The function of this layer is responsible for conveying what S wants A to do with the utterance. The functional SA structure is given in (30).

(30) Functional architecture of SA structure



(Wiltschko & Heim, 2016, p. 321)

Recall that the data section illustrates that *you see* as a discourse marker, indicating an interactive relationship between S and A. Based on Wiltschkos and

Heim's (2016) extended USH model, I assume that *you see* should be analyzed above the traditional clausal architecture since it does not contribute to the proposition formation. Thus, I assume that *you see* within the speech act structure is projected at the highest position, where the function associated with the highest functional structure involves *grounding* and *Call on the Addressee*. The analyses of each context where *you see* occurs within the USH framework are given below.

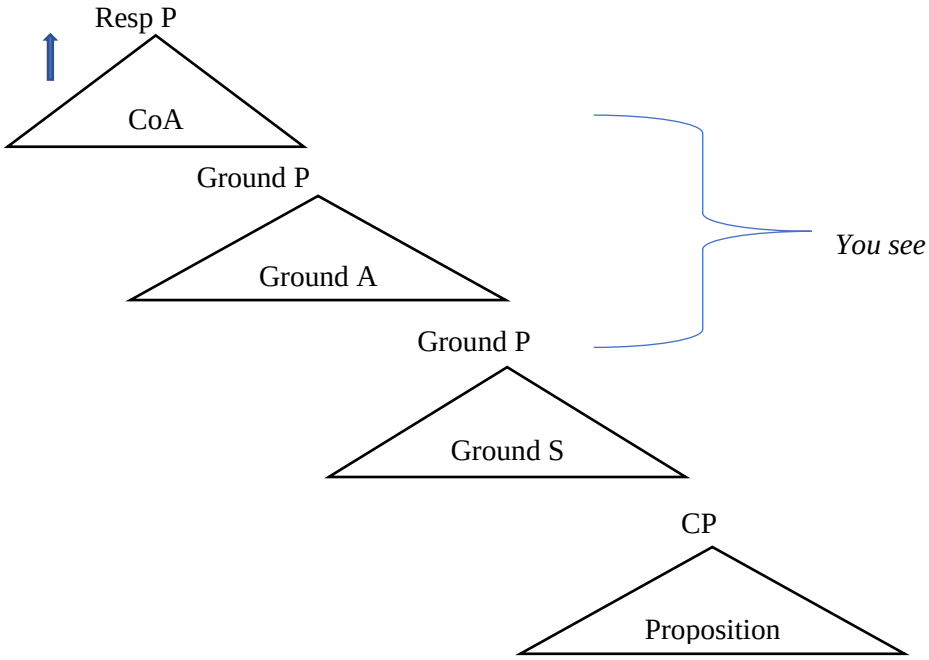
5 Analysis

5.1 Sentence-initial *you see*

As mentioned in 3.1, sentence initial position *you see* is associated with S' full commitment to p and his assumption that A would add p into her set of beliefs; therefore, *you see* functions to update (CG). S' certainty about the relation between A and p suggests that S is the source of the knowledge that A learns from. Thus, the function of demanding a confirmation corresponds to the desire that S expects A to perform an action in a particular way due to S's authority over A (Heim, 2019). It should be noted that phonological units co-occurring with *you see* play an important role in SA interaction. For example, in (31), a stress co-occurs with *you see*, which could be considered as a different function that requests a positive response from A. Hence, two functions including *grounding* and *responding* are shown with initial *you see*. I assume the use of *you see* is associated with *grounding layer* in the spine, where both GroundP S and GroundP A are activated. GroundP S contains S's propositional attitude, which is dominated by GroundP A that is corresponding to S's intention about what he wants A to do with p and A's recognition of S's belief. The highest-ranked *responding layer* is linked to a phonological component (either stress or intonation), requesting A to confirm that S's belief is shared by A, as in (32). Based on previous literature, initial *you see* relates to a more subjective meaning showing S's stance towards p, so it might be possible that it becomes less intersubjective in the absence of other phonological units (Haselow, 2012; Heim, 2019; Rozumko, 2019).

(31) A: ***You see***, if that didn't go, I'd say Gerry try it there, not don't do that, try it. Well you can't do that, and he'd do this like that!
B: I know! Yeah.

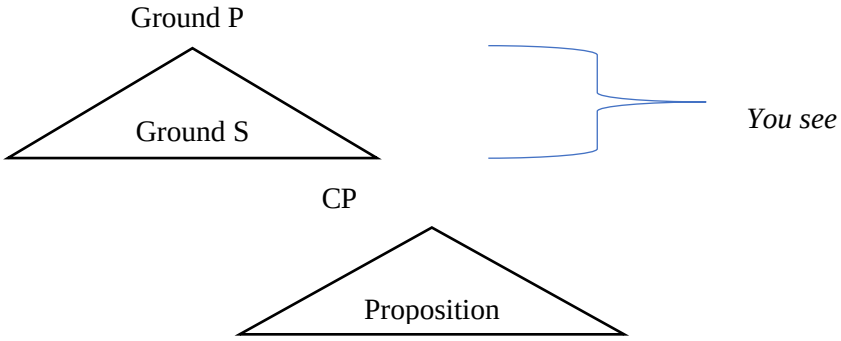
(32) Associating sentence-initial *you see* with the spine



5.2 Sentence-medial *you see*

Unlike the periphery positions of *you see*, the sentence medial variant is mainly concerned with the relation between S and p. From the data illustrated in section 3, although *you see* functions to trigger CG between S and A, there is no action taken by S to learn A's propositional attitude, showing the fact that whether S's belief is accepted by A is unknown. Similar to the study investigating the German particle *gell* (Heim, 2019), medial *you see* does not engage the receiver to the propositional content since a response from A to confirm S's belief is not required. Therefore, *you see* is only linked to GroundP S in the *grounding layer*, where S's propositional attitude is presented on the table, but it is impossible to know whether the A shares same belief as S.

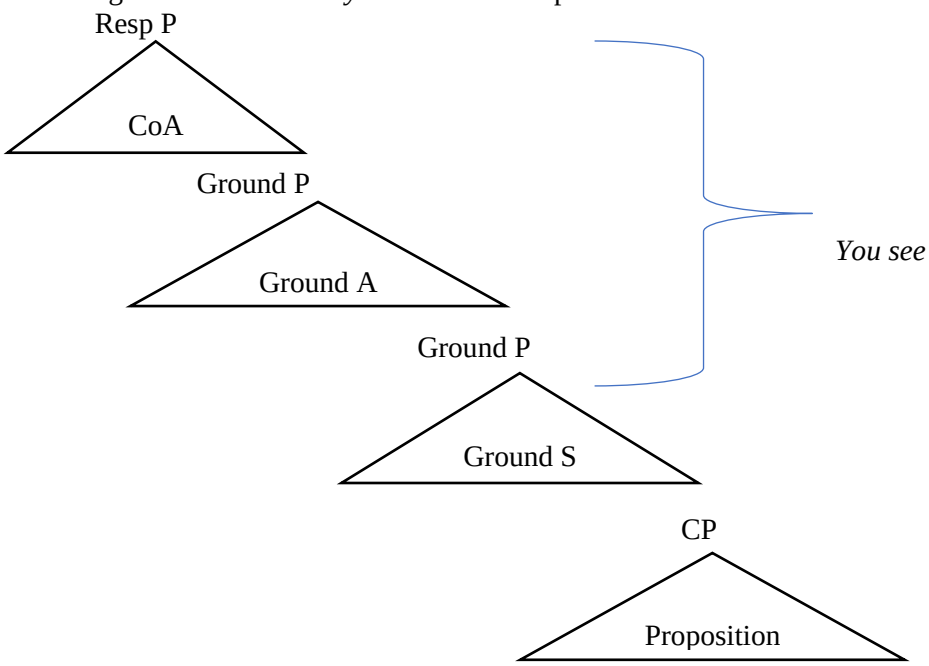
(33) Associating sentence-medial *you see* with the spine



5.3 Sentence-final *you see*

Similar to initial *you see*, sentence-final *you see* is also considered as an agreement seeker or a turn yielder (Erman, 1987). However, it can be seen as more intersubjective since it naturally marks an interactive relationship between S and A by eliciting a response from A independent of co-occurrences with other phonological units. With the use of the final variant, unlike initial *you see*, S is less certain about whether A views p in a similar way. Therefore, final *you see* serves as a confirmation seeker that requires A's response to confirm that A believes p. Therefore, in this context, *you see* is associated with both *responding* and *grounding* functions in the spine. The lower-ranked *grounding layer* includes two projections, with A's propositional attitude (GroundP A) ranked higher than the S's commitment to p (GroundP S), while the topmost *responding layer* is associated with the A's response showing agreement to S's belief.

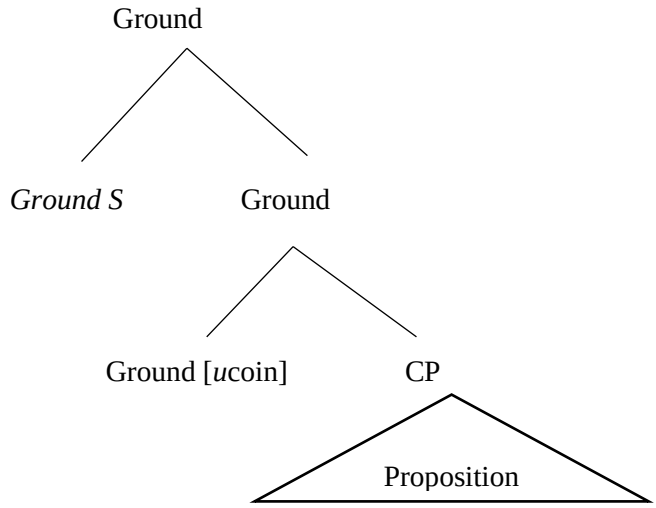
(34) Associating the sentence-final *you see* with the spine



5.4 Sentence-final *you see* following negation

The context of final *you see* can be further explored in a special case where *you see* at the end of a sentence follows negation. In this scenario, S and A would share no common knowledge, and S is certain that A would share a completely opposed view towards p as S is the only source of the truth condition of p. When *you see* occurs in the sentence-final position following negation, it indicates the contrast between the actual behaviour and the expected behaviour. As shown in the example of (21), the actual behaviour (teaching) contrasts with S's occupation (nurse). S assumes the knowledge regarding her real job as a nurse is not accessed by A but invites the hearer to accept this proposition by providing an explanation for the mismatched behaviours. Similar to *you see* in the medial position, where the A's propositional content plays a less important role, only the first layer GroundP is activated. This *grounding layer* is connected with encoding S's propositional attitude towards p. However, if we simply follow this analysis, the association with the spine would result in an identical syntactic structure with medial *you see*. In order to distinguish the negation context from the medial context, an unvalued coincidence feature [*u*coin] which establishes a relation between S's ground and its complement CP should be added to the speech act structure containing *grounding layer* (Wiltschko, 2018). The coincidence feature is concerned with whether two arguments coincide, which can be valued as positive or negative. GroundP S is placed in the specifier position of Ground P, while [*u*coin] associated with the Ground P is the sister to CP, as shown in (35).

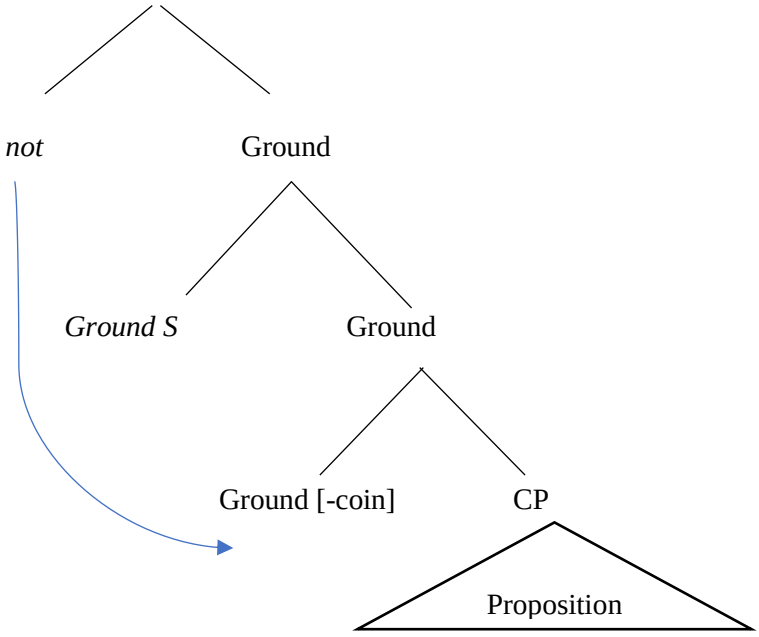
(35) Coincidence feature [*u*coin] in Ground



(Wiltschko, 2018, p. 25)

As mentioned earlier, when final *you see* follows negation, it shows a contradiction between two propositions; therefore, the negation *not* values [*u*coin] associated with Ground as [-coin], thereby illustrating that the behavior of teaching is not in S's set of beliefs, as shown in (36).

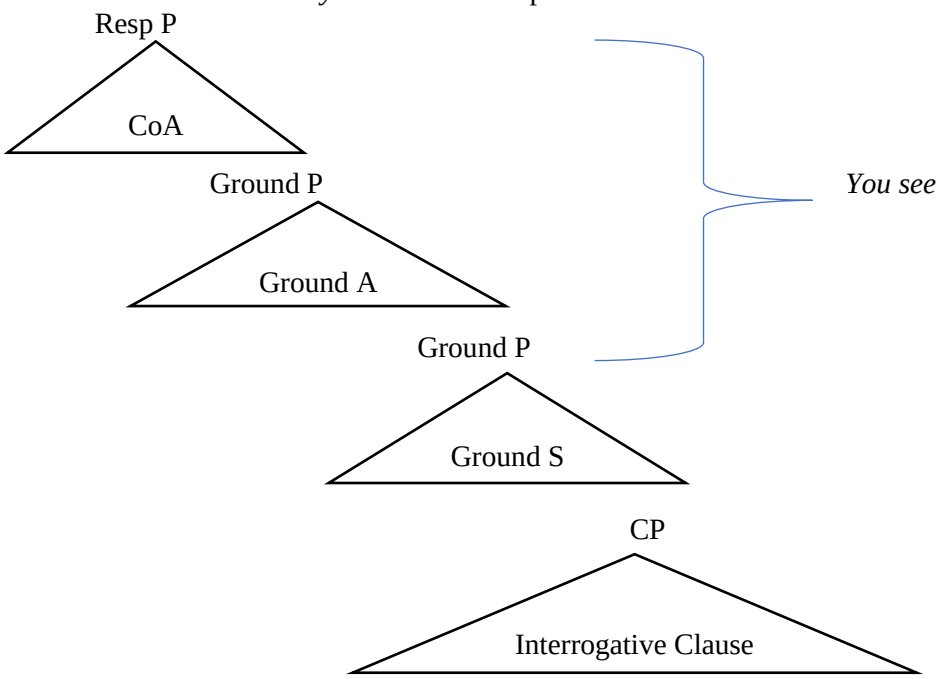
(36) Coincidence feature [*u*coin] in Ground



5.5 *you see* in interrogative clauses

The function of confirming whether p is added in A's ground becomes more evident when *you see* is employed in interrogative clauses. It is expected to draw A's attention to p by checking whether the belief assumed to be shared is added to A's set of beliefs. Here, *you see* is associated with both *grounding layer* and *responding layer*, thereby asserting that p is in A's ground and asking A to confirm that she accepts the belief in knowing the truth condition of p, as shown in (37).

(37) Associate the sentence-final *you see* with the spine



6 Conclusion

This study investigated the distribution and the response behavior of English discourse marker *you see* in dialogical contexts. It has shown that *you see* can occur at sentence-initial, medial, and final positions in declarative clauses. When *you see* is placed sentence-finally, it can follow negation or occur in interrogative clauses.

The primary function of *you see* is to manage common ground regardless of its positions; however, the difference in distribution reflects the notion and degree of intersubjectivity. In particular, the different syntactic environments of *you see* are associated with the degree to which addressees are involved in the conversation. Sentence-medial *you see* serves to check mutual knowledge without requiring a response from the addressee. Both types of sentence-peripheral *you see* serves to seek agreement, but it seems that initial *you see* has to cooccur with another phonological element such as a rising intonation or a stress to yield a responding function.

The data has been further analyzed following the USH framework (Wiltschko, 2014), where *you see* encodes the interaction between S and A is projected at the highest position within a sentence. Two functions are involved with the use of *you see*, namely *grounding* and *responding*. (Wiltschko & Heim, 2016). The analysis has shown that sentence-initial *you see* occurring with a phonological unit are linked to different layers in the spine, with you see associated with the *grounding layer* involving both S and A's commitment to p and the intonation or stress associated with the *responding layer*. Sentence-final *you see* is

associated with both *grounding* and *responding layers* independent of phonological units, which naturally calls the addressee to provide a positive response to p. *You see* in medial and negation contexts is less related to A's propositional attitude, so it solely plays a role in accessing to S's ground. More specifically, for the negation context, the negative coincidence feature indicates a contrast between two arguments uttered by S.

The current study mainly focused on the illocutionary force of *asking* and *assertion* (Lam, 2014) of *you see* in declarative and interrogative clauses, so the future study can investigate the functions of *you see* in other clause types including exclamative and imperative clauses. It is anticipated that *you see* is compatible with exclamative clauses like (38) but impossible with imperative clauses like (39).

(38) A: What a beautiful weather, you see!
B: Yeah.

(39) * y*ou see* in imperative clause
Wash the dishes, *you see*.

In some cases, sentence-final *you see* seems to be more or less equivalent to a tag question which turns a statement into a question and is often used to ask for confirmation (I may be wrong). It is proposed that both sentence-final *you se*e and tag questions function to express how S's stance is represented in A's stance, as shown in (40) and (41).

(40) A: The weather is beautiful, you see.
B: Yeah.

(41) A: The weather is beautiful, isn't?
B: Yeah.

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Condition C violations in Thai and St'át'imcets

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This paper aims to look at the relationship between different types of noun phrases in sentence structure. It focuses on Binding Theory, specifically, by outlining apparent Condition C violations found in both Thai and St'át'imcets. It presents examples of the apparent violations and consolidates restrictions found in previous literature on when these violations can occur. The violations in the two languages are compared and Dechaine and Wiltscko's (2002) pro-PhiP theory is used to account for both violations. Through applying this theory to the St'át'imcets violations, numerous issues are found and presented.
Keywords: Syntax; binding theory; condition c; pro-phiP

1 Introduction

In this paper I present grammatical Condition C violations in two languages, Thai and St'át'imcets. By reviewing key literature on this topic, I outline the restrictions on when Condition C violations can occur for each language and compare them. I then present Dechaine and Wiltschko's (2002) theory of a pro-PhiP, review how Larson (2005) has used this theory to explain the Condition C violations found in Thai and look at how this argument applies to the violations in St'át'imcets. Based on this, I explore core issues with the theory and sketch an outline for how to account for these inconsistencies. I conclude with the premise that Condition C is functional in both languages and while the pro-PhiP theory may superficially account for the Condition C violations found, it leaves many problems unexplained and therefore is not a complete analysis.

2 Background

In 1981 Chomsky proposed Binding Theory which accounts for the distribution of three types of NPs- anaphors (*herself, themselves, etc*.) pronouns (*he, they, etc.)* and R-expressions (*Sarah, London, etc.*). He showed how these Noun Phrases (NPs) are sensitive to different binding domains and proposed three principles for this. One of these principles, Condition C, states that R-expressions must be completely free; they cannot be bound like pronouns and anaphors. This means an R-expression cannot be coindexed and c-commanded by an antecedent. This is evident in (1) where the R-expression *Haley* cannot be bound by the pronoun *she*; an example of an ungrammatical Condition C violation.

(1) *She$_i$ wanted to dance with Haley$_i$

The languages studied in this paper, Thai and St'át'imcets, were chosen as though they are both Condition C violating languages, they are very different languages structurally and historically. While Thai is the primary language in the country of Thailand, St'át'imcets is an Indigenous language in Southwestern British Columbia. St'át'imcets is an endangered language with an estimated 300 speakers (Census Canada, 2016).

3 Thai Condition C Violations and Restrictions

There have been a growing number of documented languages that exhibit permissible Condition C violations. This challenges the idea of a universal Binding Theory and suggests Condition C is not robust cross-linguistically. One of the first languages reported to exhibit these violations was Thai (Lasnik, 1989). In Thai, R-expressions can be bound in many domains. This is demonstrated in (2), where the R-expression *nɔ̀yi* 'Noi' can be bound by the identical R-expression *nɔ̀yi* 'Noi'.

(2) nɔ̀yi$_i$ khít wâa nɔ̀yi$_i$ càʔ chanáʔ
Noi think that Noi will win
'Noi$_i$ thinks that she$_i$ will win' (Deen & Timyam, 2018)

Thai does, however, maintain certain restrictions on grammatical Condition C violations. First of all, Thai R-expressions cannot be bound by pronouns or anaphors as shown in (3) where khaw 'he' cannot bind John.

(3) *Khaw$_i$ chɔɔp John$_i$
he likes John
'*He$_i$ likes John$_i$' (Lasnik, 1991)

Secondly, an R-expression in Thai cannot be bound by a different definite R-expression. This was proposed to be due to an exact-copy condition (Lee, 2003). Accordingly, the Condition C violations are only permissible when the bound variable is an exact copy of its antecedent, as seen in (2). However, Larson (2005) claims that this condition is insufficient; she presents cases where only part of the R-expression is copied. For example, in (4), only *aajan* 'teacher' is copied in the bound R-expression, not the entire R-expression *aajan Sid* 'teacher Sid'.

(4) Aajan Sid$_i$ bɔɔk waa aajan$_i$ mâi waang phrungnii
Teacher Sid tell COMP[1] *teacher not free tomorrow*
'Teacher Sid$_i$ said that he$_i$ isn't free tomorrow' (Larson, 2005)

[1] The following abbreviations are used in this paper: CAUS = causative (neutral) transitivizer, COMP = complementizer, DET = determiner, ERG = ergative (transitive) subject, IMPF = imperfective auxiliary, MID = middle intransitivizer, NOM = nominalizer, PART = particle, POSS = possessive, RED = redirective (applicative) transitivizer.

As Thai is a head initial language, Larson accounts for this by posing a Head Constraint which states that minimally, the antecedent head must be copied in the bound R-expression. She demonstrates that the complement alone cannot be copied by providing examples such as (5) where it is ungrammatical for the bound R-expression to copy only the name *Sid* when it is the complement in the antecedent R-expression.

(5) *Aajan Sid$_i$ bɔɔk waa Sid$_i$ mâi waang phrungnii
Teacher Sid tell COMP Sid not free tomorrow
'Teacher Sid$_i$ said that he$_i$ isn't free tomorrow' (Larson, 2005)

4 St'át'imcets Condition C Violations and Restrictions

St'át'imcets also exhibits Condition C violations that are restricted to specific environments (Davis, 2009). An example of a Condition C violation in St'át'imcets is shown in (6), where *John* is bound by *snilh* 'he'.

(6) Tsúkw=t'u7 snilh$_i$ wa7 xát'-min'-as
finish=PART s/he IMPF want-RED-3ERG
kw=a=s nas ts'úqwaz'-am kw=s=John$_i$
DET=(NOM)IMPF+ 3POSS go fish-MID DET=NOM=John
'Only he$_i$ wants that John$_i$ goes fishing' (Davis, 2009)

The restrictions in St'át'imcets that limit violations of Condition C are as follows: First, Condition C violations only occur across clause boundaries, meaning the two coindexed elements must be separated by a clause boundary. We can see this in (7) where there is only one clause and therefore Condition C cannot be violated ('He loves John' cannot mean 'John loves himself').

(7) Wa7 xwey-s- -ás kw=s=John
IMPF love-CAUS-3ERG DET=NOM=John
'S/he loves John' (Davis, 2009)

The second restriction on Condition C violations states that the c-commanding element (the antecedent) must always be a pronoun. Davis (2009) also found additional constraints relating to bound variable anaphora when there are multiple possible referents available that are not relevant for the scope of this paper but worth noting.

5 Comparing Thai and St'át'imcets Violations

As Condition C violations in both Thai and St'át'imcets are highly restricted and systematic, we can conclude that both languages do have an operational Condition C in their language. Interestingly, Thai and St'át'imcets exhibit certain similarities in terms of their Condition C violations. Both languages show robust strong

crossover effects in long distance wh-movement, meaning that wh-traces cannot be A-bound either locally or non-locally. A St'át'imcets example of this is displayed in (8) where the wh-trace *swat* 'who' cannot be bound by *pro.* Thai demonstrates the same phenomenon in (9) where *khray* 'who' cannot be bound by *khaw* 'he'.

(8) Swat$_i$ ku=s-kw7íkwlacw-s pro$_i$ [kw=s=cuz' melyíh e kalál]?
who DET=NOM-dream-3POSS [DET=NOM=going.to marry soon
'*Who$_i$ did s/he$_i$ dream [*e* was going to get married soon]?' (Davis, 2009)

(9) *Khray$_i$ thii khaw$_i$ khit t$_i$ waa Nit rak t$_i$
who COMP he think COMP Nit love
'*Who$_i$ does he$_i$ think Nit loves?' (Lee, 2003)

It has also been proposed that both languages have a restriction on Condition C in terms of locality. As noted previously, St'át'imcets cannot demonstrate a grammatical Condition C violation within one clause. Similarly, Larson (2005) states that in Thai, the R-expression cannot be locally bound, as shown in (10).

(10) *Sak$_i$ dti Sak$_i$
Sak hit Sak
'Sak$_i$ hit himself$_i$' (Larson, 2005)

However, Larson's claim is contradictory to evidence provided by Lee (2003) where (11) is grammatical even though the R-expression is bound locally.

(11) John$_i$ konnaud John$_i$
John shaved John
'John$_i$ shaved himself$_i$' (Lee, 2003)

This suggests either one of their examples is inaccurate or something other than a locality constraint, perhaps a difference in verb class or a pragmatic effect, accounts for this contrast.

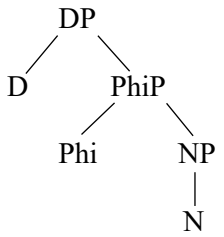
Thai and St'át'imcets also have differences in their Condition C violations. The primary difference being that in Thai, a pronoun cannot bind an R-expression whereas in St'át'imcets this is the only way Condition C violations can occur. The Most Dependent Hierarchy is a ranking which states that anaphors are the most dependent, R-expressions are the least and pronouns are in between the two (anaphor > pronoun > R-expression) (Safir, 2004). This means that St'át'imcets violates the Most Dependent Hierarchy whereas Thai does not. This idea of a binding hierarchy has been used to account for the restrictions in the Thai

violations as an R-expression is never dependent on a pronoun, so it has been argued that the hierarchy is not violated (Larson, 2005). This is not true of the St'át'imcets restrictions. This hierarchy also does not explain why a Thai R-expression cannot be bound by a different R-expression antecedent; it can not fully account for the Thai data. Throughout my research I found the only explanation that seemed to successfully account for the Thai violations analyzes the structure of nominals (Larson, 2005). This also aligns with Chomsky's recommendation of analyzing Condition C violations by looking at the how the pronoun is constructed (personal communication, April 1, 2021).

6 Pro-PhiP Theory

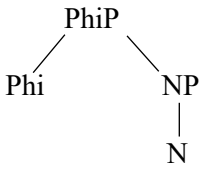
Using Dechaine and Wiltschko's (2002) argument for three different types of pronouns, Larson (2005) proposed this explanation to account for Condition C in Thai. I refer to this argument as the Pro-PhiP Theory. Dechaine and Wiltschko (2002) propose that pronouns are determined morphosyntactically and that the three types of pronouns each have a distinct structure. The first pronoun, referred to as pro-DP, is claimed to be the most syntactically complex of the three, functioning as an R-expression and containing PhiP (ΦP) and NP as subconstituents, as shown in (12).

(12)



The second pronoun, pro-PhiP, is represented in (13). These pronouns only contain Phi- features (number, gender and person). They can function either as predicates or arguments but they do not act as full DPs.

(13)



The third pronoun is a pro-NP, shown in (14). They have the same syntax as a lexical noun and are the simplest structurally, functioning as predicates only.

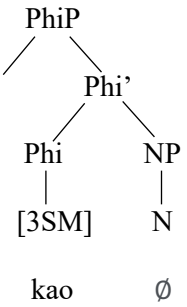
(14)

Dechaine and Wiltschko (2002) claim that only pro-DP is visible to Condition C whereas pro-PhiP and pro-NP are not. Following this theory, the Most Dependent Hierarchy can be restated as: pro-NP > pro-PhiP > pro-DP.

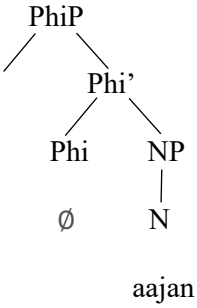
6.1 Applying Pro-PhiP Theory to Thai Condition C Violations

Larson (2005) proposed that the bound R-expressions in Thai are not DPs but pro-PhiPs and the antecedent R-expressions are pro-DPs. For the bound pro-PhiP to gain its features from the antecedent, the antecedent is first spelled out as a pro-DP; it can then license the bound pro-PhiP. At this point, according to Larson (2005), Spell-Out occurs of the pro-PhiP. There are two options for Spell-Out: it can be just of the Phi features or it can be only of the noun. If Spell-Out is just of the Phi features, a bound pronoun surfaces. If it is of the noun, the copy of the antecedent's head surfaces. This is seen in the trees below where *kao* 'he' surfaces in (15) but *aajan* 'teacher' surfaces in (16).

(15)



(16)



Larson (2005) did not thoroughly explain why sometimes the noun will be spelled out and other times the Phi will be. She stated that a speaker can alternate between the two forms of pro-PhiP, suggesting this may be due to pragmatics. I found this to be an unsatisfying explanation for why one variant would be selected

over the other. This is the main gap in applying the Pro-PhiP analysis to Thai. However, this analysis does account for the Thai data which is why I wanted to explore it further in St'át'imcets.

6.2 Applying Pro-PhiP theory to St'át'imcets Condition C Violations

Davis's (2009) proposal for St'át'imcets' failure to demonstrate Condition C effects focuses on a parameterization of Safir's (2004) Independence Principle. This principle states that a dependent pronoun cannot c-command its antecedent. Davis's (2009) parameterization of this principle is highly language specific which aligns with his conclusion that binding domains should be assessed on a language-specific basis. This conclusion directly opposes the universality of Binding Theory. When asked about this idea of assessing Binding Theory on a language specific basis, Chomsky stated that this does not tell us anything as, despite any distinction in the language itself, we are still left with universal principles (personal communication, April 1, 2021). For this reason, I aimed to find another way to account for the St'át'imcets Condition C violations.

Applying Pro-PhiP theory to the previous St'át'imcets example (6) would mean that *snilh* 'he' would be a pro-DP whereas *John* would be a pro-PhiP.

(6)	Tsúkw=t'u7	snilh$_i$	wa7	xát'-min'-as
	finish=PART	*s/he*	*IMPF*	*want-RED-3ERG*
	kw=a=s	nas	ts'úqwaz'-am	kw=s=John$_i$
	DET=(NOM)IMPF+ 3POSS	*go*	*fish-MID*	*DET=NOM=John*
	'Only he$_i$ wants that John$_i$ goes fishing'			(Davis, 2009)

This would explain why *John* is bound and invisible to Condition C. This would also resolve St'át'imcets' violations of the Most Dependent Hierarchy. For this to work, the bound pro-PhiP would pick up Phi features from its antecedent, the pro-DP, exactly as in the Thai examples where the pro-PhiP is spelled out like an R-expression. However, assuming that this is correct, there is no explanation for how an R-expression's phonetic form could surface if it is receiving all its features from a pronoun. In Thai, the R-expression could surface as the same form as its antecedent. This is not the case in St'át'imcets, however, as it does not have the same Head Constraint. To account for this, one possibility parallels Larson's (2005) idea of two options for pro-PhiP structures in Thai. St'át'imcets could have two possible pro-DP structures, one where the Phi head is spelled out and a pronoun surfaces, the other where the NP head is spelled out and the R-expression surfaces. This would mean that even if the pro-DP antecedent surfaces as a pronoun, there is still the structure of an R-expression for the bound pro-PhiP to "copy". This would account for why an R-expression can surface when it is bound by a pronoun. However, this is just a proposal and it would require further research to determine if it is a fruitful claim.

Another discrepancy in applying this theory to St'át'imcets is it does not explain why an R-expression cannot be bound by another R-expression. If all R-

expressions were pro-PhiP's in St'át'imcets then this would be logical as only a pro-DP can bind other variables. However, as shown (17), where the pronoun *snilh* 'she' can be bound to the R-expression *Mary*, R-expressions in St'át'imcets can be pro-DPs as they can bind pronouns in non-condition C violating sentences.

(17)	Tsút=tu7	s=Mary$_i$	[kw=s=cuz'	snilh$_i$	nas
	say=then	*NOM=Mary*	*[DET=NOM=going.to*	*she*	*go*
	ts'úqwaz'-am	natcw			
	fish-MID	*tomorrow*			

'Mary$_i$ said she$_i$ was going fishing tomorrow' (Davis, 2009)

This could be resolved by simply stating that all bound variables in St'át'imcets are pro-PhiPs, but then we are left with the question of why Condition C violations only occur across clause boundaries. Though this theory has accounted for how Condition C violations occur, it has dismissed the uniqueness of these violations; if all bound variables are pro-PhiPs why would only those that violate Condition C have such specific restrictions?

7 Discussion

Looking at the Thai and St'át'imcets examples where Condition C has been thought to be absent, we can determine that Condition C is in fact present in the language. This question then becomes not whether Condition C exists in the language, but what is allowing for the apparent violations. To begin to answer this question I looked at the violations under the lens of pro-PhiP theory. I found that despite accounting for the data and allowing modification of the Most Dependent Hierarchy, it was still not a comprehensive enough. The theory could not account for the specific restrictions on the binding of R-expressions, especially those in St'át'imcets. Additionally, I had to propose two possible pro-DP structures to account for how a pro-PhiP R-expression could surface despite the antecedent being a pro-DP pronoun. Another large gap in the analysis, for both languages, was determining when and why each type of pronoun would occur and, when there are two possible structures, how a speaker alternates between the two variants. As a result, further research is needed to address these questions about pro-PhiP theory.

Another option that could be explored for analyzing these violations would be to look at them from the view of phase theory. Phase theory (Chomsky, 2008) outlines how the syntactic derivation is constructed and sent off for interpretation in phases that once sent become inaccessible. Chomsky (2008) mentions looking at Condition C as a probe-goal (agreement) relation within phase structure. However, there is minimal research on Condition C specifically in relation to phase theory and there is a lack of research on how grammatical Condition C violations could occur under phase theory. With the phase impenetrability condition perhaps a phase including the antecedent is sent to Spell-Out first and then the bound variable is somehow invisible to Spell-Out, allowing it to violate Condition C. This is just a rough outline of how these violations may connect to phase theory. To

fully investigate this theory, it would also be important to see at what stage of the derivation Condition C applies, another topic disputed in the literature.

8 Conclusion

The evidence presented in this paper has confirmed findings that Condition C is present in languages that exhibit apparent Condition C violations. It has also shown that Condition C violations are highly restricted and that Thai and St'át'imcets, two structurally very different languages, show similarities in their limitations on violating Condition C. This was demonstrated in the strong crossover effect examples. We also saw how the Pro-PhiP theory could account for the data in both languages if pro-DP was adapted to have two variants for Spell-Out in St'át'imcets. However, through analyzing this data, shortcomings arose which provoked further question about the validity of this theory. In conclusion, assessing Condition C violations on a language-specific basis challenges the universality of Binding Theory and makes it necessary to analyze pronoun structure and other syntactic structures in the language that may account for these violations.

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A case study of *we* for speaker affiliation in a one-on-one writing conference talk[1]

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This research study attempts to qualitatively investigate the indexically situated functions of one person deixis in English, *we*, vis-à-vis the establishment of speaker roles, voices, and affiliations in a one-on-one writing conference talk (WCT). By appropriating the analytic model of speaker roles and voicing in *narratives*—narrator, character, and interlocutor (e.g., Koven, 2011, 2016)—informed by Bakhtinian view grounded in dialogic notion of voice (Prior, 2001), this research study furthers the discussion of how co-participation in and of a one-on-one WCT itself is tethered to the deployment of *we* that *is* and *becomes* heteroglossic. The participants' voicing and their speaker roles illuminated through a grounded and narrative methodology adopted in this study offer a radical alternative to structuralist, systematized notions of fixed form-referentiality typologies of English person-deictics. What is discovered in the study regarding the indexical meanings of *we* include: heuristics for evaluation and suggestions, device for the bridging of epistemic asymmetry, apparatus for time-travel, and proposal of hypothetical scenarios. Thus, the one-dimensional, structuralist view of an indexical linguistic sign engaged in a complex writing conference interactional talk belies a more complicated, re-occurring *narrativization* (Wortham, 2001) that permits co-participants therein to straddle past, current, and hypothetical expressions of trains of thoughts, engagements, and identities through the intertextuality of *we* and its indexical traces. This research study concludes by discussing theoretical considerations and implications specifically for WCTs and globally for writing studies scholarship.
Keywords: Writing conference talk; dyadic interaction; voicing and speaker roles; identity co-construction

1 Introduction

Researchers have used interactional talk, or talk-in-interaction (Schegloff, 1972), to scrutinize how interlocutors semiotically use linguistic resources to perform (e.g., Austin, 1975; Bauman & Briggs, 1990) a wide array of indexical and

[1] The writing conference talk examined in this article took place in a format of one-on-one writing conference exchange between a graduate teaching assistant and a student. While the configuration of the talk is quite commonplace, the interaction between the interlocutors is premised to be unique. More details are available in the main manuscript.

referential functions and to respond to dialogical uptake for value-attribution (e.g., Blommaert, 2005; Gal & Irvine, 2019). Among variegated forms of interactional talk is that of WCT, in which its prototype involves the initiated talk through the writing (or the text) of the uninitiated—proffering comments and articulating feedback within the discourse of writing conference interaction. Pedagogical benefits of delivering the WCT entail the opportunity to verbalize expressions that can be otherwise equivocal when presented merely textually and the avenue for the less experienced tutee to internalize the verbalized knowledge of writing so as to become an autonomous writer.

Previously established scholarship on WCT primarily explores the ways in which turn-taking roles deterministically influence participants' roles and conference types. However, there is a paucity of literature that assays how indexical signs, in particular person deixis or pronouns (e.g., you in English), are strategically deployed to enact functional roles of delivering criticisms and commentaries, establishing (dis)affiliation, brainstorming ideas, and/or constructing footing (Goffman, 1981). Therefore, this research study aims to extend the current scholarship on the WCT by answering the following questions: (1) what indexical functions of the English pronoun, we, emerge in a WCT; (2) how speakers in a WCT use the English pronoun, we, to enact different speaker voices, roles (Bakhtin, 1981; Koven, 2011), and identities; (3) how the resultant interactional pattern helps facilitate the WCT participants' one-on-one writing conference agenda. Results of this research study reveal that not only are the indexical meanings of we variegated but they are also closely connected to interlocutors' emerging interaction.

2 Literature Review

Language as part of the semiotic and sign system (Agha, 2007; Blommaert, 2005; Hanks, 1992; Peirce, 1955; Prior & Hengst, 2010; Silverstein, 1976) is a critical staple in linguistic anthropology. Semiotic and sign systems, like pronouns, highlight how speech events are configured, contextualized, and grounded by sign-using participants (Agha, 2007; Gal & Irvine, 2019; Silverstein, 1976). Multifunctional semiotic resources operationalize to potentially (re)fashion reality and engage in reflexive and metasemiotic meaning-making (Agha, 2007; Gal & Irvine, 2019). Whether consciously or unconsciously, participants in interaction employ these resources to index positionality. Bauman and Briggs (1990) advocate for the understanding of "heterogeneous stylistic resources, context-sensitive meanings, and conflicting ideologies into a reflexive arena where they can be examined critically" (p.60).

In the English language, person deictics (Ingram, 1971) enable interactional actors' negotiations of speaker alignment (Koven, 2016). Ingram (1971) argues: "[d]eictic features handle the fact that language is used to communicate between speakers and hearers" (p.38). More specifically, Ingram (1971) distinguishes the deictic person from the syntactic person, positioning the former as socially-dependent (e.g., indexing the power dynamics between speakers) and the latter as

upholding grammatical constraints (e.g., the agreement between the predicate and the subject). Ingram's separation of the syntactically-motivated person deictic and the semiotically-loaded deictic person points to an interactionally-motivated understanding of how person pronouns satisfy more than just grammatical requirements. Further, a keen analysis of the person deixis fruitfully provides a lens into not only how speakers negotiate socially-interactant roles in the speech event (Levinson, 1979, p.67) but also how speakers respond to larger discourse-based identification and ideological manifestation. Succinctly put, person deictics provide speakers with information on a broader historical and cultural context and relation. For instance, Morford (1997) examines the French second-person singular pronominal address forms: *tu*/*vous*, an intricate addressing system in French that not only serves as a communicative tool but also "a sign of the resilience of French in the face of anglophone hegemony" (p.4). The *tu*/*vous* distinction, along with the increasing currency of *tu* in replacement of *vous* in certain contexts, indexes not only the broader history of French pronominal address system but also the ideologically mediated and enacted social relations. For example, the more common usage of *tu* taken up by the young (p.20) insinuates youthfulness, open-mindedness (p.20), and progressive democratic ideals (p.24). Antithetical to *tu*, *vous* is deployed indexically to valorize asymmetrical social relations (pp.27-28). Indexical meanings encoded in the pronominal address *tu* and *vous* ground the grammar of the French language in social, historical, cultural, and political context, a tethering that demonstrates how "more contextually dependent forms of meaning (the indexical or "pragmatic" level) interact with less contextual, more conventional kinds of meaning (the symbolic or semantic level, focused more on language content than on form)" (Mertz, 2007, p.339).

Another telling example of how person deictic could unearth regimes of institutionalization and ideological beliefs therein can be found in Mulderrig's (2012) study, in which the person deixis *we* is found to textually function as a rhetorical instrument in the discourse of U.K. education policy-making to express neoliberal and political coalition in education. Mulderrig (2012) argues that the semantically-encoded and -ambivalent *we* is strategically leveraged for the legitimization of the educational policies by the government and the exhortation of curricular changes in response to neoliberal imperatives under the galvanization of globally-scaled economic competition and (inter)national community identities. This is done so as to arrive at the "neoliberal consensus" (Mulderrig, 2012, p.704), whereby marketization and free market economics co-exist harmoniously with the agenda of social justice and democracy.

Per the illocutionary force of the first-person plural deixis that concerns intentions of speech acts (Austin, 1975), *we*, in the modern English language, it is not only "referentially complex" (Mulderrig, 2012, p.708) but also highly contingent upon the context of utterance in order for exact connotational meanings to be aligned with speakers' position. *We* has been primarily conjectured to bifurcate the referential role played by addressees, to wit, the *we-exclusive* and the *we-inclusive* model, as well as the participatory demarcation discursively set up by interacting participants. Mulderrig (2012) reviews that the *we-exclusive* stance is

often deployed when speakers (or addressors) need to avoid contextually-infelicitous or -unnecessary reference to addressees and mitigate the seriousness of the matter at issue. The *we-inclusive* is often used to establish in-groupness, shared allegiance, solidarity, and inclusion. However, Mulderrig (2012) formulates that the referential scope of the first-person plural deictic could also connotate a sense of equivocality, thus strategically democratizing the public discourse of policy-making.

Voicing and voiced roles have been accorded with centrality when it comes to analyzing situated semiotic practices in oral narration wherein interpersonal relations, and therefore identities, are emergently co-constructed and displayed "by semiotic activities performed by both" (Agha, 2007, p.253). Koven (2011) codes three main speaker role in oral narratives: narrator, character, and interlocutor. A narrator role, according to Koven, (2011), is embodied when the speaker connects the narrated event "to the current event of speaking" (p.154) and can be identified via multiple means, such as that of the verb tense or that of place-and-time deictics. A character role is performed when speakers or narrators deploy quoted speeches to retell the story by appropriating voices and perspectives of characters within the story and by re-enacting moments of the narrative (Koven, 2011, 2016). An interlocutor role involves speakers' here-and-now evaluation of the narrated event (Dunn, 2017, p.67), and Koven (2011) notes that an interlocutor role can be pinpointed by discourse forms, such as topical markers (p.156) or a shift in the verb tense used (e.g., using the present to address the past event) (p.156). Bamberg (2004, as cited in Dunn, 2017, p.67) adds another role by suggesting a narrated *self* vis-à-vis larger-scaled operative discourses (p.335, as cited in Dunn, 2017, p.67), and this fashioning of selfhood in relation to variegated, stratifying social, historical, or political structures permits a critical reflectivity that invites the (re)positioning of subjectivities and intersubjectivities in the matrix of social movement (Bamberg, 2010, as cited in Dunn, 2017, p.68). The foregoing brief account of the typology of different speaker roles does not insinuate that voicing characters are invariably singularly voiced. In fact, Bakhtin's (1981) heteroglossia in the discourse of narratives clearly indicates that speakers' voices are multiple. Bakhtin (1981) notes that "[t]he word in languages is half someone else's…Language is not a neutral medium that passes freely and easily into the private property of the speaker's intentions, it is populated—overpopulated—with the intentions of others." (pp.293-294). The inhabitation of voicing and voiced characters also parallels the same underpinning philosophy accordingly.

The WCT is traditionally researched through the number of turns taken up by participants for the determination of the typology of writing conferences (e.g., student-centered, teacher-centered, or collaborative model; see also in Calkins, 1986; Patthey-Chavez & Ferris, 1997; Reigstad, 1982; Sperling, 1990; Walker & Elias, 1987). Recent scholarship on the WCT orients towards emergent interactions, with a particular focus on students' agency (e.g., Alexander, 2006; Hawkins, 2016, 2019; Leaner, 2005; Park, 2017; Strauss & Xiang, 2006; Waring, 2005) as well as the moment-to-moment interaction (e.g., Shvidko, 2018). However, little research is undertaken to qualitatively theorize how participants

through the WCT use person deictics to facilitate textually and verbally mediated talks. Thus, this current study aims to establish and postulate that the WCT is a type of a narrative facilitated by the use of person deictics by tutors and tutees to semiotically position their speaker roles and voices. By drawing on the analytic model of speaker roles and voicing in *narratives*, this research illuminates the ways in which the modality of a WCT becomes a linguistically-rich and -mediated location where one person deixis is observed to facilitate the process of decontextualization and recontextualization (Bauman & Briggs, 1990; Blommaert, 2005; Silverstein & Urban, 1996) of *here-and-now* and *there-and-then*.

3 Data and methods

Data analyzed in this study were selected from a larger pool of data sets from another research study that the researcher is currently undertaking. Approved by the Institutional Review Board at the State University of Illinois, U.S.A. (pseudonym; henceforth SUI) in Fall 2019, with which the researcher and the participants were affiliated during the time of data collection, this research study initially aimed to qualitatively investigate the *becoming* identity performed and enacted by FYC GTAs. Drawing data from that aforementioned project, this study shifts its focus to how semiotics, or specifically linguistic signs, are performed in a WCT. In particular, this work investigates: [1] the indexical meanings encoded in the first-person plural English pronoun *we* in a WCT and [2] the ways in which conference participants use *we* to establish different speaker affiliations. The researcher adopted convenience sampling to procure the selection of one FYC GTA (Emma- pseudonym) and her student (David-pseudonym) to reflect the qualitative nature of the data coding and the representational narrative form of the data analysis. All the participating informants were given a copy of the consent form and the tape release form to sign during the conference observation.

3.1 Setting and Participants

Attending to the qualitative case-study design, the researcher observed one writing conference in Fall 2019 by Emma, a first-year M.A. Chinese graduate student in English and a first-semester FYC instructor at the SUI, and David, a first-year African-American undergraduate student at the SUI, during the time of the data collection. The observed writing conference session took place in a shared office in the English Department building at the SUI. The researcher videotaped (cf. Waring, 2005) and audio-recorded the WCT in this shared office space—to preserve the integrity of the interaction (see also Waring, 2005) for Emma and David, as their first writing conference meeting took place in the same shared office space. The audio-recorder was placed in front of the participants with the video camera, to both ensure the sound quality and recognize equally critical semiotic resources (Leander & Prior, 2004, p.206). The observation was supplemented with extensive field notes. The WCT, lasting for roughly 15 minutes, was transcribed verbatim and sequentially through an *adaptation* of the conversation analysis (CA) paradigm. In this study, the data was excerpted from

the transcribed audio-recorded data; the transcription convention can be found in the appendix and a full transcript is available upon request.

4 Data Analysis

Adhering to the caution voiced against the referential reductionism often observed in the one-on-one lodged equation of performativity of person deixis and its illocutionary forces (Bauman & Briggs, 1990, p.62), a grounded qualitative data-analysis framed via a sequential (Martínez, Durán, & Hikida, 2017) and moment-to-moment fashion (Shvidko, 2018) was adopted for coding and analyzing the functional relations of *we* actualized in the WCT. To put it simply, to avoid imposing what *we* means in the interaction between the two interlocutors, the researcher used a more grounded approach to understanding the emergent indexical meanings of how *we* is leveraged during talk-in-interaction.

Prior to the analysis, it should be noted that Emma read through David's piece before the conference and left both marginal and end comments on his draft. This pre-conference act sets up the parameter of the unfolding of the conference and the interaction. In addition, when David entered the conference, in lieu of engaging in the WCT immediately, Emma had David silently read through her comments for several minutes before they discussed the feedback.

After an initial coding of the sequential turns (Schegloff, 1972) of the WCT, the researcher segmented the talk on the basis of completed turn-taking typically observed in the sequence of a classroom discourse (Cazden, 2001): Initiation, Response, and Evaluation (IRE). Although the sequence might not strictly hew to the 3-tier paradigm (Schegloff, 1972), they are sequential in character, and each unit contains a completed *semantic* sequence—a completed discussion of a topic. Five semantically-complete units are coded and identified in this WCT, but *we* as a person deixis is not observed in Unit 4. Thus, the following discussion would concentrate on the four units in which *we* is pinpointed. In addition, as Agha (2007) exhorts against the metonymic reduction (pp.286-293), the researcher also analyzed the other co-occurring linguistic signs that could potentially motivate the indexical meanings of *we.* That is, instead of framing the person deictic *we* from an *a priori* repertoire, the researcher treated the textual and the contextual meanings of *we* as indeterminate (Blommaert, 2005; Koven, 2016). Therefore, the following analysis is presented in a narrative form to reflect the indeterminacy to reveal how *we* is environmentally coupled with the other linguistic signs for Emma and David to emergently align themselves with differential speaker roles and fulfill speaker functions.

4.1 Unit 1

In this first unit, Emma and David began their one-on-one consultation after David spent a few minutes reading over Emma's commentaries. The following is the transcription of the first four minutes of the WCT between Emma and David.

Line 001 David	So my first que[stion is]
Line 002 Emma	[Mm-hm]
Line 003 David	Um:: (2.0) with the end comments, so I think my first question =
Line 004 Emma	=Yeah.
Line 005 David	Um:: (1.8) like so you see, you see more arguments:? and like my question is how can I mo:ve like the arguments into: (1.1) supporting evidence or analysis or=
Line 006 Emma	=Cool. Um:: (1.0) I shall give an example here:? just a moment. (2.8). Yeah. So um:: (2.2) like here. This is (.) basically more of a slo:gan type argument:?=
Line 007 David	=Okay.
Line 008 Emma	*We need to start working more on* (1.2) *teams.* ((inaudible)) *And we need- we as black people need to look at the mirror and ask what can I change myself (.) when we need to stop waiting, when we need to stop setting*, ((reading from the text)) which is gre:at]:?
Line 009 David	>[mn-hm<
Line 010 Emma	Like (.) this, like this, um: (0.2) it's kind of (2.2) it's already (0.3) there:? But I wish that you to have more specific (1.1) ((footsteps)) um: (1.3) I-I don't know…. more specific solutions:?=
Line 011 David	Okay=
Line 012 Emma	=how we should stop [racism].<
Line 013 David	[Okay].
Line 014 Emma	because I feel like your (0.5) central argument -what is your (.) central thesis?
Line 015 David	>Oh, my central thesis is m (.) like around the (1.4)-I guess m < >that it's not really white people that are being r[acist]
Line 016 Emma	[mn-hm]
Line 017 David	[this] is really more like minorities that are keeping racism ali:ve.
Line 018 Emma	Okay=
Line 019 David	=in a way=
Line 020 Emma	=Yeah. That's a great argument:? which (.) you can try to put that into the introduction [part.<=
Line 021 David	=Okay=
Line 022 Emma	=>this is a strong argument.=
Line 023 David	=Okay]
Line 024 Emma	>[Like] (.) um (.) like (.) we (.) should -I suppose that we should not only blame the white people for
Line 025 David	[Right].
Line 026 Emma	[racism], but we should also like have our own,- like, what, like confidence and cultural like, like interaction,

	whatever um (0.6) ((footsteps)) so right now:?, these are more abstract:?=
Line 027 David	=Okay.]
Line 028 Emma	>I wish you to have more: (o.6) concrete examples, either from your everyday life:?
Line 029 David	Okay.
Line 030 Emma	>Or from like the sources that you have read:? (0.9) or from um: (1.2) like, all the activities <you've>done:?=
Line 031 David	=Okay.=
Line 032 Emma	=because you did, (0.5) um. (0.5) you did mention Black Lives [ma ((stutter))
Line 033 David	[Yeah].
Line 034 Emma	Black Black - (1.5) Lives [Matter]:?
Line 035 David	[Matter]. Yeah=
Line 036 Emma	=which is a good like - which is a goo:d campaign (0.8) kind of (0.6) stuff. So try to have more examples on that>.
Line 037 David	<Okay>.=
Line 038 Emma	=And try to have more angles like we need to: (0.9) becau- like, <um> (1.2) African Americans need to have their (0.9) own to stop racism by^ <like>- by setting up their own cultural com[petence]
Line 039 David	[Mm-hm]
Line 040 Emma	by um (.) either um (1.1) exploring um (0.5) own in- in- like- exploring their own culture? or by um (1.0) having confidence a- at supporting: (0.7) each one-each other:?=
Line 041 David	=[Mm-hm]
Line 042 Emma	[in]the:? African American community? or by blah blah blah, so basically, we make it more [specific]
Line 043 David	[Okay].=
Line 044 Emma	=and from different angles=
Line 045 David	=Alright.

In this unit, David initiated the WCT by raising a specific question pertinent to how he could better marry his arguments with sources and evidence. This concern was motivated by an end comment left by Emma, who instantiated her commentary by pointing towards a particular area (Line 006) in David's draft by using the place deictic (i.e., *here*). After pinpointing a specific place where Emma found the necessity for more exegesis from David, she began to narrate David's in-text sentences verbatim (Line 008). After a short narration, an immediate appraisal by Emma ensued. Emma first complimented David's insight into a call for immediate action taken to obliterate racism (Line 008 & 010; see also Mackiewicz & Thompson, 2013), but she suggested that David specify or contextualize some viable solutions to achieving that end (Line 010). In Line 012, Emma re-couched her suggestive statement by invoking more probing questions (Line 014) in order

to help David connect his thesis to the sub-argument: addressing systemic racism (Line 017).

In this snippet of exchange, *we* as the person deictic is leveraged to facilitate different speaker-alignment functions. The first function serves as an evaluation device (e.g., Sandlund, 2014). In Line 008, Emma enacted a narrator role by extracting part of David's writing as a form of reported speech, as *we* in Line 008 appeared in the David's original wording. The transported *we* from David's text to Emma's narration helped Emma relay her assessment of David's argument, as the precursor of Line 008—Line 006—is where, as analyzed earlier, Emma provided her evaluative commentary, classifying David's argument as a "slogan type argument" (Line 006), maintaining that the generic statement by David sufficed to express his main thesis but failed to supply more detailed information (Line 010 & 012).

The second function is to avoid possible adversary confrontation or to mitigate epistemic asymmetry (Sandlund, 2014, p.662), that is, the knowledge gap between teachers and students. Such is effectuated via a doubly-voiced *we*: an interlocutor-character role. When Emma transported David's argument (Line 008), she used an implicit quotative framing of reported speech to perform as if she were David. Line 012 (*how we should stop racism*) was an extended turn (Koven, 2011, p.161) from Emma's narrating David's text in Line 008, which indicates that Emma was enacting portions of the narrated event, that is, David's argument concerning the necessity to end the racism as a character. However, at the same time, Emma also performed an interlocutor role, providing both her evaluative comment of David's argument and her close alignment with David. *We* in Line 012 by Emma is a poetic recycling and echoing of *we* in Line 008 crafted by David and envoiced by Emma, and this is preceded by Emma's evaluative comments, such as her qualified directive (Line 010), the practice of which indicates that while Emma might have concurred with David's assertion, she thought that he should have exemplified an argument that he was making. Therefore, the doubly-voiced *we* (interlocutor-character), along with the other linguistic means, is purposefully used for Emma to successfully perform her role as a congenial feedback-giver who could understand students' ideas and give constructive feedback without engaging in face-threatening acts. The same pattern is also discerned in Line 024 and Line 026. Following Emma's probing question in Line 014, David and Emma collaboratively worked to tether David's thesis to unpacking Emma's feedback on a paucity of possible solutions to racism. In Line 024, Emma evidently still hinged upon the character enactment that she established previously in Line 008 and 012 and continued well into Line 026 to offer a piece of advice of how racism could be concretely resolved, as if she were the one facing the racism or the one making the argument. The characterological enactment and attribute effected through *we* afford Emma to align herself closer with David, without her being ensconced at a dominant and authoritative position.

Similar to the speaker affiliation constructed in the earlier analysis, Emma continued her recommendation and probing. The rest of the conversation in this unit still surrounded around Emma elaborating how David should flesh out his

arguments by supplying more specific details (Line 028 to Line 36). In this part of the exchange, Emma chiefly took on the more authoritative voice by using the first person singular *I* with the predicate *wish that* (Line 028) to apprise David of her expectation (Austin, 1975). Emma segued into wanting David to address multi-pronged perspectives (Line 038) that pertain to racism. In Line 038, Emma used *we* to characterize David as if she were the writer, as established in the foregoing analysis. In Line 40, Emma detailed possible ideas of her own suggestion, such as exploring the cultural values of African American community. In Line 042, Emma summed up the discussion by transporting the hypothetical narrative into the present moment of a constructed dialogue. *We* in Line 042 not only implies to David that those directions recommended by Emma are sanctioned and can be included in his revision but also relays to David that she was willing to work with David to help, *collectively* and *together*, improve the text. By saying *we make it more specific*, Emma once again alleged solidarity with David and donned herself a countenance of a receptive and welcoming graduate teaching instructor.

4.2 Unit 2

Following the first unit, David ensued to ask a follow-up question related to a piece of advice proffered by Emma earlier for his revision. The interactional talk of this unit, presented transcriptionally below, lasted for roughly one minute.

Line 057 David	=the follow up questions,=
Line 058 Emma	=Yeah=
Line 059 David	=You said I can use examples from like (0.7) everyday life? So could I, like for example, say *Oh, even around my friends*=
Line 060 Emma	=[Mm-hm]
Line 061 David	[th]ere have been times where we have like (.) mistakenly ma:de=
Line 062 Emma	=[Mm-hm]=
Line 063 David	=stereotypes towards white people or something like that?
Line 064 Emma	=Definitely you can try.=
Line 065 David	=Okay. All right. And then:
Line 066 Emma	Yeah, like, sorry, um, just on that, like, you can say (.) we we (0.4) have friends ((footsteps)) to make stereotypes, but try to be more spe-, be more speci[fic].
Line 067 David	[Okay].
Line 068 Emma	Why is that ((inaudible))
Line 069 David	[Okay, Right. All right].

In this unit, David followed up Emma's suggestion earlier by enacting a character role when he recounted experiences of stereotypification made towards white people (Line 012). *We* used in this character enactment (Line 061) suggests a time travel, despite the fact that it could be a brief excursion, as the short time-travel

was aided by the use of the present perfect (i.e., *have mistakenly made*) for David to not only engage in traveling from *here-and-now* to *then-and-there* but also to confirm with Emma that he might have had some germane everyday experiences that could exemplify his otherwise rather generic argument in his earlier writing. Therefore, the enacted character by *we* in Line 061, coupled with the time-travel in the predicate, helps David refer to the experiences that he and his friends have had collectively (Line 059) and recognize that racism and stereotypification are a common encounter in the course of his everyday life. The researcher regards the *we* in Line 061 to mirror more a character-like speaker role than that of an interlocutor or a narrator, in that although David is recounting some of his own previous and personal experiences (which might have endowed his statement in Line 061 a narrator role), he nonetheless excerpts the experiences of him and his friends, thus speaking on behalf of the racialized group that he and his friends identify themselves with. Appropriating the voice of his friends as well as extending the application to the social group identification, David efficaciously accomplished the purpose of re-affirmation with his instructor.

Emma reciprocated by not only giving David a confirming nod (Line 064) but also poetically appropriating, with more succinct expressions, what David said previously in Line 059 and Line 061. The role encoded in the *we* in Line 066 is a doubly-voiced interlocutor-character, inasmuch as Emma performed as if she had been David by switching from the second-person deictic (*you*) to the first-person collective *we*. The shift in person allows Emma to enact David's voice, but at the same time, the echoing of *we* in Line 066 to Line 061, along with her positive response in Line 064, showcases that Emma appraised positively of David's idea, nodding (figuratively) her approval of David's proposal. The closer alignment effected by the shift towards using *we* in Line 066 could also help Emma circumvent any potential face-threatening hazard that might ensue her interlocutor-character enactment. By aligning with David first by using the doubly-voiced *we* in this particular segment of the discourse avoids sounding too diminishing or overbearing when Emma introduced her expectation in the same line (Line 066).

4.3 Unit 3

In this unit, David and Emma continued to discuss a key term used by David, who left it undefined, and Emma provided her thoughts on how to rework the part of the text. The interaction in this unit was about fifty seconds.

Line 071 David	=Um, and then I think I had a que:stion: hum (4.0) where was it, I'm sorry.=
Line 072 Emma	=Yeh, that's okay. Take your time. (5.2)
Line 073 David	Oh right [here]
Line 074 Emma	[Yeah]
Line 075 David	[So], it says what is your definition? I was a little confused on like, definition of wha:t, [ex:actly?]
Line 076 Emma	[Oh racism]=

Line 077 David	=[O::kay]
Line 078 Emma	[You were saying], like, um (0.4) yo-you say we have to start with this concept for racism<
Line 079 David	=[O::kay].
Line 080 Emma	[So, I was saying]
Line 081 David	[Okay].
Line 082 Emma	[what is exactly is that concept].
Line 083 David	[Alright, okay].
Line 084 Emma	because it's kind of hard to define?
Line 085 David	=[Mm-hm]
Line 086 Emma	[Uh]You don't need to choose the right definition? You only need to choose your own [definition].
Line 087 David	[Okay].=
Line 088 Emma	=and to explain why do you think [that]'s
Line 089 David	[Mm-hm]
Line 090 Emma.	[the] right definition, Right?=
Line 091 David	=right.=

In this unit, David moved onto another comment concerning a wanting of working definition of racism in his draft. In Line 078, Emma responded to David's question by quoting David's text. Akin to what Emma did in the preceding two units (Unit 1 & 2) where the quoted speeches contained *we*, Emma enacted a doubly-voiced role, but antithetical to the role performed previously, this unit witnesses the double narrator-character role by Emma in Line 078. Emma enacted a narrator role in the narrated event by providing a description of what David penned on his draft whereas invoking a character voice by quoting David's text. The transcription from *then-and-there* to *here-and-now* is observed when Emma switched from the past to the present tense. The speaker alignment incurred here along with the doubly-voiced narrator-character role could be construed as a preface of Emma's evaluation in the next few lines (e.g., Line 080 & Line 082), where Emma donned an interlocutor role by switching to the first-person singular person deictic, *I* as well as the second-person counter, *you*. The distinct shift from we to *I* (Line 080) and *you* (Line 086 & Line 088) clearly marks a strong evaluative stance taken up by Emma, who, in this unit, directly addressed the lack of the definition of a key term in David's writing about mitigating or qualifying her statement.

4.4 Unit 4

In this unit, Emma and David moved onto the last part of their writing conference interaction, which centered around David's concern of how to recapitulate his argument of his paper without sounding repetitive. This part of the WCT was about three minutes and fifty seconds long.

Line 149 David	Hm (0.5) And other than that? (2.0) other than that, I think like my only thing is I (.) don't think my conclusion?=

Line 150 Emma =Okay.=
Line 151 David =was strong enough? (1.1) Is there >like< any (1.8) I wouldn't say like, analysis or anything, is there anything I can a:dd,
Line 152 Emma As a conclusion?
Line 153 David Ri:ght to-kind of summari:ze but at the same time (1.2) I don't know how to put it like summarize but >at the< same time like,
Line 154 Emma push forward?=
Line 155 David =Right like finish off my argument if that makes sense,=
Line 156 Emma =[Okay].
Line 157 David [like] summarize the paper but then also give like (0.4) and then this is the side I'm o:n and if that makes sense.
Line 158 Emma (1.0) Yeah, ah what I wish you to do? i:s, definitely summarize (.) um your (0.6) part? which is? (0.9) exactly the main thesis? (0.6) state that again?, which I suppose you said >that< in the [beginning]
Line 159 David [^{0}Mm-hm].=
Line 160 Emma =but (.) a paraphrase and reverse and say that again.=
Line 161 David =okay.=
Line 162 Emma =And that will be the first part of-of the summary of- the conclusion, but also try to push a bit for:ward? (0.6) Either you can talk about the things, the other si:des (.)that you have-you haven't had time to talk during your (.)- inside your essay, it's fine? to kind of touch ^{0}on that but not talk about
Line 163 David Okay.=
Line 164 Emma =you can say um "*the-the-the problem of racism (0.8) inside minorities (1.1) can also raise on the issue because the-like black and white contrast is still grea:t, and um (0.5) even though we-I didn't focus on white people in this essay? (1.0) we should still -there are still things they can be >blah blah*"<.=
Line 165 David =Okay].
Line 166 Emma [So] that's kind of open up a: new conversation but it should not be discussed inside this. And also you can try to (0.8) um >whatever< um (.) ^{0}push forward (1.0) and also try to,-kind of (0.5) you can still try to question?=
Line 167 David =Okay].
Line 168 Emma [Som]e of the parts you: feel like you haven't (0.9) have time to support enough, you can say, "*Yeah, I did give some um (0.8) everyday examples about why: race and discrimination is still among minorities*?*"*
Line 169 David [Mm]

Line 170 Emma "*but um (0.5) either if there are other more concrete ways to solve this problem, I haven't start-I haven't had that concrete answers yet*"? Because (inaudible) still talk about that?=
Line 171 David =Okay.=
Line 172 Emma =And in the conclusion? So: I'm not sure if that answers your questi[on]?
Line 173 David [Yeah].=
Line 174 Emma =what exactly >what<-what exactly do you wish to achieve in the conclusion. Is it a closing one? or open one. Like (.) >we talked about it in class<, right.=
Line 175 David =Right.
Line 176 Emma So.
Line 177 David Um (2.5) it's kind of hard like (.) I wa:nted- it's like, I wanted to do both.=
Line 178 Emma =Definitely, it should be closed fi[rst]
Line 179 David [Right] (.) Um (1.2) It's just I'm a little confused like, every time I try to ope:n (0.7) I guess you could say it's like, okay now I feel like I have to touch on this even more and then I really don't know where to end my conclusion (1.4) so >I don't< know, I'm-I wanted to do both, I just don't kno:w (1.3) like what wa:y to do that.=
Line 180 Emma =Oh, Okay, so I would suggest (0.4) still focus on your-um focus your conclusion on thi:s closing >part<.=
Line 181 David =Okay.=
Line 182 Emma =Yeah, if you do too much on the opening part? (0.7) the readers are gonna expect more,=
Line 183 David =Right].
Line 184 Emma [>But<] there's not going to be more=
Line 185 David =Exactly]
Line 186 Emma [so] maybe one or two sentences in the last part (0.9) to say "*maybe there are still other questions like this and this"* (1.1), maybe the-(0.8) this three (2.1) not more than three.=
Line 187 David =Okay.=
Line 188 Emma =>Yeah.< "*That we can still think about, but (1.2) because I believe my essay als- already touches on this question-and kind of give some >solutions to this one.*< And that kind of en:ds the whole essay.=
Line 189 David =Okay.=

In this final unit (Unit 5), the discussion centered around how David could conclude his writing in a way that does not make him fall for the trope that a conclusion is merely a paraphrased thesis statement (Line 153 & Line 157). Emma

reacted to David's question by goading him to not only reiterate his central thrust (Line 158) but also advancing the parameter of the discussion (Line 162, Line 164, & Line 166). In Line 164, Emma enacted an interlocutor-character speaker role.

First, Emma envoiced David by using the second person deixis *you* and therefrom, provided a conjectured picture of how David could have concluded his expository piece that suited his intention: summarizing the main idea and furthering the discussion. The acting by Emma on behalf of David is also achieved by Emma switching from *we* to *I* in the same line. This is a sophisticated move to establish the speaker alignment: the shift from *we* to *I* indicates that Emma came up with this hypothetical scenario by grounding her statement in a collective and wide readership initially but then realized that the question was about how David as a writer could summarize his piece. Therefore, Emma downscaled and used *I* by contributing to and acknowledging David's authorship.

The second *we* in Line 164 is also self-repivoted by Emma, and she ended up using an expletive syntactic structure (e.g., *there are*) where the collective third-person deictic *they* replaced the first-person plural *we*. This indicates a type of speaker alignment whereby Emma attempted to issue suggestions and guidelines and to avoid appearing subjective. Switching from *we* to *they* allowed Emma to enact non-partisanship and attain calls-for-action that is rendered objective. This in turn galvanized David to contribute to his own academic authorship, the authorial self that he was developing as a writer. The same envisioned collectivity of and connection with an assumed readership by *we* but a shift to the singular counterpart *I* was also observed in Line 188, where Emma envoiced as David to provide a guideline of how he could sum his discussion. The speaker alignment collapses the distance of narrated and narrating selves seen in David and Emma as an interacting dyad but also further establishes Emma's identity role as an open-minded commentator and facilitator who was not autocratically controlling, and David's identity as an emerging college writer.

However, there is another kind of *we* used in this unit. In Line 174, Emma alluded to a particular lesson unit in her curriculum where she lectured ways to summarize a piece. The *we* here is not referenced to a general audience as the one invoked earlier in this unit. Rather, the *we* here bespeaks Emma, David, and the other students in her class. The speaker role by Emma here is that of a fused interlocutor-character, because the line *we talked about it in class* was prefaced by the discourse marker *like* and couched in the past tense, a kind of time travel that allows Emma to perform as an instructor to re-live the moment of teaching the lesson on summary. The line also connotates some sort of speaker evaluation where Emma ended the sentence with a tag question by not only affiliating herself with David but also probing to see whether David could recall what was instructed in class.

In the narrated event of conferencing and the narrating event of (re)establishing speaker relation (Wortham, 2001), the first-person collective *we* is semiotically used purposefully for an array of discursive functions for the two participants to not only fashion their emergent and interactionally grounded speaker roles and identities (Dunn, 2017, p.66; see also Koven, 2011) but also

successfully carry out the conferencing activity without compromising the facilitation of it.

5 Discussion and conclusion

Departing from the previous research on the writing conference typology and the identity roles inhabited therein that are informed by the turn-taking sequence, this current research study furthers the understanding of how *we* in English is semiotically instantiated, along with the other co-occurring linguistic-semiotic signs, for the construction of speaker voices and affiliations in a WCT. Through a narrative examination of an FYC WCT, the researcher examines the grounded patterning of *we* and preliminarily establishes the possible functional purposes of *we* in an in-person dyadic interaction. These speaker-role affiliations and their attendant functions effected by the English person-deictics *we* include: heuristics for evaluation and suggestions, device for the bridging of epistemic asymmetry, apparatus for time-travel, and proposal of hypothetical scenarios. More important to the listed functions is the establishment of a WCT as a *narrativization-in-action* (Wortham, 2001) co-constructed via speakers' strategic use of *we*.

Granted, the speaker-role affiliations and their attendant functions assayed above do not exhaust all the schema of how *we* can be operationalized. However, the preliminary findings of this study provide several critical implications of how, in an academically-oriented exchange (Sandlund, 2014), students are scaffolded into academic socialization (Baffy, 2018) through the leveraging of linguistic indexical signs. First, the one-on-one WCT can display a cross-over from that of a classroom discourse, as evidenced in how Emma referenced a lesson unit by using *we* (Line 174, Unit 5). Therefore, this indicates a far more complicated speaker-role matrix. Future research endeavors could investigate how co-narratives in the form of a conference interaction evolve across temporal and geographical scales. Researchers could examine the relationship between instructors and students in regular classroom instruction and how such interaction is carried over to the conferencing proceeding and style. Another possible arena for scrutiny is to investigate how indexical signs in WCTs are sedimented to essentialize participants' roles, such as how instructors' use (Koven, 2016; Silverstein, 1993) of *we* could help them take on the pathway (Wortham & Reyes, 2015) *to become as instructors* through conferencing with students, that is, a more sustained process of taking on the identity as the instructor.

Several limitations might qualify the findings of this research study. First, as noted by Prior and Hengst (2010), who assert that "[i]f a particular semiotic is going to be a focus (and we recognize the potential value of such focused attention), then it should be clear why and how the semiotic range has been so narrowed" (p.19), this study does not address the other equally formative semiotic resources, such as gestures, and remediation processes (Prior & Hengst, 2010) that are implicated in the happenstance of the WCT. Therefore, how semiotics are collectively enacted should be accounted for in the future research, along with other source types, such as that of videotaped interaction. Another apropos

limitation pertains to the showing of transcription. Resonating powerfully with what Prior and Hengst (2010) argue about semiotic remediation, the representation of the person deixis through transcription might overlook other linguistically embodied operations, such as the contouring of intonations of pronouncing those deictics (Gumperz, 1982). Thus, an analysis of the speaker alignment implicated by the indexicality of the person deixis should also be justified and complemented with that of other linguistic semiotic foci.

That said, the chief purpose of this research study is not meant to categorically establish a generalizable typology of how the person deixis *we* is invoked in an FYC WCT. Rather, the rich, narrative delineation of the qualitative snapshot of *we* indexically intersecting with the other co-occurring linguistic signs instantiates the necessity of more research on how multisemiotic expressions and interactions inform the accessibility, configuration, and re-mediation of speaker voices and alignments.

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Appendix A

Transcription Notation

(.)	untimed perceptible pause within a turn stress (micropause)
Underline	emphatic stress
.	sentence-final falling intonation
:	prolonged segment
?	rising intonation
,	continuing intonation
-	cut-off or self-interruption
[]	overlapped talk
=	latch (one at the end of a line and another at the start of the next line shortly thereafter)
(0.5)	numbers in parentheses indicate silence, represented in tenths of a second
(( ))	comments on background or action
< >	the talk in between is compressed or rushed
°	marked quietness and softness

An optimality theory account of the D-effect in Ahtna

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The D-effect is a well-studied phonological alternation in Dene languages and occurs when the D- classifier prefix precedes a consonant-initial verb stem. This paper analyzes the D-effect in Ahtna using the framework of Optimality Theory. In this paper, it is demonstrated that in Ahtna coalescence and syllable structure are used to preserve the input segments and their features in the output. It is demonstrated that a pattern that at first glance appears to be deletion, is another form of coalescence known as 'vacuous coalescence.' In Ahtna, full coalescence being the fusion of two segments without loss of features occurs when the resulting segment is permitted in the inventory of Ahtna. If this is not possible, then Ahtna uses syllabification and vacuous coalescence to preserve the segments. This analysis further adds data to the prediction of the D-effect in Ahtna for the patterns found in the language.
Keywords: D-effect; Dene languages; coalescence; Optimality Theory

1 Introduction

The D-effect is a well-studied alternation in Dene languages (Wilhelm, 2000). It occurs when /t-/ from the D- classifier prefix meets a consonant-initial verb stem. As demonstrated by the following data set (1), in Ahtna the D-effect is shown to have five different alternations. Ahtna is a Dene language spoken in the Copper River area of Alaska with about 80 speakers (University of Alaska Fairbanks, n.d.). The first alternation as shown in (1a) is the formation of an affricate, (1b) demonstrates the formation of a glottalized stop, the formation of a complex onset is exemplified by (1c), syllabifying the /t-/ as the coda of the preceding syllable is displayed in (1d), and finally, (1e) has previously been analyzed as deletion, but this paper analyzes it as actually another form of fusion. All the data presented in this paper comes from the Ahtna Athabaskan Dictionary (Kari, 1990) and presented using the International Phonetic Alphabet (IPA).

(1)	a.	/tɐ-**t-z**ɛn/	[tɐ.**t͡s**ɛn]	'it is dark coloured'
	b.	/nɐʔi-**t-ʔ**ɐɐn/	[nɐ.ʔi.**tʼ**ɐ:n]	'it was found'
	c.	/naʔɪ-**t-ɣ**ɐɐ/	[na.ʔɪ.**tɣ**ɐ:]	'he returned'
	d.	/ɐ-**t-n**ɐɐ/	[ɐ**t.n**ɐ:]	'he is working'
	e.	/tɐ-**t-tɬʼ**ɛt͡sʼ/	[tɐ.**tɬʼ**ɛt͡sʼ]	'it is blue'

The D-effect occurs to reduce a medial consonant cluster formed by the D-classifier prefix attaching to a stem-initial consonant to maintain as much of the input as possible. According to Wilhelm (2000), the D-effect occurs for the output to be segmentally faithful, while having to satisfy markedness and syllable structure constraints.

Previous analyses have conflicted with regard to the D-effect. Howren (1971) proposed a general rule for the D-effect stating that it is always coalescence, never deletion. LaMontagne and Rice (1994, 1995) completed an Optimality Theory analysis of the D-effect across many Indigenous languages and concluded that depending on the language, there are different processes, including coalescence, deletion, syllabification as rhyme, and epenthesis. However, Wilhelm (2000) conducted an Optimality Theory analysis of the D-effect in Slave and found support for Howren's (1971) original analysis of the D-effect. Wilhelm (2000) concluded that the D-effect is only coalescence, with the apparent deletion being 'vacuous coalescence,' which will be discussed further.

This paper will analyze the Ahtna D-effect in the framework of Optimality Theory (Prince & Smolensky, 1993). This paper will show how the five patterns exemplified in (1) are forms of coalescence or using syllable structure to preserve the segments. What at first glance appears to be deletion in (1e) is to be a form of coalescence known as 'vacuous coalescence.' In Ahtna, full coalescence being the fusion of two segments without loss of features occurs when the resulting segment is permitted in the inventory of Ahtna. If this is not possible, then Ahtna uses syllabification and vacuous coalescence to preserve the segments. This analysis further adds to the prediction of the D-effect in Ahtna for the patterns found in the language.

2 Optimality Theory analysis

2.1 Ahtna syllable and morphological structure

A discussion of the structure of Dene language syllables and morphemes is integral in discussing the Ahtna D-effect. In Ahtna, as well as other Dene languages, medial consonant clusters do not usually arise due to syllable structure (Wilhelm, 2000). Most prefixes in Dene languages have the form (C)V, with most stems having the form CV(C). The only exceptions to this form of prefixes are the classifiers. This includes the D- classifier with the form (C), and the 1PL subject agreement prefix, which has the form (VC), resulting in an input of …*VCCVC* (Wilhelm, 2005). The /t-/ is sourced from the D-classifier, which is among the group of derivational classifier prefixes which appear closest to the verb (Wilhelm, 2005). Different Dene languages resolve this medial consonant cluster in a variety of ways, with Ahtna using full coalescence, keeping both consonants at the cost of allowing codas or complex onsets, or by vacuous coalescence.

2.2 Full coalescence

Coalescence is the fusion of two input segments into one output segment and occurs when (syllable) markedness constraints and segmental faithfulness are highly ranked (McCarthy & Prince, 1995). Coalescence is a strategy that aims to maintain an unmarked (syllable) structure without the need for deleting or inserting a segment. Coalescence can be motivated by any markedness constraint, along with the faithfulness constraints DEP and MAX. Full coalescence is the fusion of two segments without the loss of features. In Ahtna, full coalescence occurs when the resulting output segment of coalescence is permitted in the inventory of Ahtna. The output segment of full coalescence corresponds to both input segments and obeys featural faithfulness (Wilhelm, 2000). There are two cases of full coalescence for the D-effect in Ahtna, which occur when the /t-/ precedes a stem-initial coronal fricative or a glottal stop.

2.2.1 Full coalescence with coronal fricative

The first pattern of coalescence to be analyzed is fusion forming an affricate. When the /t-/ from the D- classifier prefix precedes a coronal fricative, the segments coalesce by forming an affricate. The following dataset (2) provides the data from Ahtna showing this pattern of coalescence. It should be noted that the curved line above [ts] and throughout this analysis indicate an affricate which is one segment.

(2)	a.	/stʰɐnɪnɛs-**t-z**ɛt/	[stʰɐ.nɪ.nɛs.**t͡s**ɛt]	‘he became lonely’
		/nɐtʰɛs-**t-z**æʔ/	[nɐ.tʰɛs.**t͡s**æʔ]	‘he belched’
		/tɐ-**t-z**ɛn/	[tɐ.**t͡s**ɛn]	‘it is dark coloured’
	b.	/ɣɛnɐz-**t-ɬ**ɐɬ/	[ɣɛ.nɐz.**t͡ɬ**ɐː**ɬ**]	‘he dreamt of him’
		/ɣɪz-**t-ɬ**æts/	[ɣɪz.**t͡ɬ**æ͡ts]	‘he cooked it’
		/tʰɛz-**t-ɬ**ɛn/	[tʰɛz.**t͡ɬ**ɛn]	‘it is flowing swiftly’

The constraints that motivate coalescence contain some well-known and frequently used constraints as well some constraints that should be defined specifically for this paper. The well-known constraints include MAX (3) and DEP (4) as outlined by McCarthy & Prince (1995), which ban deletion of segments or insertion of segments, respectively. The constraints NOCODA (5) and *COMPLEXONSET (6), as described by Prince & Smolensky (1993), which penalize codas and complex onsets, are also required.

(3) MAXIMALITY (MAX) (McCarthy & Prince, 1995)
Every segment of the input has a correspondent in the output.

(4) DEPENDENCE (DEP) (McCarthy & Prince, 1995)
Every segment of the output has a correspondent in the input.

(5) NoCoda (Prince & Smolensky, 1993)
Syllables do not have codas.

(6) *ComplexOnset (Prince & Smolensky, 1993)
Syllables do not have complex onsets.

The key constraint that needs to be outlined for this analysis of coalescence is Uniformity. This is a faithfulness constraint that penalizes segmental coalescence when a segment in the output has multiple corresponding segments in the input. Uniformity is outlined below in (7).

(7) Uniformity ("No coalescence") (McCarthy & Prince, 1995)
No element of S_2 has multiple correspondents in S_1.

The example of /tɐ-**t**$_1$-**z**$_2$ɛn/ → [tɐ.**t͡s**$_{12}$ɛn] from the dataset provides an illustration of full coalescence where two segments fuse to form an affricate. Using the diagram shown below in (8), it is observed that the output segment [t͡s] includes the features of both input segments /t-/ and /z/. To form the output of the [t͡s], the [cont] feature from both input segments are included, the [-cont] of the stop and the [+cont] of the fricative also fuse, which allows for the output of an affricate. The Place features of both input segments match as [coronal] and are both represented in the [t͡s]. The subscripts used in the following diagram (8) and in the tableaux to follow, identify and help to track the segments which are involved in coalescence and the features associated with these segments.

(8)

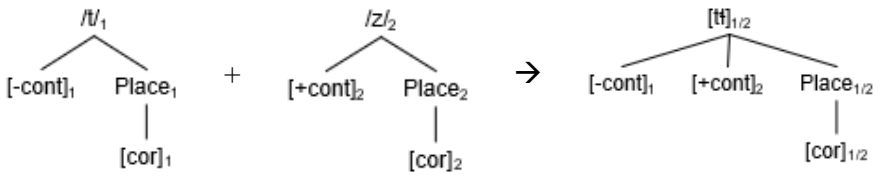


Tableau (9) provides the constraint rankings which are relevant for the parsing of /t-/ before a stem-initial coronal fricative which coalesce into an affricate.

(9)

/ tɐ-**t**$_1$**-z**$_2$ɛn /	DEP	MAX	NOCODA	*COMPLEXONSET	UNIFORMITY
→a. tɐ.**t͡ʂ**$_{12}$ɛn			*		*!
b. tɐ.**t**$_1$**z**$_2$ɛn			*	*!	
c. tɐ**t**$_1$**.z**$_2$ɛn			**!		
d. tɐ.**z**$_2$ɛn		*!	*		
e. tɐ.**t**$_1$ɛn		*!	*		
f. tɐ.**t**$_1$**ə.z**$_2$ɛn	*!		*		

The tableau in (9) compares the winning candidate [tɐ.**t͡ʂ**$_{12}$ɛn] with some losing candidates. The optimal output [tɐ.**t͡ʂ**$_{12}$ɛn] violates UNIFORMITY because the affricate [t͡s$_{12}$] has multiple corresponding segments in the input which was demonstrated in the diagram (8). The losing candidates obey UNIFORMITY, but at the expense of violating other constraints. Since UNIFORMITY is violated by the winning candidate and not by the losers, for the optimal output to be selected, the other relevant constraints must dominate UNIFORMITY. Candidate (9b) is not selected since a complex onset is formed, meaning *COMPLEXONSET is fatally violated. Each of the candidates in (9) violates NOCODA. One violation comes from the word-final coda consonant [n] in the final syllable. However, candidate (9c) *[tɐ**t**$_1$**.z**$_2$ɛn] has a second fatal violation of NOCODA from the /t-/ being parsed as a coda. Both candidates *[tɐ.**z**$_2$ɛn] and *[tɐ.**t**$_1$ɛn] fatally violate MAX because they delete one of the input segments. Finally, candidate (9f) *[tɐ.**t**$_1$**ə.z**$_2$ɛn] is not optimal because it inserts a schwa between the input segments, thereby fatally violating DEP.

2.2.2 Full coalescence with glottal stop

The next pattern of coalescence in the Ahtna D-effect to be analyzed is the formation of a glottalized stop. When the /t-/ from the D- classifier prefix precedes a glottal stop, the segments coalesce to form a glottalized alveolar stop. The Ahtna data in (10) illustrate this pattern.

(10)	/nɐʔɪ-**t-ʔ**ɐɐn/	[nɐ.ʔɪ.**t'**ɐ:n]	'it was found'
	/nɪɬʁɐdɛ-**t-ʔ**ɐɐn/	[nɪɬ.ʁɐ.dɛ.**t'**ɐ:n]	'they are joined'
	/q'ɛʔɪ-**t-ʔ**ɐt^h/	[q'ɛ.ʔɪ.**t'**ɐt^h]	'it came loose'

Along with the constraints outlined previously, an additional constraint is needed to analyze this pattern of coalescence. This constraint is MAX[cg] (11) which penalizes outputs that delete the constricted glottis (cg) feature from an input segment and prevents an output that loses the [cg] feature from the glottal stop.

(11) MAX[cg] (Howe & Pulleyblank, 2001)
Every segment of the input with the feature [constricted glottis] has a correspondent in the output.

The example /nɐʔɪ-**t-ʔ**ɐɐn/ → [nɐ.ʔɪ.**t'**ɐ:n] from the dataset in (10) demonstrates the full coalescence of the /t-/ and glottal stop to form a glottalized alveolar stop. The feature tree diagram (12) illustrates the preservation of the input features in the output features. The glottal stop is analyzed as having no place node, so the output segment of $[t']_{12}$ contains all the features of the input segments, thus making it represent full coalescence.

(12)

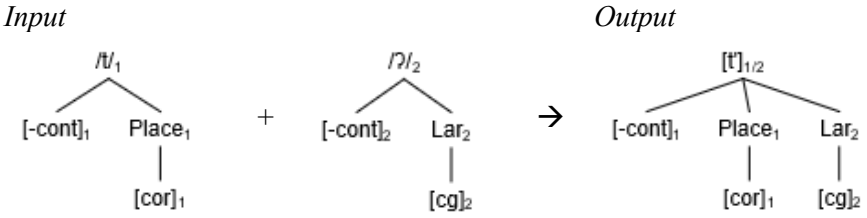


Tableau (13) provides the constraint rankings demonstrating the optimal candidate with the losing candidates which are relevant for the parsing of /t/ before a stem-initial glottal stop into a glottalized alveolar stop. The optimal candidate is [nɐ.ʔɪ.**t'**$_{1,2}$ɐ:n] which violates UNIFORMITY since the output segment [t'$_{1,2}$] has two corresponding segments in the input. The losing candidates (13b-f) demonstrate the same fatal violations as represented previously in the tableau (9) showing full coalescence forming an affricate. The losing candidate (13g) *[nɐ.ʔɪ.**t**$_{1,2}$ɐ:n] also violates UNIFORMITY with the output segment [t$_{1,2}$] having two corresponding input segments. However, *[nɐ.ʔɪ.**t**$_{1,2}$ɐ:n] also fatally violates MAX[cg] because the constricted glottis feature of the /ʔ/ is not preserved in the output. For the winning candidate [nɐ.ʔɪ.**t'**$_{1,2}$ɐ:n] to be selected, UNIFORMITY must be dominated by MAX[cg].

(13)

/ nɐʔɪ-**t₁-ʔ₂**ɐɐn /	DEP	MAX	MAX[cg]	NOCODA	*COMPLEXONSET	UNIFORMITY
→ a. nɐ.ʔɪ.**t'₁,₂**ɐ:n				*		*
b. nɐ.ʔɪ.**t₁ʔ₂**ɐ:n				*	*!	
c. nɐ.ʔɪ**t₁.ʔ₂**ɐ:n				**!		
d. nɐ.ʔɪ.**ʔ₂**ɐ:n		*!		*		
e. nɐ.ʔɪ.**t₁**ɐ:n		*!		*		
f. nɐ.ʔɪ.**t₁ə.ʔ₂**ɐ:n	*!			*		
g. nɐ.ʔɪ.**t₁₂**ɐ:n			*!	*		*

2.3 Lack of coalescence

If full coalescence of the two input segments would result in a segment that is not found in the inventory of Ahtna, then the syllable structure is adjusted to preserve the input segments and their features. When /t-/ precedes non-coronal stops, fricatives or /n/, or vacuous coalescence occurs when the /t-/ precedes an alveolar stop or affricate.

2.3.1 Complex onset with non-coronal fricative

The first of these patterns to be analyzed is the combining of the /t/ with a stem-initial non-coronal fricative to form a complex onset. The evidence for this pattern comes from the Athabaskan Ahtna Dictionary where the syllable boundaries are identified and repeated below (Kari, 1990). All features of the input are preserved and segmental faithfulness is also achieved. The data in (14) illustrates this pattern found in Ahtna.

(14) a. /naʔɪ-**t-ɣ**ɐɐ/ [na.ʔɪ.**tɣ**ɐ:] 'he returned'
/ʔʊnɛ**t-ɣ**ɐɐn/ [ʔʊ.nɛ.**tɣ**ɐ;n] 'he is shy'
/tnɛs**t-ɣ**ɐɐɣʔ/ [tnɛs.**tɣ**ɐ:ɣʔ] 'it got toasted'

b. /ʁɐ-**t-ʁ**ɐɐnʔ/ [ʁɐ.**tʁ**ɐ:nʔ] 'It became moldy'
/nɐ-**t-ʁ**ɐɐs/ [nɐ.**tʁ**ɐ:s] 'It is rough'
/ɐ-**t-ʁ**ɔl/ [ɐ.**tʁ**ɔl] 'It was scraped'

The phonological inventory of Ahtna only includes coronal affricates (Kari, 1990). This is the reason that coronal fricatives form affricates with /t-/, whereas the non-coronal fricatives do not coalesce to form affricates when preceded by the /t-/ in the D-effect. Non-coronal affricates are ruled out by the constraint

*AFFRIC[dors],[lab] (15) which penalizes non-coronal affricates.

(15) *AFFRIC[dors],[lab]
Do not have non-coronal affricates.

Tableau (16) provides the constraint rankings which is relevant for the optimal parsing of /t/ before a stem-initial non-coronal fricative into a complex onset. The tableau compares the optimal candidate to possible losing candidates.

(16)

/ ʁɐ-**t₁**-**ʁ₂**ɐɐnʔ /	DEP	MAX	*AFFRIC[dors],[lab]	NOCODA	*COMPLEXONSET	UNIFORMITY
→ a. ʁɐ.**t₁ʁ₂**ɐ:nʔ				*	*	
b. ʁɐ**t₁.ʁ₂**ɐ:nʔ				**!		
c. ʁɐ**.ʁ₂**ɐ:nʔ		*!		*		
d. ʁɐ.**t₁**ɐ:nʔ		*!		*		
e. ʁɐ.**t₁**ə.**ʁ₂**ɐ:nʔ	*!			*		
f. ʁɐ.**t͡ʁ₁₂**ɐ:nʔ			*!	*		*

Each of the candidates in this tableau violates NOCODA due to the word-final coda. Tableau (16) shows the optimal candidate to be [ʁɐ.**t₁ʁ₂**ɐ:nʔ] which violates *COMPLEXONSET due to the /t-/ and /ʁ/ forming a complex onset. The losing candidate *[ʁɐ**t₁.ʁ₂**ɐ:nʔ] obeys *COMPLEXONSET, but at the expense of parsing the /t-/ as a coda, which fatally violates the markedness constraint NOCODA. Both candidates (16c) and (16d) are ruled out since they delete an input segment, thereby fatally violating MAX. The candidate *[ʁɐ.**t₁**ə.**ʁ₂**ɐ:nʔ] fatally violates DEP due to the insertion of a schwa. Finally, *[ʁɐ.**t͡ʁ₁₂**ɐ:nʔ] is ruled out due to the formation of a non-coronal affricate by coalescence, making this candidate fatally violate *AFFRIC[dors],[lab]. Since the winning candidate [ʁɐ.**t₁ʁ₂**ɐ:nʔ] violates *COMPLEXONSET, for the winning candidate to be selected, *COMPLEXONSET must be dominated by NOCODA, MAX, DEP and *AFFRIC[dors],[lab].

2.3.2 Coda followed by a non-coronal stop or /n/

The other pattern that is related to syllable structure for the D-effect in Ahtna is syllabifying the /t-/ as a preceding coda, thus preserving all features of both input segments. When the /t-/ from the D- classifier prefix precedes a non-coronal stop or /n/, the /t/ gets syllabified as the coda of the preceding syllable, with the stem-initial consonant as the onset of the following syllable. The following dataset (17) provides the data from Ahtna showing this syllabification pattern.

(17) a. Labial Stops

/qʰu-**t-p**ɐʔ/	[qʰu**t.p**ɐʔ]	‘it became twilight’
/tɪ-**t-p**æts/	[tɪ**t.p**æts]	‘it turned tan’

b. Dorsal Stops

/tɛs-**t-k**ɛth/	[tɛs**t.k**ɛtʰ]	‘it is smoky’
/ʊqʼɛkʼɪ-**t-q**ɛz/	[ʊ.qʼɛ.kʼɪ**t.q**ɛz]	‘it wore apart’
/dʁɔs ʔɪ-**t-q**ʰɐɣ/	[dʁɔs ʔɪ**t.q**ʰɐɣ]	‘he is celebrating’
/tŋɛ-**t-qʼ**ɐɐn/	[tŋɛ**t.qʼ**ɐːn]	‘it is angled’

c. Nasal Stops

/ɐ-**t-n**ɐɐ/	[ɐ**t.n**ɐː]	‘he is working’
/nɐ-**t-n**ɛst-nɪɪ/	[nɐ**t.n**ɛst.nɪː]	‘it (motor) started’

Two additional constraints are required to analyze the pattern illustrated by this dataset. The first constraint is *[-cont][-cont]ONSET (18) which prevents a cluster of two [-cont] consonants in the onset of a syllable. This is required to prevent an onset cluster formed by the /t-/ and stem initial non-coronal stop or /n/. The other relevant constraint is MAX[nasal] (19) which penalizes outputs that delete the [nasal] feature from an input segment. This constraint is required to prevent an optimal output where the coalesced segment would be missing any positive or negative [+/-nasal] feature from the input.

(18) *[-cont][-cont]ONSET
A consonant cluster of two non-continuants is not permitted in the onset of a syllable.

(19) MAX[nasal]
If the feature [+/-nasal] is found in the input, then there is a corresponding feature in the output.

Tableau (20) provides the constraint rankings with the other losing candidates that are relevant for parsing /t/ before a stem-initial non-coronal stop or /n/, comparing the optimal candidate to the possible losing candidates.

(20)

/ ɐ-**t**$_1$-**n**$_2$ɐɐ /	DEP	MAX	MAX[nasal]	*[-cont][-cont]ONSET	NOCODA	*COMPLEXONSET	UNIFORMITY
→ a. ɐ**t**$_1$**.n**$_2$ɐ:					*		
b. ɐ.**n**$_2$ɐ:		*!					
c. ɐ.**t**$_1$ə**.n**$_2$ɐ:	*!						
d. ɐ.**t**$_1$**n**$_2$ɐ:				*!		*	
e. ɐ**t**$_{12}$ɐ:			*!				*
f. ɐ**n**$_{1,2}$ɐ:			*!				*

Tableau (20) shows the optimal candidate to be [ɐ**t**$_1$**.n**$_2$ɐ:] which violates NOCODA since the /t-/ is parsed as the coda of the preceding syllable. Candidates (20b) and (20c) obey NOCODA at the expense of deleting or epenthesizing a segment, thereby fatally violating MAX and DEP respectfully. NOCODA is obeyed by *[ɐ.**t**$_1$**n**$_2$ɐ:] but fatally violates *[-cont][-cont]ONSET by having the /t-/ and /n/ form a complex onset. The constraint MAX[nasal] is violated by both *[ɐ**t**$_{12}$ɐ:] and *[ɐ**n**$_{1,2}$ɐ:] due to the [nasal] feature being deleted from one of the input segments since [t$_{1,2}$] and [n$_{1,2}$] cannot have both a [+nasal] and [-nasal] feature. Although *[ɐ**n**$_{1,2}$ɐ:] at first glance appears to satisfy MAX[nasal] since it has a [+nasal] segment, it actually violates it. This is because as noted by the subscripts, it is a coalesced segment, meaning it fuses the features of the two input segments. Since the output of *[ɐ**n**$_{1,2}$ɐ:] does not include the [-nasal] feature of the /t-/, MAX[nasal] is violated. Since the optimal output [ɐ**t**$_1$**.n**$_2$ɐ:] violates NOCODA, in order for this candidate to be selected as the optimal candidate NOCODA must be dominated by MAX, DEP, *[-cont][-cont]ONSET, and MAX[nasal].

2.4 Vacuous Coalescence

The final pattern to be analyzed is vacuous coalescence. In full coalescence, no features are lost, whereas in vacuous coalescence the output segment contains features from both input segments, but some features are lost (Wilhelm, 2000). Vacuous coalescence can be mistaken for deletion in the D-effect, but better accounts for the patterns of the D-effect than deletion.

When the /t-/ from the D- classifier prefix precedes an alveolar stop or affricate, the segments coalesce to the form of the stem initial segment, with features of both input segments. (21) provides the data from Ahtna showing this pattern.

(21) a. Coronal Stop

/ɪnɐnɛs-**t-t^{h}**ɐɐn/	[ɪ.nɐ.nɛs.**t^{h}**ɐ:n]	‘he helped him’
/t^{h}ɛs-**t-t**uus/	[t^{h}ɛs.**t**u:s]	‘he started to crawl’
/tɐnɐ-**t-t’**uut’/	[tɐ.nɐ.**t’**u:t’]	‘it (tea) is strong’

b. Coronal Affricate

/tɐ-**t-tɬ’**ɛt͡s’/	[tɐ.**t͡ɬ’**ɛt͡s’]	‘it is blue’
/h^{w}nɪ-**t-t͡s**æχ/	[h^{w}nɪ.**t͡s**æχ]	‘the snow became soft’
/nɐɐ-**t-t͡s**hɪɪtl’/	[nɐ:.**t͡s**hɪ:tl’]	‘it snowed’
/sʔɛɬ qhʊɬ-**t-t͡l**hɛt/	[sʔɛɬ qhʊɬ.**t͡l**hɛt]	‘he caused crisis for me’

No additional constraints are required to analyze this data. Tableau (22) provides the constraint rankings with the other losing candidates which are relevant for the optimal parsing of /t/ before a stem-initial coronal stop or affricate.

(22)

/ tɐ-**t$_1$-t͡ɬ’$_2$**ɛt͡s’/	DEP	MAX	*[-cont][-cont]ONSET	NOCODA	*COMPLEXONSET	UNIFORMITY
→ a. tɐ.**t͡ɬ’$_{1,2}$** ɛt͡s’				*		*
b. tɐ.**t$_1$t͡ɬ’$_2$**ɛt͡s’			*!	*	*	
c. tɐ.**t͡ɬ’$_2$**ɛt͡s’		*!		*		
d. tɐ.**t$_1$**ɛt͡s’		*!		*		
e. tɐ.**t$_1$ə.t͡ɬ’$_2$**ɛt͡s’	*!			*		
f. tɐ**t$_1$.t͡ɬ’$_2$**ɛt͡s’				**!		

In tableau (22), each of the candidates received a NOCODA violation due the word-final coda [t͡s’]. The optimal candidate for tableau (22) is [tɐ.**t͡ɬ’$_{1,2}$**ɛt͡s’] which violates UNIFORMITY due to the /t$_1$-/ and /tɬ’$_2$/ fusing to form [tɬ’$_{1,2}$]. The second candidate is ruled out due to *[tɐ.**t$_1$t͡ɬ’$_2$**ɛt͡s’] fatally violating the constraint *[-cont][-cont]ONSET by the cluster of two [-cont] segments in the onset of a syllable. Candidates (22c) and (22d) both fatally violate MAX by deleting one of the input segments in order to satisfy UNIFORMITY. *[tɐ.**t$_1$ə.t͡ɬ’$_2$**ɛt͡s’] also obeys UNIFORMITY but inserts a schwa, thereby fatally violating DEP. Finally, candidate (22f) *[tɐ**t$_1$.t͡ɬ’$_2$**ɛt͡s’] is not the optimal candidate since it receives a second and fatal violation to NOCODA due to the /t-/ being syllabified as the coda of the preceding syllable. In order for the optimal candidate [tɐ.**t͡ɬ’$_{1,2}$** ɛt͡s’] to be selected, the constraints *[-cont][-cont]ONSET, MAX, DEP, and NOCODA must dominate UNIFORMITY. This ranking is both demonstrated by this dataset, as well as being supported by the datasets showing full coalescence.

2.5 Overall constraint ranking

The overall constraint ranking is provided below in (23) to represent the findings found from the analysis of the D-effect in Ahtna. DEP, MAX, MAX[cg], MAX[nasal], and *[-cont][-cont]ONSET are unranked with respect to each other, and dominate NOCODA, which dominates *COMPLEXONSET; they all dominate UNIFORMITY which is the key constraint for favouring coalescence.

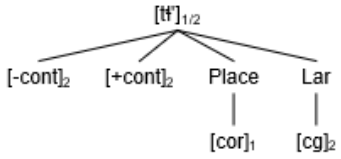
(23) DEP, MAX, MAX [cg], MAX [nasal], *[-cont][-cont]ONSET >> NOCODA >> * COMPLEXONSET >> UNIFORMITY

3 Discussion

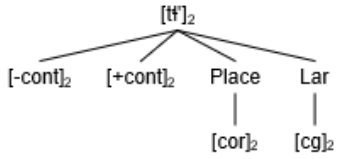
The OT analysis outlined for the D-effect in Ahtna supports previous reports of the D-effect that it always involves coalescence, never deletion (Howren, 1971; Wheeler, 2005; Wilhelm, 2000). The ranking of MAX >> UNIFORMITY is the main motivator for coalescence over deletion. The patterns outlined in the datasets (2, 10, 14, 17) also support LaMontagne & Rice's (1994, 1995) analyses of Ahtna involving coalescence. Where the current analysis differs significantly from the analysis by LaMontagne & Rice (1994, 1995) is with regards to the pattern they analyzed as deletion. The current analysis finds greater support for vacuous coalescence over the analysis of deletion. Due to its subtlety, vacuous coalescence can be misanalyzed as deletion. The subtle difference is illustrated as follows in (24) by these diagrams using the example from the Ahtna dataset (21) for the form /tɐ-**t_1-$\widehat{tɬ}'_2$**ɛ$\widehat{ts}$'/ → [tɐ.**$\widehat{tɬ}'_{1,2}$**ɛ$\widehat{ts}$']. Previous analyses of this data found in (21) have concluded that this pattern is deletion (LaMontagne & Rice, 1994, 1995; Kari, 1990).

(24) /t_1-/ + / $\widehat{tɬ}'_2$/ → [$\widehat{tɬ}'_{1,2}$]

a. *vacuous coalescence*



b. *deletion*



The subtle and formal difference between these two representations is that (24a) has features of both input segments, while (24b) does not. As seen in this illustration, because the output in (24a) has features from both input segments (the [cont] feature from [$\widehat{tɬ}'_2$] and the Place feature from the [t_1]), it is in correspondence with both segments, and represents a coalesced segment. This contrasts with (24b) where the output is not in correspondence with the input of /t-$_1$/ as there are no features from its input, so (24b) represents deletion. LaMontagne & Rice (1994, 1995) did not make the distinction between (24a) and (24b), and simply assumed

deletion whenever the output looks identical to only one of the input segments. Whenever the output looks identical to only one of the segments, it is theoretically possible for this in fact to be a form of coalescence rather than deletion. In fact, the analysis of vacuous coalescence is more coherent as an analysis than one involving deletion.

It is impossible to rule out vacuous coalescence as exemplified by (24a) with the ranking of MAX >> UNIFORMITY as seen in the overall constraint ranking (23) which motivates coalescence in the first place. For deletion to produce the optimal candidate for /tɐ-**t**$_1$-**t͡ɬ’**$_2$ɛt͡s’/, the opposite ranking of MAX and UNIFORMITY would be necessary. This opposing rankings of these constraints within one language creates a ranking paradox. If the D-effect were sometimes coalescence and sometimes deletion, there would be no uniform motivation for it. For these reasons, this analysis argues that the D-effect involves vacuous coalescence rather than deletion. In summary, in Ahtna, if coalescence can be used to form a segment found in the language, then coalescence is used. If coalescence is not possible due to the phonological inventory, then Ahtna uses syllable structure by incorporating segments into either the coda or the onset to preserve the features of the input segments.

4 Conclusion

This paper analyzed how Ahtna accounts for the D-effect and the alternation patterns that arise using Optimality Theory. This analysis provided evidence in support of the D-effect being coalescence, as the pattern that was previously evaluated as deletion can be analyzed to be vacuous coalescence. Coalescence is a strategy used to obey markedness and segmental faithfulness, as well as featural faithfulness as much as possible. In Ahtna, the alternations of the /t/ from the D-classifier prefix include coalescence forming an affricate or glottalized stop, syllabifying the two segments as a complex onset or the /t-/ as a preceding coda, and vacuous coalescence. Future development in the study of the Dene D-effect could investigate coalescence for the D-effect in the Koyukon- and Hupa-type Dene languages. The aim would be to provide further evidence for coalescence in the D-effect in other languages.

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Implicit bias and perception of accent

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This study explores our underlying, unconscious attitudes towards foreign accents. Italian and Mandarin accents were compared in order to determine whether there is a common preference amongst Western Canadian participants. Implicit bias was measured using an Implicit Association Test, in which participants associated each accent with positive words as quickly as possible and reaction times were recorded. A survey was also taken to examine participants' conscious attitudes towards the accents and compare them with their implicit biases. The survey results showed no preference for one accent or the other, with overall averages of 2.63 for Mandarin accents and 2.65 for Italian accents. The results of the IAT revealed that implicitly, Italian accents were preferred, having an average reaction time of 1528.68ms while Mandarin accents had an average reaction time of 1657.02ms. Implicitly, 16 participants preferred Italian accents, while only 4 participants preferred Mandarin accents. The results of this study suggest an underlying preference for Italian accents over Mandarin accents in Western Canadian society.
Keywords: Implicit bias; sociophonetics; nonnative accents; Mandarin; Italian

1 Introduction

In every human interaction that we have, we are constantly making judgements and assumptions about the other person (Drager, 2010). The implicit biases that are formed can contribute to societal discrimination, including racial and gender stereotyping, by individuals who would not intentionally or overtly discriminate against such minorities (Staats, 2016). Being made aware of these implicit biases can shed light on the unintentional discrimination that occurs in our society today. This paper seeks to deepen our understanding of implicit biases when it comes to Canadians' judgements of foreign accents. Italian and Mandarin accents were compared in order to identify whether these accents have a significant effect on the way that speakers are perceived as individuals.

2 Background

2.1 Implicit bias

Implicit bias refers to the unconscious attitudes and stereotypes that can affect an individual's actions without triggering their conscious awareness (Brownstein & Saul, 2015). Previous research has found that an individual's implicit bias does not necessarily correlate with their explicit or conscious attitudes (Karpinski & Hilton, 2001). Identifying the underlying implicit biases that exist in our society is a highly important area of research, as bringing awareness to a person's unconscious biases can allow them to actively align their actions with their beliefs (Staats, 2016). Illuminating the underlying stereotypes that are prevalent in our society is the first step towards eliminating the discrimination that those stereotypes bring about. Greenwald et al. (1998) developed a method for measuring implicit bias called the Implicit Association Test (IAT). In this study, they found that the IAT was able to tap into participants' unconscious racial biases by asking participants to associate white and black faces with pleasant words. The reaction times recorded in this task revealed how naturally participants associated each race with pleasant words, with shorter reaction times indicating a stronger association. Since this publication, the IAT has become a popular method for operationalizing implicit biases. This work has been primarily focused on visual stimuli, highlighting social issues including racism, sexism, and ageism. With regard to these topics, IAT scores have been found to be significantly more valid in predicting behaviour compared to self-reports (Greenwald et al., 2009). Implicit bias has been found to be a better predictor of non-verbal behaviour, while self-reports were better predictors of verbal behaviour (Dovidio et al., 2002).

3 Sociophonetics

In conversation, speakers are constantly and unconsciously picking up on subtle phonetic cues within spoken language (Drager, 2010). These cues allow us to make assumptions about important non-linguistic information, such as the speaker's personality, intent, and emotional state. Although these judgements are not always accurate, previous research has found that assumptions are often consistent across participants, regardless of the accuracy of their judgements (Drager, 2010). A study conducted by McAleer et al. (2014) asked participants to listen to audio recordings of the word 'hello' and answer questions about the speakers based on traits such as trust, likeability, and dominance. The study found that the voices were rated consistently between participants based on only a single word (McAleer et al., 2014). This study shows that judgements about personality happen almost immediately, while also supporting previous work by highlighting the consistency of personality judgements. This research provides a basis for using spoken language, as opposed to visual stimuli, to study implicit biases. Since sociophonetic information is processed after as little as one word, the unconscious

assumptions being made about the speaker are happening within that same time frame.

3.1 Attitudes towards Foreign Accents

Research on implicit biases has highlighted underlying stereotypes that exist towards various minorities, especially highlighting issues of race and gender (Melamed et al., 2019; Pritlove et al., 2019). Foreign accents are another topic that has often been the target of discrimination (Gluszek & Dovidio, 2010; Roessel et al., 2018; Roessel et al., 2020). Because of this prevalent stigmatization, nonnative accents are an important topic to study through the lens of implicit biases. Increasing individuals' awareness of their own biases toward foreign accents could lead to necessary change in their actions. Previous research has found that implicitly, nonnative accents in general are found to have a negative stigma, no matter which foreign accent is being judged (Roessel et al., 2018). In the present study I am interested in examining attitudes towards Mandarin and Italian accents of English, and comparing the two. These accents have not been studied in the context of implicit attitudes, but there is some research that has examined listeners' conscious opinions using surveys. In a study examining conscious attitudes towards a variety of foreign accents, Mandarin accents were rated less favourably than French, German, Russian, and Hindi accents (Dragojevic & Goatley-Sloan, 2020). Similar studies have associated Italian accents with incompetence, low attractiveness, and high sociability when compared to other Western European accents (Ball, 1983).

Previous research that has studied implicit biases towards accents has found significant results. Pantos and Perkins (2013) measured listeners' implicit and explicit biases of American and Korean accents. They used surveys to tap into explicit bias, and the IAT to tap into implicit bias. Upon comparing their results, they found that, explicitly, participants favoured the Korean English accent, while implicitly, the American accents were preferred (Pantos & Perkins, 2012). Another study conducted by McKenzie (2015) examined British students' implicit and explicit biases of six different accents of English. This study found similar results. The UK English accent was implicitly favoured, while the explicit tests did not show this clear bias (McKenzie, 2015). Each of these studies found that implicitly, native accents were preferred to foreign accents. These results were likely influenced by in-group bias, meaning that the results of these studies could be attributed to a preference to one's own accent, rather than having anything to do with the foreign accents themselves. In my experiment, I am interested in comparing two separate nonnative accents, rather than using any native accents. I am interested in comparing perceptions of Mandarin and Italian accents in order to answer the question: Is there a significant difference in participants' implicit judgements of Mandarin and Italian accents? Based on previous research done on the stereotypes associated with these accents, I predict that the Italian accents will be preferred to the Mandarin accents. While Italian accents were determined to be one of the least preferred among Western European accents, Mandarin accents

were rated below all of the European accents that it was compared to (Ball, 1983; Dragojevic & Goatley-Sloan, 2020). A second research question that will be answered by this study is: Do participants' explicit judgements correlate with their implicit biases? Based on the findings of previous research (McKenzie, 2015; Pantos & Perkins, 2012) I predict that there will be a difference, and that the implicit bias results will be more strongly in favour of the Italian accents, while the explicit bias results will not show such a strong preference.

4 Methods

4.1 Participants

The listeners in this study consisted of 20 native English speakers who are currently living in Western Canada. Participants needed to have English as their first language in order to ensure that the accents that they are judging are, in fact, foreign to them. It is important to take into account the area in which participants are living, because each society has different underlying stereotypes and prejudices, and for the purposes of this study I am interested in the biases of Western Canadians specifically. The participants included 17 individuals currently living in BC, and 3 individuals living in Alberta. Participants ranged from 17 to 79 years old (m=29.11). Participants were 15% men and 85% women.

4.2 Stimuli

The stimuli presented to participants was extracted from the Speech Accent Archive Corpus (Weinberger, 2015). Two speakers of each accent were selected, one male and one female. The audio files selected had similar audio quality in order to avoid skewed results based on clarity. The same speakers were used throughout the experiment, to retain consistency across the different tasks. The second task also involved visual stimuli, which consisted of individual words presented in the middle of the screen (Appendix A). Further discussion of the presentation of stimuli for each task is included below.

4.3 Experimental Procedure

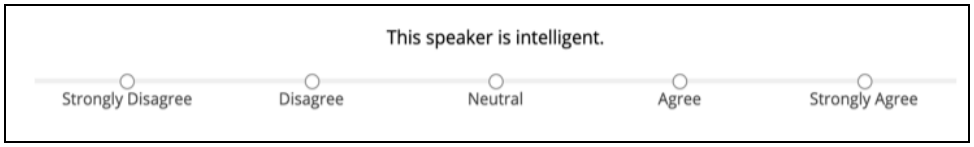
The experiment was administered online and was coded using JsPsych (de Leeuw, 2015). Participants were sent an informed consent form ahead of time and were required to give their consent in order to access the rest of the experiment. There were two parts to the study, with separate tasks to measure explicit and implicit biases. The experimental procedure of each task is outlined below. After completing the experiment, participants were asked a series of demographic questions, including gender, age, city of birth, city of residence, and previous language experience and/or exposure.

4.3.1 Task 1: Initial assumptions

The first portion of the study was a survey designed to measure participants' explicit biases. The stimuli consisted of an audio file of the following phrase spoken in either a Mandarin or an Italian accent: "Please call Stella. Ask her to bring these things with her from the store: Six spoons of fresh snow peas, five thick slabs of blue cheese, and maybe a snack for her brother Bob." After listening to the audio file, participants were asked to rate the voices on a series of 5-point Likert scales. Figure 1 shows an example of one of the Likert scales. Participants were asked to rate the voices on five scales, based on the conditions of: Likeability, Intelligence, Trustworthiness, Competence, and Friendliness. These attributes have been used in the literature to analyze the different aspects of a person's personality (Roessel et al., 2018). This procedure was repeated for each speaker, for a total of four trials, which were presented in a randomized order.

Figure 1

Survey Scale Used by Participants to Rate Speakers' Intelligence



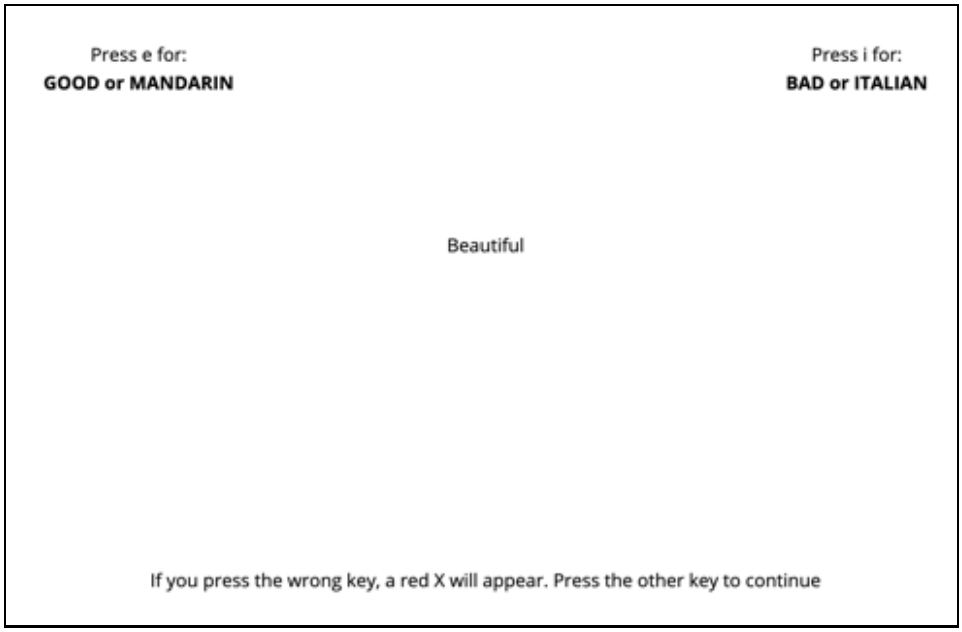
4.3.2 Task 2: Implicit association test

Implicit bias was measured using an IAT. Participants were asked to categorize stimuli as quickly as possible. The stimuli used included the same audio clips from Task 1, cropped into shorter segments using Praat (Boersma & Weenink, 2019). The stimuli also included synonyms of 'good' and 'bad' that were presented visually in the middle of the screen. Each stimulus and the category to which it belongs is given in Appendix A. The stimuli were randomly presented one at a time, and participants were instructed to press the 'E' key if the presented stimulus matched the condition shown in the upper left corner and press the 'I' key if the stimulus matched the condition shown in the upper right corner of the screen. Figure 2 shows an example of the screen that participants were shown during the IAT. In this example, the stimulus *Beautiful* is presented in the middle of the screen, and the participant has to press the 'E' key to put the stimulus in the category *Good* shown on the upper left side of the screen. If a participant responds incorrectly, a red X appears on the screen, and the participant then has to press the other key in order to continue to the next stimulus. There were seven trials of the IAT, three training sessions and four measurement sessions. Each trial involved a different combination of categories, which are outlined in Appendix B. Each training session was used to allow participants to become accustomed to the relevant categories being on each side. Training sessions 1 and 2 allowed

participants to get used to *Mandarin* and *Good* being on the left and *Italian* and *Bad* being on the right, while only having to think about one category at a time. The measurement sessions combined the audio and visual stimuli in order to quantify the associations between the two. Training session 5 allowed participants to get used to *Italian* now being on the left, associated with *Good*, and *Mandarin* now being on the right, associated with *Bad*. This block ordering, along with the words used for the *Good* and *Bad* categories, is standard amongst IAT studies (Pantos & Perkins, 2013).

Figure 2

Screenshot of IAT Trial Screen



3.4 Data Analysis

The data from the surveys was coded and compiled, with each response on the Likert scales having a corresponding numerical value. The responses were coded using integers between 0 and 4, with 0 meaning strongly disagree and 4 meaning strongly agree. The mean responses of all participants were recorded for each condition and compared across accents. For the IAT, reaction times were measured for the correct responses, and the results of each accent were compared. Reaction times for Mandarin accents were taken from blocks 3 and 4, when participants associated 'Mandarin' and "Good", and reaction times for Italian accents were taken from blocks 6 and 7, when associating 'Italian' and 'Good' (Appendix B). Reaction times were excluded if they were over 10,000ms, assuming the participant was not focused on the task, or if more than 10% of the reaction times

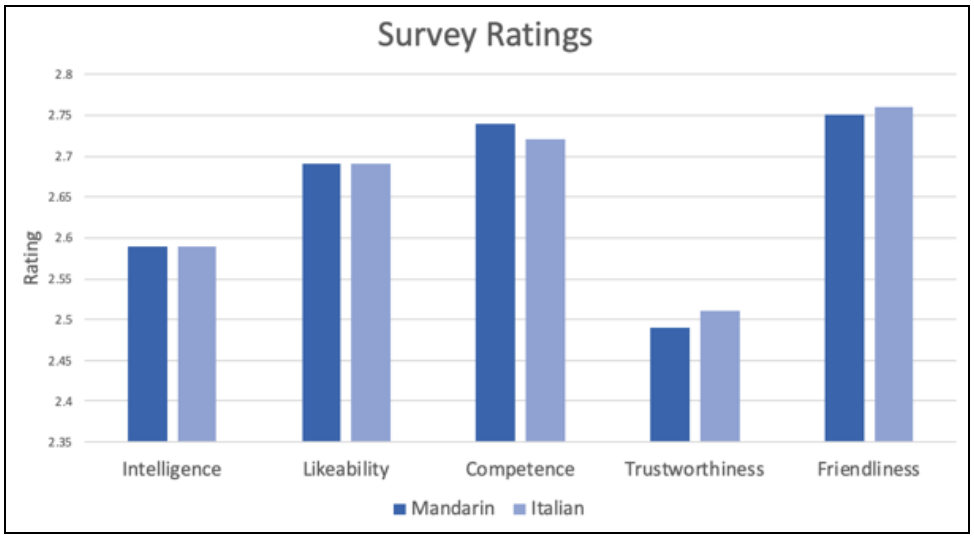
in a trial were under 300ms, assuming that the participant was pressing the keys at random, as is standard practice among IAT research (Pantos & Perkins, 2012). The difference in averages of each accent for each task were calculated within participants and compared to observe their explicit and implicit preferences.

5 Results

The results of the survey show no preference for one accent or the other. The overall average ratings across all conditions were 2.63 for the Mandarin accents and 2.65 for the Italian accents. These values indicate that both accents were overall rated just higher than neutral. Figure 3 shows the ratings for each condition. There was little variance between conditions. The highest rated condition for both Mandarin and Italian accents was Friendliness, with mean ratings of 2.75 and 2.76, respectively. The lowest rated condition was Trustworthiness, which averaged at 2.49 for Mandarin accents and 2.51 for Italian accents. Trustworthiness appears to be rated quite a bit lower in the figure, but the difference between 2.5 and 2.75 is not noteworthy, as all of the conditions were rated between 'neutral' and 'agree'. As we can see in the figure, the Mandarin and Italian accents were rated very similarly in each category. In two of the conditions, Intelligence and Likeability, the averages of the two accents were exactly the same, and the largest difference between the accents was a difference of 0.02, which occurred in the conditions of Competence and Trustworthiness.

Figure 3

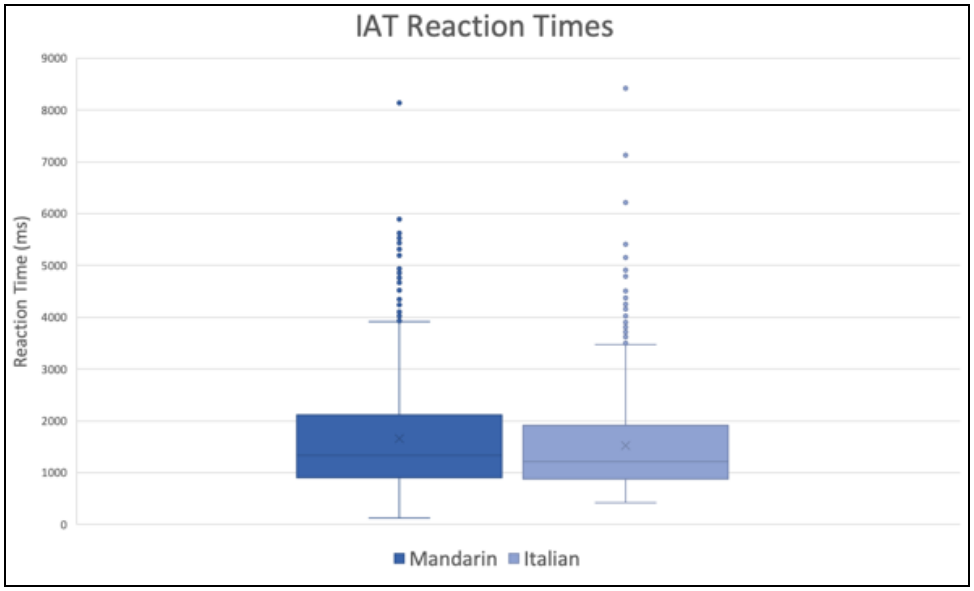
Survey ratings of Mandarin and Italian accents in each condition



There was a considerable amount of overlap amongst the reaction times of Mandarin and Italian accents in the IAT. Despite this overlap, there is a slight preference for the Italian accents. Figure 4 shows all of the reaction times for the correct responses when associating *Mandarin* with *Good* shown in dark blue, and when associating *Italian* with *Good*, shown in light blue. The overall mean reaction times were 1657.02ms for the Mandarin stimuli and 1528.68ms for the Italian stimuli.

Figure 4

IAT Reaction Times when Associating Mandarin and Italian Accents with Positive Words



Note. The reaction times include responses to all of the stimuli in all of the categories, the difference being which categories are grouped together during the respective trials.

Given the variability in both survey responses and IAT reaction times between participants, accent preferences were also compared within participants. Table 1 shows the distribution of participants based on which accent they rated higher in the survey task, and which accent they associated more quickly with positive words in the IAT. Out of the 20 participants, 8 rated Italian accents higher in the survey, 7 rated Mandarin accents higher, and 5 participants rated the accents exactly equally in the survey. This is an incredibly balanced distribution across the two accents. We do not see the same pattern in the IAT results. In this task, 16 out of the 20 participants made the association between *Italian* and *Good* more quickly than the association between *Mandarin* and *Good,* while 4 participants associated *Mandarin* with *Good* more quickly.

Table 1

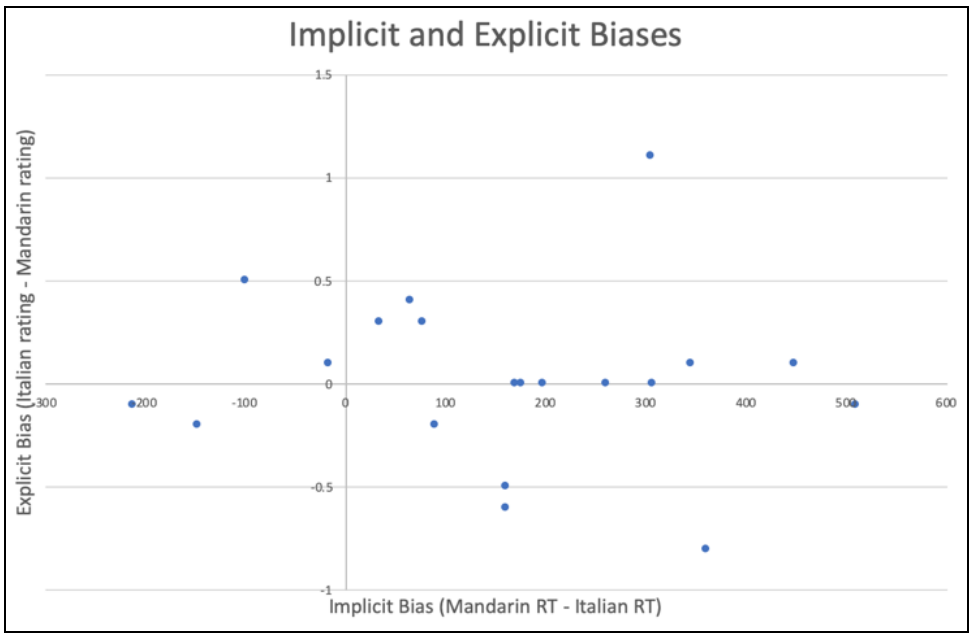
Distribution of Participants' Accent Preference in Each Task

	Italian	Equal	Mandarin
Explicit (Survey)	8	5	7
Implicit (IAT)	16	0	4

Figure 5 illustrates the degree to which participants preferred one accent or the other. Each point on the graph represents one participant, and how much preference they gave to one accent, both implicitly and explicitly. The x-axis represents participants' implicit biases. Each participant's average reaction time in blocks 6 and 7 (associating *Italian* with *Good*) were subtracted from their average reaction time in blocks 3 and 4 (associating *Mandarin* with *Good*). Participants that fall in the positive range implicitly preferred Italian accents, while participants whose x-value falls in the negative range implicitly preferred Mandarin accents. The difference between each participant's average survey rating of Mandarin accents and their average rating of Italian accents is represented on the y-axis. Higher positive values represent a greater preference for Italian accents, and negative y-values represent a preference for Mandarin accents. The values of reaction time differences ranged from -211.15ms to 509.76ms, while the differences in average survey ratings range from -0.8 to 1.1. We can see from this figure that the degree to which each accent is preferred follows the same trend as the distribution discussed in Table 1. The degree to which each accent is explicitly preferred is fairly balanced, which is similar to the number of participants who preferred each accent. Implicitly, the degree to which Italian accents are preferred exceeds the degree to which Mandarin accents are preferred by almost 200ms. This correlates to the uneven distribution in the number of participants that implicitly prefer each accent.

Figure 5

Distribution of Participants' Accent Preferences in Each Task



6 Discussion

In regard to the research questions and predictions outlined in section 2.3, the results of this study followed the trends that have been identified in previous research. The first prediction made was that implicitly, Italian accents would be preferred to Mandarin accents. This prediction was confirmed in the data. While there was no previous research found that studied implicit biases toward Italian or Mandarin accents specifically, we could assume based on previous findings examining attitudes towards foreign accents that Mandarin accents would be interpreted less favourably than Italian accents. Specifically, Dragojevic and Goatley-Sloan (2020) found that Mandarin was perceived to be inferior to German and French accents. While this study did not examine Italian accents, we could assume that these findings would extend to other Indo-European languages. This assumption was reinforced by the results of this study.

There was no distinct prediction made in regard to which accent would be explicitly preferred, as there was no comparison previously made between the two accents in the literature. It was predicted, however, that we would not see the same clear preference as in the IAT data. This prediction was made on the assumption that participants would not be entirely aware of their own attitudes or prejudices, and that consciously, they would not consider Italian accents to be in any way superior to Mandarin accents. This prediction also played out in the data. The

results of the survey data were even more evenly distributed between the accents than expected. The fact that, after 20 participants rating two different voices in each accent, the results were exactly equal in two of the conditions is surprisingly balanced.

The results of this study lead to another important question: To what can this apparent implicit bias be attributed? Previous research would suggest that it is an effect of the stereotypes that exist within our society (Brownstein & Saul, 2015). One case from the present study that is of interest is that of a Chinese participant who grew up speaking both Mandarin and Cantonese at home, along with English. Based on these facts, one would expect that her results would differ from those of Caucasian participants who have had little exposure to both Mandarin and Italian accents. Her results, however, showed that while this participant rated Mandarin accents higher in the survey, her IAT results indicated a preference for Italian accents. This data could suggest that societal stereotypes, rather than individual ethnicity, was a more influential factor in determining implicit bias, as this participant was born and raised in BC.

Another important effect to consider when analyzing the results of this study is the influence of the COVID-19 pandemic. The data in this study was collected in March 2021, a year after Canada first went into lockdown as a result of the pandemic. Studies have found that since the beginning of the pandemic, anti-Asian attitudes and xenophobia have increased in correlation with a fear of contracting the virus (Reny & Barreto, 2020). Consideration needs to be taken in whether the results that we see can be fully attributed to a general underlying prejudice in Canada, or whether the COVID-19 pandemic has had a substantial influence on our current attitudes towards Mandarin accents. It would have been interesting to be able to compare the results of this study with data recorded before the pandemic, or with data taken years down the road, in order to disambiguate the results from the influence of COVID-19.

7 Conclusions

Overall, the results of this study suggest that there is an underlying preference for Italian accents over Mandarin accents in Western Canadian society. It is tempting to generalize these findings to European and Eastern Asian accents overall, but having only looked at one accent from each region, the findings of this study can only apply to Italian and Mandarin accents specifically. Further research looking at a variety of European accents and comparing them with a variety of Eastern Asian accents would be helpful, in order to see if the present findings hold true. The present analysis is only a pilot study, with only 20 participants. In order to increase the validity of the results, further research would need to be done with a larger sample size.

If the present results were to hold true with a larger number of participants, these findings could have implications within a variety of areas. Implicit biases have been found to have a substantial impact in many fields, including law, medicine, and mental health services (Chapman et al., 2013; Jolls & Sunstein,

2006; Peris et al., 2008). It is important to consider how our unconscious attitudes towards accents as a society may be affecting the treatment of individuals who have those accents. A number of suggested interventions have been claimed to be successful in increasing personal awareness and reducing implicit biases (Brownstein & Saul, 2015; Devine et al., 2012). There are control-based interventions, which focus on increasing awareness of one's biases and actively preventing them from having an effect on one's actions, and alternatively there are change-based interventions, which focus on changing the unconscious biases themselves (Brownstein & Saul, 2015). The long-term effectiveness of both of these strategies is debated, but further research into how they could apply to implicit bias as it relates to accentism could have a crucial effect on the discrimination that takes place based on accents.

Another important implication to consider is the level of accountability that is associated with implicit bias compared to explicit bias. A study by Daumeyer et al. (2019) found that participants were less likely to hold individuals who were guilty of discrimination accountable if their actions were attributed to implicit bias. Even if their actions were the exact same, they were perceived as more acceptable if they were caused by implicit rather than explicit bias. These findings are highly important, because they highlight the possibility of implicit bias being used to justify discrimination. As our understanding of implicit bias grows, it is crucial that we continue to take responsibility and be held accountable for our implicit biases on a societal level as well as at an individual level.

Acknowledgements

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Appendix A

Implicit Association Test Stimuli

Condition	**Type of stimuli**	**Stimuli**
Mandarin	Audio	"Please call Stella"; "Ask her to bring these things with her from the store"; "Six spoons of fresh snow peas"; "Five thick slabs of blue cheese"; "We will go meet her Wednesday at the train station"
Italian	Audio	"Please call Stella"; "Ask her to bring these things with her from the store"; "Six spoons of fresh snow peas"; "Five thick slabs of blue cheese"; "We will go meet her Wednesday at the train station"
Good	Visual	Beautiful; Lovely; Joy; Happy; Smile; Wonderful
Bad	Visual	Horrible; Painful; Awful; Disgust; Humiliate; Terrible

Appendix B

Implicit Association Test Trials

Trial #	**Condition presented on the LEFT**	**Condition presented on the RIGHT**
Trial 1 (training)	GOOD	BAD
Trail 2 (training)	MANDARIN	ITALIAN
Trial 3 (measurement)	GOOD or MANDARIN	BAD or ITALIAN
Trial 4 (measurement)	GOOD or MANDARIN	BAD or ITALIAN
Trial 5 (training)	ITALIAN	MANDARIN
Trial 6 (measurement)	GOOD or ITALIAN	BAD or MANDARIN
Trial 7 (measurement)	GOOD or ITALIAN	BAD or MANDARIN

Case study: Child language project

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The following report analyzes English child speech from a video (Sims, 2014) and consists of the following three sections: phonetics and phonology; vocabulary and morphology; as well as syntax, pragmatics, and sociolinguistics. The transcription of the video in both IPA and English is included in the Appendix for reference. The purpose of this report is to simply analyze English child speech to gain experience for further child speech analyses and therefore no predictions or research questions are present.
Keywords: Child language; child speech; case study

1 Phonetics and Phonology

The following tables show the child's phonological inventory (Sims, 2014). Note that the segments in round brackets are those that have not been acquired yet or were not observed and segments with a question mark in brackets beside them are those that may or may not have been acquired. Segment /ʍ/ was not included due to the variety of English spoken by the parent in the video that does not use /ʍ/. In Table 2, all back vowels are rounded except the low /ɑ/.

Table 1

Consonant inventory

	bilabial	*labiodental*	*dental*	*alveolar*
plosive	p b		t d	
nasal	m		n	
fricative		f v	θ (ð)	s z
liquid				retroflex: r lateral: l

	postalveolar	*palatal*	*velar*	*glottal*
plosive			k g	ʔ
nasal			ŋ	
fricative	(ʃ) ʒ(?)			h
affricate	(tʃ) (dʒ)			
glide		j	w	

Table 2

Vowel Inventory

	Front	*Central*	*Back*
High	i		u
	ɪ		ʊ
Mid	ej	ə	ow oj
	ɛ	ʌ	
Low		æ	ɑ
		aj aw	

The child seems to have acquired all vowels of English as seen above in Table 2 as all of them were observed (see Appendix). Most of the consonants have also been observed, however some were not due to difficulty in production. For example, /ð/ could have occurred in multiple words as in 'then' and 'the', but /d/—a voiced dental plosive—was produced instead. This replacement was consistent throughout the child's speech. The voiceless counterpart of the fricative mentioned above seems to have been acquired but is not produced in every instance, as in 39a 'thing' is pronounced as /tɪŋ/. Other consonants were not observed due to lack of environment that they can occur in, as is the case for the postalveolar affricates and fricatives. An interesting occurrence of /ʒ/ in /bɪkʌʒt/ on line 21a, may have been a production slip-up as the child already acquired the segment /z/ as is evident in multiple other pronunciations. It was the only occurrence of splitting up the features of segment /z/ in two separate ones, i.e., the palatal fricative followed by a dental stop. Thus, due to lack of data, it cannot be concluded that the child acquired the postalveolar consonant or other postalveolar sounds from Table 1.

The occurrences of /l/, the lateral liquid and /r/ the retroflex liquid, seem to be intermittent and are usually reduced to a glide or completely omitted in consonant clusters. For example, the child is able to say 'love' /lʌv/ and 'like' /lajk/, but in 'flowers' and 'Miles' on line 51a the lateral approximant is omitted as in /fawz/ and /majəz/ due to consonant clusters present in the onset and coda respectively. However, the lateral liquid is present in the second occurrence of 'Miles' on line 65a (see Appendix) and is reduced to a glide in 'telling' /twɛwiŋ/ despite the absence of a cluster in the target pronunciation. The retroflex liquid is reduced to /w/ in clusters like 'frozen' and is omitted completely in clusters such as 'strawberries' and 'truth' (see Appendix). Interestingly, /r/ occurs as a /w/ in 'story' even though no consonant cluster is present to make production of the retroflex approximant more difficult, similarly to /l/ in 'telling'. Finally, /r/ occurs as an /r/ in 'everything' despite being adjacent to /v/, but it may be because they are in two separate syllables, /v/ is in the coda of the preceding syllable and /r/ in the onset of the next.

Consistent consonant clusters that do not get reduced seem to be in the coda position–/nt/ and /nd/, and the /st/ cluster in the onset. However, there are instances where the final stop is deleted, such as on line 41a, where both 'and' and 'didn't'

have reduced codas (see Appendix). The most complex consonant cluster is present in the coda of the word ‘seconds’ as in /sɛkəndz/.

Despite the above production deficits, the child clearly understands the parent who produces all of the above segments and clusters.

One variation, besides the liquid-glide variation present in this child’s speech, is the glottal stop and /t/ variation. For example, line 8a exhibits this with /ɪt/ and /ɪʔ/. Although the child does not seem to have a problem producing the final /t/, sometimes she replaces it with a glottal stop as in ‘that’ /dæʔ/ and ‘not’ /nɑʔ/, lines 9a and 53a respectively. Note another interesting variation present on line 6a of ‘mad’ (see Appendix). More data is needed to determine the relevant significance of this variation.

The child forms questions with rising intonation and stresses words in a target-like fashion, without any abnormally stressed syllables. For example, ‘strawberries’ and ‘everything’ both occur with primary stress on the first syllable.

2 Vocabulary and Morphology

The following table shows the child’s morphological inventory as seen from Sims (2014). Besides the various suffixes and prefixes the child has acquired, Table 3 also outlines the grammatical categories acquired by the child. Note, the morphemes included in each of the grammatical categories are shown without the suffixes with which they may or may not appear in the transcript (see Appendix).

The compound words “everything” and “someone” were considered as monomorphemic because the child did not demonstrate the use of “every”, “one”, or “some” as clear evidence of the acquisition of the separate morphemes. The same was considered for “daddy” as the child did not demonstrate any other uses of the diminutive suffix anywhere else or the morpheme “dad” on its own. The compounds “time-out” and “strawberry” were also counted as one morpheme each for the same reasons. The compound “anywhere” was considered monomorphemic for the sake of consistency with the other compounds mentioned above because “where” was not produced on its own during the video. However, the child does produce “any” as a separate morpheme on line 79, which may imply that “anywhere” is actually two separate morphemes in the child’s vocabulary and should be treated as a compound word. With the outlined points above, the MLU of the child was calculated using the total number of morphemes (188) divided by the total number of utterances (34), which yielded an MLU of 5.5.

Table 3

Morphological Inventory

Category	***Examples***	
Noun Phrase	*Noun*	room, doughnut, time-out, cake, truth, story, thing, second, daddy, flower, strawberry, nothing, Miles, everything
	Pronoun	I, my, me, you, it, this, someone, he, him
	Determiner	a, the
Preposition	in, to, on, out, at, about	
Verb	put, poke, cry, go, can, see, want to, eat, ask, love, got, tell, am, is, gonna	
Adjective	mad, any, big	
Adverb	right, like, that, then, now, anywhere, there	
Conjunction	cause, and, because, but	
Interjection	no, yeah, okay	
Suffixes	*plural*	flower-s, strawberrie-s, second-s
	progressive	was cry-ing, am tell-ing, was go-ing
	past	regular: pok-ed
		irregular: did, was, frozen, took, had
	negation	was-n't, did-n't, not

From Table 3, it is evident that the child acquired many grammatical categories, including a full range of pronouns in various cases. The pronouns which were not produced by the child in this clip were "she" and the corresponding inflected forms, i.e., "her" and "hers", as well as the plural pronouns "we" and "they". However, the presence of other single person pronouns leads to the prediction that the child did acquire the pronoun "she" and did not have the chance to produce it in this particular video. The plural pronouns may or may not have been acquired. Again, the context of the discourse simply may not have provided the child with the opportunity to produce plural pronouns. Note that the child also acquired the contracted copula "be" with the pronouns, such as "I'm" and "he's", which are not shown in the table.

The child did not produce any prefixes and as outlined above there was no evidence for any multimorphemic compounds. Note, however, the use of "doughnut thing" on line 39 instead of "container", which could be considered as a compound word made up by the child. Further, the child produced many different inflectional suffixes, including the regular plural morpheme *-s*, with no allomorphic variation present. That is, the child's only instances of producing the regular plural morpheme included the [-z] allomorph. No irregular plural nouns were present in the transcript. However, the child does seem to have acquired the irregular past for several verbs including "did", "was", "took", "had" and "frozen". Note that with the "frozen" verb, the child seems to have overgeneralized the use of the past participle morpheme *-en*, since the intended use on line 21 (see

Appendix) is the past, i.e., "froze". However, this interpretation of the data may not be correct. The child also demonstrated the use of the regular past morpheme *-ed* in "poked". The production of progressive *-ing* was also present, although it was not consistent as the child did not produce the morpheme on line 23 (see Appendix) in "talk" but did everywhere else. The negation suffix (or clitic) *-n't* seems to have been acquired as well, as the child used both "wasn't" and "didn't" correctly and in addition used the non-contracted form "not" in instances like "he's not" on line 53 and "I'm not" on line 79. The pronunciation of the *-n't* suffix seems variable, but only for "didn't" and not for "wasn't". Comparing lines 21a and 41a, for example, the child omits the [t] in the second instance (see Appendix). The child also varied in the production of the morpheme "mad" on line 6a as mentioned in the previous section of the report. No derivational suffixes were produced.

The child's competence seems to be higher than their production, because the child seems to understand everything the mother is saying, despite not producing a lot of the vocabulary demonstrated by the mother's speech. There does not seem to be any evidence for mis-segmentation in the child's speech or any use of under- or over-extension.

3 Syntax, Pragmatics and Sociolinguistics

The syntax exhibited by the child from Sims (2014) reflects the acquisition of relatively complex phrase structure where different clauses are connected by conjunctions, such as those on line 7 and 21 (see Appendix). The established phrase structure also includes the proper acquisition of syntactic properties of verbs and argument structure. Furthermore, the child seemed to have acquired inversion in questions. For example, "*can* you see it now?" on line 17, is showing the movement of the modal verb *can* to the beginning of the sentence, meaning that the child has at least partially acquired the operation of Move. Evidently, the child also seemed to have acquired some auxiliaries and proper negation using auxiliaries such as "he *wasn't* going anywhere" on line 7 or "because I *didn't* want to" on line 21 (see also Appendix, line 41). Note, the auxiliary *do* does not seem to appear in questions in the transcript, only in statements. Thus, it is inconclusive whether or not the child has fully acquired questions with negation such as "What *don't* you like?" where the non-inversion with that particular auxiliary tends to persist, e.g., "What you *don't* like?". The transcript does not demonstrate the acquisition of other auxiliary verbs, such as *have* and *will,* besides *can, was* and *do,* but that may not reflect the child's true competence in the domain of auxiliaries. It may be that the child simply did not have the opportunity to produce them within the context of this particular discourse and a short period of time. Similarly, the child's speech within the transcript does not show the use of passive sentences or relative clauses, which may imply that they have not yet been acquired. No reflexives are present in the transcript, implying that Binding Principles have not been fully acquired yet either. Again, these syntactic concepts could have been acquired by the child already, but it is not be evident due to the lack of data. The absence of relative clauses, reflexives, and passive sentences suggests that the child

has not fully acquired complex adult phrase structure even though, as mentioned previously, coordinate structures with conjunctions *and* and *but* on line 21 (see Appendix) are present.

In the video and therefore in the transcript, the child's only interlocutor is the mother. Thus, it is impossible to judge whether or not the child changes register when conversing with another speaker. Similarly, the setting does not change throughout the discourse and therefore one cannot judge whether the child is already able to adapt their speech to different settings. Although the evident parent-child power dynamic is present, the child employs a defensive tone and does not use any semantic mitigators. In fact, the threat "I'm not gonna love you *any seconds*" on line 79 has a semantic aggravator—*any seconds*—which intensifies just how much the child will not love the interlocutor. In this particular situation, the child uses language that seems to be appropriate for a parent-child confrontation, where children usually get defensive since they are familiar with the parent, but which would be an unlikely occurrence with an adult who is a stranger for example. Yet the child does not get as aggressive as they might with a peer, due to the power dynamic mentioned above.

The child is able to change the illocutionary force of their utterance because they are capable of expressing their intentions indirectly. For example, throughout the video the intent of the child is to deflect blame away from themselves. By describing the narrative, the child tries to create a cover story in order to demonstrate that in fact, they "did everything right" (see Appendix line 4 and 9) and that implies that they did not take the doughnut. Similarly, on line 41 (see Appendix), the child states that someone must not have put the doughnut back, again implying that it was not the child who took the doughnut out, but somebody else.

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Appendix A

1 MOM: so, what did you do wrong?

2 CHI: nothing.

2a /nʌθɪŋ/

3 MOM: you didn't do anything wrong?

4 CHI: no. I did everything right in my room.

4a /now//aj dɪd ɛvriθɪŋ raj ɪn maj rum/

5 MOM: really?

6 CHI: daddy put me in my room cause he was mad mad mad.

6a /dædi pʌt mi ɪn maj rum kəz hi wʌz mæd mæ mæz/

7 CHI: and I poked daddy and he was crying and then it was in time-out and then he wasn't going anywhere.

7a /ænd aj powt dædi ænd hi wʌz krajiŋ ænd dɛn ɪt wʌz ɪn tajm awt ænd dɛn hi wɑzənt gojiŋ ɛniwɛr/

8 CHI: I was going to my room. It had flowers on it, it had cake on it, it had strawberries on it.

8a /aj wʌz gojiŋ tu maj rum// ɪʔ hæd fawz ɑn ɪt ɪt hæd kejk ɑn ɪt ɪʔ æ stɑbɛriz ɑn ɪt/

9 CHI: like that. I did everything right.

9a /lajk dæʔ//aj dɪd ɛvriθɪŋ rajt/

10 MOM: Tiffany? Now, what is that right there? What is that?

11 CHI: doughnut.

11a /downʌt/

12 MOM: it's a what?

13 CHI: a doughnut.

13a. /ə downʌt/

14 MOM: were you supposed to get a doughnut?

15 CHI: no.

15a /now/

16 MOM: I can still see the doughnut.

17 CHI: can you see it now?

17a /kæn jə si ɪt naw/

18 MOM: I can still see it. Look at me. Now, did I tell you that you could have a doughnut?

19 CHI: no.

19a /now/

20 MOM: I didn't, right? So why did you come here and tell me a story?

21 CHI: because I didn't want to but (I) got out my room and someone frozen it and now xxx eat it and daddy was mad at me.

21a /bɪkʌʒt aj dɪdənt vʌnt tu bʌt gɑ ʔʌ maj rum ænd sʌmwʌn fwowzən ɪt ænd naw xxx it ɪt ænd dædi wʌz mæd æt mi/

22 MOM: Daddy is not even here.

23 CHI: no I'm talk about story.

23a /nɑ ajm tɑk əbawt stɑwi/

24 MOM: I'm not — no. I meant are you telling me the truth or a lie?

25 CHI: um the truth. I am telling the truth.

25a /ʌm də tuθ//ajm twɛwɪŋ də tuθ/

26 MOM: the truth? Really?

27 CHI: mhm.

28 MOM: well Tiffany what's inside that hat? Move the doughnut that's on top of that hat. Open up the hat. There's — so, you stole a whole doughnut, huh?

29 CHI: Uh-uh.

29a /ʌʔʌʔ/

30 MOM: You didn't?

31 CHI: uh-uh.

31a /ʌʔʌʔ/

32 MOM: what is it that I'm lookin' at?

33 CHI: this.

33a /dɪs/

34 MOM: I'm lookin' at the hat? So I don't see that doughnut?

35 CHI: uh-uh.

35a / ʌʔʌʔ/

36 MOM: Tiffany open your hand. There's a doughnut, right?

37 CHI: there.

37a /dɛr/

38 MOM: yeah. And where was it supposed to be?

39 CHI: in a doughnut thing?

39a /ɪn ə downʌt tɪŋ/

40 MOM: yeah, in that container.

41 CHI: and he —someone didn't put it in there.

41a /æn hi sʌmwʌn dɪdən pʊt ɪt ɪn dɛr/

42 MOM: no it was in there. Somebody took it out.

43 CHI: yeah.

44 MOM: who?

45 CHI: it was daddy.

45a /ɪt wʌz dædi/

46 MOM: really?

47 CHI: yeah.

48 MOM: hmm.

49 CHI: he took it out.

49a /hi tʊk ɪt awt/

50 MOM: but daddy is not here.

51 CHI: no. Miles took it out.

51a /now//majəz tʊk ɪt awt/

52 MOM: Miles is in here with mommy.

53 CHI: no he's not.

53a /now his nɑʔ/

54 MOM: he was in here.

55 CHI: but he wasn't.

55a /bʌt hi wɑzənt/

56 MOM: so what were you doing?

57 CHI: nothing.

57a /nʌθɪŋ/

58 MOM: huh?

59 CHI: nothing.

59a /nʌθɪŋ/

60 MOM: nothing?

61 CHI: no.

62 MOM: so did you have the doughnut?

63 CHI: no.

64 MOM: you didn't?! then who had the doughnut?

65 CHI: Miles.

65a /majəlz/

66 MOM: really?

67 CHI: had a big doughnut.

67a /hæd ə bɪg downʌt/

68 MOM: Miles had the big doughnut?

69 CHI: go ask him.

69a /gow æsk ʔɪm/

70 MOM: but I see you with a doughnut.

71 CHI: he— he is goin— he's—

72 MOM: now should you get in trouble for that?

73 CHI: no.

74 MOM: you shouldn't?

75 CHI: no.

76 MOM: what should happen?

77 CHI: umm nothing.

78 MOM: you were disobedient.

79 CHI: cause I'm not gonna love you any seconds.

79a /kəz ajm nɑt gɑnʌ lʌv ju ɛni sɛkəndz/

80 MOM: you're not gonna love me any seconds? That's okay. You don't have to love mommy, but you do have to be obedient. Look at me. Look at mommy. Now, just because you were disobedient you don't get any more sweets all day. Okay?

81 CHI: okay.

81a /owkej/

Learning Indigenous methodologies

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This paper recounts the author's own experiences as they relate to some of the key principles in the literature about Indigenous thinking and methodologies for research, learning, and teaching. Since story and situating the researcher are two Indigenous methodologies, the paper is organised around five stories of the author's experiences learning Indigenous methodologies as she worked with an Indigenous community in Cameroon. The stories illustrate the Indigenous methodologies of relationships and decolonising, language and land, spirituality and healing, process, connectedness, and music and finally, team, respect and transformation. Purpose and responsibility for the outcomes of the research are discussed in a section that looks back over her whole experience. The paper ends with a challenge to academia to adopt Indigenous methodologies in research.
Keywords: Indigenous methodologies; Indigenous ways of teaching and learning; Indigenous research methodologies; story

1 Introduction

Just before I left for Africa to work with an Indigenous community in Cameroon,[1] an anthropologist friend who had worked in Cameroon advised me, "When you go to Africa, don't go as a teacher; you will never survive. Go as a learner and you will do well." I took his advice, and I am glad for it. Years later, when I moved into the Mi'kmaq region in Eastern Canada, I kept that attitude and am known as a learner of Mi'kmaq in the community. I like that role.

There is quite a bit of literature on Indigenous ways of thinking and methods of teaching and learning.[2] This paper illustrates my experience as it relates to some of the key points about Indigenous methodologies in the

[1] I worked in language development and translation with SIL International.

[2] Key readings on Indigenous learning and teaching include Ahenakew (2016), Absolon (2011), Archibald (2008), Battiste (2002, 2013), Chilisa (2011), Gone (2019), Grande (2008), Hall & Cusack (2018), Hinton (2011, 2013), Kovach (2006), Parker (2012), Ryder et al. (2020), Sanford et al. (2012), Smith (2012), Smith et al. (2016), Snow et al. (2016), Walter & Suina (2019), Wilson (2005), Wilson (2007), and Windchief & San Pedro (2019). Specific applications to Mi'kmaw include Bartlett (2011), Borden (2011), and Metallic (2009).

literature. I use two of the Indigenous methodologies I have learned – story and situating myself in it.[3] My father was Mennonite and my mom a mix of German and Scottish. My dad's first language was Plautdietch, Low German, as he called it. He only learned English when he went to school at age seven. He moved out of the region and he never taught Low German to me or my sister. He lost his language by the time he was 55. I think my family situation sparked my interest in linguistics. I tell my own story of learning Indigenous methodologies when I lived and worked in the domains of language development and translation with the Moloko, an Indigenous group about 10,000 strong in the Far North Province of Cameroon (Friesen et al. 2017).

> Stories are who we are. They are both method and meaning. (Kovach, 2010, p. 108)
> Situating oneself is an essential part of Indigenous research. (Parker, 2012, p. 4)

2 Relationships and decolonising

> Research, like life, is about relationships. (Kovach, 2015, p. 50)

> Post colonial? There is nothing post about it. (Kovach, 2010, p. 76)

I worked with David,[4] one of my first Moloko colleagues, daily when I was in Maroua, the local city. David was my major language teacher, and since he is bilingual in French too, he was also my advisor in all things cultural and linguistic. He was already a song leader in the community. He became a literacy teacher and we worked together to make some of the first literacy books for Moloko.

In the early days of working together, David was polite and friendly, but his speech was peppered with "*nous les nègres … et vous les blanches*" (we the negros … and you the whites). Almost every sentence, it seemed, contained what sounded to me like self-derogatory phrases. I really had a hard time to concentrate, I found it so distressing. After a while, I tried something that I hoped would indicate that I honoured him; I invited myself over for lunch after church. That is the way you

[3] "Locating oneself honours the personal among the collective" (Kovach, 2010, p. 112). "Self-location anchors knowledge within experiences, and these experiences greatly influence interpretations." (Kovach, 2010, p. 111). In many Indigenous dissertations, the researcher first introduces themselves and inserts themselves, their family, and their history into the presentation of their research (Johnson 2014; McIvor 2012; Michel 2012; Rosborough 2012, Thompson 2012). Story works in that it is up to the listener to piece together a lesson from the story and to apply the pieces to their current situation (Wilson, 2008, p. 123). "Story as methodology is decolonizing research" (Kovach, 2009, p.103).

[4] David is not his real name. I keep his name out of print for cultural reasons and out of respect for my colleague.

are supposed to do it in Moloko. The greatest gift you can give someone is the gift of yourself – a visit. So, you go over to someone's house and you hang around until mealtime. This was way out of my comfort zone but I did it one day. I hung around for quite some time before he finally whispered to me, "We have nothing to eat." Quite embarrassed, I went home. But he had seen my intention, and every other Sunday after church I was expected to come to his house and eat. And I did. Gradually, as the weeks and months went by and we continued to work together, his language changed, as he said, "*nous les noirs ... et vous les blanches*" (we the blacks … and you the whites). Then it became "*nous les Camerounais ... et vous les Canadiennes*" (we the Cameroonians … and you the Canadians). I kind of liked that one. Eventually after a while I realized that he wasn't using any comparatives anymore. Something had changed.

When we finally published the literacy booklet, we passed the draft by the literacy consultant in the organisation who advised us and helped us to improve the document for publication. After she looked at it, she called me aside and chided me. I had put my name only as author, with the idea that the author in a 'real academic' publication is the one with the pen, the one who writes on the paper. She told me, "Put David's name as first author, and yours as second." I did, grudgingly at the time. Since then, I have realised that his input as expert in the Moloko language was far greater than mine as linguist and I have continued the practice.[5]

3 Language and the land

> One of the things that Indigenous families want in education is to maintain a relationship with the land – to find a new way of relating to the land, since the old way is impossible. (Lorna Williams, personal communication, 2014)

> The need for so many of us to not only learn what was taken from us [the language, people, land, and ancestors], but also to try to mend that tear for future generations by revitalizing our language. For many Indigenous researchers, we are using research to do just that. (Thompson, 2012, p. 9)[6]

I grew peanuts and kept chickens in the same way that Moloko women did. I lived in a mud-brick house with a thatched roof. You couldn't tell my house from any of my neighbours, at least until you got close. Then you would see that I had big glass windows with screens to keep the malaria mosquitoes out, cement floors, and

[5] "Language is extremely political" (Lorna Williams 2014, personal communication). "No matter how it is positioned, a decolonizing attitude must be incorporated within contemporary explorations of Indigenous inquiry" (Kovach 2010: 81). "Knowledge is relational … it is not the realities in and of themselves that are important. It is the relationship that I share with reality" (Wilson 2008: 74).

[6] "Living on the land … learning from the land … belonging to the land … respecting the land" (Parker, 2012, p. 27).

a kitchen that looked nothing like theirs. Actually, it didn't look much like a Canadian kitchen either, but it served my needs. I had heard that successful language projects happened when expatriates came and identified with the local people as best as they could – lived with them in their villages, dressed in the cultural way, ate their foods, drank their water. I visited my neighbours and they came over to see me – just to sit and talk or to eat together. They came over to get medicine or to ask for a ride to town the next time I was going. Some of the local kids visited me in the evening because they wanted to learn to read Moloko and they weren't allowed to attend the adult classes offered by the Moloko literacy committee (they only learned French in school). I kept ducks at one point without much success. My dog ate one and another died of the bird flu that went through every year. When a third one died, one of my friends said, "*Andibobo ango amitamat*" 'your ducks keep dying.' She used a reduplicated form of the verb 'it dies' that I had never heard before. I said, "Can you repeat that?" and discovered for myself a verb conjugation that I knew probably existed but had never been able to elicit.

4 Spirituality and healing

> I was focussing so intently on how the sacred comes into research that I almost missed how the sacred is our research. (Kovach, 2009, p. 183)

> It is vital that healing take place concurrently with language revitalization. (Thompson, 2012, p. 192)[7]

When I moved into the Moloko region, one of my first jobs was to work with a committee of Moloko men to decide how they wanted to write their language. We met every two weeks for about six months to slowly wrestle through different orthography issues, issues like what letters to choose for their different sounds, how to divide up words, how to spell words which change dramatically depending on whether you say a sentence slowly or at regular speed. It is a complex process! Each week I expected that we would finish, but every week we'd get bogged down in some issue and the time would fly and we'd be almost as far away from finishing as when we started (or so it seemed). When we were wrapping up yet another session, they said, "We have a proposal to make, since we come each time and yet we can never seem to finish the work." I expected them to complain. Imagine my shock when they asked to meet for an intensive two-day marathon of work. "Do you think we could finish that way?" they asked. I said, smiling, that I thought we might. So, we planned an orthography sleepover at my team mates' house – lots of good food (rice and meat sauce, with fresh dates and peanuts to munch on), a newly painted blackboard to write on, and enthusiasm to spare. We did finish! The first evening, we got through all the remaining major issues, so that the next day we could review and prepare for testing the orthography in the community.

[7] Johnson (2014, p. 137) advises that along with language learning for adults, that talking circles in English be incorporated into the language revitalization program, for healing.

After the first day of work, the men slept in the living room – the same room in which we had been working.

What do people do when they are left for a night in a room with a blackboard, when they have just developed a writing system for their language? Well, they don't sleep! They wrote messages back and forth to one another – in Moloko, of course – funny ones, wise ones, insulting ones; you name it, until the wee hours of the morning. Finally, one person wrote, "I don't want to hear any more words! May God give us all a peaceful rest."

The next morning, we tested all the decisions we had made over the past weeks by having each person write a short story and read another story out loud. While each person was away in the test room, the others wrote more on the blackboard. These activities helped us evaluate the writing system.

Later in the day, one of the men working on the orthography said to me, "It's going to rain today." Rainfall levels had been dangerously low that year, and partial crop failure was imminent unless we got some rain. I asked him why he said that. He replied, "Today we are finishing our alphabet talks, so that the Moloko language can be written down for the first time ever. God has certainly blessed us, and He will also send us rain." Sure enough, right after the men left to go home, the wind whipped up and it poured for hours. The parched ground was now muddy, the dried-up millet stalks greening again, grains swelling with sweet water. Until that day, I never thought of working on an alphabet as being a spiritual work.

5 Process, connectedness, and music

> Music is the voice of the universe … Everyone has a song. (Lorna Williams, 2014, personal communication)
>
> In Mi'kmaq, everyone and everything is part of a whole. (Battiste & Henderson, 2000, p. 55)

When I first moved into the Moloko community, I joined the Moloko praise group. Every couple of months they would have a praise day, where hundreds of Moloko would converge on one church for a day of praising God. They sang in Moloko and danced. It was wonderful. They were making a songbook that contained all of the songs they had written in their language for praise. Actually, they already had a draft of it typed in the computer by the time I arrived to Cameroon – they had taken the testing orthography that an expatriate phonologist had worked out with them and applied it to writing down their songs. When they saw my interest, they invited me to a committee meeting. Now, I wanted to contribute to language development but I don't really like committee meetings. I went though, and the first thing they said at the meeting was, "We want to publish our hymnbook!" I said, "Hey, I only just got here, and we have to work through the orthography issues, and it takes time, and I have to learn how to speak some Moloko." They said, "You whites have been here since 1992 and we want some fruit! You plant a

tree and you expect to get fruit sometime soon. We want to see some fruit!" Now, 1992 was when the first language survey was done in the area – the first expatriate linguists from the organisation didn't move there until 1995, and this was 1998 and I had just arrived. Well, by the end of the meeting, I promised that I would do everything I could to get that praise book published. As it turned out, working through the songbook was the greatest way to work through the orthography issues that we faced. Another benefit was that I learned so much language by singing the songs as I danced in the circle with the group.

I stayed with the praise group throughout my time in Cameroon. At one meeting I was overjoyed to hear a Moloko artist in the group suggest that the minutes of the meetings be written in the Moloko language. He said, "Why should we use French for the minutes when we can write in Moloko now?"

6 Team, respect, and transformation

> It will be recognized that transformation within every living entity participating in the research will be one of the outcomes of every project. (Wilson, 2007, p. 195)

> Knowledge is shared and relational, and this research should be conducted with methods that carry relational accountability which holds the researcher accountable for fulfilling a responsibility to all relationships with the natural environment. (Gail Dana-Sacco, from Thompson, 2012, p. 83)[8]

One of the easy readers that the Moloko published turned out to be a hit with the children. It is originally a story from Chad, a neighbouring country, and it is one that a Canadian mother would *never* read to her children. It is about a goat that is always hungry, and who goes around eating things he shouldn't. He just never is fully satisfied. First the children chase him away, then the women. Then, after he eats even more precious things, the men decide that *they* are hungry! They catch and kill the goat, roast him, and eat him. They are the ones who are fully satisfied in the end.

The translators and I worked hard to translate and improve this story, reading it to people and getting their reactions, and editing the story accordingly so that it was well-told in Moloko. Finally, we published it and printed 200 copies. We decided to sell it for just 25cfa (equivalent to a Canadian nickel) to encourage people to buy it. We took some copies to a revisers meeting. Normally we would wait for an hour or so for all the delegates to arrive, and meanwhile, many people would gather around to see what was happening in their church. We took the moment to read them a few of the newly-published books, including the goat story. Well, all day long, throughout the meeting, mothers and children came with their 25cfa to buy the book. Then we could see them outside, reading the story to their

[8] This is research "that is conducted **for**, **with**, and **by** the language-speaking community" (Czaykowska-Higgins, 2009, p. 24).

neighbours, and laughing. Within the next few minutes, another child or mother would arrive with 25cfa to buy 'that goat book.' When the day was done, we had sold 50 copies!

At the last revisers meeting I attended before going back to Canada for a few months, the same thing happened. When our meeting was over that day, the village schoolteacher came into the church. He said, "All day long I have seen my students reading a little green book, and I can see that they are interested in reading. What are you doing here, and what is this little green book?" The translators and revisers explained, and one of the church members bought the teacher a book so he could have one for himself.

We ended up by printing 1000 copies of the book. These sold out in record time.[9]

7 Purpose, responsibility for the outcomes of the research

> Knowing why we are carrying out research – our motive – has the potential to take us to places that involve both the head and the heart. We need to know our own research story to be accountable to self and community. (Kovach, 2009, p. 120)

> It is advisable that a researcher work as part of a team of Indigenous scholars/thinkers and with the guidance of elder(s) or knowledge-keepers. (Wilson, 2007, p. 195)[10]

I left Cameroon and the Moloko communities in January of 2008, intending to be away for only seven months. I haven't been back since. In 2008, I joined a colleague in my organisation who was working with Mi'kmaq communities in my home region of Canada, and have been invested here since then. I have worked in spurts on the Moloko grammar, encouraged and supported by a linguistic consultant in my organisation. The grammar grew from a sketch of some 60 pages

[9] Battiste & Youngblood (2000, p. 86) notes that "no force has been more effective in oppressing Indigenous knowledge and heritage than the education system." What better place to empower Indigenous communities now than in the education system? In an excellent report on polysynthetic language structures and curriculum, Sarah Kell (2014, p. 44) quotes Barry Montour to make a case for the need for linguistic study in education. Montour says, "It is imperative that linguists with expertise in both polysynthesis and second language learning theories work in collaboration with First Nation communities to design a research framework and select appropriate methods to investigate how second language learners acquire a polysynthetic language. … This will lead to new theories on second language acquisition, which will then allow practitioners to develop effective pedagogies for the transmission and revitalization of Indigenous languages. Without this vital research, the current efforts to ensure the transmission of North American Indigenous languages, particularly those that are endangered, will continue to struggle."

[10] "It will be recognized that the researcher must assume a certain responsibility for the transformations and outcomes of the research project(s) which he or she brings into a community" (Wilson, 2007, p. 195).

to a complete work of 400+ pages. It is now published. It is authored by me, "*with* Mana Isaac, Ali Gaston, and Mana Samuel," simply because my Moloko colleagues do not speak English and the academic rules at the time didn't allow them to be co-authors.[11] Has doing this grammar or any of the other linguistic and language development activities I was involved in had any kind of a lasting effect on the Moloko? I really can't say.[12] However, I can say that it has had a profound effect on me. I have changed completely from the person who left my home and loved ones to cross the sea to find adventure in another land. I have found another home and more loved ones. I am still a learner. I will never forget.

> The Indigenous wholistic framework is informed by Kirkness and Barnhardt's (1991) 4Rs: *Respect* for Indigenous cultural integrity; *Relevance* to Indigenous perspectives and experiences; *Reciprocal Relationships*; *Responsibility* through participation and the 5th R of *Reverence.* (Pidgeon, 2019, p. 420)

8 Conclusions

In summary, this paper paints some of the broad strokes about Indigenous thinking and methodologies for research, learning, and teaching I learned from my reading and my experiences and relates them to some of the literature published in these domains. I am still learning. I close with three questions from my reading:

> What would it take for Indigenous epistemologies to become policy? (Piper et al., 2019, p. 93)

> What does research look like when the inherent intelligence, strength and capacity of Indigenous peoples form the foundations and motivation for intellectual inquiry? (Blair, 2015, p. 820)

> To serve Indigenous knowledge systems there must be ethical, epistemological, and methodological inclusion of Indigenous voice, understandings, and practices. Further, there is a need for Indigenous presence within the academy that places value upon Indigenous knowledges, to provide a stewardship role for these knowledges. (Kovach, 2015, p. 50)

[11] I thank Charlotte Loppie for informing me that this is not the case today.

[12] Some of the literature I read advises people involved in language revitalization not to teach the language or the grammar but to emphasize communication (Franks & Gessner 2013, 57-59, Kipp 2009, McIvor 2012). On the other hand, Cruz & Woodbury (2014, p. 268) argue that grammar is important for advanced learners, for building confidence in teachers, and for pride in the language.

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The determiner phrases in East Asian learner English

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This paper aims to assist trainee or novice ESL teachers who have some knowledge of linguistic theory but little or no knowledge about the grammar of discourse- or topic-oriented languages with no article and null pronouns, including Mandarin Chinese, Japanese, and Korean. Proposing an activation model for DP in these Asian languages, the properties between English determiner phrases (DP), including articles, pronouns, demonstratives, and (alienable) possessives, are compared with those in the East Asian languages. The conscious awareness of explicit knowledge about the grammar of DP in two typologically distinct languages will provide additional benefits to the teachers' teaching in Asian contexts.
Keywords: Determiner phrase, explicit knowledge, East Asian language learners, English as second language

1 Introduction

What explicit linguistic knowledge learned by preservice ESL (English as a second language) teachers can be transferred to the ESL classroom? The goal of this paper is to assist teachers to reflect on the structure of a determiner phrase (DP) in the context of teaching ESL.[1] Specifically, it is written for trainee or novice ESL teachers who have some knowledge of linguistic theory but little or no knowledge about the grammar of discourse- or topic-oriented languages with null pronouns (Barbosa, 2011; Huang, 1984; Kim, 2000) or languages with a bare noun phrase (NP) without a determiner (Tomioka, 2003). Mandarin Chinese, Japanese, and Korean (henceforth CJK) are often listed as examples of such languages. The distributions of linguistic items in the structure of DPs in English and the CJK languages, including articles, pronouns, demonstratives, and (alienable) possessives, are explored as the requirement of the morphophonological realization of these determiner elements (Ds) varies in these two typologically distinct language groups[2]. An overt/pronounced D item with a strong D feature such as NUMBER is obligatory in English, whereas a covert/unpronounced D with a weak D feature such as NUMBER and/or INDEFINITE is ubiquitous in CJK. For example, D features NUMBER and PERSON in the English sentence *I love animals*

[1] Here ESL is used as a cover term; it includes the context of both English as foreign language and English as additional language.
[2] Quantifiers, including *all*, *each*, *both*, *most*, *many* and *every* are also D elements, but are left for future study.

must be pronounced/overt with the strong D features. However, in the equivalent Korean sentence (*nay-ka*) *tongmwul*-(*tul*)-*ul cohahay* 'I like animals', these D features are weak as *nay-ka* 'I.NOM' and the plural suffix *tul* '-s' can be unpronounced/covert. To help L1 (first or native language)-CJK learners' *restructuring* or *noticing* (Schmidt, 1990; Skehan, 1996) in the acquisition of L2 (second or additional language) English, teachers may need to be aware of features of the target language (L2) that L1-CJK learners need to acquire; furthermore, teachers can anticipate potential difficulties that the learners may encounter if they are aware of L1 structure (Andrews & McNeil, 2005; Bigelow & Ranney, 2005). Grammatical gaps discussed in this paper are written within the framework of generative second language acquisition (White, 2003), focusing on potential difficulties encountered by L1-CJK learners learning L2 English.

Teacher Language Awareness (TLA) is defined as "the knowledge that teachers have of the underlying systems of the language that enables them to teach effectively" (Thornbury,1997, p. x, cited in Andrews, 2007, p. ix). Within the framework of TLA, Knowledge About Language (KAL) includes ESL teachers' explicit and declarative knowledge about language (Andrews, 2007, p.13). Although explicit knowledge in Second Language Acquisition (SLA) is defined as "declarative knowledge of the phonological, lexical, grammatical, pragmatic, and sociocritical features of an L2" (Ellis, 2004, p. 244), declarative knowledge should not be limited to knowledge about the L2. Explicit knowledge about the grammatical difference between learners' L1 and their L2 may also help teachers and learners notice a gap in L2 acquisition (Schmidt, 1990; Swan & Smith, 2001) because L1 transfer in L2 acquisition is an observed phenomenon (Ionin & Zubizarreta, 2010). Andrews (2007) suggests that the abilities to analyze grammar from the learner's perspective and to anticipate the learners' grammatical difficulties are two of twelve aspects of grammatical knowledge and awareness that are required of trainers of English L2 teachers. Their grammatical knowledge and awareness would help L1-CJK learners notice notable forms in L2 English acquisition.

SLA studies have reported that learners from L1-CJKbackgrounds have difficulties with acquiring English articles: Chinese (Leroux & Kendall, 2018; Lopez, 2019; Snape, 2006; Snape, García Mayo, & Gürel, 2009; Tryzna, 2009); Japanese (Butler, 2002; Snape, 2006; Snape et al., 2009); and Korean (Ionin, Baek, Kim, Ko, & Wexler, 2012; Ionin, Ko, & Wexler, 2004). Some studies have provided pedagogical suggestions. For example, Master (1997, 2002, 2003, 2007) identifies the problems acquiring English articles as well as suggests that instructors use an information structure, including Topic and Focus. Akakura (2012) details effective results from explicit instruction on articles. However, it seems that there are few studies that sketch the difference between the distribution of D elements in English and CJK in a manner which may be useful for novice ESL teachers with little or no prior knowledge of CJK grammars. This paper aims

to fill the gap by providing a synopsis of contrastive analysis of the DP systems in these languages.[3]

This paper is structured as follows: Section 2 briefly reviews key research findings in DP acquisition, particularly focusing on features of D; it has been assumed that a deficit of these features in CJK may cause the problem of acquisition. In Section 3, I demonstrate the internal structure of DP in generative grammar and the different distributions of D elements in L1 and L2. I suggest that novice L2 teachers need to consciously be aware of in L1-CJK learners' grammar. Tree representations of the structure of DPs with various D elements presented in this section may help teachers visualize the differences. Section 4 concludes with a statement of my beliefs about the sequence of teaching the grammar of English DP, grounded in my understanding of DP systems and in experience of acquiring them.

2 The structure of DP, the features on D, and morphophonological D elements

A Determiner Phrase (DP) is a phrasal projection, and its head is a D (determiner) which selects an NP (Noun Phrase) as its complement in Generative Grammar (Abney, 1987; Adger, 2003; Carnie, 2013). The structural, functional, and lexical categorial labels of items in English sentences with distinct D items can be represented as in (1) and (2). None of the D elements in these two sentences are morphophonologically optional.

(1) *She loves her son*.

labels	She	loves	her	son
structure	DP	T_{PRES} vP	DP	NP
function	subject	finite	object	
category	PRONOUN	VERB	POSSESSIVE	NOUN

(2) *The boy loved this dog*.

labels	The	boy	loved	this	dog
structure	DP	NP	T_{PST} vP	DP	NP
function	subject		finite	object	
category	ARTICLE	NOUN	VERB	DEMONSTRATIVE	NOUN

DPs can be the subject of a clause, the object of a finite or non-finite verb, or the object of a preposition in English. Articles, pronouns, demonstratives, quantifiers, and (alienable) possessives can appear at D (the head of a DP); a pronoun, a demonstrative, a quantifier can stand alone at D, while an article and a possessive both must take a noun phrase (NP) as their complement. For example, the D

[3] This paper complements the summary of CJK grammars discussed in *Learner English* (Swan & Smith, 2001) although I cover only DPs.

element *her* in (1) must select a NP [$_{DP}$ her [$_{NP}$ son]] as its complement and the D element *the* in (2) must select a NP [$_{DP}$ the [$_{NP}$ boy]] as its complement.

What sort of explicit knowledge about English DPs do L2 English teachers need to be aware of or obtain to understand and help the L2 learners' learning experience? What challenge do L2 English learners face when they learn English DPs? What characteristics of DPs do discourse- or topic-oriented languages (Barbosa, 2011; Huang, 1984; Kim, 2000) have in common? Some differences in D elements in these languages, including articles, have been briefly noted in *The Grammar Book* (Larsen-Freeman & Celce-Murcia, 2016) and summarized in *Learner English* (Smith & Swan, 2001). For instance, "most Asian languages have no articles" (Larsen-Freeman & Celce-Murcia, 2016, p. 281). Thompson notes that "many Japanese learners achieve really creditable proficiency in all aspects of written English except for articles and the number-countability problem" (2001, p. 304). Chang notes that there are no articles in Chinese (2001, p. 321); Lee states that Korean nouns are not preceded by articles (2001, p. 338). As English articles are one of the D elements that appear in the head of a DP, recently, a few studies have discussed them in the context of determiner phrases in SLA studies. However, most studies discuss English articles are in the context of noun phrases.[4]

In a few SLA studies, some semantic related features have been employed to explain the behaviour of English articles. For instance, adopting from Huebner (1985), Butler (2002) identifies four types of NPs in English: i) generic nouns [-SR (Specific Reference), +HK (Hearer's Knowledge)] (e.g., *cat* or *whale* in '*A cat likes mice'* or '*The whale is a mammal'*; ii) referential definite nouns [+SR, +HK] (e.g., *pen* in '*Pass me the pen'*; iii) referential indefinite nouns [+SR, -HK] (e.g., *man* in '*I saw a strange man standing at the gate*'); and iv) non-referential nouns [-SR, -HK] (e.g., *lawyer* in '*He used to be a lawyer*'.

(3)

	- SR	+ SR
+ HK	generic nouns	referential definite nouns
- HK	non-referential nouns	referential indefinite nouns

Butler (2002) argues that these two features associated with English NPs are absent in Japanese NPs. If these four [±SR, ±HK] features are legitimate, then they must be associated with D in current generative grammar, as we now know that the properties of specificity and hearer's knowledge about referents are associated with D but not NP. In other words, these features are not inherently associated with the meaning of each noun. Ionin, Ko, & Wexler (2004) identify two kinds of English D features: D with [±DEFINITE] or D with [±SPECIFIC]. They argue that these features are related to the knowledge or mind state of the speaker

[4] *The Grammar Book* (2016, 3rd ed.) does not use DP, but still uses NP as a maximal projection; the head N with D as a specifier of NP [$_{NP}$ D N]. However, D as the head of DP [$_{DP}$ D [NP]] has been employed since Abney (1987) in Generative Grammar (cf. Adger, 2003; Carnie, 2013) which assumes Universal Grammar.

([+DEFINITE]) or interlocutors ([+SPECIFIC]) in English. In the case of [$D_{[+DEFINITE]}$ NP], both speaker and hearer presuppose the existence of a unique individual in the set denoted by the NP, while in [$D_{[+SPECIFIC]}$ NP], the speaker wants to indicate a unique individual in the set expressed by the NP and thinks this individual also has a special property. They argue that neither definiteness nor specificity is obligatorily encoded in Korean and the co-existence of *the* as [+DEFINITE] article and *the* as [+SPECIFIC] article in English grammar create a challenge in L2 acquisition. Adopting D features from Ionin et al. (2004), Lopez (2019) conducts an experiment and measures the outcome of explicit instruction on articles with [+SPECIFIC]. Results of her experiment do not support the benefit of using explicit instruction materials in the classroom. Lopez conjectures that the result may have been affected by low proficiency of L1 Chinese learners of L2 English and short intervention between the instruction and the experiment.

Some scholars do not see definiteness and specificness as discrete properties. Chesterman (1991) investigates the interaction between morphophonological D elements and morphosyntactic features. The study identifies five different kinds of D elements in English: zero ($\emptyset_1$), *some*, *a*/*an*, *the*, *null* ($\emptyset_2$). The zero ($\emptyset_1$) article is the most indefinite, while the null article ($\emptyset_2$) is the most definite article. Master (2003) lists *chicken* in the sentence *The boy ate chicken* as a noun occurring with the zero ($\emptyset_1$) article, while *home* in the sentence *I left it at home* as a noun occurring with the null ($\emptyset_2$) article in English. Although the percentage of zero/null Ds occurring (48.0%) exceeds *the* (36.3%) and *a/an* (15.7%) in five genres of English (Master, 1997), the roles of the zero and null Ds in English DPs have not received much attention in SLA research. For example, Akakura (2012) does not include either the null or zero English articles in her study measuring the effectiveness of explicit instruction to L1-Japanese learners acquiring L2 English articles. Nevertheless, this study suggests that explicit instruction can improve both implicit and explicit L2 knowledge.

Many studies discussed above assume that CJK languages lack an article system or have no encoding system of definiteness or specificity. Then, a reasonable question to ask is to what extent are the most indefinite zero ($\emptyset_1$) article and the most definite null article ($\emptyset_2$) in English similar with the bare NP in CJK languages? Although this study does not answer this specific question, Section 3 compares properties of D elements in the four languages. By suggesting an activation model as a pedagogical tool, which can help L1-CJK learners to activate a mental space for the structure of D with strong D features, this study emphasizes that it is important for trainee or novice ESL teachers to understand the structural differences in two typologically different language groups.

3 The distribution of D elements in English and in topic-oriented languages

3.1 Default versus optional activation of DP

Japanese and Korean languages are both head-final languages with an SOV word order. These two languages are typologically less close to Chinese, which has a relatively rigid SVO word order with no case markers. However, these three languages share a property in common; they are all categorized as topic- or discourse-oriented languages in the literature (Barbosa, 2011, Huang, 1984; Kim, 2000). This property allows radical pro-drops (Neeleman & Szendrői, 2007), which means a pronoun occurring as the subject of a finite clauses or as the object of a verb can be unpronounced or dropped if it can still be understood as being a topic of the clause by interlocutors in the discourse context. An unpronounced or dropped subject or object in finite main clauses is ubiquitous in the CJK languages. This contrasts with English, which is a language that only allows an unpronounced subject in controlled clauses (that is, the subject of non-finite clauses such as the covert subject of *to go* in *I want to go*).

We can see the contrasting property of D elements between English and the CJK languages in a sentence frame like that in (4).

(4) *Did you take it?*

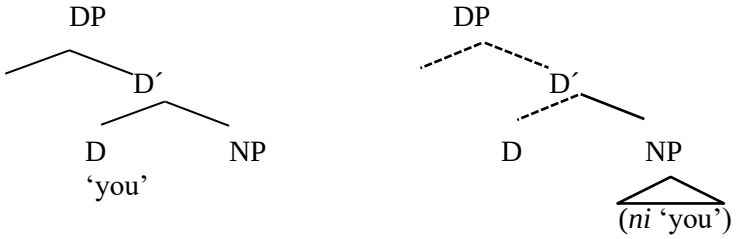
a.	*Did ∅ took it? /*Did you take ∅?	(English)
b	(ni) chi (yao) le-ma?*you eat medicine ASP Q*	(Chinese)
c.	(omae) (kusuri) nonda-kai? *you medicine eat.PST-Q*	(Japanese)
d.	(ne) (yak) mekess-ni? *you medicine eat.PST-Q*	(Korean)

For example, given a discourse context—a dad had asked his child to take medicine and later he confirmed if they took it—the pronouns 'you' and 'it' are obligatory in English, as shown in (4a), where the contrasting grammaticality is illustrated. These pronouns can be dropped in the Chinese (4b), Japanese (4c), and Korean (4d) which are equivalent clauses to the intended English (4a). The clauses with optionally pronounced arguments in the CJK languages are grammatical and the meaning of the unpronounced pronouns are correctly understood by interlocutors when the covert or dropped Ds are the topics (i.e., old information) of the clause (Huang 1984, Tomioka, 2003). Therefore, D in English is governed by the interface between phonology and semantics/syntax, while a null D in the CJK languages is seemingly governed by the interaction between the phonology and the information structure (Vermeulen, 2013) in addition to the internal structure of DP (Tomioka, 2003).

Assuming Universal Grammar and based on the structure of DPs in Generative Grammar, and the distribution of optionally pronounced pronouns and nouns in these languages, I propose an activation model for the structure of DPs in

the CJK languages, as in (5b). The Japanese pronoun *omae* ‘you’ and the Korean *ne* ‘you’ in the sentences in (4) must have the same structure with the Chinese *ni* ‘you’ in (5b).

(5) a. obligatory D (English) b. adjunct D (CJK)

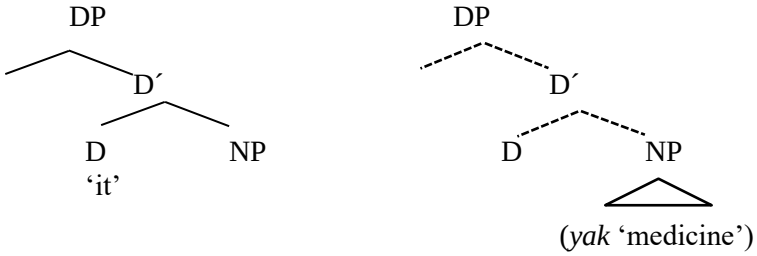


Following Tomioka (2003), I assume that the Chinese pronoun *ni* ‘you’, the Japanese pronoun *omae* ‘you’, and the Korean pronoun *ne* ‘you’ are N items. They can be unpronounced where a discourse topic is associated with D in the structure even when there is no element on verbs that agrees with the features on the subject.

Moreover, in the case of Chinese L1 speakers, there can be a negative L1 transfer in L2 learning for D items. Beginning Chinese L1 learners may frequently use a reverse gender feature for English third person pronouns, as third person pronouns with different gender features in the spoken Chinese are identical in their morphophonological forms. Teachers should not necessarily correct every learner’s error in the early stages of learning, because too-frequent correction could discourage the learners who try to develop a default DP in L2 (Lyster, Saito, & Sato, 2012). Once the learners consistently fill a pronoun in the argument positions, then they should be encouraged to focus on learning the different gender and case features on D elements in L2 pronouns.

The similar operation is assumed for a referential pronoun in an object position, as in (4b) - (4d). Instead of using a referential inanimate pronoun *it*, either a null pronoun or a repetition of the noun substitutes for the complement of the Chinese verb *chi* ‘eat’, the Japanese verb *non-* ‘drink’, and the Korean verb *mek-* ‘eat’. The structure of Chinese noun *yao* ‘medicine’ and Japanese noun *kusuri* ‘medicine’ in DP must have the same structure with the Korean noun *yak* ‘medicine’ in (6b).

(6) a. obligatory default D (English) b. optional activation D (CJK)



The English inanimate pronoun *it* in (6a) is associate with a strong feature so it can replace referring expressions, while an inanimate pronoun in CJK is absent. Common nouns, proper nouns, kinship terms, a noun with a demonstrative occur in the place of referential pronouns in CJK languages. This repetition of nouns is allowed. For instance, *yao* 'medicine' in Chinese, *kusuri* 'medicine' in Japanese, and *yak* 'medicine' in Korean can be used in the place where an English pronoun *it* would occur in a clause. Thus, there is no direct L1 transfer in terms of D items. It is informative for ESL teachers to know that the distribution of pronouns and nouns in the CJK languages differs from English. By understanding the distinct distribution of D elements in L1 and L2, teachers or teaching material designers can help learners acquire solid and default lines of DPs in the target language by developing pedagogical materials and/or in-class activities.

The evidence of the distributional difference of D items between L1 and L2 can be found in the existence of expletives as well.

(7) *It is really cold today.*

a. *Ø is very cold today. (English)
b. jintian Ø feichang leng. (Chinese)
today be very cold
c. kyou-wa Ø hontoni samui. (Japanese)
today-TOP really be cold
d. onul-un Ø cengmal chwupta. (Korean)
today-TOP really be cold.DEC

English has the dummy pronoun or expletive *it* in the head of DP in the subject position and it is obligatory, as in (7a), while the CJK languages do not have expletive pronouns in their inventory of D items. Moreover, CJK languages allow a null subject. Thus, novice teachers need to be aware of a deficit in D items in the learners' L1 and the salient traits of D in English first. After the source of errors is identified, they can help students to develop the solid D with strong phonological and semantic features in English by asking students to identify where/what the subject is in the sentence.

3.2 Salient versus irrelevant D elements: articles, demonstratives, and possessives

The overt D in English and covert D items in CJK languages discussed in Section 3.1 can be the result of the syntax-phonology interface and a matter of a phonological requirement on D in the two typologically different language groups. The distribution of D elements discussed in this section is related to how a semantic feature is associated with a covert and overt D in these four languages. The distinct distributional characteristics of articles, demonstratives, and possessive pronouns between English and the CJK languages are discussed. As shown in (8), the indefinite article *an* is obligatory in English, while there is no corresponding obligatory D element in CJK.

(8) *I ate **an** apple in the morning*

a. *I ate apple. (English)

b. (wo) zaoshang chi le (yi-ge) pingguo (Chinese)
I morning eat ASP one CLASS apple

c. (boku-wa) asa ringo-o (ikko) tabeta (Japanese)
I-TOP morning apple-ACC one CLASS eat.PST

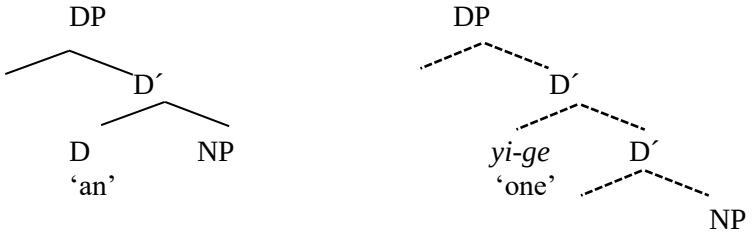
d. (na-nun) achim-ey sakwa-lul (han-kay) mekessta (Korean)
I-TOP morning-LOC apple-ACC one-CLASS eat.PST.DEC

Chang (2001, p. 321) notes that Chinese-speaking learners may omit necessary articles or insert unnecessary ones because there are no articles in Chinese.[5] There is no D item expressing APPLE as one member from the class of apples in CJK languages. If the clause implies that the speaker ate one apple but not two, a classifier with a number would surface in CJK: *Yi-ge pingguo* 'one-classifier apple' in Chinese, *ringo ikko* 'apple one-classifier' in Japanese, and *sakwa han-kay* 'apple one-classifier' in Korean. Note that the Japanese and Korean classifiers follow the noun they modify, while a Chinese classifier precedes the noun it modifies, as in (9b).[6] It could be that Chinese learners perform slightly better than Japanese learners in learning articles (Snape et al., 2009) because Chinese classifiers precede NPs. As noted by Chang (2001), Lee (2001), and Thompson (2001), an indefinite article which specifies a member of a larger class (Larsen-Freeman & Celce-Murcia, 2016) is lacking in CJK.

[5] Examples of errors listed are: *Let's make fire; * He was in a pain; * He smashed the vase in the rage.

[6] A non-restricted relative clause modifies a noun optionally, while a restricted relative clause modifies a noun specifically. *I bought a book which was on sale* versus *I bought the book what/that was on sale*.

(9) a. obligatory D (English) b. optional D (CJK)

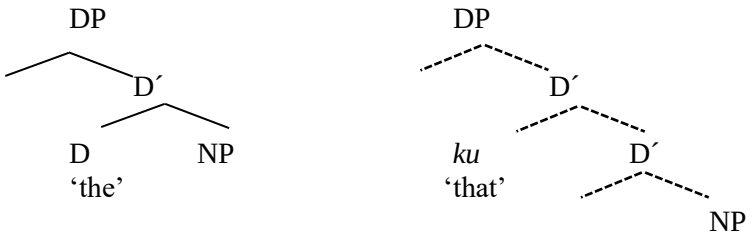


The requirement of definite article in English and CJK languages are also very different. According to Chesterman (1991), definiteness in English is scalar, rather than discrete, in terms of familiarity (locatability), quantity (inclusiveness), and generality (extensivity). The usage of definite article *the* in English is complex (see Larsen-Freeman & Celce-Murcia, 2016), while it is simply absent in CJK, as shown in (10).

(10) *I put it/that on the table.*

a. *I put it/that on ∅ table. (English)
b. wo ba ta fang zai (**na**-ge) zuozishang (Chinese)
I ACC that put LOC that-CLASS table
c. (so-re-wo) (**so**-no) teburu-no ue-ni oita (Japanese)
that thing-ACC that table-POSS top-LOC put.PST
d. (ku-kes-ul) (**ku**-) thakca wi-ey nohassta (Korean)
that thing-ACC that table top-LOC put.PST.DEC

(11) a. obligatory D (English) b. optional D (CJK)



Like Chesterman (1991) observes for the article-less language Finnish, definiteness in CJK may be inferred by a variety of means. One usage of definiteness can be expressed by a demonstrative in CJK. For instance, a demonstrative with a classifier *na-ge* 'that' in Chinese (10b), a demonstrative with a genitive *so-no* 'that of' in Japanese (10c), or a demonstrative *ku-* 'that' in Korean (10d) can optionally fill the D position. However, none of CJK demonstratives seem to totally overlap with the usages of either the English definite article or a demonstrative. Thus, the inventory and distribution of D elements vary.

Another lexical category that appears in the head of D is possessive pronouns. The distribution of alienable possessive pronouns in English is also

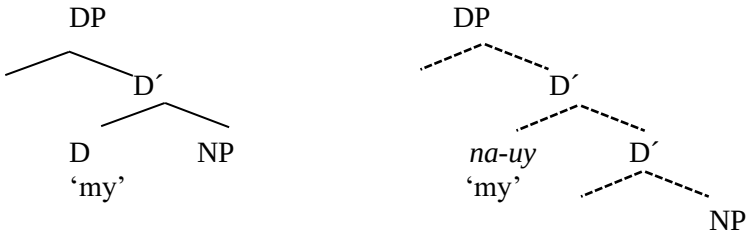
more prominent than in CJK. As shown in (12a), the alienable possessive pronoun in English is obligatory, while the equivalent constructions—a pronoun plus genitive—*wo-de* 'I-GEN' in Chinese, *boku-no* 'I-GEN' in Japanese, *na-uy* 'I-GEN' in Korean are not obligatory; the meaning of the possessive is implied in a covert D. Thompson (2001, p. 305) notes that possessive pronouns in Japanese can be unexpressed unless emphasized or contrasted.

(12) *I wiped it with my hands.*

a. *I wiped it with hands. (English)
b. yong (*wo-de*) shou ca-le-ca. (Chinese)
use I-POSS hand wipe-ASP-wipe
c. (sore-wo) (*boku-no*) te-de huita. (Japanese)
that-ACC I-POSS hand-with wipe.PST
d. (ku-kes-ul) (*na-uy*) son-ulo takkassta. (Korean)
that-ACC I-POSS hand-with wipe.PST.DEC

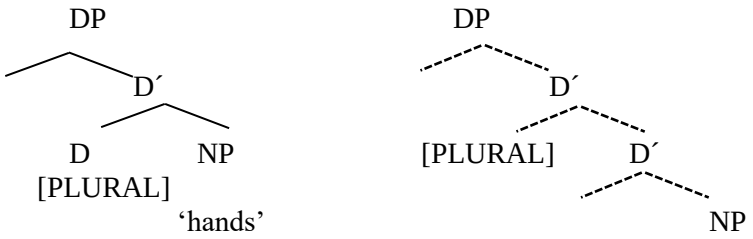
The distribution of CJK possessives in (12) show that the phonological realization of the semantic feature POSSESSIVE can be covert on the surface in these languages. This weak feature in the interface between the syntax and morphophonology may interfere in L1-CJK learners' L2 English acquisition.

(13) a. obligatory D (English) b. optional D (CJK)



Moreover, the plural *-s* must be marked in English if the speaker was using both hands, while no plural marker is needed in such a case in the CJK languages: the bare noun, including the Chinese noun *shou* 'hand', Japanese noun *te* 'hand', and Korean noun *son* 'hand' in (12), can refer to one hand or both hands. The plurality is also associated with D (which is in complementary distribution with a singular indefinite article), the distribution of plural markers in CJK confirms again that the distribution of D elements varies in these languages.

(14) a. obligatory D (English) b. optional D (CJK)



The distribution of D items including pronouns, expletives, articles, demonstratives, and possessives in English shows that the head of DP is prominent in English. One way of acquiring the obligatory marking of a D in English DPs is memorizing constituents with the obligatory D when L1-CJKlearners learn new English nouns by rote. Instead of memorizing the meaning of bare nouns, beginning learners would learn new English nouns in the form of DP constituents with any sort of D element: [that book], [a book], [the book], [his book], [these books], [∅ books] and so on. In this way, L2 learners may easily activate a default DP when they start to create new clauses in L2 with nouns. In order to acquire the D element associated with a common noun, it is desirable to learn DP constituents with an overt article first. For instance, beginning L2 learners should learn the sentences such as *thank you for **the** meal* or *People should never go without **a** meal* before *Thanks for ∅ lunch* or *People should never go without ∅ lunch!* so that the learners do not form the incorrect notion that the insertion of an English D is optional. Once learners have acquired the activated DP structure in L2 using overt pronouns and nouns with a D item, even with errors, they can move onto the next stage of learning the different distributions of each overt D element in L2. In this stage, the learners should practice using all different kinds of English D elements, including pronouns, possessives, demonstratives, and articles, when they produce simple finite clauses with one or two DPs. The difference between *a* and *an* based on phonological constraint can be introduced, but the different distributions of definite *the* versus indefinite articles based on the morphosyntactic constraint, and the difference between countable and uncountable nouns based on semantics should be presented and taught later. After they have acquired the default-ness of D, the distribution of D based on semantics and pragmatics, including idiomatic expressions, can be introduced. This idea is in line with Long (1991), which emphasizes form-function mapping.

So far, I have incorporated up-to-date syntax theory of DPs and knowledge about the contrastive characteristics of D elements in CJK in an SLA context. I have considered what explicit knowledge of English DPs must be attained by both learners and teachers in an English L2 classroom consisting of beginning learners with topic-oriented language backgrounds. The conscious awareness of explicit knowledge about the grammar of DP in L1 and L2 can provide additional benefits to the teachers' teaching in Asian contexts; explicit knowledge would help with designing an effective ESL curriculum and with diagnosing learners' errors. This

study calls for adding teaching materials that use linguistically informed explicit knowledge of DPs to develop instructional materials for trainee teachers.

4 Conclusions

Based on the internal structure of DPs in Generative Grammar and the distinct characteristics of D elements between English and topic-oriented languages like Chinese, Japanese, and Korean, I propose what explicit knowledge of DPs should be considered when teachers teach ESL in Asian contexts. I propose that instructional materials and instruction should cover the structural difference first, and then move onto individual morphosyntactic elements with different distributions, including the zero and null D elements (cf. Scott, 2019; Sun, 2016). I propose the following order of instruction:

(15) Default insertion of overt D (activating a default DP) → Identifying different distribution of overt D with subcategorization→ Identifying the distribution of covert D

A determiner is a head that selects a noun phrase in Generative Grammar. If pedagogical materials and instruction are based on the belief that N is a head and D is in the specifier of NP position, then they should be revised. The consequence of this assumption is that teaching material designers and teachers do not see that there are subcategories or sub-features of Ds that select a NP in English; accordingly, they may overemphasize the different properties of nouns. The properties of NPs do not inform what kind of Ds precede NPs. The countability and uncountability of nouns can be changed in discourse contexts or as lexical derivation (cf. Tsang, 2017). Associating a context with a D feature may help the learners' acquisition of D items in English. ESL teachers should selectively focus on teaching different properties of D elements (cf. Sheen, 2007). Learning a new language and learning to restructure a new parameter can take time if L1 and L2 have significantly different parameters. By translating teachers' implicit knowledge into explicit knowledge about the properties of D elements, both teachers and learners may feel less frustrated when explicit teaching does not show immediate results. I hypothesize that L2 learners' best learning experience will happen when the teaching materials and syllabus are designed by applying teachers' explicit knowledge of both L1 and L2, even though the ways of learning and teaching can be implicit. Future research needs to address whether any previous research has been conducted related to pedagogical applications of D items in CJK learners' classroom and to attest whether the information presented here is pedagogically useful to ESL teachers in the classroom. For example, weather teaching new vocabulary along with an explicit D can help instructors teach the appropriate usage of L2 English DP to L1 CJK speaking beginner learners.

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A note on how weaving and knitting can enhance learning Salish reduplication patterns

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There is a dearth of research on how learners acquire reduplication patterns in the Indigenous languages of North America. Additionally, most approaches to teaching reduplication (a process in which meaning is expressed by copying part of the word) utilize abstract concepts from linguistics to explain how to derive a reduplicated word from a base word. This paper outlines some strategies for incorporating key concepts from weaving and knitting into developing pedagogical materials for learning Salish reduplication patterns.
Keywords: Reduplication; pedagogy; Salish

1 Introduction[1]

There is very little research on how reduplication is acquired or taught, especially in the context of Indigenous language revitalization. Reduplication patterns form a central part of any Salish language, encoding meanings, such as imperfectivity and plurality, with subtle differences in meaning associated with differences in form (see for example Mellesmoen & Huijsmans, 2019). Furthermore, many of those patterns are not transparent to learners and can be described in various different ways. For example, the following patterns from the Central Salish languages Hul'q'umi'num' (1) and ʔayʔaǰuθəm (2) illustrate just two ways that the patterns are describable in different ways.[2] Approaches to teaching these patterns are usually based on abstract linguistic analyses, and thus are subject to being formulated in several different and often equally abstract ways. Descriptions often assume that one form is the base, and a series of operations apply to it, to transform it to the reduplicated word. To derive the Hul'q'umi'num' imperfective forms in (1), statements like 'copy the first consonant and vowel, assign stress to the first syllable and reduce the unstressed vowel to schwa', could also be described as 'copy the first consonant after the first vowel and add schwa'. Data are from Hukari and Peter (1995) and are represented in the Americanist Phonetic Alphabet.

[1] Much gratitude to Leslie Saxon – who has been a wonderful friend, inspiring colleague and fantastic knitting buddy – and the many people who I have had the fortune to learn and share the words in the paper with.
[2] The Central Salish languages referred to here are spoken along the east coast of Vancouver Island and the adjacent mainland of British Columbia.

(1)		*Perfective*	*Translation*	*Imperfective*	*Translation*
	a.	ɬíc̓ət	‘cut it’	ɬíɬəc̓ət	‘cutting it’
	b.	ɬíməṯ	‘lick it’	ɬíɬəm̓ət	‘licking it’
	c.	t̓íləm	‘sing’	t̓ít̓ələm̓	‘singing’
	d.	lémət	‘look at’	léləm̓ət	‘looking at’
	e.	kʷíntəl	‘fight’	kʷíkʷən̓təl	‘fighting’
	f.	yeq̓	‘topple down’	yeyə́q̓	‘toppling down’

For the ʔayʔaǰuθəm ‘diminutive’ words in (2), the patterns have been described and analyzed differently as well (words are represented in the ʔayʔaǰuθəm orthography and are from Mellesmoen (2017)). Most commonly, ‘diminutive reduplication has been described as prefixing a copy of the first consonant and vowel, followed by deletion of the root vowel (Watanabe, 2003). Recently, it has been described as infixing the first consonant after the first vowel (Mellesmoen, 2017).

(2)		*Base*	*Translation*	*Diminutive*	*Translation*
	a.	qʷasəm	‘flower’	qʷaqʷsəm	‘small flower’
	b.	tala	‘money’	tatla	‘a little bit of money’
	c.	sopayɛ	‘axe’	sospayɛ	‘small axe’
	d.	šukʷa	‘sugar’	šušk ʷa	‘a little bit of sugar’
	e.	ʔayaʔ	‘house’	ʔaʔyaʔ	‘small house’
	f.	qegaθ	‘deer’	qeqgaθ	‘small deer’

Each of these descriptions of how reduplicated words are formed are based on the linguistic analysis of the words and involve some complex set of steps to follow. Learners sometimes express frustration at having to keep track of all the steps in doing these abstract analyses, when they are simply interested in knowing how to say the word, and would like a simple schema to learn the word patterns.

The goal of this paper is to outline a pedagogical approach to teaching and learning reduplication patterns in Salish that is grounded in mathematical knowledge already part of the culture: weaving and knitting. I want to make the case that reduplicative patterns can be taught without technical linguistic details. This paper next discusses what is known about how reduplication is taught and learned, based on published research and personal experience (§2). The paper then discusses how to incorporate concepts from weaving and knitting into the development of pedagogical materials related to the L2 acquisition of reduplication patterns (§3). A final section of the paper provides some thoughts on how to weave culture and language learning together.

2 Context and background on teaching reduplication

The two key aspects of reduplicative patterns that need to be acquired are the meaning and the form. There is a growing body of research that aims to document the meaning and form of reduplication in Salish languages. The work on the

semantics of reduplication will surely be a great guide to learning the meanings associated with various patterns. Alongside this semantic research is theoretical research that aims to derive the correct form of reduplication. Currently, these approaches are quite technical and couched within quite abstract formal models of event semantics and constraint-based models, like Optimality Theory. While it is important that these patterns be documented accurately and models be able to correctly derive the correct forms, there is a dearth of good pedagogical materials on how to teach reduplication of Salish languages. Learners want to know the word patterns in order to gain fluency and to be able to think and express themselves in their language; not all learners are interested in also learning linguistic theories. It is, however, very challenging to explain the patterns in a way that doesn't also delve into linguistic terminology. While it is possible to just list the words to memorize, it would be helpful to have a system to point out the patterns, which is grounded in cultural concepts. I review the only published document I have been able to locate that is pedagogically oriented towards teaching complex reduplication patterns in a North American Indigenous language.

Beers, Cruz, Hirrel, and Kerfoot (2014) describe a relatively complex pattern of reduplication in Tohono O'odham (Uto-Aztecan), which is used to express plurality on nouns and verbs. Focusing on nouns, they present a pattern in which the form of the reduplicant is, for the most part, dependent on the form of the base, using McCarthy & Prince's (1986) term "quantitative complementarity". If the base has a heavy syllable (polymoraic), the reduplicant is light (monomoraic); if the base is light, the reduplicant is heavy. After describing the pattern in detail, Beers et al. present a section "Applications in the L2 classroom", where they discuss how one might approach teaching the patterns. This section first outlines the fundamental concepts learners need to know first, repeated below from Beers et al. (2018, p. 50).

(3) *Tohono O'odham plural reduplication fundamental concepts learners should know*
   a. The difference between consonants and vowel sounds
   b. Light versus heavy syllables
   c. Light versus heavy reduplicants
   d. Long versus short vowels

The authors then provide a sample worksheet to assist the learners in internalizing the pattern. This worksheet includes four questions, and are quite similar to those found in introductory linguistics problem sets. The first three questions include data sets of three words where the singular and plural are provided. A fourth singular form is listed, and the learner is asked to fill in the blank. These types of exercises involve discovering the pattern and applying it to a new form. There are no guidelines for the learner regarding how to find the patterns, as the directions include phrases such as "Compare the singular and plural forms for group (A). How is the plural formed? Can you fill in what you think the plural form would be for…?" (p. 51). The three data sets correspond with the three patterns of plural

allomorphy, and the fourth question asks for learners to "come up with possible explanations for the different patterns" (Beers et al., 2018, p. 51).

This type of fill-in-the-blank worksheet would be very helpful for those learners who are able to find patterns and think linguistically. However, not all L2 learners have these skills. I have had the experience of teaching some of the patterns presented above to different groups and learners have expressed that they want to only learn the language, and can at times find it challenging to identify all the steps needed to create new words. In one class, we developed a matching game where cards indicate the forms and learners need to identify the meanings with the forms (Claxton et al., 2019). While some learners have natural metalinguistic skills, this is not true for all learners. It therefore behooves us all to identify more culturally appropriate ways to guide learners in finding language patterns. Particularly with reduplication, when there are no comparable patterns in the learners' L1, providing the learner with hands-on, fun activities to find patterns could be helpful in many ways.

The next section presents some suggestions for doing this, drawing on work in ethnomathematics, and the parallel between mathematics and linguistics. The goal is to outline a way to teach linguistic patterns by relating the patterns to culturally significant activities like weaving and knitting.

3 Some suggestions for using weaving and knitting to teach reduplication patterns

Inspired by the work of mathematicians and my colleagues, I would like to suggest some ways that weaving and knitting can be used to teach reduplication patterns. Both activities are part of Central Salish culture and involve repetition, patterns, and a one-to-two relationship of units, where the units are stitches. These are fundamental concepts that are needed to understand reduplication, and by linking these concepts to cultural practices, learners can avoid having to learn linguistic analyses along with learning their language.

Mathematician Vesselin Jungic and ʔayʔaǰuθəm speaker and weaver Betty Wilson have identified a number of ways that concepts from mathematics are present in weaving patterns on Tla'amin baskets. (See https://bit.ly/3zzU2Lk for a discussion of this project.) For example, in the image below from the article noted above, the concept of polynomials is present in the repeating motif on the basket.

Figure 1

Tla'amin Basket

The very act of repeating a design is parallel to repeating patterns in language. As can be seen in the imbrication pattern above, not only do some parts of the pattern repeat, but there is also the situation in which there is a single item – the darkest colour – that corresponds to two elements on the next row up and the next row down. This one-to-two mapping is very similar to how reduplication is represented in some models of reduplication, in which an input segment is mapped onto two output segments.

One way that weaving patterns can be applied to teaching reduplication patterns is to indicate the pattern on a grid or graph paper, similar to basket imbrication. Different colours can be used to link segments that are repeated, as well as to indicate any sounds that are part of the pattern, but are fixed in quality. This will be illustrated with an example from ʔayʔaǰuθəm 'plural' reduplication. As in many languages, there are a number of plural allomorphs. One of the most common patterns involves $C_1əC_2$- reduplication, as indicated below.

(4)		*Singular*	*Translation*	*Plural*	*Translation*
	a.	tumıš	'man'	təmtumıš	'men'
	b.	θoman	'eyebrow'	θəmθoman	'eyebrows'
	c.	qəməp	'thigh'	qəmqəməp	'thighs'
	d.	pun	'spoon'	pənpun	'spoons'

The ʔayʔaǰuθəm orthography represents vowels allophonically, in a transparent way, reflecting the pronunciation, rather than abstractly representing the phonemes. As schwa gets its quality from neighbouring consonants, there are some patterns where it is not straightforward to learners that the reduplicated portion has a schwa and copies the second consonant. The following words look like they could be exceptions to the rule, because the part that is added is simply CV-.

(5)		*Singular*	*Translation*	*Plural*	*Translation*
	a.	čeyıš	'hand'	čičeyıš	'men'
	b.	sayɛyəχən	'shoulder'	sisayɛyəχən	'shoulders'
	c.	sayɛyıqʷən	'ankle'	sisayɛyıqʷən	'ankles'
	d.	χʷaẇawʊšın	'toe'	χʷoχʷaẇawʊšın	'toes'

In the examples above, the quality of the vowel in the reduplicant is related to the glide – it vocalizes and so obscures the fact that the second consonant is copied and that there is usually a schwa in the nucleus. Having introduced the basic pattern and issue, let's look at how one could teach these patterns using concepts from weaving and knitting.

An example of the transparent case of $C_1əC_2$- reduplication is provided below in the form of a chart with colours. A schema for the plural word pattern is given on the top row, indicating which segments correspond to each other, as well as there being a schwa between the two consonants of the reduplicant. Below this is a row, with only colours, in which the corresponding consonants are in the same colour – red for the first consonant and blue for the second consonant. Green is used to show that the fixed vowel schwa is part of this plural pattern. The other boxes are plain, to indicate that learners do not need to pay attention them, as they are not important in understanding the pattern. Just below the schema is an example word to illustrate the pattern. It is recommended that a very common word is used as the example word, as this is something that learners would remember and wouldn't need to construct on the spot.

Figure 2

Plural Reduplication Chart

Schema		C_1	ə	C_2	C_1	V	C_2	X		
Colours										
Example		t	ə	m	t	u	m	ɪ	š	

This chart has the potential to allow learners to more easily see the pattern. One could also combine the schema and colours into one row, if that is simpler for learners.

A pattern chart like this also provides a frame to develop practice exercises. For example, the instructor could provide students with a list of singular words, and ask them to do any number of things, such as first put the singular in the right spot and then fill in the blanks with what is predicted to be the copied portion. The instructor could also pre-fill the schwas. Once one pattern is demonstrated, learners could also explore more reduplication patterns, by looking at new words and colouring in the segments that correspond with each other

This approach could also be used to introduce plural allomorphs once the basic pattern is learned. Recall that when the second consonant is a glide, the reduplicant has the vowel alternant of the glide. There are a couple of different ways that one could present this pattern, depending on whether or not the instructor wants the students to see that the two plural allomorphs are essentially the same. The following chart combines the colours with the schema in the first row. I have made the vowel of the reduplicant blue-green in colour to indicate that the nucleus

of the reduplicant is a combination of the second consonant (blue) and schwa (green).

Figure 3

Plural Reduplication with a C_2 as a Glide

Schema & colours		C_1	i		C_1	V	y	X		
Example		č	i		č	e	y	ɪ	š	

For learners who are interested in knowing whether there is one general pattern for both types of words, it would also be possible to combine the two types of charts as follows. ɪIn this case, the top line is the general pattern. This allows learners to see that C_2 is the glide and that schwa and the glide combine to make the vowel [i].

Figure 4

Plural Reduplication Illustrating the General Pattern when C_2 is a Glide

General Pattern		C_1	ə	C_2	C_1	V	C_2	X		
Schema & colours		C_1	i		C_1	V	y	X		
Example		č	i		č	e	y	ɪ	š	

Knitting is another cultural practice that could be used in a similar way. The same type of grid patterning is found in Cowichan sweaters, where dark colours are used to indicate repeating or culturally significant patterns, as indicated below

Figure 5

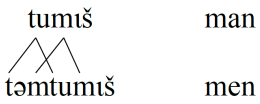
Cowichan Sweater Design (https://bit.ly/3lUj04E)

If learners are more familiar with knitting, then the connection with knitting could be made instead of weaving.

In addition to having repeating patterns, there are also several knitting techniques to increase stitches, in which one stitch can be turned into two stitches. For example, KFB – "knit into the front and the back" is a widely used technique in knitting that has a stitch on one row and creates two stitches on the second row. Increasing stitches like this is similar to models of reduplication in which a single input segment maps to two output segments. If learners are familiar with knitting stitches, it is possible to show them a representation of a reduplicated word, like the following and relate the segments to stitches.

Figure 6

Input-Output Mapping of Reduplicated Word



The figure above has lines to indicate the consonants that are doubled, similar to how a single knitted stitch can be increased to two stitches on the next row.

4 Summary

So far, I have only discussed using graph paper to find repeating patterns in words, and haven't discussed how to relate language learning in general to weaving and

knitting activities. There are many ways that weaving and knitting can be used to enhance language learning, other than by the parallels of repetition in language. One clear direction would be to have weaving and knitting workshops and introduce language related to those activities. One could make a weaving or knitting game or contest, were learners use reduplication patterns to guide their creative works.

In closing, I hope that these small suggestions will be useful to language learners and teachers in developing lessons, exercises and learning activities related to learning reduplicated words. By referencing cultural concepts of pattern repetition in knitting and weaving, learners can grasp the core concepts of how reduplicated words are formed, without reference to abstract linguistic concepts.

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