

MUTUAL DEPENDENCIES OF NOMINAL AND CLAUSAL SYNTAX IN CH'OL

A Dissertation

Presented to the Faculty of the Graduate School

of Cornell University

in Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

by

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August 2020

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MUTUAL DEPENDENCIES OF NOMINAL AND CLAUSAL SYNTAX IN CH'OL

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Cornell University 2020

This dissertation investigates nominal and clausal structure in Ch'ol, a Mayan language of southern Mexico. I take as an empirical basis the interpretation of bare nouns and extraction asymmetries in Ch'ol to argue for a base-generated account of verb-initial syntax. I propose that (in)definiteness is reflected structurally, demonstrating that only bare nominals within the VP may receive an indefinite interpretation. Any nominals generated or moved outside the VP must be definite or take wide scope. I capture this empirical generalization by linking semantic interpretation to syntactic structure. Data on elements that can or cannot be displaced from nominal expressions also bear on underlying syntactic structure. I argue that the islandhood of nominals provides evidence for whether they are contained in a moved constituent. When extraction of an element is possible, it is not in a movement-derived position—having implications for the underlying structure of verb-initial word order.

With these conclusions in mind, I support a syntax for VOS word order which is base-generated in Ch'ol. VSO is derived from VOS by moving the object. This analysis offers a straightforward account of the observed semantic properties of nominal arguments and extraction asymmetries. I model how a base-generated account of VOS is derived through linearization rules in the narrow syntax. The syntactic structure argued for here results in testable predictions about the semantic and syntactic properties of nominal arguments in other languages. I conclude that verb-initial languages do not constitute a uniform syntactic class, and further investigation into structural dependencies of nominal and clausal syntax can provide us with a window into the underlying similarities and differences across languages.

DEPENDENCIAS MUTUAS DE LA SINTAXIS NOMINAL Y CLAUSAL EN CH'OL

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En esta tesis se investiga la estructura nominal y clausal en ch'ol, una lengua mayense del sur de México, perteneciente a la rama cholana-tseltalana. La interpretación de los sustantivos escuetos y las asimetrías de extracción en ch'ol, forman la base empírica para desarrollar un análisis generado por la base (*base-generated*) de dichos datos hacia una sintaxis de verbo-inicial. Se propone que la (in)definitud está reflejada en la estructura sintáctica, lo cual demuestra que sólo los nominales escuetos que están dentro de la frase verbal pueden tener una interpretación indefinida. Cualquier nominal generado o desplazado fuera de la frase verbal tiene que ser definido, o bien, puede tomar un alcance amplio con respecto a otros elementos cuantificacionales. Se captura esta generalización empírica al conectar la interpretación semántica con la estructura sintáctica. Los datos acerca de los elementos que pueden o no ser desplazados de las expresiones nominales, proporcionan evidencia que apoya la propuesta de la estructura sintáctica subyacente presentada en este trabajo. Se sostiene que los nominales que son islas sintácticas, proveen pruebas de que están contenidos dentro de un constituyente desplazado—cuando se puede extraer un elemento de una frase nominal, la frase nominal no está en una posición derivada por el movimiento, lo cual tiene implicaciones con respecto a la estructura del orden verbo-inicial.

Ante estas conclusiones, se propone un análisis sintáctico del orden VOS, el cual está generado por la base de dichos datos en ch'ol. El orden VSO se deriva del orden VOS al mover el objeto. Dicho análisis proporciona una manera sencilla y directa de capturar las propiedades observadas en los argumentos nominales y en las asimetrías sintácticas. Se proponen reglas de linearización que permiten formalizar el análisis de VOS dentro de la sintaxis estrecha (*narrow syntax*). La estructura sintáctica propuesta en esta tesis brinda predicciones comprobables acerca de las propiedades semánticas y sintácticas de

los argumentos nominales en otras lenguas. Se concluye que las lenguas de verbo-inicial no forman una categoría homogénea, por lo que una investigación adicional con respecto a las dependencias estructurales de la sintaxis nominal y clausal, nos permitirá indagar más a fondo las similitudes y diferencias subyacentes en las lenguas del mundo.

BIOGRAPHICAL SKETCH

Carol-Rose Little was born in Durham, North Carolina. She attended McGill University and graduated with a B.A. (Hons) in Linguistics and Russian Studies. She is graduating from Cornell with a Ph.D in linguistics and graduate minors in American Indian and Indigenous Studies and Cognitive Science. Her research program brings together syntax, semantics and morphology, rooted in a strong commitment to fieldwork and language documentation. She investigates possible structural variations crosslinguistically and how these structures interface with semantic computation. Her theoretical analyses draw on data collected from fieldwork with understudied languages, such as Ch'ol (Mayan) and Mi'gmaq (Algonquian). The members of her dissertation committee are Miloje Despić and Sarah Murray (co-chairs), Molly Diesing, and Jessica Coon (McGill University). During her time as a Ph.D. student, Carol-Rose presented at distinguished conferences such as the North East Linguistic Society (NELS), the West Coast Conference on Formal Linguistics (WCCFL), and Sinn und Bedeutung (SuB). She has also published in the peer-reviewed journal *Glossa: A Journal of Generative Linguistics* and co-edited volumes for the proceedings of the Semantics and Linguistic Theory conference. Since 2015, Carol-Rose has been conducting fieldwork in Chiapas, Mexico with speakers of Ch'ol.

RESEÑA BIOGRÁFICA

Carol-Rose Little nació en Durham, Carolina del Norte, EEUU. Cursó la licenciatura en la Universidad McGill en Montreal, Canadá en lingüística y estudios rusos. Presenta esta tesis doctoral a la Facultad de la Escuela de Postgrado de la Universidad Cornell para optar al grado de doctora en lingüística con dos especializaciones, una en estudios amerindios e indígenas y la otra en ciencias cognitivas. Su programa de investigación reúne los campos de sintaxis, semántica y morfología, basándose en un firme compromiso al trabajo de campo y la documentación lingüística. Investiga posibles variaciones estructurales en las lenguas del mundo y como estas estructuras interactúan con la computación semántica. Sus análisis teóricos se basan en datos recopilados de su trabajo de campo con lenguas poco estudiadas y subrepresentadas, como el ch'ol (lengua mayense) y el mi'gmaq (lengua algonquina). Los miembros de su comité de la tesis doctoral son Miloje Despić, Sarah Murray (co-directores), Molly Diesing y Jessica Coon (Universidad McGill). Durante su tiempo como estudiante de doctorado, Carol-Rose presentó en congresos distinguidos como el North East Linguistic Society (NELS), el West Coast Conference on Formal Linguistics (WCCFL), y Sinn und Bedeutung (SuB). También ha publicado en la revista revisada por pares *Glossa: A Journal of Generative Linguistics* y co-editado volúmenes de las actas de la conferencia Semantics and Linguistic Theory (SALT). Desde 2015, Carol-Rose ha estado realizando trabajo de campo en Chiapas, México con hablantes de ch'ol.

Cha'añ xShenia

ACKNOWLEDGEMENTS

Completing a Ph.D. is not something accomplished alone. I have many, many people to thank for supporting me, encouraging me and being there for me throughout all these years. The following list is by no means exhaustive.

First and foremost, I would like to thank the Arcos López family for hosting me during my stays in San Miguel since 2015. Specifically, Nicolás Arcos López, Evelina Arcos López, Celia Álvaro Méndez, Celia Arcos Gúzman, Rosa López Pérez, Enrique Arcos López, Shenia Arcos Álvaro, María Mendoza Pérez, and Nely Arcos Álvaro, for opening up their homes to me and teaching me everything I know about Ch'ol. None of this would have been possible without your support. I look forward to many more years of collaboration. Of course, thanks to alä xQuique and little xCarolita for always keeping things interesting. *¡Tyi kpusik'al mi ksu'beñetyla wokolix la'wälä! ¡Mi kweñ k'uxbiñetyla!*

I would like to thank my dissertation committee, with whom I feel very fortunate to have worked: Miloje Despić, Sarah Murray, Molly Diesing, and Jessica Coon. I am honored to have had you all as advisors, mentors, and teachers throughout these years.

I am truly indebted to my co-chair Miloje Despić. On many occasions we have met for hours talking through data puzzles and connections to theoretical analyses. Miloje's enthusiasm for linguistics is infectious. After meetings with him, I always feel invigorated, motivated, and happy to be in this field. Miloje always made sure to congratulate me on any conference or paper acceptance—usually being the first one to do so! I admire Miloje's continual and unwavering commitment to his research, teaching, and advising—an example I strive for in the future.

I first met my co-chair, Sarah Murray, at an Algonquian conference in 2012 and again in 2013. She encouraged me to apply to the Cornell Ph.D. program, and I am very happy I did. I was fortunate to be her student in many seminars and classes, as well as her TA, her RA, and her advisee. From research to teaching to fieldwork, Sarah sets an example to be followed. Her many pieces of advice throughout the years have guided me to become

a better researcher, fieldworker, teacher, and person. I often find myself relying on her advice when I am conducting research, doing fieldwork, crafting handouts, giving talks, writing papers, and developing courses. (This list is nonexhaustive!) I thank her for inviting me to collaborate with her in the Cheyenne community of Lame Deer, Montana. Of course, I cannot forget to thank her for the Ithaca-to-Montana road trip in the summer of 2019 and for teaching me to drive manual—a skill that has come in handy many times! Sarah is truly a role model for me in linguistics and in life.

I feel fortunate to have been Molly Diesing’s advisee and student. I always look forward to our meetings and discussions of data and theory. Her questions and comments push me to probe deeper into the data and theory, always yielding a better outcome. As a student in her seminars, I was often left surprised at how quickly the time passed. I would count it as a success if one day I could be even just half as engaging as Molly is in the classroom.

Beginning when I was an undergraduate student at McGill University, Jessica Coon has made a huge impact on my linguistic trajectory. Her field methods class in 2011 introduced me to what was to become the foundation for my future research—linguistic fieldwork. Jessica is truly exemplary in her strong commitment to bridging theory and linguistic fieldwork. Through Jessica, I first met Nicolás Arcos López and many other Ch’ol speakers. Jessica has opened many doors for me; without her I would not be where I am today. Thank you for everything, Jessica!

My time at Cornell and in Ithaca has been very rewarding—I couldn’t have picked a better place to call my home base for these past years. Thank you to my cohort: Shohini Bhattacharji, Ryan Hearn, Mary Moroney, and Yanyu Long, and, of course, to our honorary cohort member Binna Stefánsdóttir. I am also indebted to Ekarina Winarto, whose friendship I value very much. Mary, here’s to many more collaborations! Thank you also to Andrea Hummel, Naomi Enzinna, Todd Snider, and Eszter Ótott-Kovács. Thank you to Mia Windhearn for our discussions on all sorts of topics and trusting me when I invited

you to come with me to Chiapas. I have enjoyed interactions with other faculty members at Cornell, particularly John Whitman, John Bowers, and Sally McConnell-Ginet. Reading groups at Cornell such as the Semantics Group and SynCirc were always productive venues to talk about recent work and give practice talks. Thank you to their many members! I would also like to thank Holly Boulia, Jenny Tindall and Gretchen Ryan for all their help with my administrative questions.

I have benefited greatly from conversations with Ch'ol linguists and scholars, Juan Jesús Vázquez Álvarez and Nicolás Arcos López. Juan Jesús's dissertation on the grammar of Ch'ol has been my guide to everything Ch'ol—I even have a shortcut on my phone to the PDF! In addition to providing a thorough description of classifiers in Ch'ol, Nicolás's thesis also contains many gems of transcribed spontaneous speech from people in San Miguel to whom I have become close—always enjoyable to come across especially during these last few months of writing. I was honored you both came to my dissertation defense.

I am also deeply indebted to many of my friends in Chiapas who welcomed me into their homes and shared their language and culture with me. Thank you to Morelia Vázquez Martínez for all your hard work. Our collaborations have been extremely fun and fruitful. We had some great adventures traveling around Chiapas, Guatemala, and New Orleans. Let's hope for many more! I also would like to thank Morelia's mother, Virginia Martínez in El Campanario, for working with me as well and making sure I had enough empanadas to eat. Many thanks to Juan Javier Álvaro López for taking me on various adventures and for introducing me to literally everyone in Tumbalá. *;Wokox awälä cha'añ ta' awäk'eyoñ kñijkañ akaru!* Also thanks to his family in Ignacio Allende for hosting me several times. I am indebted to Don Lucio Meneses Díaz in La Ilusión for sharing his language with me and letting me record him in his picturesque oasis of a house. I also would like to thank Juana Karen Peñate Montejo for letting me include some of her beautifully written poetry in this dissertation.

My friends in San Cristóbal de las Casas always made my stays there so wonderful. Thank you, Silvestre Gómez Jiménez and Daniel Ochoa Nájera at CELALI. Thank you especially to Sophie Walters, for always helping me with lodging arrangements etc. in San Cristóbal. Thank you, Esteban Marván Mirón, for making the map of the Ch'ol speaking region (available in three languages, by the way, English, Ch'ol, and Spanish!) and for your continued efforts to support the involvement of Ch'oles in your archaeological work.

I was very fortunate to have spent time as a visiting scholar at Heinrich-Heine-Universität, Düsseldorf in the fall of 2018. Thank you to Sebastian Löbner for encouraging me to apply to the position and then hosting me. I also benefited from conversations with Peter Sutton, Curt Anderson, and Hana Filip. Thanks, Peter, for organizing our 2019 European tour of the Finnish partitive in counting and measuring constructions!

I have benefited from conversations with many members of the linguistics community at conferences or other linguistics events. These people include Alan Bale, Conor Quinn, Lauren Clemens, Justin Royer (my fellow Mayanist!), Dan Kaufman, Will Oxford, Ben Bruening, Suzi Lima, Ryan Bennett, Robert Henderson (who was the one who put the idea in my head to go and study a Mayan language), Mike Hamilton, Jon Ander Mendiola, Laura Kalin, Scott AnderBois, Danny Law, Michelle Yuan, Violeta Vázquez-Rojas Maldonado, Ana Aguilar Guevara, Roberto Zavala, José Armando Fernández Guerrero, and many, many more. This list is by no means exhaustive. The work presented in this dissertation has also been influenced by the comments and questions of audiences at TbiLLC 13, NELS 50, WSCL 24, FAMLi 5, SSILA, the 2020 LSA as well as audiences at Concordia University, McGill University, SUNY Albany, and Syracuse University.

Many of my friends have kept me sane and made this journey possible. Thank you to Thea Knowles for always encouraging me to strive for the best. I couldn't have made it without you and our writing retreats. Here's to many more! Also thanks to the Kirkkomäet (Silva, Annika, Jussi, Niklas) and Raija Pilvinen. My year in Finland with you all was just the beginning of my interest in linguistics, *kiitoksia kaikesta!* Thank you

also to my dear friends throughout all these years: Ayşe Bursalı, Abby Cryan, Angela Musliner.

I would also like to thank my family for always supporting me and encouraging me to follow what I love. Without you I would truly not be where I am today. Thank you to my loving parents, Brown and Mark Little, my favorite sister Grace Little, and my ever-supportive grandparents, Carol and Bill Griffith. Your support has been immeasurable throughout my Ph.D. I love you very much! Thank you also to Janice, Cameron, Trena, Richard, Bonnie, and Gordon. And, of course, I can't forget Ellie.

Financial support for the research in this dissertation is thanks to a National Science Foundation Doctoral Dissertation Research Improvement Grant under grant no. BCS-1852744 and an Engaged Cornell graduate student research grant as well as grants from the American Indian and Indigenous Studies Program, Latin American Studies Program, the Cognitive Science Program, and the linguistics department at Cornell.

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LIST OF ABBREVIATIONS

*	ungrammatical construction
#	infelicitous construction
%	speaker variation attested with respect to grammaticality
?	odd construction
()	optional
1	first person
2	second person
3	third person
A	set A markers, marks ergative/possessive
ABS	absolutive
AGR	agreement marker
AP	antipassive
AF	agent focus
AFF	affirmative
ASP	aspect
ASV	assertive
ATTR	attributive
B	set B markers, marks absolutive
CLF	classifier
COMP	complementizer
GEN	genitive
DEINAL	deinalienable suffix
DEM	demonstrative
DEP	dependent suffix
DER	derived adjective

DET	determiner
DIR	directional
DO	direct object
DTV	derived transitive verb
D.NML	derived nominal suffix
ENCL	enclitic
EP	epenthesis
ERG	ergative
EXCL	exclusive
EXT	existential
FOC	focus
INTER	interrogative
IO	indirect object
IMP	imperative
IPFV	imperfective aspect
IV	intransitive verb suffix
IRR	irrealis
LV	light verb
NEG	negation
NOM	nominative
NC	noun class markers
N.CLF	noun classifier
PART	participant
PL	plural
PREP	preposition
POS	positional
PRED	predictive

PROG	progressive
PRON	pronoun
PFV	perfective aspect
PLIN	indeterminate plural
PRT	particle
PSV	passive
REA	realis
RED	reduplication
REP	reportative
REL	relative clause suffix
RS	relational suffix
SG	singular
SS	status suffix
STAT	stative suffix
TV	transitive verb

Kty'añ I

Jiñi kty'an che' bajche' ek'tyak mi imos jiñi pañchañ,

che' bajche' xk'ük'äs yäpyäpña che' ik'yoch'añ.

Jiñi kty'añ che' bajche' k'äñk'äñ ixim che' mi ilok'el tyi pañumil,

chäkchab ixim mi isujtyel che' mi yochel tyi ap'ätyälel.

Ili kty'añ ach'päk'añbä lum ya' baki mi ityejchel iyälas xpejpemtyak.

Juana Karen Peñate Montejo

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CHAPTER 1

INTRODUCTION

The structural position that a given nominal occupies has links to both its possible semantic interpretations and syntactic properties. This fact is generalizable across a number of typologically diverse languages. However, the way in which nominals are linearized can vary. One obvious manifestation of this syntactic variation is the diversity of word orders across languages. The goal of this dissertation is to take a closer look into the structural position of nominal arguments and their dependencies on clausal syntax. I investigate the syntactic and semantic properties of nominal arguments in a verb-initial language and the implications these properties have for analyses of verb-initial word order. At a higher level, this dissertation makes the claim that while certain dependencies between constituents hold across many languages, the way in which a language linearizes these constituents can differ.

The mutual dependencies of nominal and clausal syntax can be seen in a number of domains and are exhibited across typologically diverse languages. For instance, the movement of nominal arguments from their base-generated position has been connected to different semantic and syntactic properties. On the semantic side, it has been shown that movement of nominals outside the VP is directly correlated to their interpretation: for instance, object shift and a specific interpretation of the object has been shown to hold in a number of languages (Diesing, 1992; Diesing and Jelinek, 1995; Kelepir, 2001; Aldridge, 2004). On the syntactic side, this movement also induces freezing effects; that is, these constituents are movement-derived islands. This has been shown before in, e.g., English (Chomsky, 1973; Lasnik, 2001), German (Diesing, 1992), and Ukrainian (Mykhaylyk, 2010).

Specifically, I investigate the syntactic and semantic properties of nominal arguments in Ch'ol, a verb-initial Mayan language of southern Mexico, with data from my fieldwork gathered over the course of several years. Verb-initial word orders make up 12–19% of the world's languages (Tomlin, 1986; Dryer, 2013; Van Everbroeck, 2003; Clemens and Polinsky, 2017). Various proposals of verb-initial syntax have been put forth including a base-generated account of VOS, pursued

for Mayan languages (England, 1991; Aissen, 1992; Otaki et al., 2019), Austronesian languages (Chung, 1998, 2006), and the Wakashan language Nuu-chah-nulth (Wojdak, 2007). A phrasal-fronting account of VOS word order has been posited for Mayan (Coon, 2010b) and Austronesian languages (Aldridge, 2002; Chung, 2006; Massam, 2000). To derive verb-initiality, head movement of the verb to a position higher than the subject has been posited for Afro-Asiatic languages (Fassi Fehri, 1993; Ouhalla, 1994) and Celtic languages (Sproat, 1985; McCloskey, 1991). Clemens (2014, 2019) and Clemens and Coon (2018) adopt a head movement account and posit an additional prosodic constraint that reorders an NP object with the verb that selects it, generating VOS. In this dissertation, I compare these three families of proposals in light of new observations on the semantic and syntactic properties of nominal arguments in Ch'ol, ultimately favoring a base-generated account. I conclude that verb-initial languages do not form a unified syntactic class and offer diagnostics for probing structural positions.

This dissertation has three main conclusions: (i) the interpretation of bare argument nominals is structurally reflected; (ii) (non)islandhood has implications for whether a constituent has moved; (iii) verb-initial word order can be base-generated in ergative languages. I elaborate on each of these points below.

First, I argue that in Ch'ol (in)definiteness is reflected structurally. In particular, only bare nominals remaining within the VP may be indefinite. Other bare nominals, which are generated outside the VP or which have moved to a VP-external position, may not receive an existential indefinite interpretation. Bare nouns in ergative subject position, for instance, can only be interpreted as definite in Ch'ol as they are generated outside the VP. This supports a syntactic account of (in)definiteness with implications for the list of type shifters across languages.

Second, I argue that movement-derived islands explain extractability asymmetries. Under the Freezing Principle, moved constituents are islands for extraction—they do not allow elements extract from them. This has implications for accounts of verb-initial word order. Under a phrasal-movement account of verb-initial word order, a phrase containing the verb and object moves to a position above the subject, generating VOS. However, extraction from VOS objects is possible. A phrasal-movement account would rule out extraction from VOS objects as the VOS object is

contained within a moved constituent.

Third, these findings support a particular analysis for word order, namely base-generating VOS, with transitive subjects in a right specifier. VSO is derived from VOS by moving the object to an outer projection of the verbal domain. This analysis capitalizes on the link between object shift and the semantic and syntactic properties of VSO objects. I also posit that verb-initial word order is not derived in a uniform fashion across languages, offering testable predictions for particular analyses.

The dissertation is organized into five main chapters and an appendix. The contents of each chapter are detailed below.

In Chapter 2, I provide background on the morphosyntactic properties of Ch'ol, based on descriptions in Warkentin and Scott (1980), Coon (2010a) and Vázquez Álvarez (2011) as well as my own fieldwork from 2015 to 2020. I further present information on where Ch'ol is spoken and the methodology I used to collect the data in this dissertation. I lay out my assumptions for how case assignment, agreement markers, and split ergativity are derived, following Coon (2013, 2017). This chapter concludes with a brief introduction on the three families of verb-initial word order analyses that I compare in Chapter 5.

In Chapter 3, I investigate the interpretational possibilities of bare nominals in Ch'ol and their implications for clausal structure. I argue that the Mapping Hypothesis from Diesing (1992) can capture the fact that only bare nominals which are next to the verb can be indefinite. This is because they are within the domain of existential closure, namely the VP. The analysis I propose is based on the notion that indefinite internal arguments are instances of pseudo-incorporation. Ergative subjects or nominals that have moved outside the VP cannot be interpreted as narrow scope indefinites. This chapter supports analyses of word order where VSO is derived from VOS, in part, via movement of the object, capturing that quantifiers, such as numerals in VSO object position, obligatorily take wide scope. I also discuss implications for other constructions with bare nominals, namely those of incorporated nominals. Unlike bare nominals in argument position, these incorporated nominals do not refer—that is, they do not introduce possible antecedents for agreement or pronominal anaphora.

Chapter 4, based on Little (2020), presents data on subextraction from nominals, focusing on the extraction of interrogative possessors and numerals from different argument positions. Subextraction is possible from VOS objects, but not VSO ones. I argue that VSO objects have moved, thus creating an island for extraction, following from the Freezing Principle. In this chapter, I also present a way to formalize these freezing effects under Agree-based frameworks for extraction. I end this chapter with implications for theories of verb-initial word order and a brief discussion of dialectal variation with respect to subextraction.

Chapter 5 ties together the findings of Chapters 3 and 4 to argue for a base-generated account of verb-initial syntax. I propose that there is a link between object shift and word order, in that VSO is derived from VOS via movement of the object. I first compare the following analyses for verb-initial word order: the predicate-fronting analysis from Coon (2010b) and the head movement account in Clemens and Coon (2018). While both of these analyses can account for core data with respect to VOS/VSO word order, certain questions arise when other empirical patterns are taken into consideration. The issues that are discussed concern the order of morphemes, nominalized complements, the islandhood of fronted phrases, and interpretational differences of VOS and VSO objects. I consider potential modifications to both these accounts in order to capture the additional empirical patterns from Chapters 3 and 4, but ultimately favor a base-generated analysis, based on England (1991) and Aissen (1992). I provide a formalization of right specifiers, drawing on a suggestion from Otaki et al. (2019). This formalization connects VOS languages and ergativity: only ergative languages may parameterize specifiers on the right. I end this chapter with implications for rigidly VSO Mayan languages, syntactic ergativity, and areas for future investigation with respect to nominal syntax in Mayan languages.

Chapter 6 is the conclusion. I discuss the implications of the analyses proposed in this dissertation as well as specific points of future investigation. I conclude that properties such as alignment are of particular interest in determining the syntax of verb-initial languages.

In Appendix A, I have included a fully glossed narrative from a speaker of the Tumbalá dialect of Ch'ol. This narrative and its audio along with additional narratives and audio may be found in the Archive of the Indigenous Languages of Latin America. Throughout the dissertation, I refer-

ence excerpts from this narrative by including the name of the narrative and corresponding line number. Excerpts from other transcriptions are referenced only by the name of the transcription.

CHAPTER 2

BACKGROUND ON CH'OL AND VERB-INITIAL WORD ORDER

2.1 Introduction

In this chapter, I provide background on Ch'ol morphosyntax, highlighting relevant points for theories of verb-initial word order. The descriptions below are based on previous work such as Warkentin and Scott (1980), Vázquez Álvarez (2002, 2011), and Coon (2010a), as well as my field notes from 2015 to 2020. I detail the analyses I adopt for agreement, case, and split ergativity in Ch'ol based on previous work (e.g., from Coon (2013, 2017)). I first discuss the linguistic context of Ch'ol as well as where the fieldwork for this dissertation was conducted (Section 2.2). I then move on to the clausal domain, providing background on person-marking, alignment, split ergativity, and word order (Section 2.3). In Section 2.4, I present basics on the structure of nominals and elements occurring within nominals. I conclude in Section 2.5, with a brief summary of previous work on verb-initial syntax.

2.2 Linguistic and fieldwork context

2.2.1 Ch'ol in the Mayan language family

There are currently about 30 Mayan languages spoken today by over 6 million people in Mexico, Guatemala, Belize, and Honduras, as well as diaspora communities in the United States and Canada. Ch'ol belongs to the Greater Tseltalan family, in the Ch'olan subgroup. A list of Mayan languages is given in (1), with Ch'ol underlined. The asterisk indicates that the language is no longer spoken; names in parentheses indicate other ways of referring to the language; semi-colons signal subgroupings within families. (1) lists 33 languages; note that sometimes Achi,

Akatek, and Chalchitek are described as dialects of K'iche', Q'anjob'al and Awakatek, respectively (Bennett et al., 2015).

- (1) Mayan family classification (Bennett et al. 2015, 4)
- a. **Huastecan:** Huastec (Teanek) and Chicomulceltec (Kabil)*
 - b. **Yucatecan:** Yucatec (Maya), Lacandon (Lakantun); Mopan, Itzaj (Itza')
 - c. **Greater Tseltalan/Ch'olan-Tseltalan:**
 - i. *Ch'olan:* Ch'ol, Chontal (Yokot'an); Ch'orti', Ch'olti'*
 - ii. *Tseltalan:* Tseltal, Tsotsil
 - d. **Greater Q'anjob'alan:**
 - i. *Q'anjob'alan:* Q'anjob'al, Akatek, Popti' (Jakaltek); Mocho' (Motosintlek)
 - ii. *Chujean:* Chuj, Tojol-ab'al
 - e. **K'ichean-Mamean:**
 - i. *K'ichean:* Q'eqchi'; Uspantek; Poqomchi', Poqomam; Achi, K'iche', Kaqchikel, Tz'utujil, Sakapultek, Sipakapense
 - ii. *Mamean:* Tektitek (Teko), Mam; Awakatek, Chalchitek, Ixil

The Ch'ol language and the people are both referred to as Ch'ol, sometimes written as 'Chol'. Throughout this dissertation, I use the spelling 'Ch'ol'. Ch'ol speakers refer to their language as *lakty'añ* 'our language' and the people as *lakpi'älob* 'our friends'. The name 'Ch'ol' is of unknown origin. Some have reported that Ch'ol comes from *chol* 'cornfield'. However, this is generally agreed to be a folk etymology without basis in regular historical sound change: there is no evidence that would suggest that *ch* in *chol* would become *ch'* in the name for the language and people (D. Mora-Marín, personal communication, April 2, 2020 and N. Hopkins, personal communication, April 26, 2020).

2.2.2 Where Ch'ol is spoken

Ch'ol is spoken in southern Mexico in communities in the Mexican states of Chiapas, Tabasco and Campeche, as shown in the map in Figure 2.1. Locations with large populations of Ch'ol speakers include Tila, Tumbalá and Palenque (these are all *cabeceras municipales* or 'municipal capitals'). There are also communities of Ch'ol speakers in the Mexican state of Campeche, who moved there during the 1960s (Rodríguez Ceja, 2012), as well as some recently founded communities in

southeastern Chiapas (see map in Figure 2.1 and discussion in Vázquez Álvarez (2019) on the sociolinguistic profile of the variant of Ch'ol spoken in Frontera Corozal).

Ch'ol has three mutually intelligible dialects: Sabanilla, Tila and Tumbalá. The Sabanilla dialect is sometimes described as a subvariety of the Tila dialect (Vázquez Álvarez, 2011, 5). The Tumbalá dialect is spoken in the municipalities of Tumbalá, Salto de Agua and Palenque. The Tila dialect is spoken in the municipality of Tila and parts of Tabasco. The Sabanilla dialect is spoken in Sabanilla and Huitiupán (N. Arcos López, personal communication, April 26, 2020). These varieties differ slightly in their phonology and morphology, but the greatest variation is seen in the lexicon. For instance in Tumbalá Ch'ol, the progressive aspect marker is *woli*, whereas Tila Ch'ol speakers use *choñkol*. Sabanilla speakers use *yäkel*, which Vázquez Álvarez (2011, 5) reports to be borrowed from the Tseltal progressive form *yakal*. The data in this dissertation come from the Tumbalá variant of Ch'ol. I note dialectal differences when relevant.

2.2.3 Status of Ch'ol

There are about 222,000 speakers of Ch'ol including about 40,000 monolinguals (Ethnologue, 2018).¹ While Ch'ol is still used by multiple generations, language shift towards Spanish is observed, especially among younger generations of speakers. Gómez Jiménez (2015, 19) reports that Spanish is displacing Ch'ol in many contexts, resulting in a loss of both the Ch'ol language and culture. For example, Ch'ol is no longer used as the main language of communication in local governments. This is especially visible in younger generations of Ch'ol speakers as many harbor negative attitudes towards their language due to feelings of “marginalization, discrimination, and other conditions imposed by the Mexican state” (Gómez Jiménez, 2015, 18).

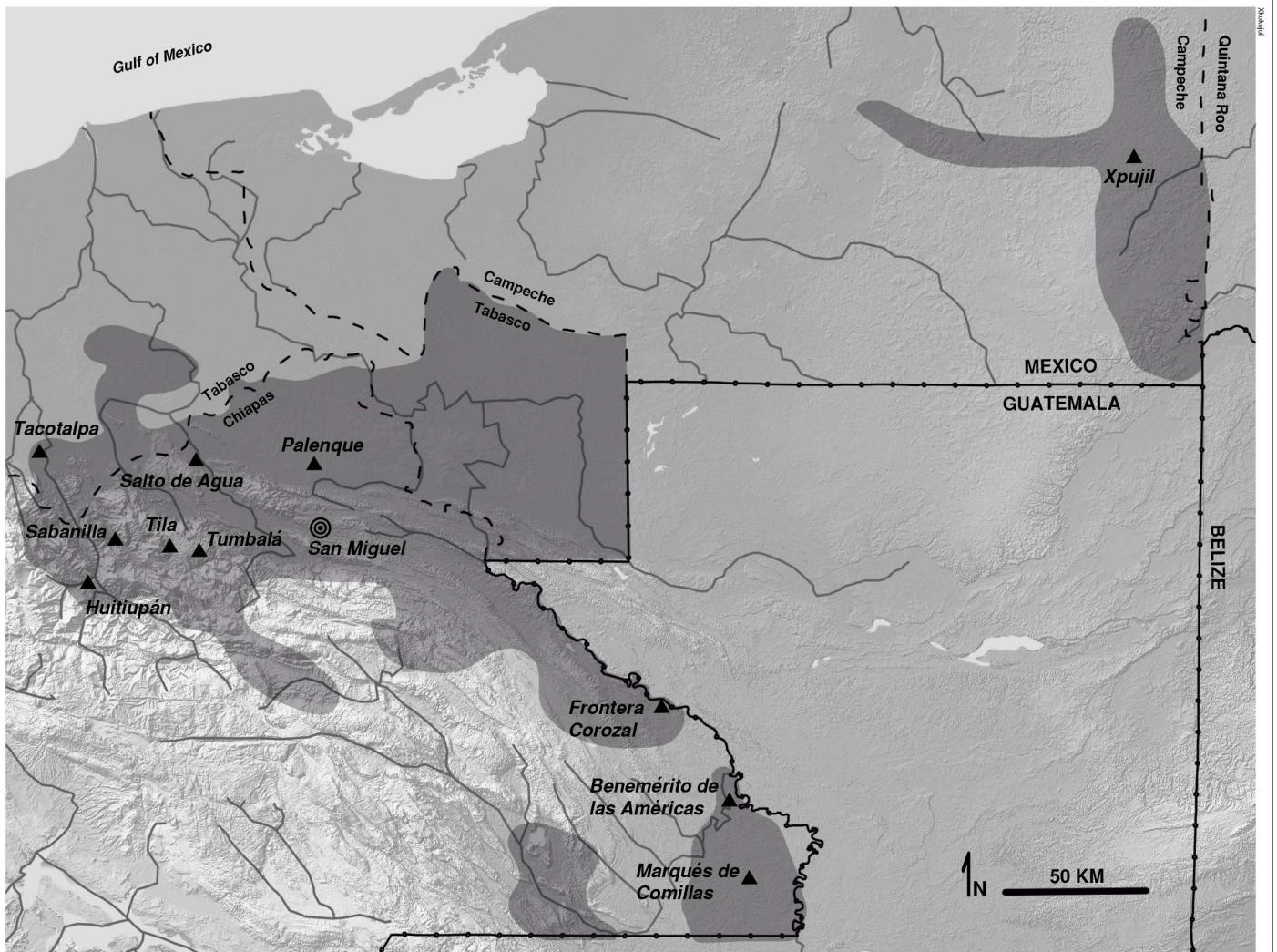
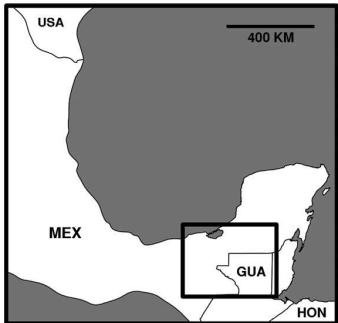
That being said, there are many ongoing efforts by Ch'ol teachers, authors and scholars to further foster the preservation and retention of the Ch'ol language and culture. These include those working at institutions such as the *Centro Estatal de Lenguas, Arte y Literatura Indígenas* (The Center for Indigenous Languages, Art and Literature of Chiapas, CELALI), *Casas de la Cultura* (Cultural

¹This number comes from around 2010. I suspect the number of Ch'ol speakers to be much greater.

Houses) in municipalities such as Salto de Agua and Tumbalá, and *universidades interculturales* (intercultural universities) in Tabasco and Chiapas (UIET and UNICH, respectively).

Map of Ch'ol communities

- Areas with Ch'ol speakers
- International border
- - State line
- Major rivers
- ▲ Settlements with large Ch'ol populations
- ◎ Field site



Sources: 1. Hydrography and political division - CONABIO (<http://www.conabio.gob.mx/informacion/gis/>) 2. Topography - NASA (https://www2.jpl.nasa.gov/srtm/central_america.html) 3. Ch'ol areas - CDI (http://atlas.cdi.gob.mx/?page_id=1599)

Figure 2.1: Map of Ch'ol communities, courtesy of Esteban Mirón Marván.

2.2.4 Orthographic conventions

Throughout this dissertation I will use the orthographic system of Ch'ol agreed upon in 2010 by Ch'ol writers and bilingual teachers. This orthography is based on the one proposed by the author and native speaker of Ch'ol, José Díaz Peñate in Díaz Peñate (1992) and updated in INALI (2011). Table 2.1 shows Ch'ol consonants written in the International Phonetic Alphabet with the orthographic variant in parentheses. Table 2.2 shows the vowel inventory of Ch'ol. Ch'ol has a sixth vowel, the high central unrounded vowel [i], orthographically *ä*. Historically, there was a long and short vowel contrast in Mayan languages but long and short vowels merged with their counterparts in the Ch'olan branch, except for *aa and *a, where *aa became *a, and *a became *ä (Kaufman and Norman, 1984, 85).

Table 2.1: Ch'ol consonants

	Labial	Alveolar	Post-Alveolar	Palatal	Velar	Glottal
Implosive	b (b)					
Plosive	p			c (ty)	k	t(')
Ejective	p'	ts' (ts')	tʃ' (ch')	c' (ty')	k'	
Affricate		ts (ts)	tʃ (ch)			
Fricative		s	f (x)			h (j)
Nasal	m			n (ñ)		
Approximant	w	l		j (y)		

Table 2.2: Ch'ol vowels

	Front	Central	Back	.
High	i	ɨ (ä)	u	.
Mid	e		o	
Low		a		

The vowels in Table 2.2 contrast with their aspirated counterparts, represented orthographically as *-Vj*. For instance, *sak'* 'itchy' and *sajk'* 'grasshopper' constitute a minimal pair where the minimal contrast is the aspiration of the vowel (Coon, 2017, 649). Vowel aspiration is also a productive process used to derive passives, e.g., the root *mäñ* 'buy' is *mäjñ* 'be bought' in the passive, where the minimal contrast is vowel aspiration.

2.2.5 Previous descriptive work with Ch'ol

There exists relatively extensive documentation of Ch'ol as well as earlier forms of Ch'ol. For instance, Proto-Ch'olan served as the basis for the Classic Lowland Mayan writing (i.e., Mayan glyphs) (Mora-Marín, 2009a), receiving much attention in the epigraphical literature (e.g., Schele (1982); Kaufman and Norman (1984); Bricker (1986); Houston et al. (2000)). Early grammars and documentation on Ch'ol from the 20th century include Bercerra (1937), Aulie and Aulie (1978) (the Ch'ol-Spanish dictionary), Attinasi (1973, 1976), Warkentin and Scott (1980), and Warkentin and Brend (1974). Whittaker and Warkentin (1965) and Hopkins et al. (2016) contain collections of stories and narratives in Ch'ol. Josserand (2001) provides a detailed description of Ch'ol ritual language. A comprehensive grammar of Ch'ol was published by Vázquez Álvarez (2011) as his doctoral dissertation, and Coon (2017) provides a recent grammar sketch.

2.2.6 Fieldwork context and general methodology

Unless otherwise noted, the data in this dissertation come from working with Ch'ol speakers over the course of five years, beginning in May of 2015. I worked mostly with speakers of the Tumbalá dialect spoken in San Miguel, Salto de Agua, Chiapas, Mexico, about 16 miles from the city of Palenque, see map in Figure 2.1 and photo in Figure 2.2. I traveled to San Miguel about twice a year and resided there for one to three months at a time. The data in this dissertation come from transcribed narratives, spontaneous speech, and elicited speech that I collected during my stays in San Miguel. For elicited speech, I asked for grammaticality and felicity judgements, following methodology and discussion in, e.g., Matthewson (2004), Murray (2015), and Gillon (2015). Contexts were provided in Spanish or Ch'ol depending on the task. After 2016, I conducted fieldwork with speakers mainly in Ch'ol and sometimes in Spanish. I primarily worked with groups of speakers, rather than one-on-one interviews. Elicitation sessions occurred in the houses of the language consultants, so speakers within that household would often discuss questions with each other before giving me a judgement. I primarily worked with a group of five women who were monolingual Ch'ol speakers and understood Spanish, but did not speak it. When asking for translations of sentences into Spanish, I consulted younger bilingual speakers who learned Spanish in school.



Figure 2.2: Photo of San Miguel, December 2019, by the author.

Ch'ol is still used daily for most communication within the community of San Miguel. Community announcements, meetings, and church services are all conducted in Ch'ol. Ch'ol is the first language learned by children in the community; they are introduced to Spanish through school and media. In addition to Spanish, some speakers may have some knowledge of Tseltal, another Mayan language spoken locally. In San Miguel, Spanish is used for doing business with outsiders and in educational settings. Education at the local preschool, primary school, and secondary school is all in Spanish. Students will use Spanish when talking to teachers, but use Ch'ol when talking amongst themselves. Writing in Ch'ol is not explicitly taught in school, but some speakers have taught themselves to write in the language. The Arcos López family, who hosted me during my stays in San Miguel, use only Ch'ol to communicate with one another and with me. This is to say, my fieldwork experience was quite immersive.

2.3 Clause structure of Ch'ol

Ch'ol is a synthetic, predicate-initial, head-marking language, as can be seen in example (2). In (2) there is a high morpheme-to-word ratio, arguments follow the aspect marker and verb, and agreement, such as the A3 prefix, is marked on the verb.

- (2) [ASP *Wol=ix=me=ku=ta'*] [V *i-ch'oj-ch'oj-tsep-tyak-ob*] [O *tye'*]
PROG=ASP=MIR=AFF=REA A3-ONO-RED-cut-PLIN-PL wood
[S *x-mel bij-tyak-ob*].
NC-make road-PLIN-PL

'The various construction workers are already chopping up trees, I'm telling you.'

Below, I detail background on the elements in (2) such as aspect, person marking, verbs and verbal affixes, alignment, and word order, as well as outline my assumptions about how case, agreement, and split ergativity are derived in Ch'ol.

2.3.1 Aspect

As in other Mayan languages, Ch'ol clauses are marked for aspect, rather than tense. Ch'ol has three aspects: perfective, imperfective, and progressive.

Table 2.3: Aspect markers in Ch'ol. Tila lexical variants in parentheses.

	Short form	Long form
perfective	<i>ta</i> (<i>tyi</i>)	<i>tsa'/ta'</i>
imperfective	<i>mi</i>	<i>muk', mu'</i>
progressive	<i>wo</i> (<i>choñ</i>)	<i>woli</i> (<i>choñkol</i>)

The perfective aspect indicates viewing "a situation as a single whole, without distinction of the various separate phases that make up that situation" (Comrie, 1976, 15). Perfective forms are translated into past tense in English as in (3). The perfective aspect can also appear in antecedent of nonpast conditionals as in (3d).

In casual speech, the short form of the aspect marker is often pronounced with the set A marker as in (4). Orthographic forms are in parentheses on the right.

Throughout this dissertation, I will label the projection that hosts the perfective aspectual marker IP (i.e., InflP). Attinasi (1973) and Warkentin and Scott (1980) describe *tsa'/ta'* as a past tense marker, but, as demonstrated below, many past tense clauses appear without the perfective aspect marker. Coon (2013, 39) notes that *tsa'/ta'* could bundle both past and perfective features together. Relevant for the empirical pattern in this dissertation is that *tsa'/ta'* contrasts with the *woli*, the progressive aspect marker and *mi*, the imperfective aspect marker. I refer to the group containing the progressive and imperfective aspects as nonperfectives, to contrast them with the perfective aspect.

The two nonperfective aspects marked in Ch'ol are the imperfective (IPFV) and progressive (PROG) (6). The imperfective aspect marks habitual and continuous nonprogressive readings, such as in (5a). In (5b), from a narrative, the speaker relates how her mother used to take a certain type

²From the General Consulate of Mexico in Phoenix, AZ: <https://consulmex.sre.gob.mx/phoenix/index.php/servicios-consulares-en-lenguas-indigenas/ch-ol>

of medicine. The imperfective is used as this was a habitual action, even though it was in the past, indicated by *wajalix* ‘back then’.

- (5) a. *Mi i-weñ jap lembal.*
IPFV A3-a.lot drink liquor
'He drinks a lot.'
- b. *Mu'=tyo i-weñ-k'ux k-mama, wajali=x*
IPFV=still A3-very-eat A1-mother back.then=already
'My mother used to eat it a lot back then.'
- Xi'ba.65

The progressive, on the other hand, is used for events which are ongoing, as in the examples in (6).³ As in (6b), it can be used in past tense contexts as well.

- (6) a. *x-wi'il-kol-el-ob woli=x i-ñajäy-el i-cha'añ i-k'äñ jiñi*
NC-after-grow-NML-PL PROG=already A3-forget-NML A3-PREP A3-use DET
lakty'añ.
PART.PL=A1-language
'As for the younger generations, they are forgetting to use Ch'ol.' Don Lucio
- b. *Woli i-juch' sa' x-Nely, che' ta' k'oty-i x-Norma.*
PROG A3-grind masa NC-Nely COMP PFV arrive-IV NC-Norma
'Nely was grinding masa when Norma arrived.'

In contrast to the perfective aspect marker, Coon (2013) analyzes the nonperfective markers as complement-taking predicates. I discuss this aspectual difference more in Section 2.3.5.

2.3.2 Person marking

Ch'ol has two sets of person markers, referred to in the Mayan literature as Set A and Set B markers. Set A markers in Ch'ol are prefixes that index possessive- or ergative-marked nominals. Set B markers are suffixes, which index absolute arguments, as summarized in (7).

- (7) PERSON MARKING LABELS IN MAYAN
- a. Set A: ergative, possessive
 - b. Set B: absolute

³The subject *xwi'ilkolelob* ‘younger generation/teenagers’ is likely in a topicalized position, accounting for why the second position clitic appears on the progressive aspect, after the topic in (6).

Ch'ol person markers and their allomorphs are given below in Table 2.4. Pronouns are also provided in the third column. Ch'ol pronouns are based on the Proto-Mayan form *ha'-'. The forms *joñoñ* and *jatyety* are probably derived from *ja'-oñ and *ja'-ety (Hopkins et al., 2008; Mora-Marín, 2009b). These forms are related to the determiner *jiñ(i)* in Ch'ol.

Table 2.4: Ch'ol person markers.

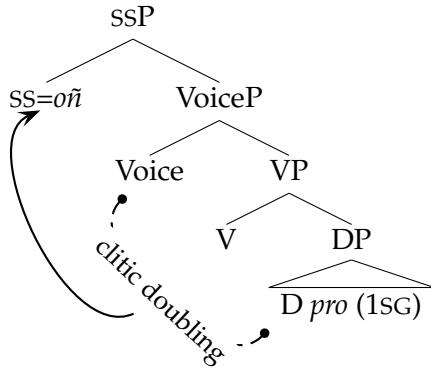
	Set A (ergative/possessive)	Set B (absolutive)	Pronouns
1st	<i>k-/j-</i>	-(<i>y</i>)oñ	<i>joñoñ</i>
2nd	<i>a(w)-</i>	-(<i>y</i>)ety	<i>jatyety</i>
3rd	<i>i(y)-</i>	Ø	<i>jiñ</i>

The glides *y* and *w* in Table 2.4 appear to break up vowel hiatus; the first person marker *k-* is realized as *j-* ([h]) before velar consonants. There is no overt realization of the set B marker for third person, so I therefore do not include set B markers in the glosses for third person. There is no gender distinction in Ch'ol, so throughout the dissertation, I gloss third person forms with 'he' or 'she' (when not apparent through context), with the understanding that either interpretation is possible.

I follow previous work (Woolford, 2000; Coon, 2013; Preminger, 2014) in analyzing the set B markers as clitics. They are generated via an Agree relation, as schematized in (8). A low functional head, labeled as Voice in (8), enters into an Agree relation (in the sense of Chomsky (2000, 2001)) with the object in the complement of the verb, triggering set B morphology, which attaches to the verbal status suffix in ss. Under a movement approach in (8), clitics are D elements that move from the DP in the complement of the verb and attach to the functional head ss. Following conventions in previous work (Vázquez Álvarez 2011, Coon 2013), I will indicate set B markers with a hyphen '-', instead of '='. The status suffix projection (ssp) indicates the edge of the verbal projection. I label the projection that introduces the transitive subject as VoiceP. I note that the projection I label as VoiceP has been described as bundling features of vP and VoiceP together; see Coon and Preminger (2013) and Harley (2017) for more details on the mixed properties of Voice in Ch'ol.

- (8) a. *Ta' a-k'el-e-yoñ.*
PFV arrive-TV-B2
'You saw me.'

b.

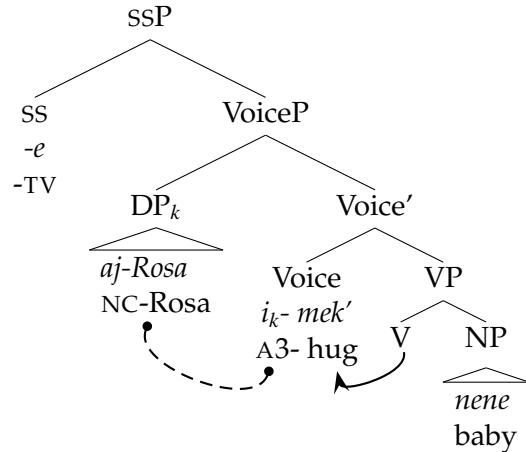


For absolute subjects, also marked with set B clitics, I(nfl), not Voice, licenses and Agrees with the absolute subject and the clitic attaches to the edge of the verbal projection.

Set A markers are agreement markers that I take to be the result of an agreement relation with a low functional head and a nominal in its specifier. This is schematized in (9).⁴ The transitive verb suffix is hosted ssP.

- (9) a. *Ta' i-mek'-e nene aj-Rosa.*
PFV A3-hug-TV baby NC-Rosa
'Rosa hugged the baby.'

b.



Plural markers are given in Table 2.5 and may appear on nouns and verbs. They can reflect plural arguments indexed by set A and set B markers. The third person plural marker is used with

⁴This agreement configuration is what Legate (2014, 37) refers to as “inherent” agreement, analogous to inherent ergative case assignment. Under an approach where agreement and case licensing go hand in hand, this type of agreement is expected. What is important is that set A markers are the result of a local agreement relation between a low functional head and the subject or possessor in a specifier position.

human-denoting and some animate-denoting nominals. The participant pluralizer *la* appears with first and second person markers.

Table 2.5: Ch'ol plural markers

[+participant]	<i>la</i>
[−participant]	<i>-ob</i>

Plural markers are not obligatory for a plural interpretation in Ch'ol (Little, 2018b). The plural marker *-ob* patterns similarly to the non-inflectional plural marker described in Halkomelem Salish (Wiltschko, 2008) as well as the optional plural marker in Yucatec Maya, which Butler (2011) analyzes as being adjoined to the DP. Further investigation is required to better describe the plural marker's distribution in Ch'ol, but for now, I assume that the plural is noninflectional and is an adjoined modifier.⁵ See, however, additional details on plurality in Chapter 3, Section 3.3.6.

Participant plurals are composed of the first or second person marker and *la*. Table 2.6 provides set B markers of participant plurals, with *la*.

Table 2.6: Participant plural set B

First person plural	<i>-oñ=la</i>
First person plural exclusive	<i>-oñ=laj-oñ</i>
Second person plural	<i>-ety=la</i>

I analyze the exclusive first person plural as being morphologically complex, composed of the participant pluralizer and first person set B marker as per discussion in Little (2018a).^{6,7}

⁵The plural *-ob* can index both subjects and objects in transitive clauses, but it may not only reference the object, as indicated by the translations in (1). This points towards an analysis where the plural marker is adjoined to a position above the subject and object and can be 'omnivorous' (as per Nevins (2011))—that is, it can pluralize both subject and object in some cases.

(1) *Tyi i-k'el-e-yob.*
PFV A3-see-PL
'They saw them, They saw him, *He saw them.' (Tila Ch'ol)

Note that 'he saw them' is not a banned construction in the language—with overt pronouns this interpretation can be specified. I thank Jessica Coon for pointing this out.

⁶=*La* often undergoes vowel assimilation when *-oñ* attaches to it in the exclusive form (*laj+oñ* → *lojoñ*).

⁷Ch'ol has been described as having an inclusive and exclusive distinction (e.g. Kaufman and Justeson

2.3.3 Verbs in Ch'ol

Ch'ol verbal roots are generally CVC in shape and can be transitive or intransitive. Examples are given in Table 2.7. These verbal roots contrast with derived verbs, further discussed below.

Table 2.7: Ch'ol verb roots

Transitive	Intransitive
<i>män</i>	'buy'
<i>choñ</i>	'sell'
<i>k'ux</i>	'eat'
<i>k'el</i>	'see'
<i>kuch</i>	'carry'
<i>ch'il</i>	'fry'
<i>mek'</i>	'hug'
<i>bek'</i>	'pour'
<i>xul</i>	'break'
<i>majl</i>	'go'
<i>tyäl</i>	'come'
<i>jub</i>	'descend'
<i>lets</i>	'ascend'
<i>wäy</i>	'sleep'
<i>kol</i>	'grow'
<i>chäm</i>	'die'
<i>ajñ</i>	'run'
<i>käl</i>	'stay'

Below, I provide background on the various status suffixes that appear with the verbal roots in Table 2.7. I additionally provide information on derived transitive verbs and valency changing morphemes.

Intransitive roots

Intransitive roots appear with the intransitive verb suffix *-i* and set B markers with the perfective aspect marker, as shown in (10). Intransitive verb suffixes are hosted in a status suffix projection.

2003, Law 2009, Coon 2010a, Vázquez Álvarez 2011). But, as I describe in Little (2018a), the exclusive form is morphologically more complex than the inclusive and is formed by adding the first person marker *-oñ* to the inclusive form. Effectively, the exclusive form contains the inclusive form. In Little (2018a), I provide evidence that the inclusive is not a traditional inclusive form (i.e., including speaker and hearer in its denotation), but in fact a general first person plural form, unspecified for the inclusion of the hearer. The exclusive, on the other hand, is morphologically and semantically more specified to exclude the hearer.

- (10) a. *Ta' ju'b-i-yoñ.*
 PFV descend-IV-B1
 'I descended.'
 b. *Ta' lets-i.*
 PFV ascend-IV
 'She ascended.'
 c. *Ta' wäy-i-yety.*
 PFV sleep-IV-B2
 'You slept.'

With nonperfective aspect markers, intransitive verbs appear with the nominalizing suffix *-el* and set A person markers, as shown in (11). I discuss these aspectual differences further in Section 2.3.5.

- (11) a. *Woli k-jul-el.*
 PROG A1-arrive-NML
 'I am arriving.'
 b. *Mi i-lets-el.*
 IPFV A3-ascend-NML
 'She ascends.'
 c. *Woli a-wäy-el.*
 PROG A2-sleep-NML
 'You are sleeping.'

Root transitive verbs

With the perfective aspect marker, root transitive verbs take verbalizing suffixes, also referred to as status suffixes, which are fully harmonic with the root vowel, as in (12). These verbs are CVC in phonological form, the minimum word length in Ch'ol.

- (12) a. *Ta' k-päk'-ä ixim.*
 PFV A1-plant-TV corn
 'I planted corn.'
 b. *Ta' a-k'el-e-yoñ.*
 PFV A2-see-TV-B1
 'You saw me.'
 c. *Ta' i-boñ-o otyoty.*
 PFV A3-paint-TV house
 'She painted a house.'

In nonperfective aspects, there is either no suffix, such as in (13a), or the dependent clause suffix *-e'* (DEP) may optionally appear with third person objects as in (13b) and (13c).

- (13) a. *Mi a-k'el-oñ.*
IPFV A2-see-B1
'You see me.'
- b. *Woli k-päk'(-e') jiñi ixim.*
PROG A1-grow-DEP DET corn
'I am planting the corn.'
- c. *Woli i-boñ(-e') otyoty.*
PROG A3-paint-DEP house
'She is painting a house.'

Non-root transitive verbs

Root transitive verbs contrast with derived or non-root transitive verbs. Derived transitive verbs are generally not CVC in shape and appear with a derived transitive suffix *-V* or *-Vñ*. Unlike root transitives, the derived transitive verbalizer is not a harmonic vowel, as seen in the perfective forms in (14).⁸

- (14) a. *Ta' k-pejk-a juñ.*
PFV A1-read-DTV paper
'I read a document.'
- b. *Ta' i-ts'ib-u tsol-ts'ib.*
PFV A3-write-DTV align-letter
'He wrote the alphabet.'
- c. *Ta' i-mul-a a-bujk.*
PFV A3-like-DTV A2-shirt
'She liked your shirt.'
- d. *Ta' j-k'uxb-i-yety.*
PFV A1-love-DTV-B2
'I loved you.'

With nonperfective aspects, these derived transitives appear with the derived nominal suffix *-Vñ*, as in (15). The *-Vñ* suffix can be decomposed further into *-V*, the derived transitive vowel, and *-ñ*, a nominalizer.

⁸In examples such as (14a) and (14c) the derived transitive suffix is realized as *-ä* in the Tila dialect.

- (15) a. *Woli k-pejk-añ juñ.*
 PROG A1-read-D.NML paper
 'I read a document.'
- b. *Mi i-ts'ib-ujñ tsol-ts'ib.*
 IPFV A3-write-D.NML align-letter
 'He wrote the alphabet.'
- c. *Woli i-mul-añ a-bujk.*
 PROG A3-like-D.NML A2-shirt
 'She likes your shirt.'
- d. *Mi j-k'uxb-iñ-ety.*
 IPFV A1-love-D.NML-B2
 'I love you.'

Unergative roots

Unergative structures are expressed with the light verb *cha'l* and a nominalized unergative root. Sometimes the verb *bajb-* 'hit/strike' is also used as a light verb with unergative roots. Unergative roots such as *soñ* 'dance' and *k'ay* 'sing' are nominal in nature and appear in the object position of the light verb *cha'l* in (16), with the result being that these constructions are structurally transitive.⁹

- (16) a. *Ta' k-cha'l-e k'ay.*
 PFV A1-LV-DTV song
 'I sang.'
- b. *Ta' i-cha'l-e soñ x-Wañ.*
 PFV A3-LV-DTV dance NC-Juan
 'Juan danced.'

⁹While the light verb can be passivized in certain cases, it is unclear if the form in (16b) can be passivized, in the sense described for certain impersonal passives in, e.g., Dutch (Perlmutter, 1978). Forms such as (1) are possible with the meaning that 'there was dancing' where *soñ* 'dance' is the subject of the intransitive verb *ujty-* 'finish'.

- (1) *Ta' ujty-i soñ.*
 PFV finish-IV dance:NML
 'There was dancing.'

Passive morphology may appear on the light verb *cha'l* such as in the construction in (2a). The construction in (2a) is common when the object of the PP is borrowed from Spanish such as *publicar* 'publish'. Compare the passive construction in (2a) to the active in (2b). In both cases *publicar* appears as the complement to the preposition.

- (2) a. *Ta' cha'l-eñ-ty-i tyi publicar.*
 PFV LV-DTV-PSV-IV PREP SP:publish
 'It was published.'
- b. *Ta' i-cha'l-e tyi publicar.*
 PFV A3-LV-DTV PREP SP:publish
 'She published it.'

Some verbal roots are ambiguous and may surface in unergative constructions as well as with intransitive morphology. One such form is the root *wäy* 'sleep' in (17). When *wäy* appears in unergative constructions, the nominalizer *-el* is suffixed to it, cf. the intransitive construction in (17b) where *wäy* appears with the intransitive verbalizer *-i*.

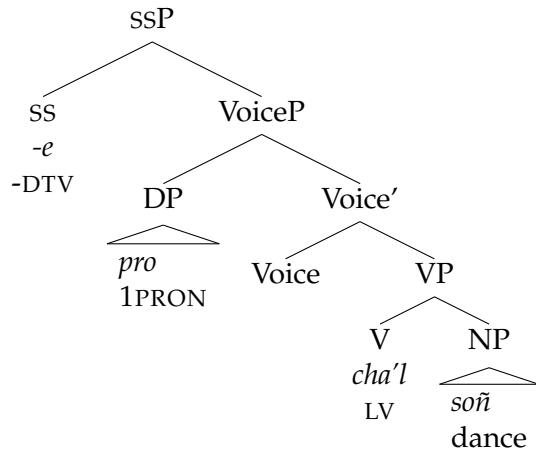
- (17) a. *Ta' k-cha'l-e wäy-el.*
PFV A1-LV-DTV **sleep**-NML
'I slept (on purpose).'
- b. *Ta' wäy-i-yoñ.*
PFV **sleep**-IV-B1
'I slept.'

Compare the unergative construction in (18) to the transitive construction in (19).

(18) Unergative structure

- a. *Ta' k-cha'l-e [NP soñ].*
PFV A1-LV-TV dance
'I danced.'

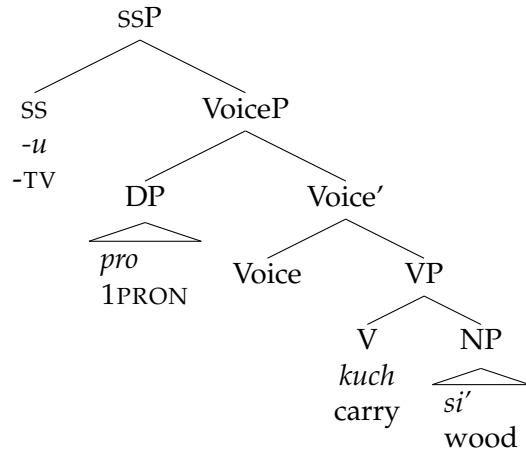
b.



(19) Transitive verb construction

- a. *Ta' j-kuch-u [NP si'].*
 PFV A1-carry-TV wood
 'I carried wood.'

b.



I discuss other constructions with the light verb *cha'l* in more detail in Chapter 3, Section 3.4.

Positionals

A third class of roots specific to Mayan languages are positional roots. These are a large and distinct class of roots that convey information about the position or configuration of an object (see e.g. England 1983, Haviland 1994, and Henderson 2019). Positionals are eventive predicates and appear with aspect markers such as in (20) and (21). With the perfective aspect, the positional suffix *-li/-le* appears, glossed as the positional intransitive verb suffix (POS.IV). With nonperfective aspects, *-tyäl* appears, glossed as the positional nominal suffix (POS.NML).

(20) Perfective positionals

- a. *Ta' buch-le-yoñ tyi kosina.*
PFV seated-POS.IV-B1 PFV kitchen
'I sat in the kitchen.'
- b. *Ta' wa'-li ch'ityoñ tyi bij.*
PFV stand-POS.IV boy PREP road
'The boy stood on the road.'

(21) Nonperfective positions

- a. *Woli k-ñol-tyäl tyi a'b.*
PROG A1-lie.down-POS.NML PREP hammock
'I am lying in the hammock.'
- b. *Mi i-buch-tyäl tyi kolem xajlel.*
IPFV A3-seated-POS.NML PREP big rock
'He sits on a big rock.'

See Arcos López (2009) and Vázquez Álvarez (2011) for more discussion of these roots in Ch'ol.¹⁰

Valency changing operations

Passives For root transitives, passives are formed by aspirating the vowel (CVC → CVjC) and the addition of the intransitive verbalizer, as in (22a) and (22b). If the verb root ends in a fricative consonant (*j*, *s*, *x*, or [h], [s], [ʃ] in IPA), the verb is passivized by adding the suffix *-le* as in (22c). These passive forms appear with set B person markers. Compare the passives in (22) to their transitive counterparts in (23).

(22) Perfective passives

- a. *Ta' chojñ-i wakax.*
PFV sell.PSV-IV cow
'Cows were sold.'
- b. *Ta' mäjñ-i bu'ul.*
PFV buy.PSV-IV beans
'Beans were bought.'
- c. *Ta' k'ux-le-yoñ.*
PFV eat-PSV.IV-B1
'I was bitten.'

(23) Perfective transitives

- a. *Ta' i-choñ-o wakax.*
PFV A3-sell-TV cow
'He sold cows.'
- b. *Ta' i-mäñ-ä bu'ul.*
PFV A3-buy-TV beans
'She sold beans.'
- c. *Ta' i-k'ux-u-yoñ.*
PFV A3-eat-TV-B1
'It bit me.'

¹⁰Arcos López (2009), for instance, discusses how numeral classifiers are derived from transitive verb roots and positional roots.

With nonperfective aspects in (24), root transitives are passivized by aspirating the root vowel as well, and adding a nominalizing *-el* suffix. These forms appear with set A person markers. With nonperfective aspect markers, if the vowel of the root transitive ends in a fricative, it appears with *-tyäl* in (24c). Interestingly, the same morphology found on passive roots that end in fricatives is found on the positionals from above. See Coon and Preminger (2011) for discussion. Compare the passive form in (24) to their active forms in (25).

(24) Nonperfective passives

- a. *Woli i-chojñ-el wakax.*
PROG A3-sell.PSV-NML cow
'Cows are being sold.'
- b. *Mi i-mäjñ-el bu'ul.*
IPFV A3-buy.PSV-NML beans
'Beans are bought.'
- c. *Woli j-k'ux-tyäl.*
PROG A1-eat-PSV.NML
'I am being bitten.'

(25) Nonperfective transitives

- a. *Woli i-choñ wakax.*
PROG A3-sell cow
'He is selling cows.'
- b. *Mi i-män bu'ul.*
IPFV A3-buy beans
'She buys beans.'
- c. *Woli i-k'ux-oñ.*
PROG A1-eat-B1
'It is biting me.'

Derived transitive verbs are passivized by adding the suffix *-ty* to the derived transitive form in (26) and (28). With the perfective aspect marker, the intransitive verb suffix *-i* appears, as in (26). With nonperfective aspect markers, the nominalizing suffix *-el* appears after the passive marker *-ty*. Compare (26) and (28) to their active forms in (27) and (29).

(26) Perfective passives

- a. *Ta' kolty-äñ-ty-i aläl.*
PFV help-DTV-D.PSV-IV child
'The child was helped.'
- b. *Ta' xujch'-iñ-ty-i tyak'iñ.*
PFV steal-DTV-D.PSV-IV money
'Money was stolen.'

(27) Perfective transitives

- a. *Ta' i-kolty-a aläl.*
PFV A3-help-DTV child
'He helped the child.'
- b. *Ta' i-xujch'-i tyak'iñ.*
PFV A3-steal-DTV money
'She stole money.'

- (28) Nonperfective passives
- a. *Mi i-kolty-äñ-ty-el aläl.*
PFV A3-help-DTV-D.PSV-NML child
'The child is helped.'
 - b. *Woli i-xujch'-iñ-ty-el tya'k'iñ.*
PFV A3-steal-DTV-D.PSV-NML money
'Money is being stolen.'
- (29) Nonperfective transitives
- a. *Mi i-kolty-añ aläl.*
IPFV A3-help-D.NML child
'He helps the child.'
 - b. *Woli i-xujch'-iñ tya'k'iñ.*
PROG A3-steal-D.NML money
'She is stealing money.'

Ditransitives Ditransitive constructions are formed by adding the applicative *-b* suffix to transitive verbs as in (30). Indirect objects are marked with set B suffixes. Direct objects must be third person in ditransitive constructions.

- (30) a. *Ta' k-choñ-b-e-yety karu.*
PFV A1-sell-APPL-DTV-B2 car
'I sold you a car.'
- b. *Ta' i-ts'ija-b-e-yoñ i-k'a'ba.*
PFV A1-write-APPL-DTV-B1 A3-name
'He wrote down his name for me.'

The verb *ak'* 'give' is the only verb that is ditransitive but does not appear with the applicative suffix *-b*, as seen in (31). The vowel in *ak'* is realized as *i* with set A prefixes.¹¹

- (31) a. *Ta' k-äk'-e-yety bu'ul.*
PFV A1-give-DTV-B2 beans
'I gave you some beans.'
- b. *Ta' aw-äk'-e karu k-chich.*
PFV A2-give-DTV car A1-sister
'You gave my sister a car.'

Ditransitives are passivized with the *tyi/tyel* suffix as can be seen in (32). Set B suffixes index the indirect object in the perfective forms and set A prefixes index the indirect object in the nonperfective forms. Only the indirect object can be passivized in these forms.

¹¹Compare the ditransitive form of *ak'* 'give' with its transitive form meaning 'place' or 'put' in (1). The status suffix of *ak'* in its transitive form is *ä*.

- (1) *Ta' k-äk'-ä latyu tyi mesa.*
PFV A1-give-TV plate PREP table
'I placed the plate on the table.'

- (32) a. *Ta' choñ-b-eñ-ty-i-yety karu.*
PFV sell-APPL-DTV-**D**.PSV-IV-B2 car
'You were sold a car.'
- b. *Woli y-äk'-eñ-ty-el karu k-chich.*
PROG A3-give-DTV-**D**.PSV-NML car A1-sister
'My sister is being given a car.'

Causatives Causatives are realized with the suffix *-es*,¹² which attaches to predicates such as *mich'* 'angry' in (33a) or intransitive verb roots such as *ju'b* 'descend' in (33b).

- (33) a. *Ta' i-mich'-es-a-yoñ yumäl.*
PFV A3-angry-CAU-DTV-B1 leader
'The president made me angry.'
- b. *Woli i-ju'b-es-añ pok' aj-Rosa.*
PROG A1-descend-CAU-D.NML bowl NC-Rosa
'Rosa took down a bowl.'

These constructions may also be passivized with *-tyi/tyel*, as in (34).

- (34) a. *Ta' mich'-es-äñ-ty-i-yoñ.*
PFV angry-CAU-DTV-**D**.PSV-IV-B1
'I was angered.'
- b. *Woli i-ju'b-es-äñ-ty-el pok'.*
PROG A1-descend-CAU-DTV-**D**.PSV-NML bowl
'The bowl is being taken down.'

2.3.4 Alignment

As mentioned above, Ch'ol is a head-marking language with grammatical relations marked on the verb. Transitive objects and intransitive subjects are indexed by absolute markers (set B) in (35). Transitive subjects are marked with set A prefixes, as in (36).

- (35) Absolute markers = set B

- | | |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| a. <i>Ta' majl-i-yoñ.</i>
PFV go-IV- B1
'I went.' | b. <i>Ta' i-k'el-e-yoñ aj-Maria.</i>
PFV A3-see-TV- B1 NC-Maria
'Maria saw me.' |
|----------------------------------------------------------------|----------------------------------------------------------------------------------------------|

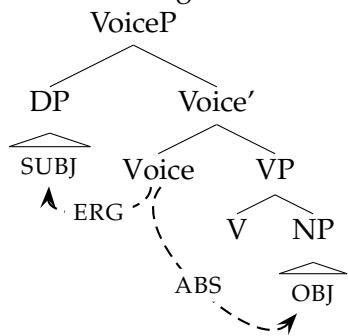
¹²In the Tila dialect, the causative suffix is sometimes realized as *-is* and the derived transitive suffix as *-ä*.

- (36) Ergative markers = set A

Ta' i-juch'-u sa' aj-Maria.
 PFV A3-grind-TV masa NC-Maria
 'Maria ground masa.'

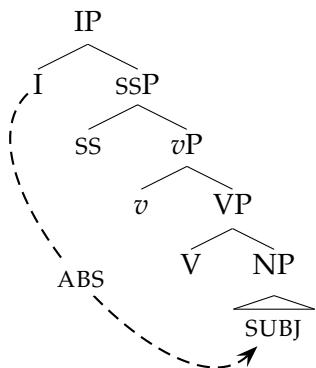
I assume, following Coon (2017), that a low functional head, labeled as Voice, licenses ergative case. This is consistent with the inherent ergative approach to case (Aldridge, 2004; Legate, 2008; Coon et al., 2014). Transitive Voice also licenses case for the absolute object.

- (37) Case licensing in transitive clauses in Ch'ol



Absolutives in intransitive constructions are licensed by Infl (labeled as I) (Coon, 2017), as shown in (38).¹³

- (38) Absolutive case licensing for intransitive verbs in Ch'ol



¹³Under Legate's (2008) terms, absolute is the default case in Ch'ol.

2.3.5 Split ergativity

In Ch'ol, intransitive subjects and transitive objects are indexed via set B markers, as in (39) where both the first person intransitive subject and first person transitive object are indexed by *-oñ*. With nonperfective aspects, intransitive subjects are indexed with set A markers, not with set B, as in (40). In (40), the first person intransitive subject is indexed by *k-*. This same marker also indexes ergative subjects, as in (41).

- (39) a. *Ta' majl-i-yoñ.*
PFV go-IV-**B1**
'I went.'
 - b. *Ta' i-k'el-e-yoñ.*
PFV A1-see-TV-**B1**
'He saw me.'
- (40) a. *Mi k-majl-el.*
IPFV A1-go-NML
'I go.'
 - b. *Woli k-majl-el.*
PROG A1-go-NML
'I am going.'
- (41) *Ta' k-tyuk'-u kajpe'.*
PFV A1-cut-TV coffee
'I harvested coffee.'

At first glance, it seems as if Ch'ol exhibits a split ergative system based on aspect where it is ergative-absolutive with the perfective aspect marker, but nominative-accusative aligned with nonperfective aspect markers. This is due to the fact that with perfective aspects, set B markers mark subjects of intransitive verbs and objects of transitive verbs in (39). However, with nonperfective aspects, set A markers index subjects of intransitive verbs in (40), seemingly patterning with the ergative subject of the transitive verb in (41). However, Coon (2010a, 2012, 2013) argues that this aspect split is epiphenomenal and the verbs in (40) are nominalized complements of the predicative nonperfective aspect. The set A markers in (40) are possessive markers. Recall that ergative and possessive markers are identical: compare (40) with (42).

- (42) *k-otyoty*
A1-house
'my house'

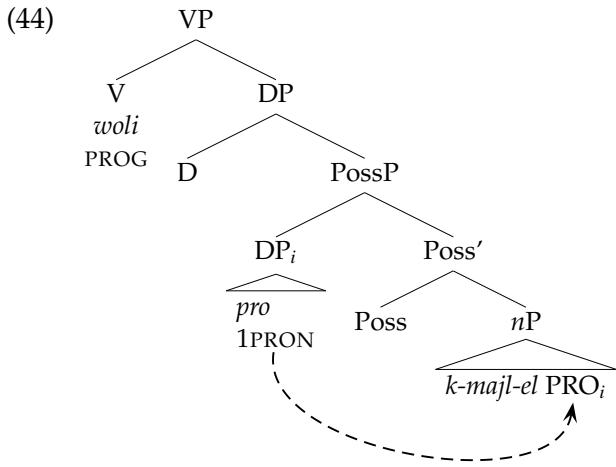
That is, the set A markers in (40) are both genitive prefixes, indexed on a nominalized verb.

Additional evidence that the verbs in (40) are nominalized is that they appear with a nominalizing suffix *-el*, and not the intransitive verb suffix *-i*, which appears in (39a).

The two aspect markers *mi* and *woli* are analyzed as predicates that take nominalized complements. The analysis for (40b) is schematized in (43). The progressive aspect *woli* in (40b) takes the nominalized *kmajlel* ‘my going’ as its complement. The verb root *majl* has the nominalizing suffix *-el* and possessive marker *k-* on it. The possessive marker *k-* is co-indexed with a PRO in the nominalized complement.

- (43) *Woli* [DP k_i - [*majl-el* PRO_{*i*}]].
 PROG A1- go-NML
 ‘I am going.’ Lit. ‘My going is happening.’

The structure of (43) is provided in (44) from Coon (2013).



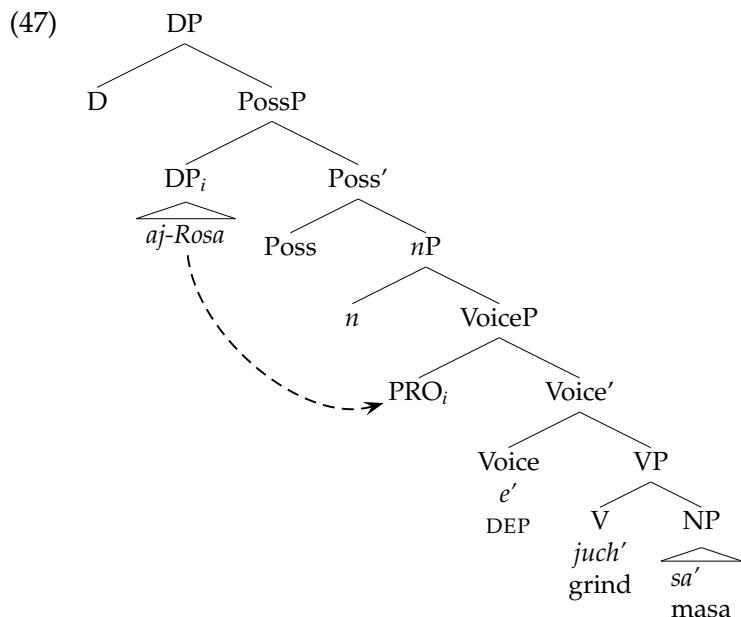
When possessor subjects are overt in nominalized complements they appear *after* the verb, as in (45a). This parallels possessive phrases, where possessors also appear after their possessees, as shown in (45b) (and discussed more in Section 2.4.5 below).

- (45) a. *i-majl-el aj-Rosa*
 A3-go-NML NC-Rosa
 ‘Rosa’s going’
 b. *i-wakax aj-Rosa*
 A3-cow NC-Rosa
 ‘Rosa’s cow’

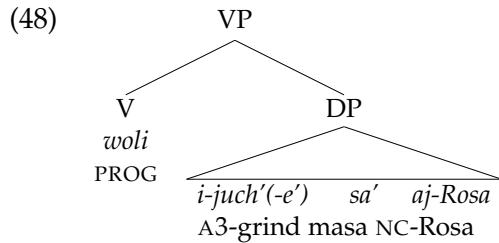
Transitive verbs with nonperfective aspects are also analyzed as nominalized complements where the subject is structurally a possessor. For transitive verbs with nonperfective aspects, morphological differences also provide evidence for their nominal status. Compare the transitive verb in the perfective aspect in (46b) and the transitive verb with the progressive aspect in (46a). In (46b) the transitive verbalizer *-u* appears with the verb *juch'* 'grind'. In (46a) the suffix is null or the dependent clause suffix *-e'* can optionally appear with third person objects.

- (46) a. *Woli i-juch'(-e')* *sa'* *aj-Rosa.*
 PROG A3-grind-DEP masa NC-Rosa
 'Rosa is grinding masa.'
 b. *Ta' i-juch'-u* *sa'* *aj-Rosa.*
 PFV A3-grind-TV masa NC-Rosa
 'Rosa ground masa.'

The structure of (46a) according to Coon (2010a, 2012, 2013) is given in (47). The subject, Rosa, is expressed as the possessor in Spec,PossP and is co-indexed with a PRO in the nominalized complement (see also Coon and Royer (To Appear)). The verbal stem raises to *n*, where set A marking appears. The set A agreement morpheme is analyzed as the result of an agreement relation between Poss and the possessor in its specifier. The ϕ features are then inherited by *n*, triggering the spell out of set A markers on the nominalized stem. To achieve the correct word order, I argue in Chapter 5 that the possessor is on the right.



The aspect marker *woli* takes (47) as its complement, as shown in (48).



Further evidence that the complements of nonperfective aspects are nominal comes from data such as in (49a). In the expression for ‘it is raining’, the noun ‘rain’ appears as the complement to the progressive aspect marker *woli* in (49a). This nominal may not appear with the perfective aspect marker as in (49b).

- (49) a. *Woli* [NP *ja'äl*].
PROG rain
‘It is raining.’
- b. * *Ta'* [NP *ja'äl*]
PFV rain
Intended: ‘It rained.’

In sum, the seemingly split ergative pattern is in fact epiphenomenal. The aspectual-based split of agreement comes down to the fact that progressive markers are verbal predicates that take nominalized complements. With the perfective aspect marker, the verb appears with a verbal suffix. Structurally, however, the perfective aspect is a ‘true’ aspect marker in an inflectional head, whereas nonperfective aspects are predicates that take nominal complements.

2.3.6 Clausal word order

Ch'ol is verb-initial with alternating VOS/VSO word order (Vázquez Álvarez, 2002, 2011; Coon, 2010b; Clemens and Coon, 2018). This alternation is connected to structural properties of the object. VOS word order is associated with NP objects, and VSO with DP objects. Bare object NPs such as *waj* ‘tortilla’ in (50a) must appear next to the verb, generating the pragmatically neutral VOS word order. VSO word order is ungrammatical with NP objects, as shown by (50b). Other

modifiers, such as numerals, may also appear with objects in VOS position. I use the term NP descriptively to refer to nominals without any overt elements in or above D.

- (50) a. *Ta' i-k'ux-u [O waj] [S aj-Maria]*.
 PFV A3-eat-TV tortilla NC-Maria.
 'Maria ate a tortilla.'
 b. * *Ta' i-k'ux-u [S aj-Maria] [O waj]*.
 PFV A3-eat-TV NC-Maria tortilla.
 Intended: 'Maria ate a tortilla.'

DP objects are banned from appearing in VOS object position. I use DP as a descriptive term in this dissertation, meaning that they are nominals that contain overt material in or above D.^{14,15} In Tumbalá Ch'ol, VSO word order with a full DP object was judged felicitous in a context in which the speaker is looking at a dead deer and says (51a). DP objects are judged to be ungrammatical in VOS object position, as in (51b).

- (51) a. *Ta' i-jul-u [S aj-Ariañ] [O jiñi me']*.
 PFV A3-shoot-TV NC-Adrian DET deer
 'Adrian shot the deer.'
 b. * *Ta' i-jul-u [O jiñi me'] [S aj-Ariañ]*.
 PFV A3-shoot-TV DET deer NC-Adrian
 Intended: 'Adrian shot the deer.'

The word order patterns in (50) and (51) are discussed more in Chapter 5 of the dissertation.

Other predicates such as adjectives or nouns also appear before any overt subjects as in (52a). Predicates appear with set B markers, as in (52b) and (52c). Data such as in (52) lead to the characterization of Ch'ol as generally a *predicate-initial* language.

- (52) a. *Säsäk ili waj*.
 white this tortilla
 'This tortilla is white.'
 b. *Pek'-ety*.
 short-B2
 'You are short.'

¹⁴While VSO word order is marginal (indeed, two full postverbal nominals across Mayan languages are uncommon (England, 1991)), VSO sentences are still judged felicitous and are spontaneously produced, as also Coon (2010b, 362) notes for the Tila dialect of Ch'ol.

¹⁵See discussion in Chapter 5, Section 5.8, for some outstanding issues regarding nominal syntax and Mayan languages.

- c. *X-k'el juñ-oñ.*
 NC-see book-B1
 'I am a student.'

2.3.7 Negation

The negation marker *ma'añ* precedes aspectual markers, as in (53). The negation marker *mach* appears with stative predicates as in (54). In the Tumbalá dialect, the irrealis enclitic *=ik* also appears cliticized to the negation marker or predicate. The negation marker *ma'añ* is most likely composed of the negative marker *mach* and the existential predicate *añ*; see Chapter 3, Section 3.3.2 and Coon (2006) for discussion.

(53) Verbal predicate negation

- a. *Ma'añ=ik ta' k-tyaj-a.*
 NEG=IRR PFV A1-find-TV
 'I didn't find it.'
- b. *Ma'añ=ik mi i-mul-añ.*
 NEG=IRR IPFV A3-like-D.NML
 'She doesn't like it.'

(54) Stative predicate negation

- a. *Mach k-om=ik bu'ul.*
 NEG A1-want=IRR beans
 'I don't want any beans.'
- b. *Mach loktor-oñ=ik.*
 NEG doctor-B1=IRR
 'I am not a doctor.'

2.3.8 The preverbal position

The preverbal position in Ch'ol, as in many other Mayan languages, is where focused, *wh*-marked or topicalized constituents appear, as shown in (55). Topicalized constituents often appear with the *=i* enclitic, as in (55c). In many cases, the particle *a* precedes the topicalized constituent, but it is not obligatory.

- (55) a. *Wh*-word

[_{wh} *Chuki*]_i *ta'* *i-kuch-u* *t_i* *ch'ityoñ?*
what PFV A3-carry-TV boy

'What did the boy carry?'

- b. Focus

[FOC *La=k-ña'-ob*]_i *mi* *i-majl-el* *i-tyuk'-b-eñ-ob* *i-wuty* *t_i*.
 PART.PL=A1-mother-PL IPFV A3-go-NML A3-pick-APPL-NML-PL A3-fruit

'The women go and pick its fruit.'

Don Lucio

- c. Topic

[TOP *Jiñi muty=i*]_i *mi* *i-mel* *i-y-otyoty.*
 DET chicken=ENCL IPFV A3-make A3-house

'As for the bird, it makes its house.'

Don Lucio

As Ch'ol is an obligatory *wh*-fronting language, interrogative words such as *majki* 'who' and *chuki* 'what' must appear preverbally in (56a) and (57a).¹⁶ In situ *wh*-words are ungrammatical, as per (56b) and (57b).

- (56) a. *Chuki* *ta'* *i-k'ux-u* *t_i* *aj-Maria?*
 what PFV A3-eat-TV NC-Maria

'What did Maria eat?'

- b. * *Ta'* *i-k'ux-u* *chuki aj-Maria?*
 PFV A3-eat-TV what NC-Maria
 Intended: 'What did Maria eat?'

- (57) a. *Majki* *ta'* *i-k'ux-u* *waj* *t_i?*
 who PFV A3-eat-TV tortilla

'Who ate a tortilla?'

- b. * *Ta'* *i-k'ux-u* *waj majki?*
 PFV A3-eat-TV tortilla who
 Intended: 'Who ate a tortilla?'

The data in (56) and (57) also display that Ch'ol is not syntactically ergative. That is, Ch'ol does not restrict the A-bar extraction of ergative arguments. Further exemplifying this point is that, without context, the sentence in (58) is ambiguous between extraction of the ergative subject or extraction of the absolute object.

- (58) *Majki* *ta'* *i-kel-e?*
 who PFV A3-see-TV

'Who saw her?' or 'Who did she see?'

¹⁶Question words could be further broken up into an indefinite pronoun *majch* 'someone' and *chu* 'something' and the question enclitic *=ki*, though I do not make this distinction in the glosses. See Vázquez Álvarez and Coon (To Appear).

Multiple *wh*-questions are not permitted in Ch'ol, as displayed in the ungrammatical examples in (59).

- (59) a. * *Majki_j ta' i-k'ux-u chuki t_j?*
who PFV A3-eat-TV **what**
 Intended: 'Who ate what?'
 b. * *Majki_j chuki_i ta' i-k'ux-u t_i t_j?*
who **what** PFV A3-eat-TV
 Intended: 'Who ate what?'

Focused-marked constituents in Ch'ol may also appear in the clause-initial position (Vázquez Álvarez, 2011), as shown in (60), though in situ focus has also been shown to be possible in Ch'ol (Clemens et al., 2017).

- (60) a. *Aj-Maria_i ta' i-juch'-u sa' t_i.*
NC-Maria PFV A3-grind-TV masa
 'Maria ground masa.'
 b. *Sa'_i ta' i-juch'-u t_i aj-Maria.*
masa PFV A3-grind-TV NC-Maria
 'Maria ground *masa*'

Topicalized and focused constituents may co-occur, where the topicalized constituent must precede the focused constituent. An example is given in (61) from the Tila dialect of Ch'ol.

- (61) [TOP *a li aj-Wañ=i*] [FOC *ixim*] *tyi i-mäñ-ä.*
 TOP DET NC-Juan=ENCL corn PFV A3-buy-TV
 'As for Juan, it is corn that he bought.' (Vázquez Álvarez, 2011, 342) (with my bracketing)

Depictive secondary predicates may also appear in the preverbal position as in (62). See Vázquez Álvarez (2010) for more discussion.

- (62) a. *Buch-ul ta' majl-i-yoñ tyi Saltu.*
seated-STAT PFV go-IV-B1 PREP Salto
 'I went to Salto seated.'
 b. *Loñ-li-li-ña tyal la=k-tyaty.*
in.vain-RED-walk-ATTR come PART.PL=1-father
 'The man was just coming towards us walking.' *Bats'*

2.3.9 Summary

In sum, Ch'ol is a predicate-initial, head-marking ergative-absolutive language. I assume that set A (ergative/genitive) person prefixes are spelled out of an agreement relation between a low functional head and a nominal in its specifier. Set B markers are analyzed as clitics, derived via Agree. Ergative case is licensed in Ch'ol by a low functional head (in this dissertation labeled as Voice). Absolutive objects are licensed by a low functional projection whereas absolutive subjects are licensed by INFL, throughout this dissertation labeled as I. Ch'ol constituent order within the clausal domain is summarized in (63).

- (63) Topic/Focus/Wh- Neg TAM Predicate

The morphology of transitive and intransitive verbs are summarized in Table 2.8 for perfective and nonperfective aspects. With the perfective aspect marker, root transitives take a vowel suffix harmonic with the vowel of the root. Nonperfective aspects take nominalized complements. Root transitives can appear with a dependent suffix *-e'* with third person objects. The intransitive verbalizer with the perfective aspect is always *-i*; in nonperfective aspects *-el* surfaces. There is no overt nominalizing morpheme for root transitives; for nonroot transitives this morpheme is spelled out as *-ñ*.

Table 2.8: Ch'ol stem morphology (Coon, 2013, 28)

	Perfective	Nonperfective
Root transitive	A- <u>root</u> -V-B	A- <u>root</u> -(<i>e'</i>)-B
Nonroot transitive	A- <u>root</u> -V-B	A- <u>root</u> -Vñ-B
Intransitive	<u>root</u> - <i>i</i> -B	A- <u>root</u> - <i>el</i>
Positional	<u>root</u> - <i>li</i> -B	<u>root</u> - <i>tyäl</i> -B

Following Coon (2010a, 2012, 2013), I take the apparent aspect split in Ch'ol to be epiphenomenal. Perfective aspects take 'true' verbs whereas nonperfective aspect markers are predicates that take nominalized complements.

2.4 Ch'ol nominal basics

In this section, I cover background on the nominal domain in Ch'ol. While fully extended nominal expressions are rare in casual speech, they are possible in elicited contexts. For instance, in (64), determiners, numerals, and adjectives are prenominal while the (noninterrogative) possessor is postnominal.

- (64) *jiñi cha'-kojty i-säsäk wakax aj-Rosa*
DET two-CLF A3-white cow NC-Rosa
'the two white cows of Rosa's'

I discuss each one of these elements below.

2.4.1 Nouns

Nouns are not marked for case, rather agreement markers appear on the verb, as discussed above. Bare nouns can serve as arguments and may be interpreted as definite or indefinite, as in (65).

- (65) a. *Ta' jul-i wiñik.*
PFV arrive-IV man
'A/the man arrived.'
b. *Ta' i-boñ-o otyoty ch'ityoñ.*
PFV A3-paint-TV house boy
'The boy painted a/the house.'

I further discuss the interpretation of bare nouns with respect to (in)definiteness in Chapter 3.

Nouns in Ch'ol are furthermore unspecified for number—that is, they have general number in the sense of Corbett (2000), or are number neutral in the sense of Chierchia (1998a) and Rullmann and You (2006). This is supported by data in (66), where the bare noun *ts'i'* 'dog' is not specified for number.

- (66) *Tsa' j-k'el-e ts'i'*.
PFV A1-see-TV dog
'I saw a dog/dogs.' Speaker comment: We do not know how many dogs you saw. Little (2018b)

See discussion in Chapter 3, Section 3.3.6 for more on plurality in Ch'ol.

2.4.2 The noun class prefixes *x-* and *aj-* in Ch'ol

There are two noun class prefixes in Ch'ol, *x-* and *aj-*, which appear with certain nouns and proper names. Historically *aj-* is related to the Proto-Mayan masculine prefix, and *x-* the Proto-Mayan feminine prefix. In Ch'ol, however, their uses do not correspond to gender. In the Tumbalá dialect *x-* is used to derive demonyms for places as in (67a) and (67b) and can attach to N-V compounds or nominalized antipassives as in (67c) and (67d) to mean 'someone who does X'.¹⁷

- (67) a. *x-Palenke*
NC-Palenque
'someone from Palenque'
b. *x-tyejklum*
NC-city
'someone from the city'
c. *x-choñ waj*
NC-sell tortilla
'tortilla seller'
d. *x-mäñ-oñ-el*
NC-buy-AP-NML
'shopper'

The prefixes *x-* and *aj-* can also attach to names, as in (68). According to Arcos López (2009, Chapter 3) both prefixes can codify respect or friendship of the speaker towards the referent. In certain contexts, *aj-* can sometimes be used to indicate disagreement between participants and *x-* can be used to make fun of someone when prefixed to a name.

- (68) a. *x-Wañ*
NC-Juan
'Juan'
b. *aj-Rosa*
NC-Rosa
'Rosa'

¹⁷In the Tila dialect of Ch'ol, the prefix *aj-* is used to derive the meanings in (67), e.g., *aj-Palenke* 'someone from Palenque', *aj-choñ waj* 'tortilla seller', etc.

There are also dialectal differences: INALI (2011) indicates that *x-* is used more often with names in the Tumbalá dialect, whereas Tila speakers use *aj-*.

These noun class prefixes may appear on names in argument position (69a) as well as in vocatives (69b).

- (69) a. *Ta'=ix majl-i x-Wañ.*
PFV=already go-IV NC-**Juan**
'Juan left already.'
- b. *X-papito, la' jap-ä a-kajpe'*
NC-**papito** come drink-PFV A2-coffee
'Papito¹⁸, come drink your coffee.'
- (Arcos López, 2009, 125)

2.4.3 Plural markers

The plural suffix *-ob* can optionally attach to human-denoting nouns and some animal-denoting nouns, as in (70). This plural marker also can appear on verbs, as discussed above in Section 2.3.2. I analyze the plural marker as adjoined to the nominal, as per Wiltschko (2008) for Halkomelem Salish and Butler (2011) for Yucatec Maya, though further investigation is needed in order to describe its precise distribution.

- (70) a. *x-ch'ok-ob*
NC-girl-PL
'girls'
- b. *k-erañ-ob*
A1-sibling-PL
'my siblings'
- c. *wiñik-ob*
man-PL
'men'

This plural marker can also attach to proper names to derive an associative plural meaning, as in (71).

- (71) *aj-Celiaj-ob*
NC-Celia-PL
'Celia and her friends'¹⁹

¹⁸Term of endearment.

¹⁹This can also mean a group of women all named Celia.

The plural suffix *-tyak* can also attach to nouns and adjectives as in (72) and (73), with the meaning of ‘various’.²⁰

- (72) a. *ixim-tyak*
corn-PLIN
'various types of corn'
- b. *otyoty-tyak*
house-PLIN
'various houses'

- (73) Context: After seeing pictures of different pairs of shoes

Uts'aty-tyak=jax.
nice-PLIN=EXCL

'They are very nice.'

(WhatsApp, May 25th, 2019)

The plural markers *-ob* and *-tyak* may also co-occur, as in the excerpt from a pamphlet in (74).

- (74) *Jiñ mi i-tyaj i-kolty-äñ-tyel pejtyelet-ob ch'ityoñ x-ch'ok-tyak-ob k'äläł*
DET IPFV A3-receive A3-help-DTV-PSV.NML all-PL boy NC-girl-PLIN-PL until
tyi 22 años i-ja'bil-el-ob.
PREP 22 SP:years A3-year-RS-PL
'All boys and girls up to 22 years of age will receive this support.'²¹

2.4.4 Demonstratives and determiners

Ch'ol demonstratives and determiners are listed in Table 2.9. The Tila dialect has an additional determiner *li*, not used by Tumbalá speakers (Vázquez Álvarez, 2011).²²

²⁰The plural marker *tyak* may also attach to verbs as in (1).

(1) *Jiñ=jach k-poj-k'ajty-iñ-tyak=loñ.*
DET=EXCL A1-HON-ask-D.NML-PLIN=PL.EXCL
'This is all we ask.'

(Vázquez Álvarez, 2011, 80)

²¹Guía cha'añ programas sociales [Guide for social programs], 2014, Ministry of Social Development https://www.gob.mx/cms/uploads/attachment/file/30800/GPS_2014_Chol_de_l_Noroeste.pdf

²²Little and Vázquez Martínez (2018) note that Tumbalá speakers sometimes use a particle *a* before nouns. They suggest that *a* possibly comes from a shortened *a jiñi*, the topic marker *a* plus the determiner *jiñi*. More investigation is needed, however, to figure out exactly what the particle *a* is in the Tumbalá dialect. Arcos López (2009) glosses *a* as a filler word.

Table 2.9: Demonstratives and determiners in Ch'ol

<i>ili</i>	'this'
<i>jiñ(i)</i>	'that'
<i>ixä</i>	'that (distal)'

The demonstratives *ili* and *ixä* encode deixis with respect to the speaker/hearer; *jiñi*, on the other hand, is often used in anaphoric contexts (Little and Vázquez Martínez, 2018).²³ Bare nouns may also be interpreted as definite: a determiner is not needed for a definite interpretation, as discussed further in Chapter 3. VOS objects in Ch'ol may not appear with the determiners or demonstratives in Table 2.9.

2.4.5 Possessive constructions

In the nominal domain, set A person markers, bolded in (75), are prefixed to the possessed noun and overt possessors follow possessees. The possessive structure I adopt is given in (76).

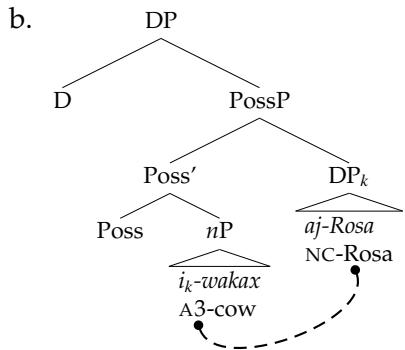
- (75) a. *k-waj*
A1-tortilla
 'my tortilla'
- b. *i-waj aj-Maria*
A3-tortilla NC-Maria
 'Maria's tortilla'

²³The determiner *jiñi* is also used in focus contexts and sometimes glossed as a focus marker (Vázquez Álvarez, 2011). Additionally, it appears in copular constructions along with the affirmative clitic =äch as in (1).

- (1) *K-tema=loj-oñ jiñ=äch i-ñusa-k'iñ x-mayaj-ob y-ik'oty i-ty'añ.*
 A1-topic-PART.PL-B1 DET=AFF A3-pass-day NC-maya A3-COM A3-language.
 'Our topic was the history of the Mayan people and their language.'
<http://chol.lingspace.org/ctu/tallertyak-tyi-tumbala-yikoty-san-miguel/>

Zavala (2017) notes a similar pattern of grammaticalization in Olutec (Mixe-Zoquean), where demonstratives become pronouns, copula morphemes, and focus markers. See also Li and Thompson (1977) for discussion on anaphoric pronouns becoming copula morphemes.

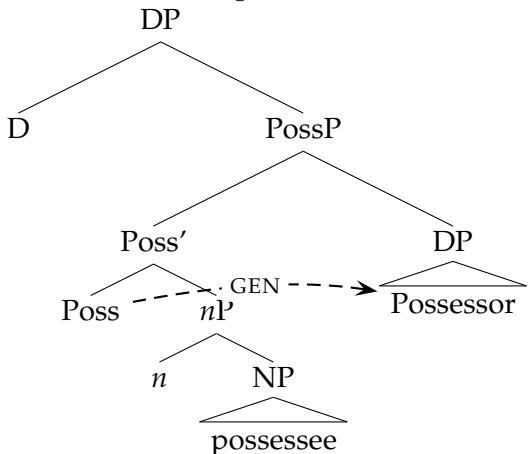
- (76) a. *i-wakax aj-Rosa*
 A3-cow NC-Rosa
 ‘Rosa’s cow’



I take the set A prefix to be the spell out of an agreement relation between the possessor and a low functional head, Poss. The ϕ features on Poss are inherited by n , triggering the set A agreement morpheme on nP . The agreement morpheme is spelled out on nP , but below any adjuncts. That is, it appears on adjectives but not on numerals, discussed further in Section 2.4.6.

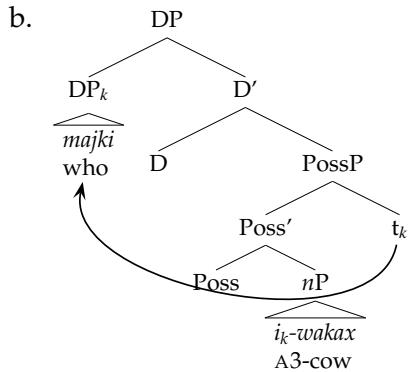
Similar to ergative case assignment above, I adopt the view that genitive case is assigned by Poss to the nominal in its specifier, schematized in (77).

- (77) Genitive case assignment



When the possessor is interrogative, it precedes the possessee, generating the possessor–possessee order in (78).

- (78) a. *majki_k i-wakax t_k?*
 who A3-cow
 'whose cow?'



As will be discussed further in Chapter 4, overt possessors are banned from appearing in VOS object position.

2.4.6 Modifiers

Modifiers, such as adjectives, numerals, and quantifiers, appear before the noun as in (79). Numerals in Ch'ol appear with an obligatory numeral classifier.²⁴

- | | | |
|--------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|
| (79) a. <i>cha'-kojty wakax</i>
two-CLF cow
'two cows' | b. <i>säsäk wakax</i>
white cow
'a white cow' | c. <i>ka'bäl wakax</i>
many cow
'many cows' |
|--------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------|

Possessive markers attach to adjectives as in (80a), but not numerals or other quantifiers, as in (80b).²⁵

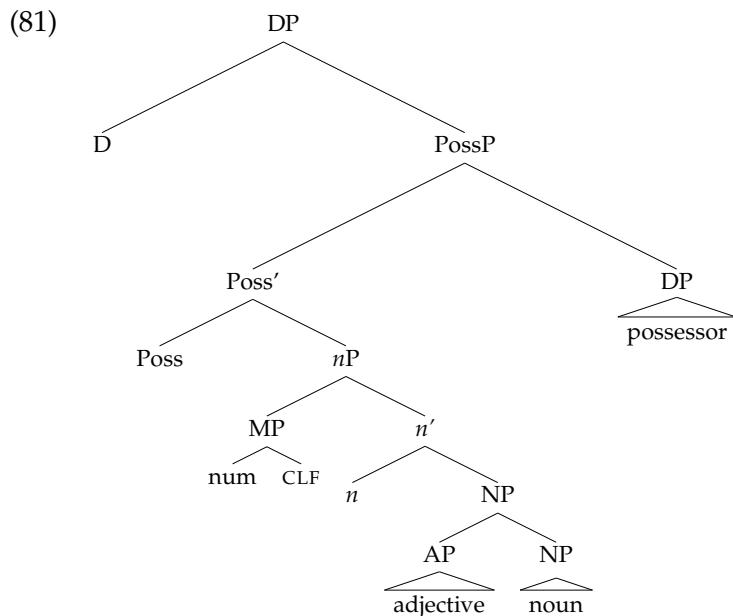
²⁴See work by Arcos López (2009); Bale and Coon (2014); Bale et al. (2019); Little et al. (2020) for more on numerals and classifiers in Ch'ol.

²⁵The meaning of (80b) does not have maximality entailments as English does in the phrase 'my two white cows.' To indicate maximality, a possessed numeral is used as in (1), discussed in detail in Little (2018b).

- (1) *tyi i-cha'-kojty-lel k-säsäk wakax*
 TYI A3-two-CLF-RS A1-white cow
 'my two white cows'

- (80) a. *k-säsäk wakax*
A1-white cow
'my white cow'
- b. *cha'-kojty k-säsäk wakax*
two-CLF **A1**-white cow
'two of my white cows'

The structure of the nominal phrase is given in (81). I follow Bale et al. (2019) in labeling the phrase containing a numeral and its obligatory classifier as MP, adjoined to the *nP*. Possessive marking is the result of agreement between the possessor in Spec,PossP and Poss, the same head that assigns the possessor genitive case. Agreement is spelled out on the *nP*, excluding adjuncts such as numerals.²⁶



2.4.7 Relative clauses and =*bä*

Relative clauses usually follow the head noun and are marked with the clitic =*bä* (a borrowing from the Mixe-Zoque language, Zoque (Vázquez Álvarez, 2011)). The relative clause marker =*bä* is a second position clitic appearing on the first element of the relative clause. The morpheme =*bä* is bolded in the examples in (82).

²⁶The specifier of PossP and *nP* have both been proposed to be the position where possessors are base-generated (see discussion in Alexiadou et al. (2007)). An alternative approach is that the possessor occupies Spec,*nP* and numerals are adjoined to a specifier position above the possessor. However, under this type of account, it would be unclear how to capture structural differences with respect to objects in VOS position. As will be discussed further in Chapter 4, overt possessors in object position trigger object shift, but numerals do not. If numerals occupied a position above possessors, an explanation would be needed as to why possessors trigger object shift, but numerals (structurally higher under this approach) do not.

- (82) a. *Ta' j-k'el-e wiñik_i [ta'=bä i-choñ-b-e-yoñ bu'ul t_i]*
PFV A1-see-TV man PFV=REL A3-sell-APPL-B1 beans
'I saw the man who sold me beans.'
- b. *Ta' wejl-i majlel x-ch'e'_i [ta'=bä i-chuk-u t_i ch'ityoñ].*
PFV fly-IV DIR:away NC-bird PFV=REL A3-catch-TV boy
'The bird that the boy caught flew away.'

Modifiers may also appear with the relative clause enclitic *=bä*. Adjectives without *=bä* are obligatorily prenominal as in (83a), whereas modifiers with *=bä* may appear before or after the nominal, as in (83b) and (83c). Unlike in (83a), possessive morphology cannot appear on modifiers with *=bä*, displayed in the ungrammatical example (83d).

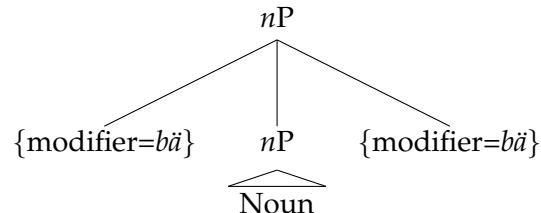
- (83) a. *i-säsäk wakax*
A3-white cow
'her white cow'
- b. *i-wakax säsäk=bä*
A3-cow white=REL
'her white cow'
- c. *säsäk=bä i-wakax*
white=REL A3-cow
'her white cow'
- d. * *i-säsäk=bä wakax*
A3-white=REL cow
intended: 'her white cow'

With some modifiers, especially derived modifiers, *=bä* is obligatory, as in (84) (see also discussion in Coon (2018)).

- (84) a. *wel-el*(=bä) tye'*
flat-STAT=REL wood
'flat wood' (Martínez Cruz, 2007)
- b. *tye' wel-el*(=bä)*
wood flat-STAT=REL
'flat wood'

As mentioned above, these modifiers with *=bä* may appear either prenominally or postnominally, schematized in (85) (see also Bale et al. (2019, 23)).

(85)



2.4.8 Summary

In sum, the order of constituents within the nominal domain is given in (86).

- (86) Nominal constituent order
Dem/Det Numeral set A- Adjective Noun Possessor

Demonstratives, determiners, numerals, and adjectives are all prenominal and possessors are postnominal. Interrogative possessors are prenominal. The genitive set A marker is spelled out on the *nP* (including any adjectives). As briefly discussed in this section, demonstratives, determiners, and overt possessors are banned from appearing in VOS object position.

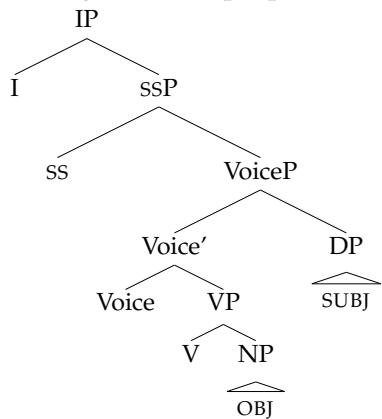
2.5 Conclusion and a brief overview of verb-initial word order

I have given an overview of Ch'ol morphosyntax, which I will reference throughout this dissertation. Additionally, throughout this chapter, I have highlighted some empirical points of Ch'ol morphosyntax that form the basis for the analyses of the following chapters. In Chapter 3, I provide data on the interpretation of bare nouns and a semantic analysis of how the syntax reflects semantic interpretation. In Chapter 4, I argue that movement-derived islands account for subextraction asymmetries. Chapter 5 ties together the conclusions from Chapter 3 and 4 to argue for a base-generated account of verb-initial syntax. Three possibilities for verb-initial syntax are summarized in (87). The base-generated account in (87a) has been pursued for Mayan languages in England (1991), Aissen (1992) and Otaki et al. (2019), as well as for Austronesian languages (Chung, 1998, 2006) and the Wakashan language Nuu-chah-nulth (Wojdak, 2007). A phrasal-fronting account of VOS word order in (87b) has been posited for Mayan (Coon, 2010b) and Austronesian languages (Aldridge, 2002; Chung, 2006; Massam, 2000); while head movement of the verb above the subject has been posited for Afro-Asiatic languages (Fassi Fehri, 1993; Ouhalla, 1994) and Celtic languages (Sproat, 1985; McCloskey, 1991). Recent work by Clemens (2014, 2019) and Clemens and Coon (2018) adopt a head movement account and posit an additional prosodic constraint that reorders an NP object with the verb that selects it, generating VOS in (87c). Clemens and Polinsky (2017)

provide a recent overview of verb-initial languages with a special focus on Mayan and Austronesian.²⁷

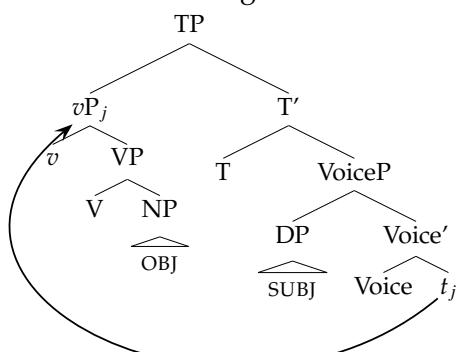
(87) VOS word order

- a. Base-generated (proposal)

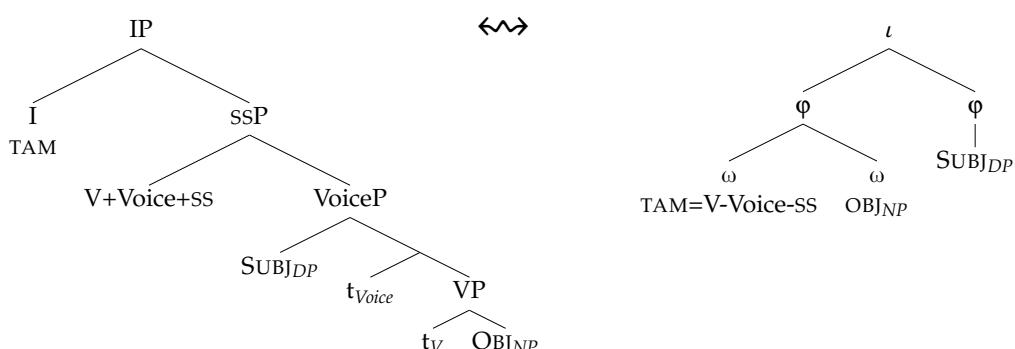


- ### b. Phrasal-fronting

(Coon, 2010b)



- c. Syntactic input and prosodic output of VOS order with NP objects (Clemens and Coon, 2018, 258)



The relationship between the underlying syntax of each of these accounts differs. For a base-

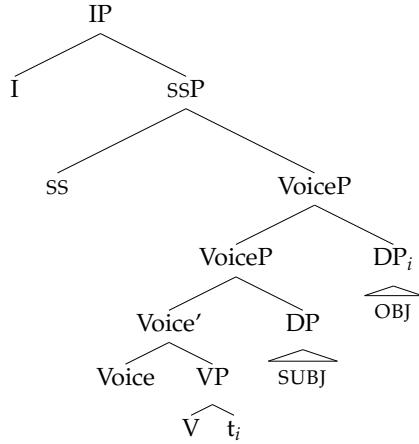
²⁷In (87) and (88), I am faithful to the labels of the original analyses. For instance, what I label IP, Coon (2010b) labels TP.

generated account, the underlying word order is VOS, where subjects, in the specifier of VoiceP, are linearized to the right. Phrasal-fronting and head movement accounts begin by base-generating SVO. For phrasal-fronting accounts, such as in Coon (2010b), VOS surfaces via the fronting of a phrasal projection containing both the verb and object. Head movement of the verb generates VSO in (87c), and VOS is derived via certain prosodic constraints.

Each account therefore differs in how VSO word order is derived. For a base-generated account, VSO is derived from VOS by moving the object to a position above the subject in (88a). For phrasal-fronting accounts, the object moves out of the VP, to a position below the subject, in (88), before the vP moves to Spec,TP, as in (88b). Under a prosodic account, after head movement of the verb, VSO word order is generated. Prosodic reordering constraints do not apply to the DP object, as the DP is considered to be a phase and already sent to spell out.

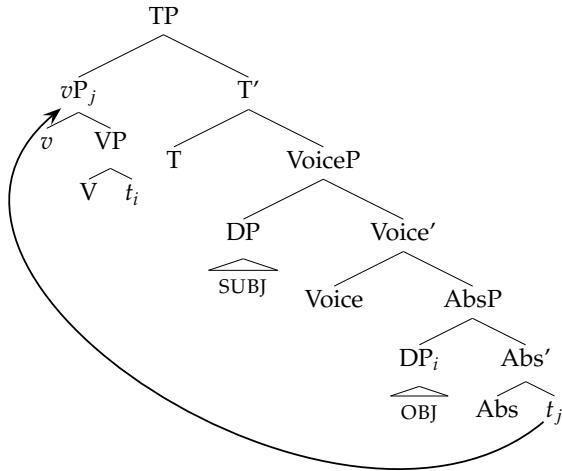
(88) VSO

- a. Base-generated (proposal)



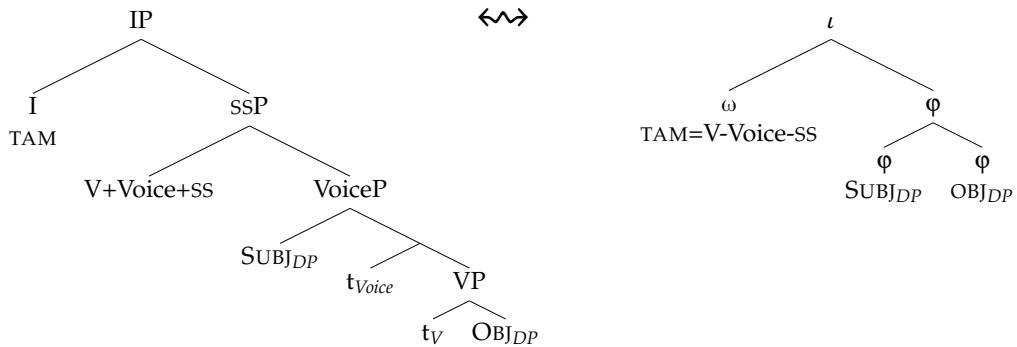
b. Phrasal-fronting

(Coon, 2010b)



c. Syntactic input and prosodic output of VSO order

(Clemens and Coon, 2018)



The rest of this dissertation investigates the syntactic and semantic properties of nominal arguments and their implications for clausal syntax. The properties exhibited by Ch'ol, such as structurally reflected (in)definiteness and movement-derived islands, are not unique to Ch'ol. What is particular to Ch'ol, I argue, is how the constituents are linearized with respect to each other, most straightforwardly captured by base-generating VOS. I conclude that while structural dependencies across language pattern similarly, (i) the way in which they are underlyingly linearized in the syntax is a point of crosslinguistic variation; and (ii) verb-initial languages do not comprise a uniform syntactic class.

CHAPTER 3

STRUCTURALLY REFLECTED (IN)DEFINITENESS

3.1 Introduction

In a language such as English, overt morphemes like ‘the’ or ‘a’ signal a definite or indefinite interpretation. Not all languages, however, have overt markers of (in)definiteness. A question arises as to how definiteness is expressed in a language lacking obligatory articles where, depending on the context, bare nouns can be interpreted as definite or indefinite. Stemming from Carlson (1977), much work has investigated the interpretations of bare nouns and how their possible interpretations connect to their structural position. Many authors have shown that in languages that allow bare nouns to be arguments, their possible interpretations are constrained. That is, while definite and kind-level interpretations are freely available, indefinite interpretations arise in a set of restricted environments (e.g., Dayal (2004) for Hindi, Geist (2010) for Russian, and recently Deal and Nee (2017) for Teotitlán del Valle Zapotec).

In this chapter I investigate the relationship between the structural position of bare nominal arguments in Ch'ol and their availability to be interpreted as indefinite. I propose a structurally motivated account of indefiniteness, based on Chung and Ladusaw's (2004) Restrict operator as well as confining existential closure to the VP domain, as per Diesing (1992). This is based on the notion that in Ch'ol, indefinite arguments are instances of pseudo-incorporation, in the sense of Massam (2000, 2001). My analysis provides further support for crosslinguistic generalizations on the constraints of semantic interpretation.

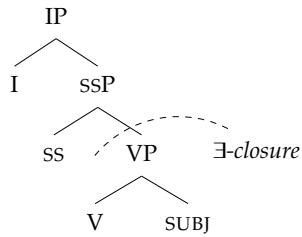
As seen in (89) and (90), bare nouns can be arguments of verbs in Ch'ol and can be definite or indefinite. Both a definite interpretation and indefinite interpretation is available for the intransitive subject *wiñik* ‘man’ in (89) and the bare object noun *waj* ‘tortilla’ in (90). However, the bare transitive subject *wiñik* ‘man’ in (90) can only be definite.

- (89) *Ta' jul-i wiñik.*
 PFV arrive-IV man
 'A/the man arrived.'

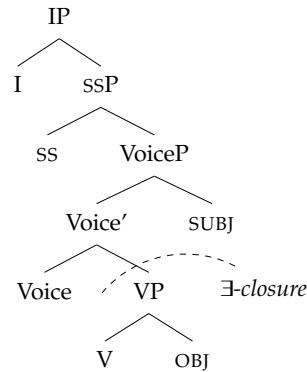
- (90) *Ta' i-mäñ-ä otyoty wiñik.*
 PFV A3-buy-TV house man
 (i) 'The man bought a/the house.'
 (ii) NOT: A man bought a/the house.

I propose that these interpretations follow naturally from adopting existential closure at the VP, as per Diesing (1992). Restricting existential closure to this structural domain accounts for the fact that only internal arguments, i.e. the subject in (89) and the object in (90), may be interpreted as indefinite. External arguments, such as the subject in (90), may only be definite, as they are generated above existential closure. A definite interpretation is derived via standard assumptions about type shifting operations for bare argument languages (i.e., Chierchia (1998b); Dayal (2004)). The placement of existential closure for intransitive and transitive verbs is modeled in (91).

- (91) a. Intransitive verb in Ch'ol



- b. Transitive verb in Ch'ol



While I analyze the indefinite interpretation of absolute subjects and objects as instances of pseudo-incorporation, I also discuss instances of full nominal incorporation, such as in so-called 'incorporation antipassive' constructions, as in (92).

- (92) *Ta' k-cha'l-e [NP kuch si'].*
 PFV A3-LV-DTV carry wood
 'I carried wood.' Lit. I did wood-carrying.

As I will demonstrate below, in contrast to pseudo-incorporated nominals, bare nouns as incorporated nominals display a different pattern from the bare nouns in (89) and (90). Unlike the arguments above, *incorporated* nouns may not serve as antecedents for agreement markers or pronominal anaphora. Additionally, *kuch si'* 'carry wood' is in argument position of the light verb *cha'l*—it

is nominal. This syntactic fact has implications for a semantic analysis, as I will detail in Section 3.4.

This chapter is structured as follows. In Section 3.2, I present relevant data on bare nominals as arguments in Ch'ol, providing evidence that a definite interpretation is freely available for bare nouns. Indefinite interpretations are only possible for subjects of unaccusative verbs and objects of transitive verbs. In Section 3.3, I implement an analysis using Chung and Ladusaw's (2004) Restrict and existential closure at the VP (Diesing, 1992) for the indefinite interpretation of bare nouns. This account capitalizes on the notion that the indefinite interpretations arise as they are instances of pseudo-incorporation. I adopt the ι operator to derive a definite meaning for bare nouns and, as ergative subjects are generated *above* existential closure, they may only be definite, achieved via ι . I further discuss how a definite interpretation can be derived for internal arguments as well as different dimensions of definiteness in Ch'ol. In Section 3.4, I discuss grammatical properties of incorporation antipassives and list desiderata for a semantic analysis of these structures. Section 3.5 concludes the chapter, detailing some crosslinguistic implications of this analysis for type shifters in natural language as well as for analyses of word order.

3.2 Bare nouns in argument position

As has been reported before, bare nouns may be arguments in Ch'ol, as in the sentence in (93).¹

- (93) *Tyi y-il-ä wiñik x-ixik.*
PFV A3-see-TV man NC-woman
'The woman saw the man.' (Vázquez Álvarez, 2011, 21)

Vázquez Álvarez (2011) translates both bare nouns as definite in (93). As previewed in the introduction, while a definite interpretation is available for all bare arguments, where nouns may be interpreted as indefinite is syntactically restricted. Below, I provide evidence for this with data from transcribed narratives and elicited speech.

¹The *x-* prefix on the noun *ixik* is a noun class prefix; it does not contribute to whether the noun is definite or indefinite. See Chapter 2, Section 2.4.2 for more details on noun class prefixes.

3.2.1 Absolutive arguments

Absolutive subjects

Bare absolutive subjects can be definite or indefinite, as shown in the examples from narratives in (94). For instance in (94a), the woman is an established protagonist in the story and the sentence was uttered towards the end of the story. In (94b), this is the first mention of the man.

- (94) a. Context: The woman is an established protagonist in the story. (Definite)

Ta' puts'-i lok'el x-ixik.
PFV flee-IV DIR:out NC-woman

'The woman fled away.'

Bajlum

- b. Context: First mention of man in the story. (Indefinite)

Ta'=bi chäm-i wiñik.
PFV=REP die-IV man

'A man had died.'

Xi'ba.11

In both sentences in (94), the bare nouns are next to the verb complex. In (94a), *x-ixik* is next to the verb *puts'-i lok'el* 'fled away', which is what Aissen (2009) analyses as a serial verb construction. In (94b) the bare noun *wiñik* 'man' is also next to the verb but receives an indefinite interpretation.

Bare absolutive subjects may appear next to the verb, or there may be intervening material, such as a PP adjunct or adverb. When next to the verb, *wiñik* 'man' can be interpreted as indefinite as in (95a). When there is an intervening adverb between the verb and bare subject, as in (95b), the only possible interpretation is definite.

- (95) Context A: What happened yesterday?

a. *Ta' jul-i wiñik ak'bi.*
PFV arrive-IV man yesterday
'A man arrived yesterday.'
A ✓; B ✗

- Context B: When did the man arrive?

b. *Ta' jul-i ak'bi wiñik.*
PFV arrive-IV yesterday man
'The man arrived yesterday.'
A ✗; B ✓

Absolutive objects

Absolutive objects may also be definite as per (96a), or indefinite, as in (96b).

- (96) a. Previous sentence in story 'The people entered to where some corn was.'

Ta'=bi i-jok'-o-yob ixim a wiñik-ob.
PFV=REP A3-dig-TV-PL **corn** PRT man-PL

'The men dug into the corn.'²

Xi'ba.86

- b. Story about an evil godmother who lures a young girl to look for snails. This is the first mention of the rock in the story.

Ta'=bi i-ch'äm-ä xajlel...
PFV=REP A3-take-TV **rock**

'She took a rock.'

Kumale

In contrast to subjects in (95), bare objects must always appear adjacent to the verb, such as in (97). These facts have also been reported by Coon (2010b) and Clemens and Coon (2018).

- (97) a. *Ta' k-mäñ-ä otyoty ak'bi.*
PFV A1-buy-TV house **yesterday**

'I bought a house yesterday.'

- b. * *Ta' k-mäñ-ä ak'bi otyoty.*
PFV A1-buy-TV **yesterday** house

Intended: 'I bought the house yesterday.'

3.2.2 Ergative subjects

Bare nouns may also appear as ergative subjects, but are always interpreted as definite, as indicated by the translations in (98).

- (98) *Ta' i-mäñ-ä otyoty wiñik.*
PFV A3-buy-TV house **man**

- (i) 'The man bought a/the house.'
(ii) NOT 'A man bought a/the house.'

Speakers reject (ii) as a translation of (98) and instead provide (99) as the Ch'ol version for the translation in (ii) where the numeral *juñtyikil* 'one' is used to force an indefinite interpretation of the subject.

²It is unclear based on context whether the object receives a maximal interpretation. The point here is that the noun is being used to refer back to the previously mentioned entity. See discussion in Section 3.3.6 for more on how definite interpretations for internal arguments arise as well as Section 3.3.7 for more on anaphoric definites.

- (99) *Ta' i-mäñ-ä otyoty juñ-tyikil wiñik.*
 PFV A3-buy house one-CLF man
 'A man bought a/the house.'

Furthermore, in a survey of eight transcribed narratives from the Tumbalá dialect of Ch'ol (see Little and Vázquez Martínez (2018) and Vázquez Martínez and Little (2020)), every bare ergative argument was interpreted as definite, such as in example (100).

- (100) Context: The fox is an established protagonist in the story.

Ta'=bi iy-ajñ-es-a wax.
 PROG A3-run-CAU-DTV grey.fox

'The grey fox was running after them.'

Xi'ba.77

3.2.3 Scope interactions

Scope interactions provide evidence that indefinite objects must take low scope with respect to other quantifiers, as in (101a). For instance, in (101a), *juñ* 'book' in the object position takes narrow scope with respect to *jujuñtyikil xch'ok* 'every girl'. Similarly in (101b), the bare nominal *ixim* 'corn' takes low scope with respect to the negation marker *ma'añik*.³

- (101) a. *Ta' i-pejk-a juñ ju-juñ-tyikil x-ch'ok.*
 PFV A3-read-TV book RED-one-CLF NC-girl
 'Every girl read a book.' $\forall > \exists$
 b. *Ma'-añ=ik ta' k-mäñ-ä ixim.*
 NEG-EXT=IRR PFV A1-buy-TV corn
 'I didn't buy any corn.' $\neg > \exists$

³In addition to nominal modifiers, there are other quantificational adverbial elements that can appear prefixed to the verb such as in (1).

- (1) a. *Mi i-ñoj-choñ waj.*
 PFV A3-always-sell tortilla
 'He always sells tortillas.'
 b. *Ta' i-laj-jap-ä-yob sa'.*
 PFV A3-all-drink-TV-PL pozol
 'They drank all the pozol.'

(Adapted from Aulie and Aulie 1978, 48)

Preliminary evidence suggests that these prefixes take scope over internal arguments such as absolute objects and subjects, but not external arguments. These verbal prefixes need further investigation especially with respect to the differences in A(verbial) quantification and D(eterminer) quantification, which has, for instance, been discussed in detail for typologically diverse languages in Bach et al. (1995).

3.2.4 Summary

In sum, indefiniteness is not licensed in every argument position. Ergative-marked bare nouns are always interpreted as definite. Objects of transitive verbs and subjects of unaccusative verbs (i.e., absolute arguments) may be definite or indefinite. While bare objects must remain next to the verb and can be interpreted as definite or indefinite, bare absolute subjects can be next to the verb, or other material may intervene. But, as shown by the differences in (95), the bare absolute subject is interpreted as definite if there is intervening material between it and the verb. Table 3.1 summarizes the available interpretations of bare arguments in Ch'ol.

Table 3.1: Available interpretations of bare arguments in Ch'ol

	Definite	Indefinite
Subjects of intransitive verbs (absolute)	✓	✓
Objects of transitive verbs (absolute)	✓	✓
Subjects of transitive verbs (ergative)	✓	✗

3.3 Deriving the Ch'ol pattern

For my analysis, I adopt a Neo-Davidsonian framework where verbs are predicates of events. I also assume, following much previous work, that external arguments are not arguments of verbs, but are introduced by a Voice head (e.g., Marantz (1984); Kratzer (1996)). To derive the indefinite interpretation of internal arguments, verbs and predicative nouns combine via Restrict (Chung and Ladusaw, 2004), paralleling Chung and Ladusaw's (2004) analysis of low scope indefinites in Maori (Austronesian), and capitalizing on the notion that indefiniteness in Ch'ol is an instance of pseudo-incorporation. The theme argument is then existentially closed at the VP, as per the Mapping Hypothesis (Diesing, 1992). Structurally constraining existential closure to the VP predicts the interpretational possibilities of bare nouns in Ch'ol.

3.3.1 Semantic preliminaries

I use a Neo-Davidsonian framework to model my analysis of the facts in Table 3.1. I give a sample of my notational conventions in Table 3.2. Nouns are type $\langle et \rangle$, sentences are type t , verbs are predicates of events, etc.

Table 3.2: Semantic notation

Notation	Type	Metalanguage	Object language	Syntax
e	individual	$a, b, c \dots$	$ajRosa$ 'Rosa'	DP
t	truth value	1,0	$ta' ik'u xu waj$	IP
			$ajRosa$ 'Rosa ate a tortilla'	
s	eventuality (event)	$s_1, s_2 \dots$		
$\langle et \rangle$	function from individuals to truth values	$\lambda x.[TORTILLA(x)]$	waj 'totilla'	N
$\langle e(st) \rangle$	function from individuals to functions from eventualities to truth values	$\lambda x \lambda e.[SELL(x)(e)]$	$choñ$ 'choñ'	V
$\langle st \rangle$	function from eventualities to truth values	$\lambda e.[SEE(r)(e)]$	$k'el ajRosa$ 'see Rosa'	VP, VoiceP

All verbs in Ch'ol take internal arguments as per Coon (2012, 2013). This is encoded semantically for the unaccusative verb *jul* 'arrive' and the transitive verb *choñ* 'sell' in (102a) and (102b), respectively.⁴ (See also Coon (2019) for verbs in Chuj, a Mayan language of the Q'anjob'alan branch.) Ch'ol nouns are type $\langle et \rangle$, as in (102c).⁵

- (102) a. $\llbracket jul \rrbracket = \lambda x \lambda e.[ARRIVE(x)(e)]$
 b. $\llbracket mäñ \rrbracket = \lambda x \lambda e.[BUY(x)(e)]$
 c. $\llbracket otyoty \rrbracket = \lambda x.[HOUSE(x)]$

⁴Unergative verb constructions in Ch'ol are formally transitive, where the subject is introduced as an agent to a light verb and the light verb takes a nominal such as 'dance' as its internal argument. See details from Chapter 2 Section 2.3.3 and some discussion in Section 3.4 below.

⁵Little (2018b) analyzes nouns as number neutral, with the denotation $\lambda x.[^*TORTILLA(x)]$. See Section 3.3.6 below for more discussion.

3.3.2 The Mapping Hypothesis and indefinite bare arguments

In order to account for low scope indefinites, I adopt Diesing's (1992) Mapping Hypothesis in (103).

- (103) Mapping Hypothesis Diesing (1992)
- a. Material from VP is mapped into the nuclear scope.
 - b. Material from IP (above VP) is mapped into a restrictive clause.

More specifically, existential closure is structurally constrained to the VP level as per (103a) and modeled in (104).

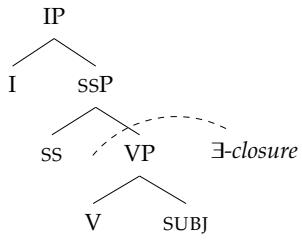
- (104)
-
- ```
graph TD; ... --- VP[VP]; ... --- NP[NP]; VP --- V[V]; VP --- NP; NP --- NP2[NP]; arc((VP)---NP) label "∃-closure";
```

In Ch'ol, absolute arguments, that is, subjects of intransitive verbs and objects of transitive verbs, are both introduced as complements to the verb, as shown in (105). Voice introduces the agent in Ch'ol, and the transitive verbalizer is in a status suffix above VoiceP. For ease of exposition, I assume that subjects of transitive verbs are in a right specifier of VoiceP, as per Aissen (1992). I further defend this view in Chapter 5.<sup>6</sup>

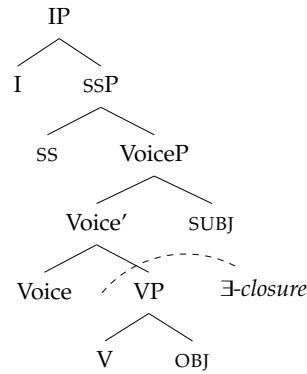
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<sup>6</sup>Though not represented in (105a), there is additionally an intransitive vP projection between the SSP and VP. This projection would host, e.g., passivizing material. Since it does not factor into the semantics here, I do not include it in the tree.

- (105) a. Intransitive verb in Ch'ol



- b. Transitive verb in Ch'ol



### Existential closure of the event and negation

As mentioned in Chapter 2, I label the projection that hosts the perfective aspect marker as IP. I assume that this is the same projection as INFL/T from Coon (2017) or INFL from Clemens and Coon (2018). This is where the event is existentially closed, below any eventive negation markers. Negation, which appears before the aspect marker, is composed of the negative particle *mach* and the existential predicate *añ*, as in (106). The negation marker in Tumbalá Ch'ol additionally appears with the irrealis enclitic *-ik*.

- (106) a. *Ma'-añ=ik ta' i-k'el-e-yoñ.*  
**NEG-EXT=IRR PFV A3-see-TV-B1**  
 'She did not see me.'
- b. *Ma'-añ=ik woli i-wäy-el.*  
**NEG-EXT=IRR PROG A3-sleep-NML**  
 'He is not sleeping.'

I take the event to be existentially closed below negation—a robust crosslinguistic generalization (Herburger, 2001; Zeijlstra, 2004; Zimmermann, 2007). In fact, Ch'ol provides evidence in support of overt existential closure of events in negative sentences, as has also been described in the Central Chadic language Bura in Zimmermann (2007). Indeed, the eventive negative morpheme can be decomposed into the negation particle *mach* and the existential predicate *añ*, glossed as such in (106).<sup>7</sup>

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<sup>7</sup>Zimmermann (2007) analyzes the distribution of the existential predicate *adi* in Bura, a Central Chadic

With these pieces in mind, I first derive an indefinite interpretation for the intransitive subject.

## Derivation for bare indefinite absolute subjects

Consider the sentence in (107), where the subject *wiñik* ‘man’ is indefinite.

- (107) *Ta' jul-i wiñik.*  
PFV arrive-IV man  
‘A man arrived.’

The verb ‘arrive’ in (102a) of type  $\langle e(st) \rangle$  cannot yet combine with the subject ‘man’ of type  $\langle et \rangle$  as there is a type mismatch. To remedy this, I adopt the operation Restrict from Chung and Ladusaw (2004), stated in (108). This composition rule combines a verb and a noun, where the end result is that the event denoted by the verb becomes more restricted in meaning.

- (108)  $\text{Restrict} = \lambda P_{\langle e(st) \rangle} \lambda Q_{\langle et \rangle} \lambda x \lambda e. [P(x)(e) \wedge Q(x)]$  (Chung and Ladusaw, 2004)

Restrict is commonly used in the semantics for noun incorporation as Chung and Ladusaw (2004, Chapter 3) do for Chamorro (Austronesian) and Coon (2019) does for the Mayan language Chuj. Chung and Ladusaw (2004) also use Restrict to derive the semantics for the indefinite article *he* in Maori (also Austronesian). Using Restrict also capitalizes on the notion that the indefinites in Ch’ol are instances of pseudo-incorporation.

To illustrate how this works for Ch’ol, take (109). The verb and noun in (107) combine first via Restrict in (108), deriving (109). Here the event of arriving is restricted to events of men arriving.

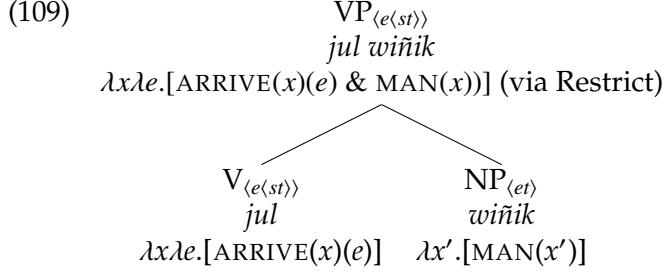
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language. In Bura, the existential predicate occurs in negative eventive clauses and can introduce new discourse references. The negation marker in Ch’ol for eventive clauses is composed of the existential and the negative particle. The existential predicate in Ch’ol can also be used to introduce indeterminate pronouns as in (1).

- (1) *Añ chu kom.*  
EXT what A1-want  
‘I want something.’

The existential predicate can also be used with tensed clauses as in (2).

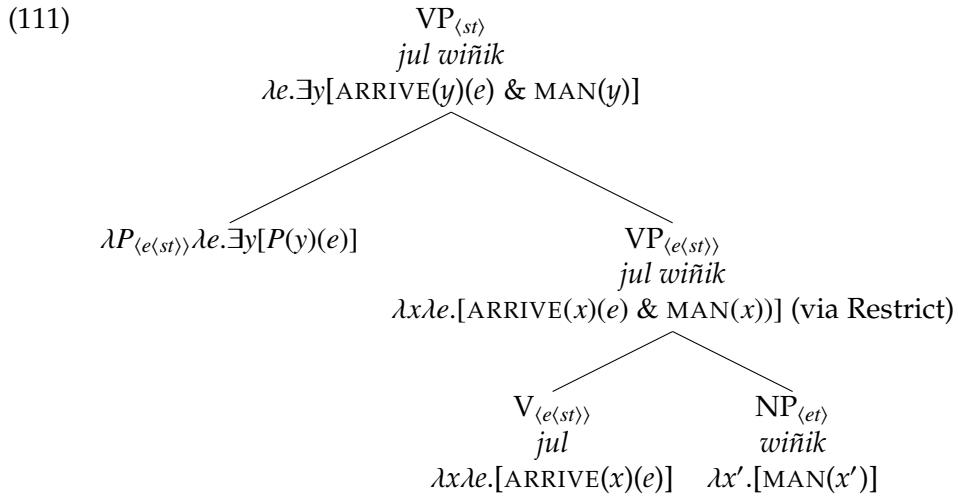
- (2) *Añ ta' k-jap-ä lembal.*  
EXT PFV A1-drink-TV alcohol  
‘I have drunk alcohol.’ Lit. ‘There is an event of me drinking alcohol.’



The result in (109) is not yet complete as the theme argument is not yet saturated. This is where existential closure comes in, given in (110) and structurally constrained to the VP level.

- (110) Existential closure at VP  
 $\lambda P_{\langle e(st) \rangle} \lambda e. \exists y [P(y)(e)]$

After existential closure, the result is (111).

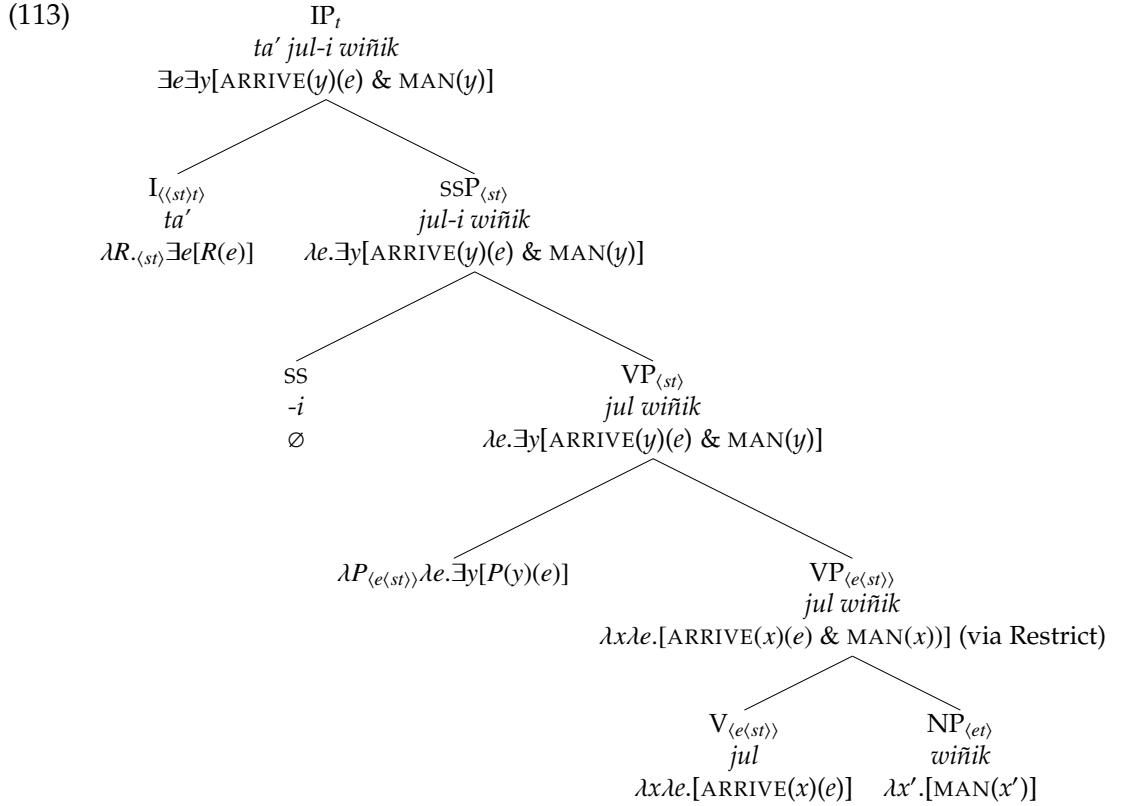


Putting everything together, we derive (113) where (113) is true if and only if there is an arriving event and there is a man who is the theme of the arriving event. I assume that the intransitive verbalizer *-i*, glossed as IV in (107), is obligatory in the syntax but does not factor into the compositional semantics. The aspect marker encodes existential closure of the event, given in (112).<sup>8</sup>

- (112)  $\llbracket ta' \rrbracket = \lambda R. \langle_{st} \rangle \exists e [R(e)]$

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<sup>8</sup>Carlson (2003) takes a different view where the event is existentially closed at the VP level, not at the clause level. Importantly for the data here, existential closure of the event takes place below negation, as discussed above.

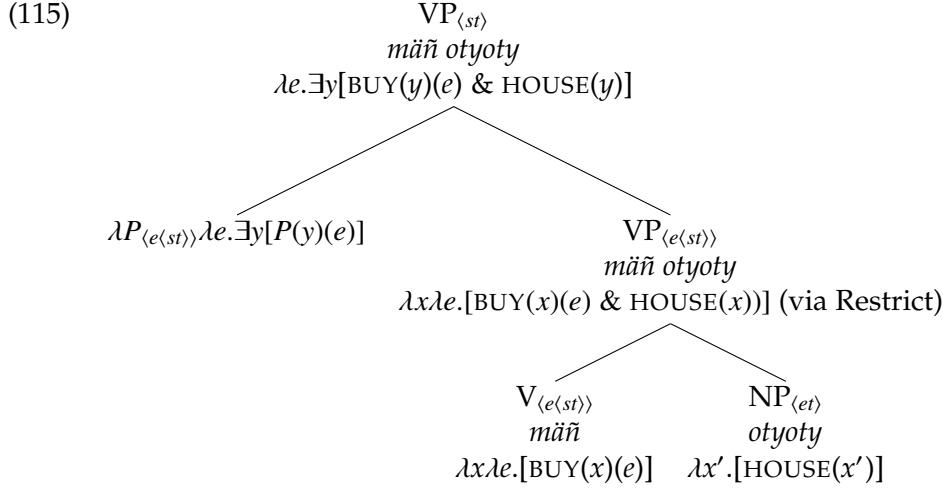


### Derivation for bare indefinite absolutive objects

As shown above for absolutive subjects, absolutive objects may also be indefinite, as in (114).

- (114) *Ta' i-mäñ-ä otyoty aj-Rosa.*  
 PFV A3-buy-TV house NC-Rosa  
 'Rosa bought a house.'

The derivation for the VP proceeds as seen above for absolutive subjects, where the verb *mäñ* 'buy' and *otyoty* 'house' combine via Restrict and the theme argument is existentially closed at the VP, as in (115).



As per Kratzer (1996), external arguments are not arguments of the verb but rather introduced in the specifier of VoiceP where Voice has the semantics in (116). See also Coon and Preminger (2013) for arguments that the subject is generated externally in Ch'ol as well.

$$(116) \quad [\![\text{Voice}]\!] = \lambda x \lambda e. [\text{Agent}(x)(e)] \quad (\text{Kratzer, 1996, 121})$$

There is no overt morphological realization of Voice in the transitive clause in (114). (Overt Voice morphemes do exist in Ch'ol, such as for causative structures, detailed more in Chapter 5 Section 5.4.1.) Voice introduces the ergative subject, *aj-Rosa*, and semantically encodes it as the agent of the sentence. The VP in (115) and Voice head combine via Event Identification, given in (117).

$$(117) \quad \text{Event Identification} \quad (\text{Kratzer, 1996})$$

$$\lambda P_{\langle e(st) \rangle} \lambda Q_{\langle st \rangle} \lambda x \lambda e. [P(x)(e) \wedge Q(e)]$$

The agent, *aj-Rosa* is combined, via Functional Application. The transitive verbalizer *-ä* is needed in the syntax and sits in ssp, but does not factor into the semantic derivation. The event is existentially closed by the aspect marker *ta'*, as in (118). I assume that the third person agreement prefix *i-*, glossed as A3, is the reflex of an agreement relation with the subject *aj-Rosa* and does not factor into the compositional semantic analysis. See Chapter 2 Section 2.3.2 for more details on agreement.



The sentence in (118) is true if and only if there exists an event of buying with Rosa as the agent and there exists a house and the house is the theme of the buying event.

The analysis in (118) correctly predicts a low scope indefinite reading of *otyoty* 'house', as the object is existentially closed at the VP level—lower than the subject or negation, consistent with Diesing's (1992) analysis of existential indefinites. This is exhibited in the data on the scope of bare indefinite internal arguments from (101) repeated in (119). Existential closure of the internal argument takes place at the VP level, therefore capturing that the internal argument will take low

scope with respect to the subject, as in (119a), or negation, in (119b).

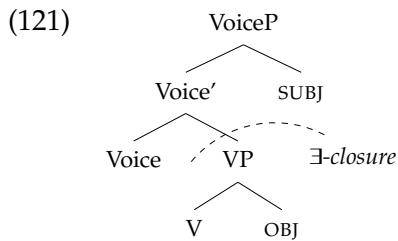
- (119) a. *Ta' i-pejk-a juñ ju-juñ-tyikil x-ch'ok.*  
PFV A3-read-TV book RED-one-CLF NC-girl  
'Every girl read a book.'  $\forall > \exists$
- b. *Ma'añ=ik ta' k-mäñ-ä ixim.*  
NEG=IRR PFV A1-buy-TV corn  
'I didn't buy any corn.'  $\neg > \exists$

### 3.3.3 Deriving definite bare nominal subjects

To illustrate why bare nominal transitive subjects are always definite, I consider the sentence in (120).

- (120) *Ta' i-mäñ-ä otyoty wiñik.*  
PFV A3-buy-TV house man  
'The man bought a house.'

Given existential closure at the VP, consider again the syntactic structure of the sentence in (120), given in (121).



Now, given the denotation of *wiñik* 'man' in (122), there is a type mismatch: Voice, repeated in (123), takes an individual as its first argument. Voice in (123) cannot combine with (122), as (122) as is type  $\langle et \rangle$ .

$$(122) \quad \llbracket wiñik \rrbracket = \lambda x. [\text{MAN}(x)]$$

$$(123) \quad \llbracket \text{Voice} \rrbracket = \lambda x \lambda e. [\text{Agent}(x)(e)] \quad (\text{Kratzer, 1996, 121})$$

Furthermore, as existential closure is syntactically restricted, if Voice and (122) were to combine via Restrict, it would happen *above* the domain of existential closure, meaning that the agent argument cannot be existentially closed and the agent argument would be left unsaturated.

As Ch'ol does not have a definite article in the standard sense (see Vázquez Álvarez (2011); Little and Vázquez Martínez (2018); Vázquez Martínez and Little (2020) for discussion), I propose, following standard assumptions about bare argument languages (Chierchia, 1998b; Dayal, 2004), that bare nouns may be type shifted via the  $\iota$  operator given in (124). This type shifter takes the predicate in (122) and shifts it to an individual, requiring the predicate to be true of one entity.

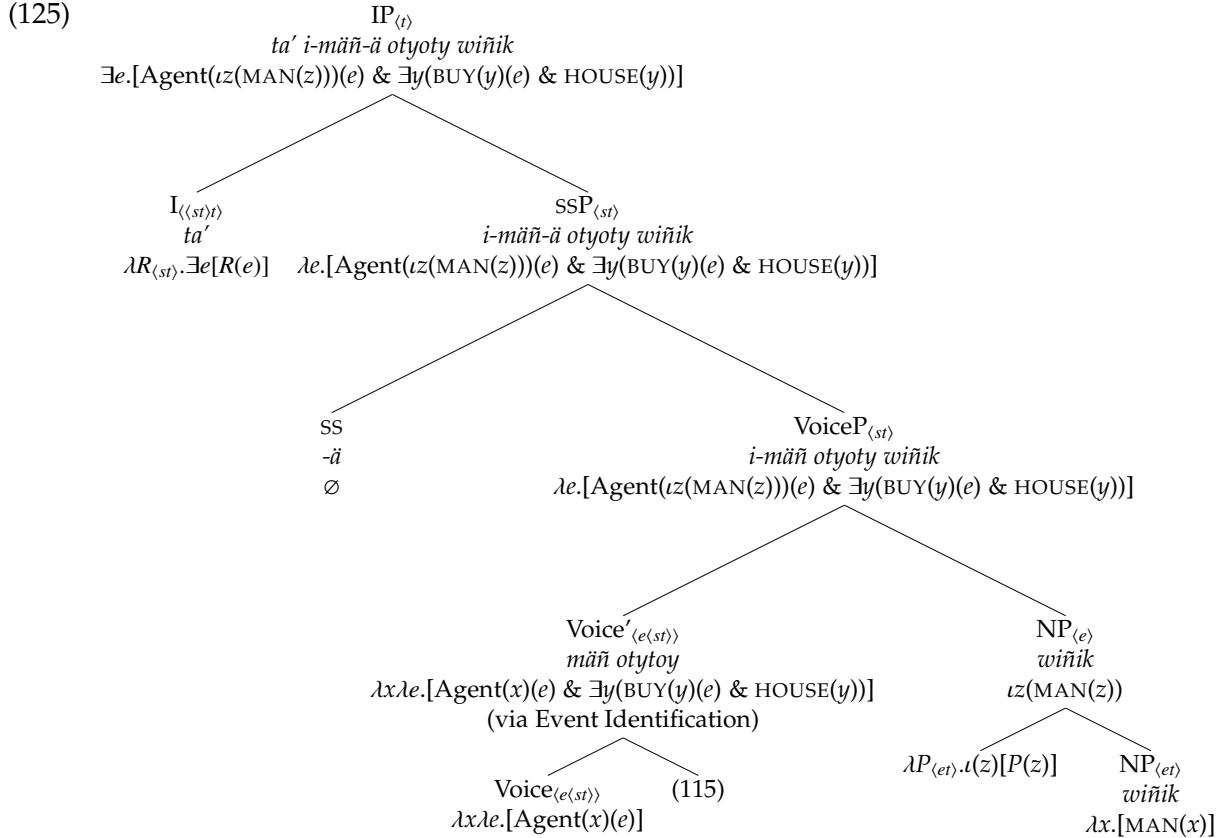
- (124)  $\iota$  type shifter<sup>9</sup>  
 $\lambda P_{\langle et \rangle} . \iota(z)[P(z)]$

The full derivation is given in (125). Voice combines with the VP from (115) above. The agent is merged in a position above VP, and above existential closure; thus, for it to be an argument of the verb, the only option is for it to be type shifted via  $\iota$  in (124). It may then combine via Functional Application and be interpreted as the agent.

---

<sup>9</sup>In order to capture definite plurals  $\iota$  can be substituted for the supremum operator, where definiteness with pluralities can come through a maximality condition (Landman, 2004) as in (1).

(1)  $\lambda P. sup(P)$  if defined; undefined otherwise  
 where  $sup(P) = \iota x[P(x) \& \forall y[P(y) \rightarrow y \leq x]]$  (Solt, 2011, 2)



Existential closure may only apply at the VP level, accounting for the fact that only nominals in the complement position of a verb may be indefinite. The  $\iota$  type shifter, on the other hand, is available for all nouns regardless of their syntactic position—accounting for why bare nouns as complements to verbs may also be definite. When nominal complements of verbs are type shifted via (124), the verb and nominal combine via Functional Application, where the complement satisfies the individual argument of the verb.

### 3.3.4 Moved absolute subjects

Certain moved absolute subjects also are interpreted as definite.<sup>10</sup> Take again the data in (126) where absolute subjects next to the verb may be interpreted as indefinite, as in (126a), but moved subjects may not, as in (126b).

<sup>10</sup>Note that focused absolute subjects can be indefinite or definite and appear in a preverbal position. It is movement within the verbal domain that is relevant for the availability of a definite or indefinite interpretation.

(126) Context A: What happened yesterday?

- a. *Ta' jul-i wiñik ak'bi.*  
 PFV arrive-IV man yesterday  
 'A man arrived yesterday.'  
 A ✓; B ✗

Context B: When did the man arrive?

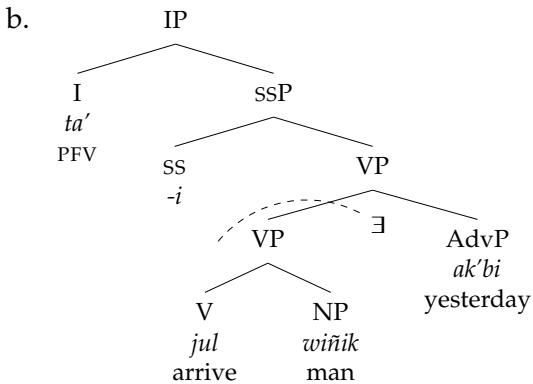
- b. *Ta' jul-i t<sub>i</sub> ak'bi wiñik.*  
 PFV arrive-IV yesterday man  
 'The man arrived yesterday.'  
 A ✗; B ✓

Data with the predicate *añ* display a similar pattern. *Añ* is typically glossed as an existential predicate but is also used in locative constructions. (See also Polian (2004) for a similar pattern in the closely related language Tseltal regarding the existential/locative predicate.) When the absolute subject is next to the existential predicate, as in (127a), it receives an indefinite interpretation. This again follows from the placement of existential closure at the VP level. When the subject is no longer next to the verb, indicated by the intervening PP in (127b), an indefinite interpretation is no longer available.

- (127) a. *Añ wiñik t<sub>y</sub>i otyoty.*  
 EXT man PREP house  
 'There is a man in the house.'
- b. *Añ t<sub>y</sub>i otyoty wiñik.*  
 EXT PREP house man  
 'The man is in the house.'

Returning to the examples in (126), restricting existential closure at the VP level predicts the available interpretations. The structure for (126a) is given in (128b).

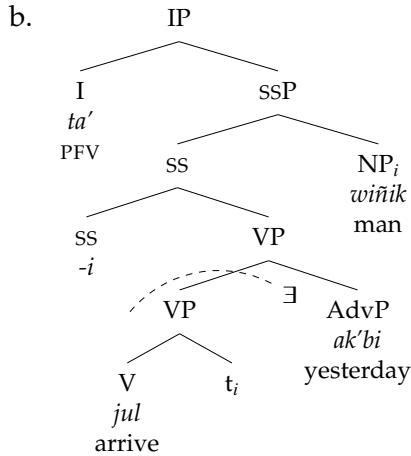
- (128) a. *Ta' jul-i wiñik ak'bi.*  
 PFV arrive-IV man yesterday  
 'A man arrived yesterday.'



In (128b), the absolute subject is introduced in the complement of V and is in the domain of existential closure.

Once the subject moves out of the VP, the only available interpretation is a definite one, via  $\iota$ , as modeled in the structure in (129b).<sup>11,12</sup> In (129b), the subject moves to a right specifier of SSP, the projection demarcating the edge of the verbal domain. As mentioned above, I do not represent intransitive  $v$  in the structure, but the specifier of  $v$  can also be a conceivable landing site for the moved absolute subject. What is important is that the subject *wiñik* ‘man’ has moved out of the VP.

- (129) a. *Ta' jul-i ak'bi wiñik.*  
PFV arrive-TV yesterday man  
‘The man arrived in Salto.’



### 3.3.5 Numerals in object position

Data from shifted and unshifted objects with numeral modifiers provide further evidence for where existential indefinite interpretations are available. For instance, NPs with numeral modifiers receive a low scope interpretation in (130a), with respect to the adverbial prefix *ñoj* ‘always’. But when there is an intervening adjunct such as the PP in (130b), the NP with the numeral modifier is interpreted as specific. In (130a), there are two possible readings for the object: (i) the speaker always sees two men on the road, but not necessarily the same men, or (ii) the speaker

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<sup>11</sup>This proposal is similar to recent work in Collins (2019). Collins proposes that in Tagalog, all nominals which move outside the VP receive definite interpretations, derived via an  $\iota$  type shifter. Nominals within the VP must receive a low scope indefinite interpretation. This is where the current account differs from Collins’s (2019). In Ch’ol, bare nominals inside VP can also be type shifted via  $\iota$ .

<sup>12</sup>Bare objects must appear next to the verb, but absolute subjects do not need to, as seen in (126b). I propose that this is due to the different licensors for these arguments. As per Coon (2017), objects are licensed by Voice/ $v$ , and absolute subjects are licensed by INFL.

always sees two specific men. However, in (130b), there is an intervening PP between the verb and the object and the only possible interpretation is that the speaker always sees two specific men on the road. These differences in interpretations provide clues to where the objects in (130) are structurally.

- (130) Context A: There is a road behind my house. I always see two men walking there, sometimes it is Marcos and Rogelio, sometimes Juan and Eladio, and sometimes Jorge and Javier.  
Context B: There is a road behind my house. I always see Nicolás and José walking there.

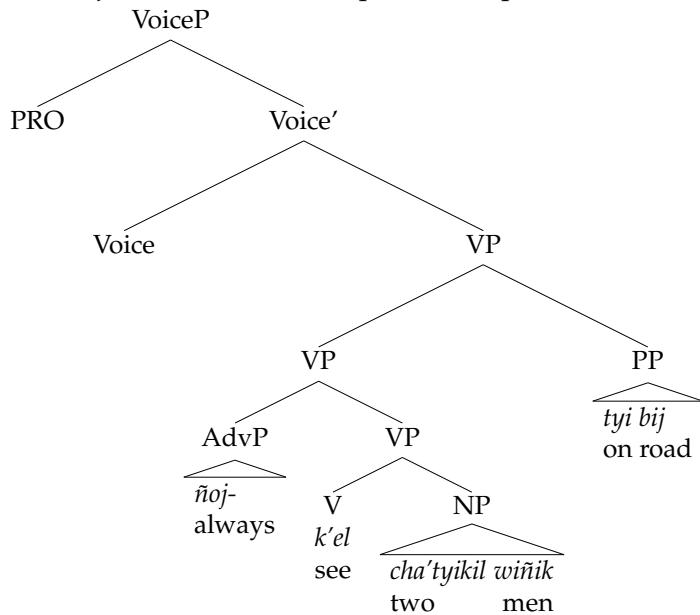
- a. *Mi k-ñoj-k'el [cha'-tyikil wiñik] tyi bij.*  
 IMF A1-always-see two-CLF man PREP way  
 'I always see two men on the road.' ✓A ✓B
- b. *Mi k-ñoj-k'el tyi bij [cha'-tyikil wiñik].*  
 IMF A1-always-see PREP way two-CLF man  
 'I sometimes see on the road two men.' ✗A ✓B

It has been noted before in the literature that numerals can be both quantificational or predicational (e.g., Milsark (1974); Diesing (1992); de Hoop (1996); Dayal (2013)). The two interpretations in (130) with respect to the adverbial prefix *ñoj* 'always' can be analyzed as following. In (130a) the numeral is type  $\langle et \rangle$ , combining with the noun via predicate modification, deriving an object of type  $\langle et \rangle$ . The object remains next to the verb, within the domain of existential closure; the verb and object combine via Restrict and then the theme is existentially closed at the VP level, *below* the attachment of the adverbial prefix *ñoj* 'always'. This is schematized in (131a). In (130b), the quantificational object moves out of the VP, outside the scope of the adverb *ñoj* 'always', as in (131b).<sup>13</sup> The subject is a PRO as the verb is a nominalized complement. The PRO is controlled by a DP in Spec,PossP. See Chapter 2, Section 2.3.5 for more details.

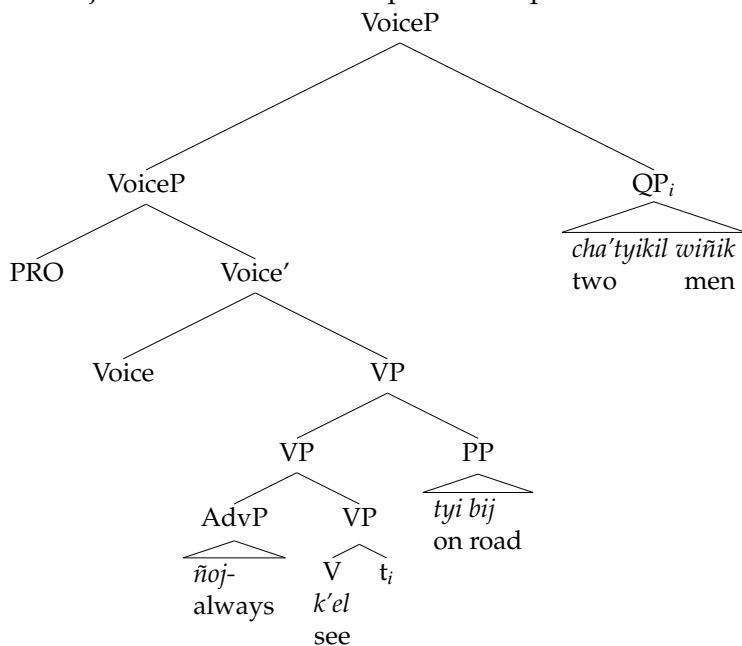
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<sup>13</sup>An additional prediction of the analysis in (131b) is that the numeral should take wide scope with respect to the subject. This remains to be tested.

- (131) a. The object can take low scope with respect to the VP adverb



- b. The object must take wide scope with respect to the VP adverb



In (130b), the numeral does not appear next to the verb, as there is an intervening PP. I take the intervening PP to be indicative that the object has moved out. The presuppositional reading may be accounted for by positing that the numeral is quantificational (i.e., it is  $\langle\langle et \rangle\rangle\langle\langle et \rangle\rangle t$ ). It combines with the nominal, saturating its first argument, deriving a QP of type  $\langle\langle et \rangle\rangle t$ . As the object is a generalized quantifier, it may not remain in object position, as this would result in a

type mismatch. Rather it moves out of the VP, undergoing Quantifier Raising, leaving behind a trace and taking scope over the sentence at LF. (The QP in (131b) undergoes additional movement at LF outside the VoiceP.) This, in turn, accounts for the wide scope of the numeral in (130b). Note that the quantificational interpretation is not ruled out in (130a)—if the numeral in (130a) is a QP, it undergoes additional movement at LF. Crucially, however, the low scope interpretation of the object *is* ruled out in (130b).

### 3.3.6 Definite interpretations of bare internal arguments

While I focused on deriving an indefinite interpretation of internal arguments and a definite interpretation of external arguments, I discuss here how definite interpretations can arise with internal arguments and the factors that play a role in their definiteness. Consider again the sentence in (132).

- (132) *Ta' i-mäñ-ä otyoty aj-Rosa.*  
PFV A3-buy house NC-Rosa  
‘Rosa bought a/the house.’

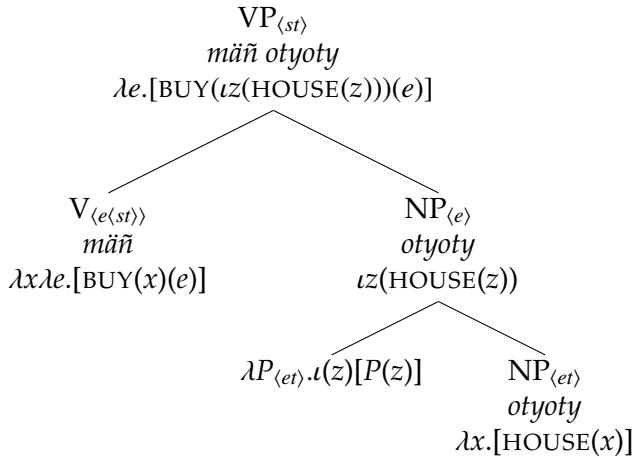
Without context, the object can be interpreted as definite or indefinite. However, there are factors that constrain this interpretation. Crosslinguistically, objects tend to be indefinite and inanimate while subjects are definite and animate (Keenan, 1976). While a definite interpretation may arise for the object in (132), the animacy of the object can affect its interpretation. While the animate object in the VOS sentence in (133a) is more likely to be interpreted as definite without context, the inanimate VOS object in (133b), is more likely to be interpreted as indefinite out of the blue.

- (133) a. *Tyi y-il-ä wiñik x-ixik.*  
PFV A3-see-TV man NC-woman  
‘The woman saw the man.’ (Vázquez Álvarez, 2011, 21)
- b. *Ta' i-tyuk'-u kajpe' x-Wañ.*  
PFV A3-cut-TV coffee NC-Juan  
‘Juan picked coffee.’

It has been noted in the Mayan literature that animacy influences word order (England, 1991), and here I suggest that it also influences whether it is interpreted as definite.

Above we saw how  $\iota$  may type shift bare subjects—this is the only way they may combine with transitive verbs to be arguments. The definite interpretation of the object can be type-shifted via  $\iota$ , derived in (134) for the VP ‘buy the house’.

(134) Derivation for the VP ‘buy the house’



There are no morphological differences between the analysis of indefinites above and definite internal objects in (134), but certain factors such as animacy and context influence its interpretation.

Another area worth exploring is that of number marking and definiteness in Ch’ol. As mentioned in Chapter 2, bare nouns appear to be number neutral in Ch’ol—they can combine directly with numerals, as in (135), without extra plural morphology.

- |                                                               |                                                                  |
|---------------------------------------------------------------|------------------------------------------------------------------|
| (135) a. <i>cha'-tyikil wiñik</i><br>two-CLF man<br>‘two men’ | b. <i>ux-k'ej waj</i><br>three-CLF tortilla<br>‘three tortillas’ |
|---------------------------------------------------------------|------------------------------------------------------------------|

Ch’ol does, however, have a plural marker, *-ob*, used mainly for human-denoting nouns. Nevertheless, the bare noun in (136) is interpreted as definite and singular out of the blue, which is why the meaning of this sentence is odd.<sup>14</sup>

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<sup>14</sup>Further comparison is needed if a similar construction results in an infelicitous interpretation when the subject is inanimate.

- (136) # *Woli i-k'oty-el wiñik tyi ju-jum-p'ej tyejklum.*  
 PROG A3-arrive-NML **man** PREP RED-one-CLF city  
 'The man is arriving in every city.'  
 Speaker comment: Sounds like he is an omnipresent man, as if from a story.

Examples such as (136) for Dayal (2004) suggest that it is not possible for a number-marking language to have a purely indefinite reading outside of (pseudo)incorporation structures.<sup>15</sup> Indefiniteness must come through the grammar in other ways (such as the pseudo-incorporation analysis given above). Out of the blue, (136) shows that a definite interpretation is more readily available for the bare noun *wiñik* 'man'. Further work is needed to ascertain whether the structural position of the subject in (136) influences its interpretation. As discussed in Chapter 2, non-perfective aspects take nominalized complements. Structurally, the subject of (136) is a possessor (indicated by the appearance of set A genitive morphology on *k'otyel* 'arrive'). Nevertheless, this example does bring up a few lines of inquiry, such as whether Ch'ol really is a number neutral language after all, or if plurality must be overtly marked in certain contexts.

In the next section, I turn to overt markers of definiteness in Ch'ol and discuss syntactic implications for when definiteness *is* overtly marked.

### 3.3.7 Dimensions of definiteness and effects on word order

Overt morphemes, such as *jiñi*, can also signify a definite interpretation in Ch'ol. I argue that *jiñi* indicates anaphoric definiteness; in contrast, bare nouns correspond to a unique definite interpretation. Furthermore, determiners are prohibited from appearing in VOS object position. I tie this into the syntactic structures proposed by Jenks (2018) for unique and anaphoric definites, provided in (137a) and (137b).

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<sup>15</sup>See also discussion in Despić (2019) for how Dayal's (2004) analysis relates to kinds and anaphoricity.

(137) Jenks (2018, 515)



Important for the discussion at hand is that anaphoric definites have a DP structure, but unique definites are NPs. This relates to the word order facts in (138): NPs can appear in VOS object position, but DPs are banned from this position, instead surfacing in VSO object position.

(138) a. VOS objects = NPs

*Ta' i-mäñ-ä [O otyoty] [S aj-Maria].*  
PFV A3-buy-TV house NC-Maria

'Maria bought a/the house.'

b. VSO objects = DPs

*Ta' i-mäñ-ä [S aj-Maria] [O jiñi otyoty].*  
PFV A3-buy-TV NC-Maria DET house

'Maria bought the house.'

While the ban on DP objects in VOS object position is construed as a syntactic difference, I relate the syntactic restriction in (138) to the semantics of bare definite nouns and nouns marked with *jiñi*. That is, the DP object in (138b) is anaphoric. I begin with a brief overview of unique versus anaphoric definiteness.

Recent work has argued that definiteness can be split up into different dimensions. Support for this comes from languages that mark these dimensions in distinct ways. For instance, Schwarz (2009, 2013) presents data from the Frisian dialect of Fering (Germanic) in (139), which marks unique and anaphoric definites with morphologically distinct determiners. The first context in (139a) is an instance of a unique definite determiner. Unique definites make reference to salient entities in larger or global contexts—for instance ‘the king’ in a country with one king, or ‘the piano’ in a room with one piano. Anaphoric definites, on the other hand, reference previously mentioned entities, such as the horse in (139b).

- (139) Fering

  - a. *A koning kaam to bischiik.*  
the weak king came to visit

<sup>weak</sup> ‘The king came for a visit.’ (Schwarz (2013, 541) citing Ebert (1971a, 82–83))

- b. *Oki hee an hingst keeft. \*A /Di hingst haaltet.*  
 Oki has a horse bought **the**<sub>weak</sub> **the**<sub>strong</sub> horse limps  
 'Oki has bought a horse. The horse limps.' (Schwarz (2013, 538) citing Ebert (1971b, 161))

While in Fering, different articles are used in (139a) and (139b), in English, as evidenced by the translations, ‘the’ is used in both contexts. Though languages such as English do not make a morphological distinction, recent work has shown that other languages do (Schwarz, 2009, 2013; Arkoh and Matthewson, 2013). Some languages mark unique definites such as (139a) with bare nouns, but use a determiner for anaphoric reference (Arkoh and Matthewson, 2013; Jenks, 2018). Other languages mark both unique and anaphoric definites with bare nouns (Moroney, 2020). I provide support here that Ch’ol mostly falls into the category where unique definites, such as in the example in (139a), are indexed by bare nouns but anaphoric definites are marked with an overt determiner. For instance, in (140a), ‘moon’ is referred to by a bare noun, whereas in the anaphoric usage in (140b), a determiner appears.

- (140) a. Unique context (first mention of *uw* 'moon' in the story):

*Mi tsa' mäjk'-i uw...*  
COMP PFV hide.PSV-IV moon

'When the moon is hidden... (Whittaker and Warkentin, 1965, 71)

- b. Anaphoric context: After previous mention of *x-k'äläi* 'girl' twice before:

*K'uñtya k'uñtya mi y-ust-es-äñ-tyel i-tyaty i-ña' jiñi*  
slow slow IPFV A3-convince-CAU-DTV-PSV-NML A3-father A3-mother DET  
*x-k'aläl.*  
**NC-girl**

'Slowly the parents of the girl become convinced.' (Cuentos Cultura Chol: 14)

In elicited contexts, to refer to the sun, speakers prefer bare nouns as in (141a). If the determiner *jiñi* appears with ‘sun’, speakers comment that it is better without *jiñi*. This supports the argument that bare nouns can refer to unique definites, but *jiñi* indexes anaphoricity.

- (141) a. *Ta' lok'-i k'iñ.*  
PFV come.out-IV **SUN**  
'The sun came out.'
- b. # *Ta' lok'-i jiñi k'iñ.*  
PFV come.out-IV **DET SUN**  
Intended: 'The sun came out.'  
Speaker comment: This sentence is better without *jiñi*

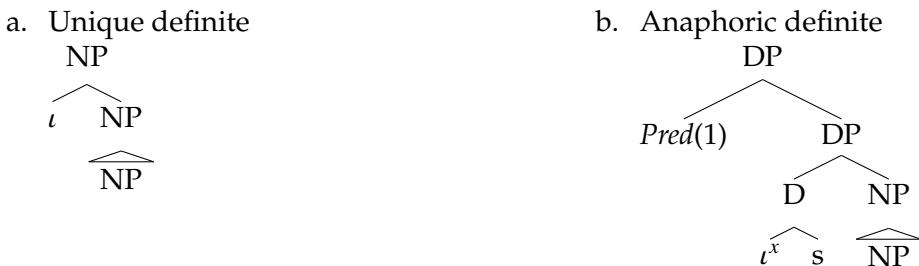
This pattern is further corroborated by a corpus study by Little and Vázquez Martínez (2018) and Vázquez Martínez and Little (2020). They found that unique definites are referred to with bare nouns, but determiners usually appear when reference is made anaphorically. In Vázquez Martínez and Little (2020), 64% of the instances of anaphoric definites appeared with a determiner, whereas unique definites were referred with bare nouns 100% of the time.

Based on work from Schwarz (2009, 2013), Jenks (2018) posits different semantic denotations for unique and anaphoric definites. The denotations for the two types of definiteness are given in (142).

- (142) Jenks (2018, 513)
- a. UNIQUE DEFINITE ARTICLE  
 $\llbracket \iota \rrbracket = \lambda s_r. \lambda P_{\langle e(st) \rangle}. : \exists! x[P(x)(s_r) . \iota x P(x)(s_r)]$
  - b. ANAPHORIC DEFINITE ARTICLE  
 $\llbracket \iota^x \rrbracket = \lambda s_r. \lambda P_{\langle e(st) \rangle}. \lambda Q_{\langle et \rangle} : \exists! x[P(x)(s_r) \wedge Q(x)] . \iota x P(x)(s_r)$

Relevant to the discussion here is that for Jenks (2018), the two syntactic structures for unique definites and anaphoric definites are distinct, repeated in (143). Unique definites are NPs as in (143a), but anaphoric definites are DPs (143b).

- (143) Jenks (2018, 515)



The determiner *jiñi*, I propose, corresponds to Jenks's anaphoric definites. While unique definites, NPs for Jenks (2018), are compatible within the VP in Ch'ol, anaphoric definite DPs are not and must move out. This is reflected syntactically as objects with *jiñi* surface in VSO object position. This is a syntactic restriction—a prohibition on DPs to remain in the VP—but relates to the semantics: DPs marked with *jiñi* refer anaphorically, unlike unique definite NPs. The semantics is thus reflected in the syntax: anaphoric definites have overt markers in D triggering movement out of the VP.

### 3.3.8 Summary

In this section, I developed a pseudo-incorporation analysis for indefinite bare nouns in Ch'ol, constraining existential closure to the VP, as per Diesing's (1992) Mapping Hypothesis. Bare nouns may be indefinite only if they remain in their syntactically base-generated position inside the VP. Nominals combine with verbs via Restrict and are subsequently existentially closed at the VP level. Ergative subjects are generated outside the VP in Spec,VoiceP, and therefore are not in the domain of existential closure. The only option is for bare ergative subjects to have a definite interpretation, which is done by assuming that *i* can type shift the predicative nominal to an individual. By adopting the *i* type shifter, we can also account for the fact that bare nouns within the VP can also be definite. Arguments in the complement of VP may be type shifted and combine with the verb via Functional Application, though certain caveats regarding this were discussed in Section 3.3.6. I ended with a discussion of unique and anaphoric definiteness in Ch'ol with consequences for word order.

The analysis for indefinite internal objects developed here predicts that they can be possible antecedents for agreement or anaphora. Indeed, this is borne out below in (144). The first line of (144a) introduces *xcholelob* 'farmers' as the complement of the existential predicate *añ*. The next line refers back to the farmers via third person marking (B3), showing that bare nouns are accessible to anaphoric elements in subsequent discourse.

- (144) a. *Añ abi x-cholel-ob.*  
 EXT REP NC-cornfield  
 ‘There were some farmers.’ Xi’ba.1
- b. *Ta’=bi sujty-i-Ø-yob tyilel, i’ik’=ix abi.*  
 PFV=REP return-IV-B3-PL DIR:towards black=already REP  
 ‘They were returning at night.’ Xi’ba.2

In the next section, I consider another instance of bare nouns—those that are incorporated nominals. The nominals in these constructions exhibit a number of syntactic and semantic differences from bare nouns in argument position. One of which is that, unlike bare nouns as arguments, incorporated nominals are not accessible for agreement or pronominal elements in subsequent discourse.

## 3.4 Incorporated nominals

Nominals may also be incorporated with verb stems in Ch’ol, in a construction referred to as “incorporation antipassives” (Gutiérrez Sánchez, 2004; Coon, 2010a; Vázquez Álvarez, 2011; Coon, 2019). First, I provide morphosyntactic background on these constructions. I then give new semantic data displaying evidence that incorporated nominals are number neutral, may not be antecedents for pronominal anaphora, and that incorporation is a productive process in Ch’ol. I then list desiderata for a semantic analysis of these constructions.

### 3.4.1 Morphosyntactic properties of incorporation antipassives

#### Incorporation antipassives with root transitive verbs

As has been discussed by Gutiérrez Sánchez (2004), Coon (2010a) and Vázquez Álvarez (2011), nouns can be integrated with verbal stems. Coon (2010a) and Vázquez Álvarez (2011) call this structure an incorporation antipassive. Ch’ol incorporation antipassives are an instance of Mithun (1984, 849)’s composition by juxtaposition where “the V and the N are simply juxtaposed to form

an especially tight bond". No phonological changes are triggered with this juxtaposition and no extra morphology appears with the incorporated noun and root transitive verb.<sup>16</sup> Examples of incorporation antipassives are given in Table 3.3 for root transitive stems.<sup>17</sup>

Table 3.3: Examples of incorporated nominals with transitive verb roots

| Incorporation antipassive (V N) | Translation                |
|---------------------------------|----------------------------|
| <i>choñ waj</i>                 | 'sell tortilla'            |
| <i>mel pan</i>                  | 'make bread'               |
| <i>k'el juñ</i>                 | 'watch book' (i.e., study) |
| <i>boñ otyoty</i>               | 'paint house'              |
| <i>mäñ muty</i>                 | 'buy chicken'              |

These incorporation antipassives surface as nominals (Coon, 2012). They can appear as an argument to the light verb *cha'l* in (145a), as the complement of PPs with nonperfective aspects (145b), in PPs with predicates of motion (145c), and as the subject of predicate adjectives (145d). They can also appear in object position with other verbs such as *mulañ* 'like' in (145e). In (145d) and (145e), the incorporation antipassive occurs with the determiner *jiñi*, but without *jiñi* these constructions remain acceptable.

- (145) a. *Ta' k-cha'l-e [NP **kuch si'** ].*  
PFV A1-LV-DTV **carry wood**  
'I carried wood.' Lit. 'I did wood-carrying.'
- b. *Woli-yety [PP **tyi kuch si'** ].*  
PROG-B2 PREP **carry wood**  
'You are carrying wood.'
- c. *Sam-oñ [PP **tyi kuch si'** ].*  
go-B1 PREP **carry wood**  
'I am going to carry wood.'

<sup>16</sup>The suffix *oñ* is used to derive antipassives from root transitives, with the addition of the nominalizer *-el* as in *mäñ-oñ-el* 'buying' in (1a). Without this extra morphology, the verb root may not appear as the complement to the light verb as in (1b).

- (1) a. *Ta' k-cha'l-e **män-oñ-el**.*  
PFV A1-LV-TV **buy-AP-NML**  
'I shopped.'
- b. \* *Ta' k-cha'l-e **mäñ**.*  
PFV A1-LV-TV **buy**  
Intended: 'I shopped.'

<sup>17</sup>Derived transitive verbs take the derived antipassive suffix *-Vyaj* in incorporation antipassive constructions, i.e., *pejk-ayaj juñ* 'read book', *ts'ujs'-uyaj nene* 'kiss baby'.

- d. *Weñ wokol* [DP *jiñi kuch si'* ].  
very difficult DET **carry wood**  
'Carrying wood is very difficult.'
- e. *Ma'añ=ik mi k-mul-añ* [DP *jiñi kuch si'* ].  
NEG=IRR IPFV A1-like-DTV.NML DET **carry wood**  
'I do not like carrying wood.'

These incorporation antipassives have different syntactic properties from regular transitive constructions. For instance, observe the transitive construction in (146a) and the incorporated construction with the light verb in (146b).

- (146) a. *Ta' j-kuch-u si'*.  
PFV A1-carry-TV wood  
'I carried wood.'
- b. *Ta' k-cha'l-e* [NP *kuch si'* ].  
PFV A1-LV-DTV carry wood  
'I carried wood.' Lit. 'I did wood-carrying.'

In (146a), the verb *kuch* 'carry' has the transitive verbalizing suffix *-u* on it. This suffix does not appear in (146b), where *kuch* is part of the incorporation antipassive structure. Furthermore, in (146a) the verb *kuch* is the predicate of the sentence, whereas the incorporation antipassive appears as the nominal complement to the transitive light verb *cha'l*.

Unlike with transitive constructions as in (147), the incorporation antipassive object may not be extracted, either via focus (148a) or *wh*-movement (148b).

- (147) a. *Si'\_i ta' j-kuch-u t<sub>i</sub>*.  
wood PFV A1-carry-TV  
'I carried wood.'
  - b. *Chuki<sub>i</sub> ta' a-kuch-u t<sub>i</sub>?*  
wood PFV A2-carry-TV  
'What did you carry?'
- (148) Based on data from Coon (2010a, 66 ex 34)
- a. \* *Si'\_i ta' k-cha'l-e* [NP *kuch t<sub>i</sub>* ].  
wood PFV A1-LV-TV carry  
Intended 'I carried wood.'
  - b. \* *Chuki<sub>i</sub> ta' a-cha'l-e* [NP *kuch t<sub>i</sub>* ]?  
what PFV A2-LV-TV carry  
Intended: 'What did you carry?'

As discussed in Coon (2010a, 66), incorporated nominals may not appear with determiners (149a), be set B markers (149b), be proper names (149c), or be a null *pro* (149d).

(149) Based on Coon (2010a, 66)

- a. \* *Ta' k-cha'l-e* [NP *jap jiñi kajpe'* ].  
PFV A1-LV-TV drink DET coffee  
Intended: 'I drank the coffee.'
- b. \* *Ta' k-cha'l-e* [NP *k'el-ety* ].  
PFV A1-LV-TV see-B2  
Intended: 'I saw you.'
- c. \* *Ta' k-cha'l-e* [NP *k'el x-Maria* ].  
PFV A1-LV-TV see NC-Maria  
Intended: 'I saw Maria.'
- d. \* *Ta' k-cha'l-e* [NP *jap pro* ].  
PFV A1-LV-TV drink  
Intended: 'I drank it.'

Incorporated nominals are, for the most part, bare nominals. There seems to be variation with respect to whether incorporated nominals can be modified, also noted by (Coon, 2010a, 67). For instance, *sumuk* 'delicious' cannot modify *waj* 'tortilla' in (150a), but *pulem* 'burnt' can modify *si'* 'wood' in (150b). Speaker variation is attested—not all speakers readily accept modified incorporated nominals such as in (150b).

- (150) a. \* *Ta' k-cha'l-e* [NP *mel sumuk waj* ].  
PFV A1-LV-TV make delicious tortilla  
'I did delicious tortilla making.'
- b. *Ta' k-cha'l-e* [NP *kuch pulem si'* ].  
PFV A1-LV-TV carry burnt wood  
'I did burnt-wood-carrying'.

### Syntactic structure of incorporated nominals

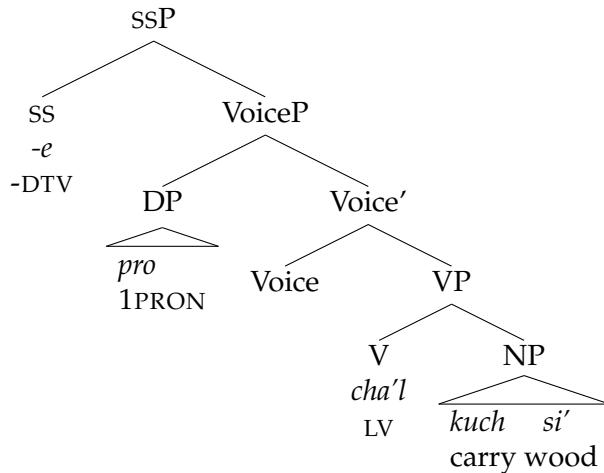
In (151a) the incorporation antipassive is the internal *nominal* argument of the light verb, as shown by its structure in (151b). A transitive verb with a NP internal object is given in (152) for comparison. Recall that in addition to appearing as complements to the transitive light verb, incorporation antipassives also appear with determiners and in subject position of adjectival predicates—lending further support to their status as nominals.

- (151) Incorporated antipasstive construction

Based on Coon (2010a, 68)

- a. *Ta' k-cha'l-e [NP kuch si']*.  
 PFV A1-LV-TV carry wood  
 'I carried wood.' Lit. 'I did wood-carrying.'

b.

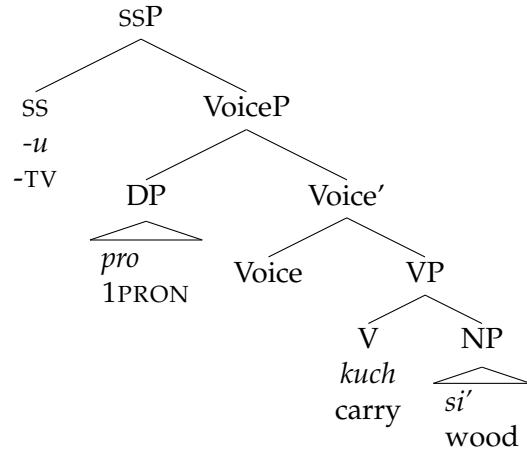


- (152) Transitive verb construction

Based on Coon (2010a, 68)

- a. *Ta' j-kuch-u [NP si']*.  
 PFV A1-carry-TV wood  
 'I carried wood.'

b.



With these syntactic properties in mind, I turn to new data on the semantics of incorporated nominals.

### 3.4.2 New data: Semantics of incorporated nominals in Ch'ol

#### Incorporated nominals are number neutral

One property of incorporated nominals that holds crosslinguistically is that they are number neutral (Baker, 1988; Dayal, 2011). This is the case in Ch'ol in (153).

- (153) *Ta' k-cha'l-e [NP mel otyoty ].*  
PFV A1-LV-TV make house  
'I built houses.' Lit. I did house-buidling.  
Speaker comment: We don't know many houses you worked on. Could be one, but wouldn't be surprised if you worked on three.

#### Incorporated nominals cannot be antecedents for pronominal anaphora

There is crosslinguistic variation as to whether incorporated nouns can be antecedents for subsequent pronominal anaphora or agreement (Mithun, 1986; Baker, 1996). In languages such as Kalaallisut (Van Geenhoven, 1998; Bittner, 1994), Mohawk (Baker, 1988), and Chamorro (Chung and Ladusaw, 2004), incorporated nominals may serve as antecedents. An example from Chamorro (Austronesian) is given in (154), where an incorporated nominal serves as an antecedent for a *pro*. In (154), the nominal *kareta* 'car' is incorporated into the 'have' construction. It is then referred back to in the next sentence by the *pro*, evidence for Chung and Ladusaw (2004) that incorporated nominals in Chamorro can introduce antecedents for agreement/pronominal anaphora.

- (154) *Käda taotao ni gai-[kareta<sub>i</sub>] ha-diséeha na siña, ha-bendi pro;*  
each person COMP WH[nom].agr-have-car agr-wish.Prog Comp can agr-sell  
'Each person who owns a car<sub>i</sub> wishes that he could sell it<sub>i</sub>.'
- Chamorro  
Chung and Ladusaw (2004, ex. 85a)

On the other hand, Dayal (2011) provides evidence from Hindi that incorporated nouns cannot be antecedents for pronominal anaphora as in (155). The noun *kitaab* 'book' may not be an antecedent for the pronoun *vo*.

- (155) *anu-ne kitaab<sub>i</sub> paRhii. # vo<sub>i</sub> bahut acchii thii*  
 anu book read-PFV it very good be-PST  
 'Anu book-read (read a book). It was very good.' Hindi (Dayal, 2011, 134)

In Hindi, a full nominal is possible, as in (156), where the anaphoric bare noun *laRkii* 'girl' in (156b) refers back to the incorporated nominal of (156a).

- (156) Hindi: Dayal (2003, 21) with my bolding added
- a. *anu apne beTe ke-liye laRkii dekh rahii hai*  
 anu self's son for girl is-looking-at  
 'Anu is looking at prospective brides for her son.'
  - b. *vo #uskaa/laRkii-kaa swabhaav jaanaa caahtii hai*  
 she her/girl's nature to know wants  
 'She wants to know #her/the girl's temperament.'

The Ch'ol data pattern like the Hindi data above in that incorporated nominals cannot serve as antecedents for agreement. For instance in (157a), the incorporated nominal may not serve as an antecedent for set B agreement markers on the predicate *sumuk* 'delicious'. Nominal anaphora, however, are possible as in (157b) where *jiñi waj* 'the food' is an instance of an associative anaphor.

- (157) a. *Ta' k-cha'l-e mel waj<sub>i</sub>. # Weñ sumuk-Ø<sub>i</sub> pro<sub>i</sub>.*  
 PFV A1-LV-TV make **tortilla**. very elicious-B3  
 'I did tortilla-making. They were delicious.'
- b. *Ta' k-cha'l-e mel waj. ✓ Weñ sumuk-Ø jiñi waj.*  
 PFV A1-LV-TV make **tortilla**. very delicious-B3 DET **food**  
 'I did tortilla-making. The tortillas were delicious.'

## Incorporation is productive

Unlike in other languages, in Ch'ol there is no restriction placed on which verbs can incorporate and which nouns can be incorporated. For instance, in some languages, the actions denoted by incorporation structures must refer to 'proto-typical' events. In the Danish data in (158), while incorporating 'pig' with butcher is fine, incorporating 'ostrich' is not.

- (158) Danish

(Dayal 2015, 54 data credited to Line Mikkelsen, p.c.)

- |                                                       |                                                                             |
|-------------------------------------------------------|-----------------------------------------------------------------------------|
| a. <i>gris-slagte</i><br>pig-butcher<br>'pig butcher' | b. ? <i>struds-slagte</i><br>ostrich-butcher<br>Intended: 'ostrich butcher' |
|-------------------------------------------------------|-----------------------------------------------------------------------------|

Dayal (2015) refers to this property as institutionalization/enrichment and likens it to restrictiveness. Presumably, there are no ostriches native to Denmark so the butchering of them is not institutionalized. In languages such as Danish and Hindi, incorporation is limited to a certain paradigm conditioned by proto-typical events.

In Ch'ol, however, no restrictions have been found with respect to the incorporation antipassive structures. All verbs and all nouns may be incorporating or incorporated, respectively. For instance, *mel otyoty* 'build house' is a commonplace event in (159a), whereas *k'el ajiñ* 'see crocodiles' in (159b) may not be. However, both these nominals may be incorporated.

- (159) a. *Ta' k-cha'l-e* [NP *mel otyoty* ].  
PFV A1-LV-TV build **house**  
'I built houses.'
- b. *Ta' k-cha'l-e* [NP *k'el ajiñ* ].  
PFV A1-LV-TV watch **crocodile**  
'I looked at crocodiles.'

There is also no animacy restriction for the incorporated nominal. Human-denoting nominals may also be incorporated, as in (160). For instance, in (160b) the noun *xchoñ-waj* 'tortilla seller' has been incorporated with the verb *k'el* 'watch'. Note that *x-choñ-waj* itself is an instance of incorporation of *waj* 'tortilla' with the verb *choñ* 'sell'. The prefix *x-* turns the incorporation antipassive nominal to mean 'one who does X', as per discussion in Chapter 2, Section 2.4.2.

- (160) a. *Ta' k-cha'l-e* [NP *mek' nene* ].  
PFV A1-LV-TV hug **baby**  
'I hugged babies.'
- b. *Ta' k-cha'l-e* [NP *k'el x-choñ waj* ].  
PFV A1-LV-TV see NC-sell food  
'I watched tortilla sellers.'

The lack of restrictions on what can incorporate/be incorporated is further supported by the fact that nouns borrowed from Spanish may appear in incorporation antipassives, as in (161) for *repeyo* ‘plaster’ and *komputadora* ‘computer (spelling changed to conform to the orthographic conventions of Ch’ol).

- (161) Spanish-borrowings are also possible as incorporated nominals

- a. *Ta' k-cha'l-e [NP choñ repeyo ].*  
PFV A1-LV-TV sell SP:plaster  
'I sold plaster.'
- b. *Ta' k-cha'l-e [NP tyoj-'es-ayaj komputadora ].*  
PFV A1-LV-TV straight-CAU-D.AP SP:computer  
'I fixed computers.'

### 3.4.3 Implications for an analysis

Moving forward, a semantic analysis of incorporation antipassives must capture the three points in (162).

- (162) Empirical generalizations for a semantic analysis of incorporated antipassives

- a. Incorporated nominals cannot be antecedents for pronominal anaphora.
- b. Incorporation is productive: there are no restrictions on the proto-typicality of events denoted by the incorporation antipassives.
- c. The incorporation antipassive constructions are formally nouns.

Below, I consider previous analyses and how they may capture the points in (162). Dayal’s (2011) analysis can account for (162a), intuition from Chung and Ladusaw’s (2004) composition rule can account for (162b). A challenge is that both analyses fall short of predicting that these forms must surface as nominals (162c). I elaborate below.

#### Dayal (2011)

Dayal’s (2011) analysis of incorporating verbs may be on the right track in order to capture the fact that incorporated nominals do not introduce antecedents for agreement or pronominal

anaphora.<sup>18</sup> Using data from Hindi nominal incorporation, Dayal (2011) provides the following semantics for incorporating verbs (163a) and regular transitive verbs that take individuals as arguments (163b) in a Neo-Davidsonian framework. Incorporating transitive verbs in (163a) for Dayal differ from transitive verbs in (163b) in that the incorporating verb in (163a) takes a property, not an individual, as its first argument. This analysis assumes that some verbs are lexically ambiguous between incorporating and transitive.

- (163) Incorporating and transitive ‘catch’ (Dayal, 2011, 146)
- a. Incorporating verbs  
 $\llbracket \text{catch}_{\text{INC-V}} \rrbracket = \lambda P_{\langle e \rangle} \lambda y \lambda e [P\text{-catch}(e) \& \text{Agent}(e) = y],$   
*where*  $\exists e [P\text{-catch}(e)] = 1$  iff  $\exists e' [\text{catch}(e') \& \exists x [P(x) \& \text{Theme}(e) = x]]$
  - b. Standard transitive verb in a Neo-Davidsonian semantics  
 $\llbracket \text{catch}_{\text{TV}} \rrbracket = \lambda x \lambda y \lambda e [\text{catch}(e) \& \text{Agent}(e) = x \& \text{Theme}(e) = y]$

The incorporation semantics in (163a) “takes the property to be a modifier of the event, yielding in effect a sub-type of the event” (Dayal, 2011, 146). That is, the incorporated nominal does not refer independently; rather it modifies the event, in this case it modifies catching-events. Additionally in (163a), the theme argument is suppressed and instead expressed in a presupposition. This captures the fact that incorporated nominals cannot be antecedents to pronominal anaphora. In contrast, the transitive verb ‘catch’ in (163b) takes an individual as its first argument, which is interpreted as the theme of the event.

Directly implementing the analysis from Dayal (2011) would mean that all transitive verbs in Ch’ol would have the additional lexical semantics in (163a), and thus be lexically ambiguous between the incorporating verb semantics in (163a) and a transitive verb denotation. This lexical ambiguity is a welcome result for Hindi, as Hindi has restrictions on the types of verbs and nominals which may incorporate—i.e., incorporation in Hindi is restricted to proto-typical events. For Ch’ol, however, there is no restriction on the proto-typicality of incorporation. Proto-typical events as well as not so proto-typical events may be expressed via incorporation antipassives. A lexical ambiguity account does not quite do justice to the productivity of incorporation in Ch’ol.

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<sup>18</sup>Dayal (2011) also makes some observations about telicity and incorporation, paralleling observations by Kratzer (2004) on objective case. Further investigation of telicity and incorporation is needed in Ch’ol to determine how these incorporation structures relate to telicity.

Rather than make all verbs lexically ambiguous, let us consider a Chung and Ladusaw 2004-style composition rule in the next section.

### **Chung and Ladusaw (2004)-style analysis for incorporated nominals?**

In addition to being used as a way to derive narrow scope indefinites, Restrict (Chung and Ladusaw, 2004) has also been implemented for incorporated nominals. As discussed above, under Chung and Ladusaw's (2004) analysis, the composition rule Restrict combines verbs and nouns by restricting the event, but without placing any restrictions on what can be incorporated or which verbs can incorporate. The fact that Restrict may be used to combine any verb and predicative noun is an advantage—as we saw above, there are no restrictions on the types of verbs that can incorporate as well as the types of nouns that may be incorporated. However, the theme argument is then existentially closed—a desirable result for Chung and Ladusaw (2004), as in Chamorro this type of incorporation allows for the incorporated nominal to be available for subsequent discourse anaphora. However, as Dayal (2003, 2011) points out for Hindi, and as I have shown above for Ch'ol, incorporated nominals may not serve as antecedents for anaphoric elements.

A composition rule, inspired by Restrict, could be developed in order to account for the fact that incorporated nominals may not serve as antecedents for pronominal anaphora in Ch'ol. Under such an account, the verb and noun combine, but the rule also suppresses the theme argument of the verb, as Dayal (2011) has done in (163a). This possibility is given in (164).

- (164) An incorporation composition rule?

$$\lambda P_{\langle e \rangle st} \lambda Q_{\langle et \rangle} \lambda e. [Q \cdot P(e)], \\ \text{where } \exists e [Q \cdot P(e)] = 1 \text{ iff } \exists e' [P(e') \& \exists x [Q(x) \& \text{Theme}(e) = x]]$$

(164) turns Dayal's (2011) incorporating verb semantics into a composition rule that combines a verb and noun (rather than making the verb lexically ambiguous) and suppresses the theme argument, making it inaccessible for certain anaphoric elements in subsequent discourse. This can capture the desired results of (i) making the incorporated nominals inaccessible to anaphoric elements; and (ii) the productivity of the incorporation antipassives.

## On the nominal nature of incorporation antipassives

Yet, both these semantic analyses face challenges accounting for point (162c)—that all incorporation antipassive structures are *nominal*. Syntactically, Coon (2019) posits that Ch'ol lacks an agentive intransitive Voice head, which is why these incorporation antipassives surface not as verbs, but as nouns. Semantically, it is still necessary to determine why incorporation antipassives must surface as nominal arguments as well as what their semantic type is. One possibility is that the light verb *cha'l-* must take arguments of type  $\langle st \rangle$ , making the incorporated antipassives formally different from  $\langle et \rangle$  nominals such as 'boy' or 'corn'. This does not immediately explain, however, the fact that incorporation antipassives may be modified by a determiner or be in complement position of other verbs, such as 'like' above in (145e). For now, I leave these questions open for future research.

## 3.5 Conclusion

I began with the data from (89)–(90), repeated in (165)–(166).

- (165) *Ta' jul-i wiñik.*  
PFV arrive-IV man  
'A/the man arrived.'

- (166) *Ta' i-mäñ-ä otyoty wiñik.*  
PFV A3-buy-TV house man  
(i) 'The man bought a/the house.'  
(ii) NOT: A man bought a/the house.

I accounted for the possible interpretations of the nouns in (165) and (166) by following a Diesing-style approach to existential indefinites, namely that existential closure happens at the VP layer. This allows for complements of verbs to be indefinite but excludes an existential indefinite interpretation for arguments moved or generated outside the VP. For indefinite interpretations, Restrict from Chung and Ladusaw (2004) combines the verb and its internal object together, capitalizing on the notion that these are instances of pseudo-incorporation.

Bare nouns may also appear in other constructions, such as in incorporation antipassives in (167).

- (167) *Ta' k-cha'l-e* [NP *kuch si'* ].  
 PFV A3-LV-DTV carry **wood**  
 'I carried wood.' Lit. I did wood-carrying.

Unlike the bare arguments in (165) and (166), the noun *si'* 'wood' in (167) does not refer. Incorporation antipassives are productive in Ch'ol with no apparent restrictions on which verbs can incorporate, or on the type of bare nominals that may be incorporated. I discussed possible analyses for incorporation such as Dayal's (2011) incorporating verb semantics and a Chung and Ladusaw (2004)-style composition rule. Where both these analyses fall short is that they do not predict that incorporation antipassives always surface as nouns, and not verbs.

The analysis of indefinites in Ch'ol in this chapter has implications for theories of type shifters available to natural language as well as for analyses for VOS word order. For instance, Partee (1986) proposed type shifters such as in (168).

- (168) Partee 1986 type shifters (nonexhaustive)  
 a.  $\iota = \lambda P. \iota x[P(x)]$   
 b.  $\exists = \lambda P \lambda Q. \exists x[P(x) \wedge Q(x)]$

Chierchia (1998b) and Dayal (2004) proposed a ranking of type shifters, given in (169). Importantly,  $\iota$  and  $\cap$ , which turns predicates into kind-terms, are ranked higher than  $\exists$ .

- (169) Ranking of type shifters Dayal (2004)  
 $\{\iota, \cap\} > \exists$

This chapter supports a structural approach to existential indefiniteness (i.e., (Diesing, 1992) and recent work by Dayal (2013)), in that there does not need to be a ranking of type shifters. Rather, existential indefinite interpretations are governed by the syntax, with the VP being the domain of existential closure. That is, rather than the type shifters in (168b) being available to type shift nouns in any position, the data from Ch'ol provide support that there are certain structural constraints as to where bare nouns may be interpreted as indefinite.

Finally, as this chapter has argued that the interpretation of nouns is reflected by their structural positions, analyses of word order should capture this. For instance, bare object nouns in

Ch'ol must appear in VOS object position. VOS objects are precisely objects that can receive an existential indefinite interpretation. Therefore, any analysis for Ch'ol word order should capture that VOS objects are syntactically within the VP. It should also capture that an existential indefinite interpretation for constituents moved or generated outside the VP is not possible. This includes VSO objects and objects non-adjacent to verbs (i.e., in V-XP-(S)-O position). I will further develop this implication for word order in Chapter 5.

CHAPTER 4  
MOVEMENT-DERIVED ISLANDS

## 4.1 Introduction

The previous chapter investigated the semantic properties of VP-internal and VP-external nominals. In this chapter, I investigate the syntactic properties of nominals that are within the VP in contrast to those that have moved outside the VP. Specifically, I look into which elements can and cannot be subextracted from nominal arguments. Ch'ol exhibits asymmetries in what is available for subextraction. Interrogative possessors may extract from absolute subjects in (170a), but not from absolute objects, as in (170b). Numerals, on the other hand, may extract from both absolute subjects (171a) and absolute objects (171b).

- (170) a. *Majki<sub>i</sub> ta' yajl-i [ i-wakax t<sub>i</sub> ]?*  
**who** PFV fall-IV **A3-cow**  
 'Whose cow fell?'
  - b. \* *Majki<sub>i</sub> ta' a-k'el-e [ i-chich t<sub>i</sub> ]?*  
**who** PFV A2-see-TV **A3-sister**  
 Intended: 'Whose sister did you see?'
- (171) a. *Cha'-kojty<sub>i</sub> ta' yajl-i [ t<sub>i</sub> wakax ].*  
**two-CLF** PFV fall-IV **cow**  
 'Two cows fell.'
  - b. *Cha'-kojty<sub>i</sub> ta' i-k'el-e [ t<sub>i</sub> wakax ] aj-Wañ.*  
**two-CLF** PFV A3-see-TV **cow** NC-Juan  
 'Juan saw two cows.'

To capture this asymmetry, I provide evidence that objects with overt possessors always move out of the VP and for this reason subextraction is blocked. This follows from the Freezing Principle (Ross, 1974; Wexler and Culicover, 1977), or a ban on extraction from a moved constituent. Numeral modifiers in object position do not obligatorily trigger object shift and therefore may extract from the object. That is, the nominals in (170a) and (171a) are inside the VP, but the object in (170b)

has moved outside the VP. I conclude that movement-derived islands block the extraction of elements from nominal arguments. When extraction *is* possible, it is not from a moved constituent.

This work has implications for deriving verb-initial word order. That is, analyses that posit that a verbal projection fronts with the object (e.g., Massam (2000); Chung (2005); Coon (2010b)), face challenges in capturing that extraction from the object in (171b) is possible. Following from the Freezing Principle, the moved verbal projection containing the verb and object should be an island for extraction. However as shown in (171b), numerals may extract from object position, a surprising fact if it is contained in a moved constituent. I argue that this points to an analysis of verb-initial word order where VOS objects are not contained in a moved constituent; rather VOS is base-generated and extraction from objects is possible from their base position.

This chapter is structured as follows. In Section 4.2, I present the extraction asymmetry facts previewed in the introduction. I include data on other elements, such as demonstratives and possessors, which are banned from extracting from any argument position. In Section 4.3, I present evidence that DP objects in Ch'ol undergo obligatory object shift. Evidence for object shift comes from the ordering of DP objects and adverbs as well as certain interpretational differences, building on the analysis from Chapter 3. Objects with overt possessors obligatorily shift, while objects with numerals do not. In Section 4.4, I posit that object shift can account for the extraction asymmetries of Section 4.2: shifted objects are movement-derived islands and therefore subextraction from them is banned. In Section 4.5, I develop an idea from Little (2020) on how subextraction is licensed, predicated on Agree-based frameworks for extraction (e.g., Rackowski and Richards (2005); Van Urk and Richards (2015)). Section 4.6 discusses implications of this chapter's proposal with respect to phrasal-fronting analyses of verb-initial word order. I conclude with some data on dialectal variation regarding subextraction in Section 4.7.

## 4.2 Subextraction data

Subextraction, which I also refer to as left branch extraction<sup>1</sup>, is when a constituent embedded in a larger constituent is moved out via A-bar movement. In this chapter, I focus on the subextraction of elements from nominals. While the subextraction of interrogative possessors has been noted before for the Tila dialect of Ch'ol (Coon, 2009) and the closely related language Tsotsil (Aissen, 1979, 1987, 1996), this study adds new data on the possibilities for extracting a variety of elements from different positions in Ch'ol.

### 4.2.1 Interrogative possessor extraction

In the nominal domain, possessors follow possessees, as in (172a). When the possessor is interrogative, it precedes the possessee, generating the possessor–possessee order in (172b).

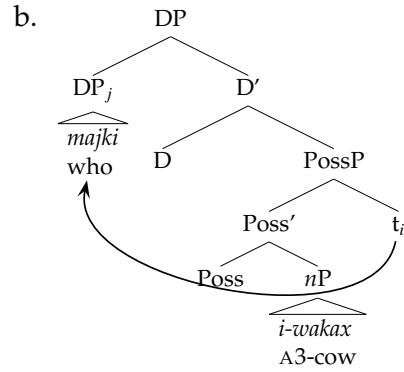
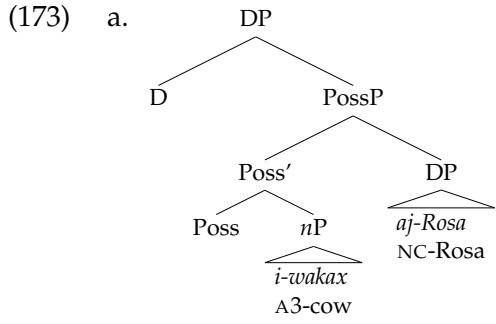
- (172) a. *i-wakax aj-Maria*  
A3-cow NC-Maria  
'Maria's cow'
- b. *majki<sub>i</sub> i-wakax t<sub>i</sub>?*  
who A3-cow  
'whose cow?'

I present data on the extraction of interrogative possessors in (172b). The inability of possessors, such as in (172a), to undergo subextraction is discussed further in Section 4.2.3 and Section 4.4.5. For simplicity of exposition, I assume the nominal structures from Aissen (1992) for (172a) and (172b) in (173a) and (173b), but see Chapter 5 for discussion motivating these structures. Recall that the possessive set A markers are derived via a local agreement relation between a low functional head and the possessor (see discussion in Chapter 2 Section 2.4.5). The interrogative possessor moves to the edge of the DP, driven by *wh*-features.<sup>2</sup>

---

<sup>1</sup>All elements that may subextract in Ch'ol are located in a left branch.

<sup>2</sup>Under a phrasal-fronting analysis proposed by Coon (2010b), the order Possessor-Possessee is first generated and *nP*, containing the possessee, fronts to a position above the possessor, between DP and PossP as in (1). The nominal structure in (1) is also compatible with the analysis of this chapter.

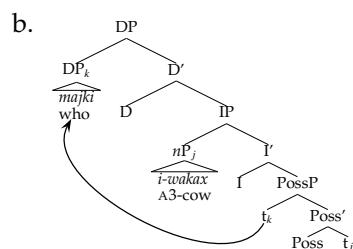
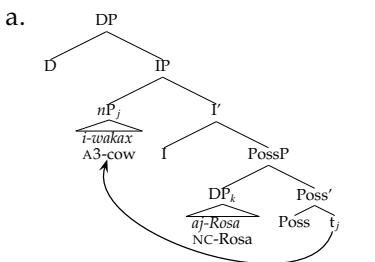


Interrogative possessors may extract from absolutive subjects, as in (174a), where the interrogative possessor *majki* appears before the verb. The trace  $t_i$  in the glosses is where the interrogative possessor originates, in Spec,PossP. The interrogative possessor subextracts from its position in the left branch of Spec,DP, as schematized in (173b). Pied-piping is also an available option, as shown by (174b), where the constituent containing the interrogative possessor and its possessee fronts to the preverbal position. Semantically, subextraction is associated with focus on the extracted constituent. In (174b), a speaker may be asking whose cow fell, but in (174a), the speaker may not have properly heard the name of the cow's owner and be asking for the interlocutor to repeat it.<sup>3</sup>

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(1) Predicate-fronting account of possessive structures

(Coon, 2010b)



In Chapter 5, I present more details comparing analyses for the nominal domain in Ch'ol, favoring the approach in (173).

<sup>3</sup>With nonperfective aspects, subextraction is possible:

- (1) *Majki; woli i-yajl-el [ i-wakax ti ]?*  
 who PROG A3-fall-NML A3-cow  
 'Whose cow is falling?'

As discussed in Chapter 2, the subject *majki i-wakax* 'whose cow' in (1) is structurally a possessor.

(174) Absolutive subject

- a. *Majki<sub>i</sub> ta' yajl-i [ i-wakax t<sub>i</sub> ] ?*  
**who** PFV fall-IV A3-cow  
 'Whose cow fell?'
- b. *[ Majki i-wakax ]<sub>i</sub> ta' yajl-i t<sub>i</sub> ?*  
**who** A3-cow PFV fall-IV  
 'Whose cow fell?'

For some speakers, extraction of an interrogative possessor out of ergative subjects in (175a) is marginally acceptable, though most speakers find this ungrammatical. Pied-piping is also an option available to all speakers, as in (175b).<sup>4</sup>

(175) Ergative subject

- a. ??/\* *Majki<sub>i</sub> ta' i-k'el-e-yety [ i-chich t<sub>i</sub> ] ?*  
**who** PFV A3-see-TV-B2 A3-sister  
 'Whose sister saw you?'
- b. *[ Majki i-chich ]<sub>i</sub> ta' i-k'el-e-yety t<sub>i</sub> ?*  
**who** A3-sister PFV A3-see-TV-B2  
 'Whose sister saw you?'

Extraction of an interrogative possessor from the subject of an unergative verb is grammatical for some speakers (and slightly better than (175a)), as shown in (176a). Pied-piping, again, is an available option for all speakers, as in (176b).

(176) Unergative subject

- a. % *Majki<sub>i</sub> ta' i-cha'l-e soñ [ i-chich t<sub>i</sub> ] ?*  
**who** PFV A3-dance-TV dance.NML A3-sister  
 'Whose sister danced?'
- b. *[ Majki i-chich ]<sub>i</sub> ta' i-cha'l-e soñ t<sub>i</sub> ?*  
**who** A3-sister PFV A3-dance-TV dance.NML  
 'Whose sister danced?'

Extraction of an interrogative possessor from an absolute object, on the other hand, is ungrammatical, as in (177a).<sup>5</sup> In this case, pied-piping is the only available option as in (177b).

---

<sup>4</sup>In the Tila dialect of Ch'ol, extraction from ergative subjects is ungrammatical (Coon, 2009).

<sup>5</sup>With the applicative suffix -be, possessor extraction from object position is possible, as in (1). Following Coon and Henderson (2010), (1) is an external possessive construction, indicated by the applicative marker. For Coon and Henderson (2010), external possessors are located in the specifier of ApplP. Thus, under this analysis the external possessor in (1) is actually extracted from Spec,ApplP and not from the direct object. Therefore, it is not an instance of subextraction.

(177) Absolutive object

- a. \* *Majki<sub>i</sub> ta' a-k'el-e [ i-chich t<sub>i</sub> ] ?*  
**who PFV A2-see-TV A3-sister**
- Intended: 'Whose sister did you see?'
- b. [ *Majki i-chich* ]<sub>i</sub> *ta' a-k'el-e t<sub>i</sub> ?*  
**who A3-sister PFV A2-see-TV**
- 'Whose sister did you see?'

Paralleling the pattern for objects of transitive verbs, extraction of an interrogative possessor out of the direct object or indirect object of a ditransitive verb is also ungrammatical, as in (178) and (179).<sup>6</sup> In these examples, the interrogative possessor must pied-pipe its possessee.

(178) Ditransitive DO

- a. \* *Majki<sub>i</sub> ta' a-choñ-be aj-Rosa [ i-karu t<sub>i</sub> ] ?*  
**who PFV A2-sell-APPL NC-Rosa A3-car**
- Intended: 'Whose car did you sell to Rosa?'
- b. \* *Majki<sub>i</sub> ta' a-choñ-be [ i-karu t<sub>i</sub> ] aj-Rosa?*  
**who PFV A2-sell-APPL A3-car NC-Rosa**
- Intended: 'Whose car did you sell to Rosa?'
- Only possible meaning: 'Who did you sell Rosa's car to?'

(179) Ditransitive IO

- a. \* *Majki<sub>i</sub> ta' a-choñ-be karu [ i-chich t<sub>i</sub> ] ?*  
**who PFV A2-sell-APPL car A3-sister**
- Intended: 'Whose sister did you sell a car to?'
- b. \* *Majki<sub>i</sub> ta' a-choñ-be [ i-chich t<sub>i</sub> ] karu ?*  
**who PFV A2-sell-APPL A3-sister car**
- Intended: 'Whose sister did you sell a car to?'

Finally, interrogative possessors inside PPs must pied-pipe the entire PP, as in (180a). They may not extract from PPs, as per (180b).

---

(1) *Majki<sub>i</sub> ta' a-k'el-be i-chich t<sub>i</sub>?*  
**who PFV A2-see-APPL A3-sister**

'Whose sister did you see?'

<sup>6</sup>I provide two possible word orders for the ditransitive constructions, as multiple overt postverbal nominals are rare in Mayan languages. It seems that when the direct object is bare, the pragmatically neutral ordering of postverbal objects is V-DO-IO.

(180) PP adjunct

- a. [PP *Majki tyi y-otyoty* ]<sub>i</sub> *ta' k'oty-i-yety t<sub>i</sub>* ?  
  **who** PREP A3-house PFV arrive-IV-B2  
‘To whose house did you go?’
- b. \* *Majki; ta' k'oty-i-yety* [PP *tyi y-otyoty* *t<sub>i</sub>*] ?  
  **who** PFV arrive-IV-B2 PREP A3-house  
Intended: ‘To *whose* house did you go?’

In fact, extraction of the object of a preposition is impossible, as in (181).<sup>7</sup>

- (181) \* [ *Majki y-otyoty* ]<sub>i</sub> *ta' k'oty-i-yety* [PP *tyi t<sub>i</sub>*] ?  
  **who** A3-house PFV arrive-IV-B2 PREP  
Intended: ‘Whose house did you go to?’

I follow previous work, which argues that PPs in Ch’ol are adjuncts (Coon, 2013; Coon and Preminger, 2013), and therefore adjunct islands. This claim is further supported by the data above, where the extraction of the PP object in (181) and subextraction of the interrogative possessor in (180b) are banned. Additional support for the islandhood of PPs comes the fact that PPs are never selected as complements in Ch’ol. For instance, picture-of-NPs are expressed with possessive phrases—‘a picture of Rosa’ in Ch’ol would be ‘Rosa’s picture’.

#### 4.2.2 Numeral extraction

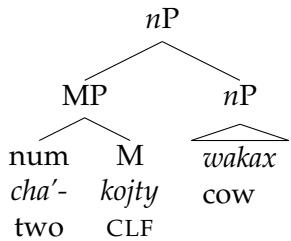
Before moving on to the numeral extraction data, I provide the structure I adopt for nominals with numerals, following Bale et al. (2019), in (182). Numerals are adjoined to the *nP* in a MP (or measure phrase) projection. The MP contains both the numeral and the numeral’s obligatory classifier.

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<sup>7</sup>It is also not possible to front the interrogative possessor and preposition, leaving behind the possessee:

- (1) \* *Majki tyi ta' k'oty-i-yety otyoty* ?  
  **who** PREP PFV arrive-IV-B2 **house**  
Intended: ‘To whose house did you arrive?’

- (182) Position of numerals for *cha'kojty wakax* 'two cows'



The MP constituent, containing the numeral and classifier, may extract from its position adjoined to the *nP* in (182). Extraction of only the numeral or only the classifier is ungrammatical.

Numerals may extract from absolute subject position in (183a) and absolute object position in (183b).<sup>8</sup>

- (183) a. *Cha'-kojtyi ta' yajl-i* [ *t<sub>i</sub> wakax* ] *tyi potruru.*  
**two-CLF** PFV fall-IV **cow** PREP field.  
     'Two cows fell in the field.' Absolutive subject

b. *Cha'-kojtyi ta' i-k'el-e* [ *t<sub>i</sub> wakax* ] *aj-Wañ.*  
**two-CLF** PFV A3-see-TV **cow** NC-Juan  
     'Juan saw two cows.' Absolutive object

When only the numeral extracts, the numeral alone is focused (rather than the whole nominal argument). For instance, (183a) may be a response to someone who mistakenly said that only one cow fell.<sup>9</sup>

As shown for interrogative possessors, extraction out of ergative subjects receives mixed judgements, as in (184).



<sup>8</sup>The subextraction facts are the same for nonperfective aspects and numerals:

- (1) a. *Cha'-kojtyi woli i-yajl-el* [ *t<sub>i</sub> wakax* ] *tyi potreru.*  
 two-CLF PROG A3-fall-NML cow PREP field.  
 'Two cows are falling in the field.'  
 b. *Cha'-kojtyi woli i-k'el* [ *t<sub>i</sub> wakax* ] *aj-Wañ.*  
 two-CLF PROG A3-see cow NC-Juan  
 'Juan saw two cows.' (This can also mean: 'Juan is looking after two cows.')

<sup>9</sup>For reasons of space, I do not give data on other quantifiers, but the numeral in (183) can be substituted with a quantifier such as *pejtyel(el)* 'all' and the extraction facts remain the same.

Numeral extraction is possible from the direct object of a ditransitive verb, as in (185a), but not from the indirect object (185b). The data in (185a) contrast with what was reported above for objects of ditransitives with interrogative possessors.

- (185) a. *Cha'-kojty<sub>i</sub>* *ta'* *k-choñ-be* [ *t<sub>i</sub> karu* ] *aj-Wañ*.  
**two-CLF** PFV A1-buy-APPL **car** NC-Juan  
'I sold *two* cars to Juan.' Ditransitive DO

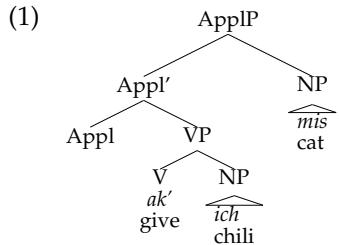
b. ?? *Cha'-tyikil-ob<sub>i</sub>* *ta'* *k-choñ-be* *karu* [ *t<sub>i</sub> x-'ixik-ob* ].  
**two-CLF-PL** PFV A1-sell-APPL **car** NC-woman-PL  
Intended: 'I sold cars to *two* women.' Ditransitive IO

Additional data also reveal a difference between extracting from the direct object and extracting from the indirect object in Ch'ol. In (185b), the classifier used with 'two' is the human classifier (*-tyikil*) so it is only possible to associate it with the indirect object 'women' and not 'car'—but even then it is still judged to be strange. When both objects take the same classifier, as in (186) with chili peppers and cats, the extracted numeral unambiguously modifies the direct object 'chili peppers'.

- (186) *Cha'-kojty ta' k-äk'-e ich mis.*  
**two-CLF** PFV A1-give-APPL chili cat.  
'I gave two chili peppers to the cat.'  
NOT: 'I gave chili peppers to two cats.'

The example in (186) provides evidence that extracting from the direct object is the only option in ditransitive constructions. I return to why this may be the case in Section 4.5.<sup>10</sup>

<sup>10</sup>While *ich* 'chili pepper' is linearly closer, it is structurally further away, given the structure in (1).



It is therefore not the case that the numeral in (186) can only be associated with the direct object because it is structurally closer (i.e., the Minimal Link Condition). In fact, given the structure in (1), moving from the direct object is a longer move.

Evidence for the structure in (1) comes from binding relations between the direct and indirect objects. The indirect object in (2) may bind into the reflexive direct object.

Finally, it is not possible to extract numerals from PPs, as shown by the ungrammatical (187). I take (187) as further evidence for the islandhood of PPs in Ch'ol.

- (187) \* *Cha'-p'ej<sub>i</sub> ta' k'oty-i-yoñ* [PP *tyi t<sub>i</sub> otyoty* ].  
 two-CLF PFV arrive-IV-B1 PREP house  
 Intended: 'I went to *two* houses.'

#### 4.2.3 Demonstratives and non-interrogative possessors cannot extract

Elements that may *not* subextract from any argument position are demonstratives and non-interrogative possessors. Data on demonstratives are given in (188) and data on non-interrogative possessors are given in (189).

- (188) a. \* *Ixä<sub>i</sub> ta' yajli* [ *t<sub>i</sub> wakax* ].  
**that** PFV fall-IV **cow**  
 Intended: 'That cow fell.' Absolutive subject
- b. \* *Ixä<sub>i</sub> ta' i-k'el-e-yoñ* [ *t<sub>i</sub> wiñik* ].  
**that** PFV A3-see-TV-B1 **man**  
 Intended: 'That man saw me.' Ergative subject
- c. \* *Ixä<sub>i</sub> ta' k-mäñ-ä* [ *t<sub>i</sub> karu* ].  
**that** PFV A1-buy **car**  
 Intended: 'I bought *that* car.' Absolutive object
- d. \* *Ixä<sub>i</sub> ta' k-choñ-be* [ *t<sub>i</sub> karu* ] *aj-Rosa*.  
**that** PFV A1-sell-APPL **car** NC-Rosa  
 Intended: 'I sold *that* car to Rosa.' Ditransitive DO
- e. \* *Ixä<sub>i</sub> ta' k-choñ-be* *karu* [ *t<sub>i</sub> wiñik* ].  
**that** PFV A1-sell-APPL **car** **man**  
 Intended: 'I sold *that* man a car.' Ditransitive IO

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(2) *Ta' k-päs-b-e i-bä x-Quique tyi espejo.*  
 PFV A1-show-APPL-DTV A3-self NC-Quique PREP SP:mirror  
 'I showed Quique himself in the mirror.'

I return to these ungrammatical instances of subextraction in Section 4.4.5.

#### 4.2.4 Summary

The subextraction facts from this section are summarized in Table 4.1. Crucially, extraction of interrogative possessors is banned from the object position of transitive and ditransitive verbs. Numerals, on the other hand, can extract out of object position. Extraction from subjects of transitive verbs and indirect objects is ungrammatical or significantly degraded. The extraction of demonstratives and possessors is banned from all positions.

Table 4.1: Subextraction summary

|                         | Subj<br>IV | of<br>TV | Subj<br>TV | of<br>TV | Obj<br>of<br>TV | DO<br>ditrans | IO<br>ditrans |
|-------------------------|------------|----------|------------|----------|-----------------|---------------|---------------|
| Interrogative possessor | ✓          | %        |            | *        |                 | *             | *             |
| Numeral                 | ✓          | %        |            | ✓        |                 | ✓             | *             |
| Dem                     | *          | *        |            | *        |                 | *             | *             |
| Possessor               | *          | *        |            | *        |                 | *             | *             |

## 4.3 Evidence for object shift

In this section, I provide diagnostics for object shift from adjunct placement and the semantic properties of the object, following from the analysis in Chapter 3. I will show below that objects modified by (predicative) numerals pattern like NP objects; objects with overt possessors pattern like DP objects. When numerals are quantificational (QPs), they pattern syntactically like DP objects. I will use data on object shift to account for the asymmetries exhibited between the extraction of numerals versus interrogative possessors. In short, object shift bleeds subextraction.

### 4.3.1 Adjunct placement as a diagnostic for object shift

The placement of adjuncts has been used as a test in Germanic languages for object shift (i.e. Holmberg (1986); Diesing (1992, 1996)) and can provide evidence that the object has moved. As previously discussed in Coon (2010b), temporal adverbs and prepositional phrases can intervene between a DP object and verb, generating V-XP-(S)-O order, as in (190a). An adjunct may not intervene between an NP object and verb, as in (190b).<sup>11</sup> The adverb/PP may only appear *after* the NP object, as in (190c).

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<sup>11</sup>While temporal adverbs and PPs display similar distributional behavior with respect to NP and DP objects, other adverbial elements may attach directly to the VP, such as the prefix *cha'* 'again' in (1).

- (1) *Tyi i-cha'-boñ-o otyoty jiñi wiñik.*  
PFV A3-again-paint-TV house DET man  
'The man painted the house again.'

(Coon, 2010b, 373)

As suggested by Coon (2010b, 373), I take the adverb in (1) to be a VP-level adverb. Evidence for this comes from the fact that (1) means that the house has been painted before, but not necessarily by the same man, suggesting the adverb does not have scope over the subject. These VP modifiers can have scope over the object and thus seem to attach lower in the verbal domain than the adverbs and PPs discussed above.

Directionals are another set of elements that seem like adverbs in Ch'ol and may appear between a bare noun object and verb. However, as Coon (2013) notes, directionals are different from other adverbials, as they must appear next to the verb, without anything else intervening. Directionals have been reported to be a closed class of items in a number of Mayan languages (England 1976, Mam; Haviland 1993; Aissen 1994, Tsotsil; Mateo Toledo 2004, Q'anjob'al). Mateo Toledo (2004) argues that directionals in Q'anjob'al are clitics to the verb. Aissen (2009) proposes that the directionals in Tsotsil are serial verb constructions. For these reasons, I do not use directionals as a diagnostic for object shift.

(190) Data based on Coon (2010b, ex (40) and (41))

- a. *Ta' j-k'ux-u ak'bi/tyi k-otyoty* [DP *jiñi waj* ].  
PFV A1-eat-TV **yesterday/PREP A1-house** DET tortilla.  
'I ate the tortilla yesterday/in my house.'<sup>12</sup>
- b. \* *Ta' j-k'ux-u ak'bi/tyi k-otyoty* [NP *waj* ].  
PFV A1-eat-TV **yesterday/PREP A1-house** tortilla.  
Intended: 'I ate a tortilla yesterday/in my house.'
- c. *Ta' j-k'ux-u* [NP *waj*] *ak'bi/tyi k-otyoty*.  
PFV A1-eat-TV tortilla **yesterday/PREP A1-house**  
'I ate a tortilla yesterday/in my house.'

As in (190a) for DP objects, an adjunct may intervene between the verb and an object with an overt possessor as in (191).

- (191) *Ta' j-k'ux-u ak'bi* [DP *i-waj aj-Eve* ].  
PFV A1-eat-TV **yesterday** A3-tortilla NC-Eve  
'I ate Eve's tortilla yesterday.'

The placement of adjuncts with respect to the object has implications for interpretational differences. I discuss data from Chapter 3 below on the interpretation of numerals, which provides further support for object shift.

### 4.3.2 Interpretational differences of numerals and adjunct placement

As per data from Chapter 3 Section 3.3.5, numerals and their relative position to the verb lend support that some objects move out of the VP. When they do move, semantic differences are observed. Adjuncts may appear after an object modified by a numeral and a verb as in (192a). The adjunct may also intervene between the verb and the object in (192b). The interpretations of the numerals in (192) differ. Evidence for this comes from their scopal relations with the adverb prefix *ñoj-* 'always'. While (192a) is felicitous in a context in which the speaker sees two men on the road,

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<sup>12</sup>It is also possible for the adverb to appear after the verb and DP object in (190a), as in (1).

- (1) *Ta' j-k'ux-u jiñi waj ak'bi*.  
PFV A1-eat-TV DET tortilla **yesterday**.  
'I ate the tortilla yesterday.'

but not necessarily the same two men, (192b) is felicitous in a context in which the speaker often sees two specific men.

- (192) Context A: There is a road behind my house. I always see two men walking there, sometimes it is Marcos and Rogelio, sometimes Juan and Eladio, and sometimes Jorge and Javier.  
Context B: There is a road behind my house. I always see Nicolás and José walking there.
- a. *Mi k-ñoj-k'el [cha'-tyikil wiñik ] tyi bij.*  
 IPFV A1-always-see two-CLF man PREP way  
 'I always see two men on the road.' ✓A ✓B
  - b. *Mi k-ñoj-k'el tyi bij [cha'-tyikil wiñik ].*  
 IPFV A1-always-see PREP way two-CLF man  
 'I sometimes see on the road two men.' ✗A ✓B

As discussed in Chapter 3, these interpretational differences are predicted by Diesing's (1992) Mapping Hypothesis, whereby unshifted objects such as in (192a) can receive an existential interpretation, as they are within the domain of existential closure, (i.e. within the VP). Presuppositional or specific objects as in (192b) shift out of the domain of existential closure (i.e. outside the VP), indicated by the intervening adverb. In (192b), the numeral is quantificational so must move out of the VP domain (as discussed in Chapter 3, Section 3.3.5). The interpretational differences in (192) constitute semantic evidence of object shift, when material intervenes between the verb and object.

### 4.3.3 Constituent order

Recall from Chapter 2 that VOS word order is possible with NP objects as in (193), and VSO appears with DP objects, given below in (194).

- (193) VOS = NP objects
- a. *Ta' i-k'ux-u [O waj ] [S aj-Maria ].*  
 PFV A3-eat-TV tortilla NC-Maria.  
 'Maria ate a tortilla.'
  - b. *\* Ta' i-k'ux-u [S aj-Maria ] [O waj ].*  
 PFV A3-eat-TV NC-Maria tortilla.  
 Intended: 'Maria ate a tortilla.'

- (194) VSO = DP objects

- a. *Ta' i-jul-u* [S *aj-Ariañ*] [O *jiñi me'* ].  
PFV A3-shoot-TV NC-Adrian DET deer  
'Adrian shot the deer.'
- b. \* *Ta' i-jul-u* [O *jiñi me'*] [S *aj-Ariañ* ].  
PFV A3-shoot-TV DET deer NC-Adrian  
Intended: 'Adrian shot the deer.'

The data in (195) provide evidence that objects with overt possessors pattern like the DP objects from above. As seen with objects with determiners, VOS word order is prohibited for objects with overt possessors, as in (195a). Rather, objects with overt possessors appear in VSO object position in (195b).

- (195) a. \* *Ta' i-k'ux-u* [O *i-waj aj-Wañ*] [S *aj-Maria* ].  
PFV A3-eat-TV A3-tortilla NC-Juan NC-Maria  
Intended: 'Maria ate Juan's tortilla.'
- b. *Ta' i-k'ux-u* [S *aj-Maria*] [O *i-waj aj-Wañ* ].  
PFV A3-eat-TV NC-Maria A3-tortilla NC-Juan  
'Maria ate Juan's tortilla.'

A possessed nominal *without* an overt possessor, on the other hand, may appear in VOS object position, as in (196).

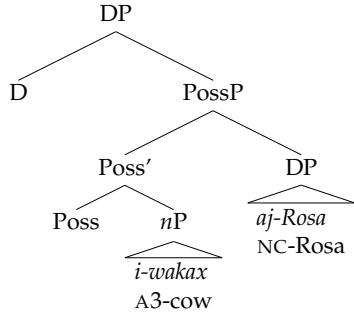
- (196) *Ta' i-boñ-o* [O *iy-otyoty*] [S *wiñik* ].  
PFV A3-paint-TV A3-house man  
'The man painted his house.'

The possessive structure in (197a) is banned from appearing in VOS object position, but the structure in (197b), with no overt possessor, is possible in VOS object position.<sup>13</sup>

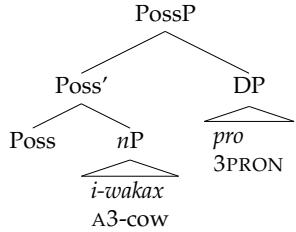
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<sup>13</sup>As discussed in Coon and Henderson (2010), the possessor in (197b) could be a minimal pronoun in the sense of Kratzer (2009), whose features are valued by a nominal which c-commands it.

- (197) a. Banned in VOS object position



- b. Allowed in VOS object position



Numerals can appear in VOS object position, as shown in (198a). The example in (198b) demonstrates that numerals can also occur in VSO object position.

- (198) a. *Ta' i-k'ux-u* [O *cha'-k'ej waj*] [S *aj-Rosa*].  
 PFV A3-eat-TV two-CLF tortilla NC-Rosa  
 'Rosa ate two tortillas.'
- b. *Ta' i-k'ux-u* [S *aj-Rosa*] [O *cha'-k'ej waj*].  
 PFV A3-eat-TV NC-Rosa two-CLF tortilla  
 'Rosa ate two tortillas.'

Numerals and constituent order will prove to be an important diagnostic for the proposal that movement of the object blocks subextraction. As I will show below, the numeral may extract from (198a) but not (198b).

#### 4.3.4 Summary of object restrictions

A summary of object restrictions and constituent order is given in Table 4.2; a summary of the ordering of objects and adjuncts is given in Table 4.3.

Table 4.2: Summary of object restrictions and word order

|                             | VOS | VSO |
|-----------------------------|-----|-----|
| Bare object                 | ✓   | *   |
| Object with determiner      | *   | ✓   |
| Object with overt possessor | *   | ✓   |
| Object with numeral         | ✓   | ✓   |

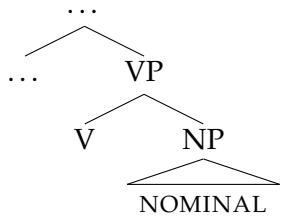
Table 4.3: Summary of object restrictions and adjunct placement

|                             | V-XP-(S)-O |
|-----------------------------|------------|
| Bare object                 | *          |
| Object with determiner      | ✓          |
| Object with overt possessor | ✓          |
| Object with numeral         | ✓          |

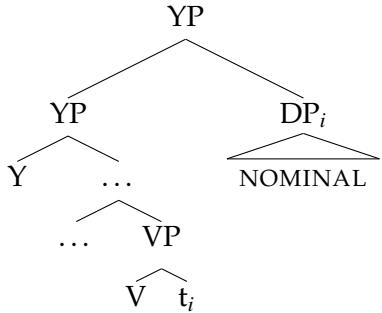
In Tables 4.2 and 4.3, we see that bare objects must appear next to the verb in VOS position with nothing intervening. Objects with determiners appear in VSO position, and can have intervening material. This pattern holds for objects with possessors and numerals. As detailed in Section 4.3.2, objects modified by numerals are special in that they provide evidence for interpretational differences of objects in V-XP(-S)-O and V-O-XP(-S) position. When adjacent to the verb, an object modified by a numeral can receive an existential indefinite interpretation; an adjunct which intervenes between the verb and object with the numeral modifier indicates that the object has moved. In this case the object takes wide scope.

I argue that in the contexts where objects appear in VSO object position, the object has moved out of the VP. Thus, when the object remains in its position as the complement to the verb in (199a) subextraction is possible. When it has undergone movement outside the VP, as in (199b), subextraction from it is not longer possible.

- (199) a. Subextraction from nominal is possible



- b. Subextraction from nominal is not possible



## 4.4 Capturing the subextraction facts

### 4.4.1 Proposal

I argue that object shift, discussed in Section 4.3, freezes the object, creating an island. Elements within that object are subsequently prohibited from extracting out. This follows from the Freezing Principle in (200), which bans moving something out of an already moved element (i.e. Ross (1974); Wexler and Culicover (1977); see also discussion in Corver (2006)).

- (200) The Freezing Principle (Wexler and Culicover, 1977, 17)  
Moved constituents are islands to extraction.

While the Freezing Principle in (200) may be too strong<sup>14</sup>—indeed, not all moved constituents are islands for extraction (see e.g., Konietzko et al. (2018))—object shift has been shown to create islands in a number of languages, including English (Chomsky, 1973; Lasnik, 2001), German

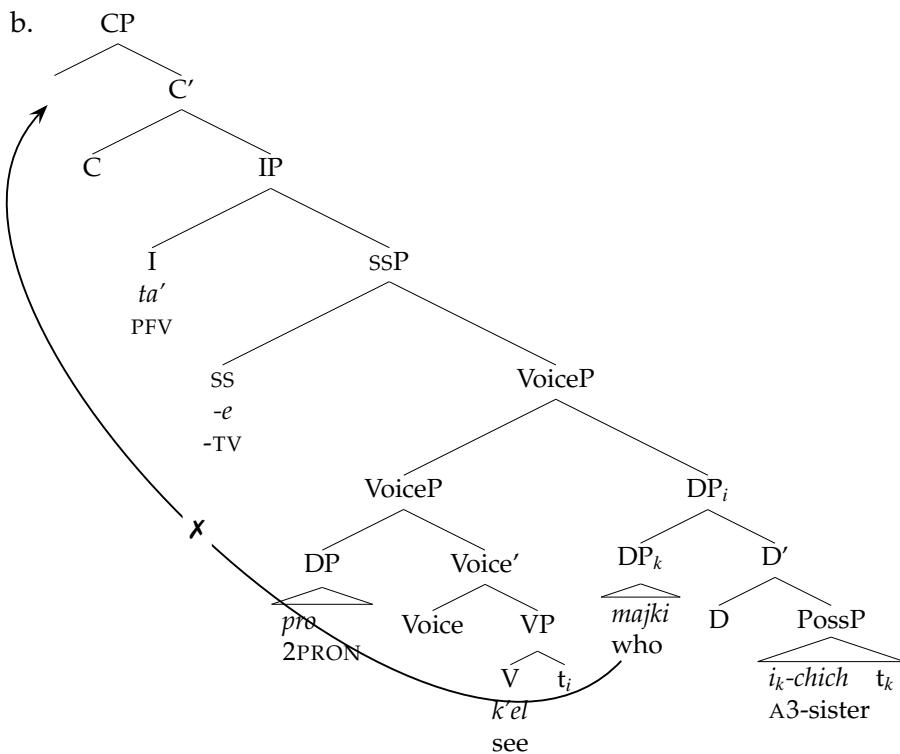
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<sup>14</sup>See also discussion on the Revised Extraction Constraint from Diesing (1992, 128).

(Diesing, 1992), and Ukrainian (Mykhaylyk, 2010). Here I argue that Ch'ol, too, bans extraction from shifted objects.

Recall that nominals with overt possessors are banned from VOS object position. As with non-interrogative possessors, interrogative possessors also trigger object shift before the interrogative phrase fronts to the preverbal position. It then follows that for interrogative possessors in object position, the object first moves, creating an island as per the principle in (200). This accounts for the ungrammaticality of interrogative possessor extraction from object position in (201a).

- (201) a. \* *Majki; ta' a-k'el-e [ i-chich t<sub>i</sub> ] ?*  
**who PFV A2-see-TV A3-sister**  
       Intended: 'Whose sister did you see?'



Given the principle in (200), extraction *from*, not extraction *of*, the shifted object is banned. As noted above, the interrogative possessor can pied-pipe the possessee as in (202), which is predicted on this analysis. As Coon (2010b, 368) notes, the entire object constituent may extract from its moved position, and indeed there is no ban on the movement of object constituents in Ch'ol.

- (202) [ *Majki i-chich*  ]<sub>i</sub> *ta' a-k'el-e t<sub>i</sub> ?*  
**who A3-sister PFV A2-see-TV**  
       'Whose sister did you see?'

#### 4.4.2 Numerals may not extract from moved constituents

Further support for the current proposal comes from shifted objects with numeral modifiers. Assuming that VOS is derived from VSO via object shift (I motivate this further in Chapter 5), the extractability facts from VOS versus VSO objects can be captured. While objects with overt possessors *always* shift, numerals may appear in VOS or VSO object position. It is therefore possible to test whether extraction of the numeral is grammatical when the object shifts. Extraction of a numeral from the object position is only possible in VOS word order, as shown by (203a). Extraction of a numeral from a shifted object, indicated by VSO word order, is ungrammatical, as in (203b).<sup>15</sup>

- (203) a. *Cha'-kojty<sub>i</sub> ta' i-k'el-e [ t<sub>i</sub> wakax ] aj-Rosa.*  
 two-CLF PFV A3-see-TV cow NC-Rosa  
 'Rosa saw two cows.'  
 b. \* *Cha'-kojty ta' i-k'el-e aj-Rosa [ t<sub>i</sub> wakax ].*  
 two-CLF PFV A3-see-TV NC-Rosa cow  
 Intended: 'Rosa saw two cows.'

---

<sup>15</sup> Adjectival extraction may constitute further evidence that extraction from the object is only possible from VOS objects in (1a), not VSO, as in (1b).

- (1) Context: Which car did Rosa buy?
- a. *Säsäk<sub>i</sub> ta' i-mäñ-ä [ t<sub>i</sub> karu ] aj-Rosa.*  
 white PFV A3-buy-TV car NC-Rosa  
 'Rosa bought the *white* car.' Unshifted absolutive object
- b. \* *Säsäk<sub>i</sub> ta' i-mäñ-ä aj-Rosa [ t<sub>i</sub> karu ].*  
 white PFV A3-buyTV NC-Rosa car  
 Intended: 'Rosa bought the *white* car.' Shifted absolutive object

However, further investigation is needed to determine if the adjectives in (1) are true instances of subextraction. Adjectives may not, however, extract from absolute subjects or ergative subjects (recall that numerals can extract from absolute subjects). When adjectives appear discontinuous from nouns in these positions, they are interpreted as secondary predicates or depictives, as shown in (2).

- (2) a. \* *Pek' ta' i-k'el-e-yoñ wiñik.*  
 short PFV A3-see-TV-B1 man  
 Intended: 'The short man saw me.' Ergative subject  
 OK if means 'The man saw me as short.'
- b. \* *Säsäk ta' wejl-i maj x-ch'e'.*  
 white PFV fly-IV DIR NC-bird  
 Intended: 'The white bird flew away.' Absolutive subject  
 Speaker comment: A translation of this would be 'the bird flew away white', however, speakers comment that this does not make sense.

See Vázquez Álvarez (2010) and Martínez Cruz (2007) for further discussion on secondary predication, depictives, and adjectives in Ch'ol. I note this as an issue for future research.

While it is impossible to test whether unshifted objects with overt possessors allow extraction of an interrogative possessor, as they always shift, data from shifted objects with numerals can provide support for the bleeding effects of object shift.

#### 4.4.3 Moved absolute subjects block subextraction

Absolute subjects in Ch'ol originate as complements to the verb. Unlike objects, absolute subjects with overt possessors do not always move (see also Coon (2010b, 362)). Nevertheless, if they do move, indicated by the placement of adjuncts, extraction from the subject is ungrammatical. In (204), the subject has an overt possessor, and the PP adjunct may appear between the verb and subject, or after the verb and subject.

- (204) *Ta' yajl-i (✓ tyi potreru ) i-wakax aj-Rosa (✓ tyi potreru ).*  
 PFV fall-IV PREP field A3-cow NC-Rosa PREP field  
 'Rosa's cow fell in the field.'

In (205), an interrogative possessor may extract when the subject remains next to the verb, as in (205a). However, when the subject has moved, indicated by the placement of the intervening PP in (205b), interrogative possessor extraction is blocked.<sup>16</sup>

- (205) a. *Majki<sub>i</sub> ta' yajl-i [ i-wakax t<sub>i</sub> ] tyi potreru?*  
 who PFV fall-IV A3-cow PREP field  
 'Whose cow fell in the field?'  
 b. \* *Majki<sub>i</sub> ta' yajl-i tyi potreru [ i-wakax t<sub>i</sub> ] ?*  
 who PFV fall-IV PREP field A3-cow  
 Intended: 'Whose cow fell in the field?'

---

<sup>16</sup>Speakers have similar judgements for (204) and (205) if the PP is replaced with the temporal adverb *ak'bi*, as in (1) and (2). Extraction is degraded in (2) when the subject has moved.

- (1) *Ta' yajl-i (✓ ak'bi ) i-wakax aj-Rosa (✓ ak'bi ).*  
 PFV fall-IV yesterday A3-cow NC-Rosa yesterday  
 'Rosa's cow fell yesterday.'  
 (2) *Majki<sub>i</sub> ta' yajl-i (?? ak'bi ) [ t<sub>i</sub> i-wakax ] (✓ ak'bi ) ?*  
 who PFV fall-IV yesterday A3-cow yesterday  
 'Whose cow fell in the field?'

#### 4.4.4 Shifted ditransitive objects block subextraction

Recall that extraction of interrogative possessors is ungrammatical from objects of ditransitive verbs, but the extraction of numerals is grammatical for direct objects of ditransitive verbs. The argument for ditransitive objects proceeds in a similar fashion: when the object shifts, extraction is blocked. I again use adjunct placement as a diagnostic for object shift. While interrogative words must always front to the preverbal position, it is possible to test object shift with objects that have overt non-interrogative possessors. Data from direct objects with noninterrogative possessors reveal that they, too, undergo object shift, as in (206). In (206), the adverb *ak'bi* 'yesterday' comes between the verb and direct object *ikaru ajRosa* 'Rosa's car', indicating that the direct object has shifted. Following the line of argument laid out here, it is correctly predicted that extraction of interrogative possessors from objects of ditransitive verbs is ungrammatical: overt possessors trigger object shift with ditransitive objects as well, bleeding extraction from object position, as shown by (207).

- (206) *Ta' k-choñ-be-yety ak'bi [ i-karu aj-Rosa ].*  
PFV A1-sell-APPL-B2 yesterday A3-car NC-Rosa

'I sold you Rosa's car yesterday.'

- (207) \* *Majki; ta' k-choñ-be-yety ak'bi [ i-karu t<sub>i</sub> ]?*  
who PFV A1-sell-APPL-B2 yesterday A3-car t

Intended: 'Whose car did I sell you yesterday?'

Numerals provide further evidence that object shift bleeds extraction: when an object with a numeral has shifted, the numeral cannot extract out. When an adverb intervenes between a ditransitive object and verb in (208a), extraction of the numeral is blocked. When the verb and object are adjacent, however, extraction may proceed as expected in (208b).

- (208) a. \* *Cha'-kojty ta' k-choñ-be-yety ak'bi [ t<sub>i</sub> karu ].*  
two-CLF<sub>i</sub> PFV A1-sell-APPL-B2 yesterday car

Intended: 'I sold you two cars yesterday.'

Shifted DO

- b. *Cha'-kojty ta' k-choñ-be-yety [ t<sub>i</sub> karu ] ak'bi.*  
two-CLF<sub>i</sub> PFV A1-sell-APPL-B2 car yesterday.

'I sold you two cars yesterday.'

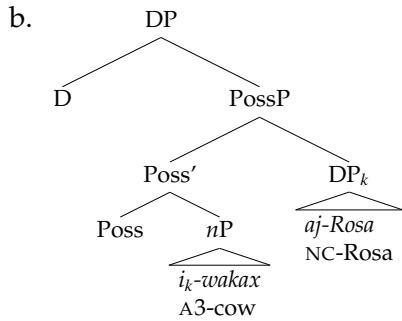
Unshifted DO

#### 4.4.5 Banning demonstrative and non-interrogative possessor extraction

Demonstratives and non-interrogative possessors may never extract from any position. I suggest that demonstratives project in Ch'ol<sup>17</sup> and that there is a ban on the A-bar extraction of the demonstrative head (see discussion on movement in, e.g., Travis (1984)).<sup>18</sup> Numerals, adjectives, and interrogative possessors, on the other hand, form their own constituents, and therefore have the possibility of extracting out.

To rule out possessor extraction, I propose that this is due to the inability of (non-interrogative) possessors to move to the edge of DP. Under a phase-based theory of movement (Chomsky, 2000, 2001, 2008), in order to extract out of a phase, constituents must move to the edge of that phase. Adopting the proposal that DPs are phases (Adger, 2003; Svenonius, 2004; Chomsky, 2008; Despić, 2015), a possessor must be able to reach the edge of the DP phase to extract out. To illustrate, I repeat the syntactic structure of possessives in (209).

- (209) a. *i-wakax aj-Rosa*  
A3-cow NC-Rosa  
'Rosa's cow'



Interrogative possessors always appear before their possessees, as in (210a). This involves additional movement of the interrogative possessor to Spec,DP, as shown in (210b). As the inter-

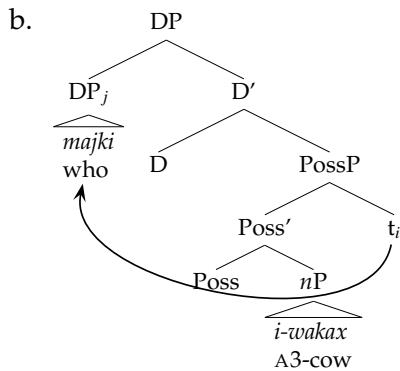
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<sup>17</sup>See, e.g., Nicolae (2015) for an analysis of weak demonstratives in Romanian as heads.

<sup>18</sup>The determiner *jiñ(i)* may appear discontinuous to the noun (Vázquez Álvarez, 2011, 337), but as discussed by Vázquez Álvarez (2011) and Little and Wiegand (2018), it also acts as a focus marker. In Ch'ol and many Mayan languages, the preverbal position is the focus position. For the present paper, I follow Vázquez Álvarez (2011) and Little and Wiegand (2018) in assuming that *jiñ(i)*, when discontinuous from nouns, is the spell out of focus features in the preverbal focus position, rather than an extracted constituent.

rogative possessor is at the edge of the DP phase, it has the possibility to subextract.

- (210) a. *majki<sub>i</sub> i-wakax t<sub>i</sub>?*  
           who A3-cow  
           'whose cow?'



I posit that while *wh*-features obligatorily trigger movement in (210), other features, such as focus, do not. It may be expected that if a possessor fronts within the DP, it gives rise to a focus interpretation, paralleling focus movement in the clausal domain. However, as shown by (211), even when prosodically stressed, a non-interrogative possessor may never occur before its possessee. In Ch'ol, the possessor in (211) is unable to move to the edge of the DP phase, evidenced by its inability to appear prenominally. As it cannot move to the edge of the DP, it cannot subextract.

- (211) \* *aj-Rosa<sub>i</sub> i-wakax t<sub>i</sub>*  
       NC-Rosa A3-cow  
       Intended: 'Rosa's cow'

Interrogative possessors, on the other hand, do move to the edge of DP, driven by *wh*-features, as in (209), and therefore have the ability to extract out. The differences in *wh*- and focus-driven movement within the nominal domain have parallels in the verbal domain. While *wh*-features always trigger movement within the verbal and nominal domains, focus features do not: in situ focus seems possible in Ch'ol (Clemens et al., 2017).

## 4.4.6 Summary

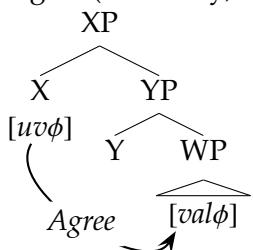
Taking VSO word order and the distribution of adjuncts as indications of object shift, we see that the subextraction asymmetries follow naturally from the restrictions on VOS objects. When objects shift, they become frozen. For objects with overt interrogative possessors, object shift always occurs, which means that extraction from the object is always blocked. For objects with numerals, extraction of the numeral is only blocked if the object has moved. Under my account, demonstratives may not extract from any position due to a ban on the A-bar movement of heads. Possessors may not subextract, as they cannot move to the edge of the DP to do so. Next, I turn to licensing subextraction and why subextraction from specifiers is ungrammatical or strongly dispreferred.

## 4.5 Licensing subextraction

### 4.5.1 Agree and unlocking

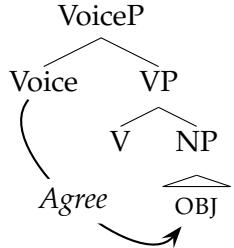
In this section, I propose a way to capture the subextraction freezing effects under Agree-based approaches to extraction. Under Agree-based analyses of extraction, Agree, in the sense of Chomsky (2000, 2001), unlocks nominals for extraction (i.e., Rackowski and Richards (2005); Van Urk and Richards (2015); Branan (2018)). Agreement morphemes in this context are taken to be the result of an Agree relation between a probe with unvalued  $\phi$  features and a goal (an NP or DP) with valued  $\phi$  features. This is modeled in (212). The probe on X in (212) searches in its domain and finds a nominal (WP) with valued  $\phi$  features. An agreement morpheme is then spelled out on X.

- (212) Agree (Chomsky, 2000, 2001)



Rackowski and Richards (2005) implement an Agree-based theory for extraction in that Agree in (212) unlocks nominals, making extraction possible. In Ch'ol, Agree takes place between a probe on Voice and the object in the complement of V, modeled in (213).

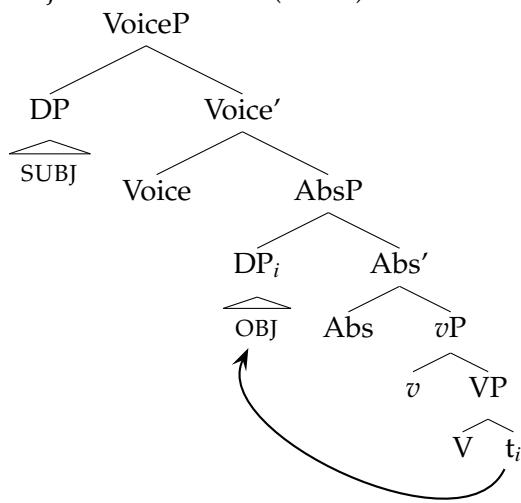
- (213) Voice licenses and Agrees with the complement of V



Recall that Voice licenses and Agrees with the object (see Chapter 2, Section 2.3.2). This licensing allows the nominal to be unlocked and therefore elements may extract from it.

In Little (2020), I proposed that once the object moves out of the domain of the head that Agrees and licenses it, it is frozen. In the word order analysis adopted in Little (2020), the object shifts from *vP* to a position between the subject and *vP*, in a projection labeled as *Abs(olutive)P*. This is schematized in (214).

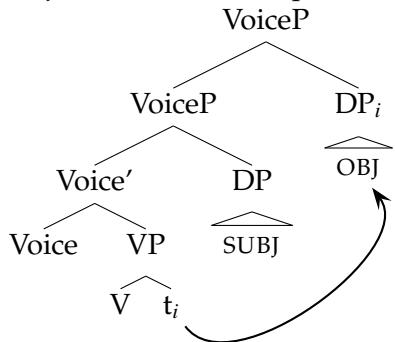
- (214) Object shift in Coon (2010b) and the analysis adopted in Little (2020)



Under the analysis adopted in Little (2020), *v* in (214) Agrees and licenses the object. By Agreeing with the object, it is unlocked for extraction. Once the object moves out of the *vP*, and consequently outside the domain that licenses it, it is no longer unlocked for extraction.

The object shift analysis adopted in this dissertation and further elaborated on in Chapter 5 posits that objects shift to a position above the subject in VoiceP. However, the object is in the same domain of Voice, the head that Agrees and licenses the object, schematized in (215).

(215) Object movement adopted in this dissertation:



The idea from Little (2020)—that objects outside of the domain of their licensors are no longer unlocked for subextraction—can still be maintained by adopting the feature inheritance analysis from Richards (2007)/Chomsky (2008). Features on a phase head, such as transitive *v* or Voice, are inherited by a nonphase head such as *V*. *Voice*, under the proposal adopted here, is the locus of a probe with uninterpretable features. The Agree probe belongs to *Voice*, but is ultimately valued on *V* as these features are then inherited by *V*, as discussed in Richards (2007, 567). Therefore, if the object in (215) has moved outside *V*, it is no longer unlocked for extraction. This also connects to the ban on extraction from specifiers. The object in (215) is in the specifier of VoiceP after movement and, as seen above, subextraction from specifiers is banned or dispreferred.<sup>19</sup>

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<sup>19</sup>This raises some questions regarding extraction from intransitive subjects in nonperfective aspects, which are analyzed as structural possessors, in the specifier of PossP. These possessors control a covert internal argument to the intransitive verb, schematized in (1).

- (1) *Woli* [DP *i*- [ *yajl-el* PRO<sub>*i*</sub> ] ].  
 PROG A3- fall-NML  
 'He is falling.' Lit. 'His falling is happening.'

Subextraction is possible from the subject of (1), as noted in footnote 3 of this chapter. It is possible that the control structure in (1) licenses subextraction from the subject-possessor, but this should be further explored.

#### 4.5.2 Banning subextraction from specifiers

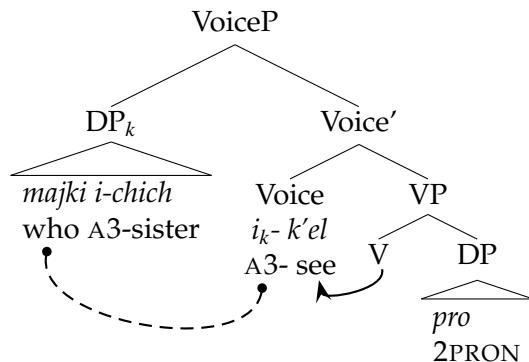
<sup>20</sup> Extraction from an ergative argument or indirect object is mostly banned, as indicated in (216).

- (216) ??/\* *Majki<sub>i</sub> ta' i-k'el-e-yety [ i-chich t<sub>i</sub> ] ?*  
**who PFV A3-see-TV-B2 A3-sister**  
 'Whose sister saw you?'

Unlike absolute subjects and objects, both ergative subjects and indirect objects are introduced in a specifier position: ergative subjects in Spec,VoiceP and indirect objects in Spec,ApplP. Under the current proposal, ergative subjects are not *prima facie* islands for extraction, given the Freezing Principle in (200). In fact, there is no evidence that subjects of transitive verbs move from their base position in Spec,VoiceP (Coon, 2010b, 2013, 2017; Clemens and Coon, 2018). Nevertheless, variation in judgements is unsurprising, given crosslinguistic facts on the variability of extraction out of transitive subjects (i.e. Chomsky (2008); Polinsky et al. (2013), *inter alia*).

Recall that set A agreement is the result of a specifier-head configuration, what Legate (2014) terms ‘inherent agreement’, as described in Chapter 2, Section 2.3.2, schematized in (217). The configuration in (217) triggers set A agreement markers on the verb.

- (217)



<sup>20</sup>The variability in judgement may connect to processing factors. The subject is possessed, so the logical parse of *majki* 'who' is as the possessor. Similarly, in (1), the numeral appears with the classifier for animals, making it easier to associate with subject 'cat'.

- (1) % *Cha'-kojty<sub>i</sub> ta' i-k'ux-u-yoñ [ t<sub>i</sub> mis ].*  
**two-CLF**      **PFV A3-eat-TV-B1**      **cat**  
                 'Two cats bit me.'

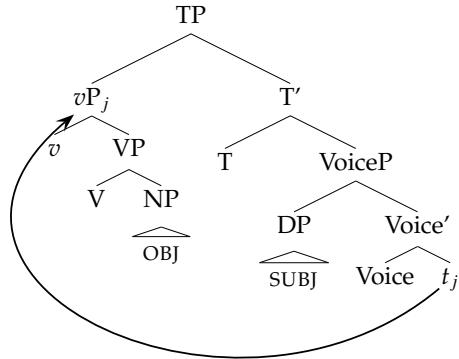
### Ergative subject

If Agree between a probe and a goal only happens with internal arguments, only internal arguments may be unlocked so that elements may extract out of them (see also discussion in Branan (2018)). Agreement derived via the configuration in (217) does not permit the unlocking of that argument, so elements may not extract from nominals in specifier positions, such as the subject in (217). Therefore, under this proposal, arguments in specifiers cannot be unlocked for subextraction because they have not been Agreed with, in the sense of (213) above.

## 4.6 Implications for theories of word order

As I will discuss in Chapter 5, the data here have implications for the syntax of verb-initial languages. Firstly, VSO word order must be derived in part via object shift since object shift, I argue, is crucial in capturing the subextraction asymmetries. Secondly, a challenge arises for theories that posit phrasal-fronting of a constituent containing the verb and object to a higher position in the clause. A phrasal-fronting account is modeled in (218).

- (218) A phrasal-fronting account of VOS (Coon, 2010b)



Recall that extraction out of VOS objects *is* possible, as in the example below with the numeral in (219).

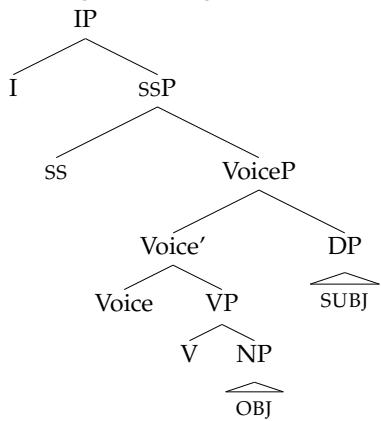
- (219) *Cha'-kojty<sub>i</sub> ta' i-k'el-e [ t<sub>i</sub> wakax ] aj-Rosa.*  
 two-CLF PFV A3-see-TV cow NC-Rosa  
 'Rosa saw two cows.'

As pointed out by Chung (2005), a moved constituent should constitute an island, given the Freezing Principle. Thus, the *vP* in (218) is predicted to be an island for extraction. A question

arises as to the structure of (219). If the object *cha'kojty wakax* 'two cows' is in the fronted vP, how is the numeral able to extract from it?

A simpler solution, which I motivate in the next chapter, is modeled in (220). By base-generating VOS word order, objects in their VOS position are not within moved constituents, and extraction from them is possible.

(220) Base-generating VOS



## 4.7 Conclusion

In this chapter, I argued that movement-derived islands capture asymmetries exhibited in what is available for subextraction. Specifically, overt possessors always trigger object shift, which is why they may never extract from object position. Numerals, on the other hand, do not obligatorily trigger object shift and may extract from *unmoved* objects, but not from moved ones. This follows from the Freezing Principle (Ross, 1974; Wexler and Culicover, 1977), or a ban on extracting from a moved constituent. I developed a way to model freezing effects under an Agree-based approach to extraction.

The Freezing Principle raises some challenges for phrasal-fronting proposals of VOS word order. For phrasal-fronting accounts, to derive VOS, a phrase containing the verb and object fronts to a position higher than the subject. I showed data where extraction from VOS objects is possible.

If the object is inside a moved constituent, how does extraction proceed from the object? In the next chapter, I favor a base-generated account, in part because the subextraction facts can be captured in a more straightforward way.

Finally, while this dissertation focuses on the Tumbalá dialect of Ch'ol, some interesting differences have been documented with the mutually intelligible Tila dialect of Ch'ol. The Tila dialect of Ch'ol is less permissive in what may extract. For instance, the Tila speakers I consulted find extraction of the numeral in (221) degraded.

- (221) ?/% *Cha'-kojty tyi yajl-i* [ *t<sub>i</sub> wakax* ].  
two-CL PFV fall-IV cow

'Two cows fell.'

Tila Ch'ol

Tila Ch'ol has been reported to have an additional definite determiner *li*, which Tumbalá speakers do not use (Vázquez Álvarez, 2011; Vázquez Martínez and Little, 2020). This has implications for the left branch extraction implication in (222).<sup>21</sup>

- (222) *Left Branch Extraction Implication:*

If a language permits left branch extraction, it lacks articles. (Uriagereka, 1988; Corver, 1992; Bošković, 2005)

I suggest that Tila Ch'ol speakers are less likely to find (221) acceptable because the determiner *li* is a grammaticalized definite article. This provides an additional data point for the implicational relationship in (222). Tumbalá Ch'ol allows bare nouns to be definite, as per Chapter 3, but Tila Ch'ol appears to mark definiteness overtly. Nevertheless, more investigation is needed on the differences with respect to left branch extraction and definiteness in each dialect to ascertain its connection with the implication in (222).

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<sup>21</sup>The implication in (222) is formulated as a one-way implication: it does not mean that all languages without articles allow left branch extraction.

## CHAPTER 5

### A BASE-GENERATED ACCOUNT OF VERB-INITIAL SYNTAX

#### 5.1 Introduction

The conclusions from Chapters 3 and 4 are the following: (i) (in)definiteness is reflected structurally; and (ii) the islandhood of nominals provides evidence for whether they are contained in a moved constituent. While these results are not unique to Ch'ol, they point to a particular analysis of verb-initial word order, developed further in this chapter. In Ch'ol, I argue that verb-initial word order is base-generated with subjects linearized to the right. This captures the observed empirical patterns while also having implications for the derivation of word order in other Mayan languages. I additionally claim that verb-initial languages do not form one syntactic class. The diagnostics in this dissertation can thus provide insight into further investigation on how constituents are linearized in a given language.

Mayan languages are generally analyzed as being verb-initial (Norman and Campbell, 1978; England, 1991; Aissen, 1992; Clemens and Coon, 2018). They fall into three main categories: VOS word order, fixed VSO word order and VOS/VSO alternating. Ch'ol is in the last category as it is VOS/VSO alternating (Coon, 2010b; Vázquez Álvarez, 2011). Certain syntactic properties of the object govern whether the object surfaces in VOS or VSO object position. Specifically, if the object has material in or above D, it is prohibited from appearing in VOS object position (Coon, 2010b). I refer to nominals without anything in or above D descriptively as NPs, shown in (223a). If there is material in D, such as the determiner *jiñi* in (223b), the object appears in VSO object position. I refer to nominals with material in or above D descriptively as DPs.

- (223) a. VOS objects = NPs

[v *Ta' i-k'ux-u*] [o *waj*] [s *aj-Rosa*].  
PFV A3-eat-TV tortilla NC-Rosa  
'Rosa ate a tortilla.'

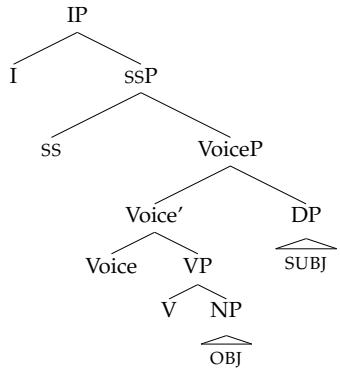
- b. VSO objects = DPs

[v *Ta' i-k'ux-u*] [s *aj-Rosa*] [o *jini waj*].  
PFV A3-eat-TV NC-Rosa DET tortilla  
'Rosa ate the tortilla.'

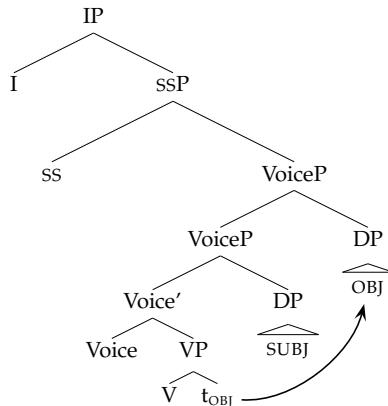
In this chapter, I favor a base-generated account for VOS syntax and argue that the data from the previous two chapters can be more simply captured under this analysis. The proposal advocated for is given in (224), where VOS word order in (223a) is the underlying order with the subject in a right specifier. VSO word order in (223b) is derived via movement of the object to a position above the subject.

- (224) A base-generation account of verb-initial syntax

a. VOS



b. VSO



The structures in (224) are updates of the analyses originally proposed by England (1991) and modeled in Aissen (1992).

This chapter makes a claim on the relationship between VOS and VSO word orders. Under the analysis motivated here, VOS is the underlying word order from which VSO is derived. VSO is derived via movement of the object to a higher position above the subject, capturing links between object movement, properties of VSO objects, and word order.

To motivate the approach in (224), I compare two previous word order analyses: a

predicate-fronting analysis from Coon (2010b), which has its roots in other phrasal-fronting accounts (e.g., Kayne 1994; Massam 2000; Aldridge 2002), and a head movement account from Clemens and Coon (2018) (which has also been developed in other verb-initial languages, e.g., Sproat (1985); McCloskey (1991); Ouhalla (1994)). While certain modifications could be made to these analyses, I argue that the analysis in (224) can account for word order and other syntactic and semantic properties found in Ch'ol in a more parsimonious way.

I begin by presenting core data on NP and DP objects in Ch'ol (Section 5.2). I then present two recent analyses for the word order contrast in (223). That is, I provide background on Coon's (2010b) predicate-fronting analysis and Clemens and Coon's (2018) head movement account (Section 5.3). In Section 5.4, I present additional data, including data from Chapters 3 and 4, and consider how these two analyses may be modified to account for these data. In Section 5.5, I motivate the analysis previewed in (224), which can account for the word order differences in (223) as well as the additional data from Chapters 4 and 5. I argue that the analysis in Section 5.5 can be extended to ditransitives. Section 5.6 presents a way to formalize rights specifiers through linearization rules based on a suggestion in Otaki et al. (2019). In Section 5.7, I discuss implications for the structure of Mayan languages with fixed VSO word order as well as syntactic ergativity in VSO Mayan languages. Section 5.8 provides some remarks on future areas of investigation within the nominal domain across Mayan languages. Section 5.9 summarizes and concludes the chapter.

## 5.2 Core data and base generating the VOS/VSO distinction

Norman and Campbell (1978) and England (1991) analyze Proto-Mayan basic word order as VOS, but VSO when the object is marked for definiteness or higher on the animacy hierarchy. Factors influencing postverbal arguments include phonological weight, specificity, definiteness, and animacy (though see Clemens and Coon (2018) for more nuances, such as animacy being a processing effect). I review these factors influencing word order for Ch'ol, with a focus on overt markers of definiteness. At the end of this section, I discuss earlier syntactic work that base-generates VOS word order (i.e., England 1991; Aissen 1992).

### 5.2.1 VOS objects = NPs

As noted by England (1991) for Mayan languages in general and Coon (2010b) for Ch'ol, two postverbal arguments are not very common in spontaneous speech<sup>1</sup>, but they do occur, as in the VOS examples taken from transcribed narratives in (225). In (225a) the VOS object is bare; in (225b) the object appears with a possessive prefix, which is co-indexed with the subject.

- (225) a. *Ta'=bi i-jok'-o-yob* [O *ixim*] [S *a wiñik-ob*].  
PFV=REP A3-take-TV-PL corn PRT man-PL  
'The men dug into the corn.' Xi'ba.86
- b. *Wo i-kuch-ob tye* [O *i-we'el*] [S *a Xi'ba*].  
PROG A1-carry-PL DIR:come A3-meat PRT demon  
'The *xi'bas* were carrying their meat.' Xi'ba.13

Modifiers and numerals may also appear in VOS object position, as shown by (226).

- (226) a. *Ta' i-mäñ-ä* [O *chächäk karu*] [S *aj-Rosa*].  
PFV A3-buy-TV red car NC-Rosa  
'Rosa bought a red car.'
- b. *Ta' i-choñ-o* [O *cha'-kojty wakax*] [S *aj-Rosa*].  
PFV A3-buy-TV two-CLF cows NC-Rosa  
'Rosa sold two cows.'

VSO word order with NP objects is not possible, as in (227a), cf. (227b).

- (227) a. \* [V *Ta' i-k'ux-u*] [S *aj-Rosa*] [O *waj tortilla*].  
PFV A3-eat-TV NC-Rosa tortilla  
Intended: 'Rosa ate a tortilla.'
- b. [V *Ta' i-k'ux-u*] [O *waj tortilla*] [S *aj-Rosa*].  
PFV A3-eat-TV tortilla NC-Rosa  
'Rosa ate a tortilla.'

### 5.2.2 VSO objects = DPs

Objects with determiners are banned from appearing in VOS object position, and instead surface in VSO object position in (228a). I refer to these objects descriptively as DP objects.

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<sup>1</sup>See also Brody (1984) for some discussion surrounding conceptual problems with the notion of basic word order.

- (228) a. [v *Ta' i-k'ux-u*] [s *aj-Rosa*] [o *jiñi waj*].  
PFV A3-eat-TV NC-Rosa DET tortilla  
‘Rosa ate the tortilla.’
- b. \* [v *Ta' i-k'ux-u*] [o *jiñi waj*] [s *aj-Rosa*].  
PFV A3-eat-TV DET tortilla NC-Rosa  
Intended: ‘Rosa ate the tortilla.’

Proper names are also banned from appearing in VOS object position (229).

- (229) \* *Ta' i-mek'-e* [o *x-Wañ*] [s *jiñi aläl*].  
PFV A3-see-TV NC-Juan DET boy  
Intended: ‘The child hugged Juan.’<sup>2</sup>

As also demonstrated in Chapter 4, overt possessors are not possible in VOS object position, as in (230). They must appear in VSO object position (230b), patterning like the DPs above.

- (230) a. \* *Ta' i-k'ux-u* [o *i-waj* *x-Wañ*] [s *aj-Maria*].  
PFV A3-eat-TV A3-tortilla NC-Juan NC-Maria  
Intended: ‘Maria ate Juan’s tortilla.’
- b. *Ta' i-k'ux-u* [s *aj-Maria*] [o *i-waj* *x-Wañ*].  
PFV A3-eat-TV NC-Maria A3-tortilla NC-Juan  
‘Maria ate Juan’s tortilla.’

### 5.2.3 Other factors influencing word order

As noted by Norman and Campbell (1978), England (1991), Aissen (1992), and Vázquez Álvarez (2011), other factors that influence the order of postverbal arguments are animacy and phonological weight. For instance, Vázquez Álvarez (2011) notes that in (231) for Ch’ol, postverbal arguments higher on the animacy hierarchy are more likely to be interpreted as subjects. This accounts for the strangeness of (231). A woman is higher in animacy than a snake, but is in object position, so the sentence in (231) sounds as if the woman bit the snake.

- (231) \* *Tyi i-k'ux-u* [o *x-ixik*] [s *lukum*].  
PFV A3-bite-TV NC-woman snake  
Intended: ‘The snake bit the woman.’ Tila Ch’ol (Vázquez Álvarez, 2011, 22)

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<sup>2</sup>This sentence is grammatical with the meaning ‘Juan hugged the child.’

To express the intended meaning of (231), a focus construction is used where the subject is fronted to the preverbal focus position in (232).

- (232) [S *Jin̄ lukum*]<sub>i</sub> *tyi i-k'ux-u* [O *x-ixik*] *t<sub>i</sub>*.  
FOC snake PFV A3-bite-TV NC-woman

'The snake bit the woman.' Tila Ch'ol Vázquez Álvarez (2011, 22) with my bracketing

As noted by Clemens and Coon (2018, 247), phonological weight of the NP can influence word order, such as in (233) where the object is an NP in VSO object position but is also modified by the relative clause.

- (233) *Ta' i-mäñ-ä* [S *aj-Rosa*] [O *karu ta'=bä k-choñ-o* ].  
PFV A3-buy-TV NC-Rosa car PFV=REL A1-sell-TV  
'Rosa bought the car that I sold.'<sup>3</sup>

## 5.2.4 Word order restrictions to be captured

The word order restrictions that I will be focusing on are summarized in Table 5.1.

Table 5.1: Ch'ol object restrictions (Coon, 2010b, 363)

|    | VOS | VSO |
|----|-----|-----|
| NP | ✓   | *   |
| DP | *   | ✓   |

The restriction on VOS objects is also captured in (234).

- (234) Nominals with material in or above D<sup>0</sup> are banned from VOS object position in Ch'ol.  
(Coon, 2010b, 361)

The restriction in (234) is syntactic in nature, though see Chapter 3, Section 3.3.6 for more on the relationship between DPs and the dimension of definiteness they express. Demonstratives,

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<sup>3</sup>Some preliminary consultations with speakers suggest that the interpretation of the object must be definite. This relates to the fact that it has undergone movement, however, further investigation is needed to determine if it is related to its movement-derived position or properties related to relative clauses in Ch'ol.

overt possessors, determiners, and proper names are rejected in VOS object position. This is not necessarily a semantic restriction—bare nouns may receive definite interpretations in VOS object position, as demonstrated in Chapter 3. However, as presented in Chapters 3 and 4, the position of the object does have an effect on the available semantic interpretations. I will discuss this further in Section 5.4.

### 5.2.5 Base-generating verb-initial syntax in Mayan

Early analyses of Mayan word order include England (1991) and Aissen (1992), developed on the intuition that VOS is base-generated and VSO is derived from VOS by reordering the object to the right of the subject. England (1991) posits the base word order in (235). Topicalized and focus-marked constituents are preverbal.

- (235) TOPIC FOCUS [ V O S ] REORDERED O England (1991, 484)

Aissen (1992) posits the syntactic structures in (236) for Tsotsil, where subjects are in right specifiers. VOS word order is base generated in (236a) and VSO is derived by moving the object to a position above the subject in the specifier of XP as in (236b). The structures from Aissen (1992) are updated with current assumptions about phrase structure.<sup>4</sup>

<sup>4</sup>The original trees posited by Aissen (1992), under a Government and Binding framework (i.e., Chomsky (1981)), are given in (1), where the subject is in a right specifier, generated VP-internally.

- (1) a. VOS

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graph TD
 IP[IP] --- I[I]
 IP --- VP[VP]
 VP --- V[V']
 VP --- SUBJ[SUBJ]
 V --- V[]
 V --- OBJ[OBJ]

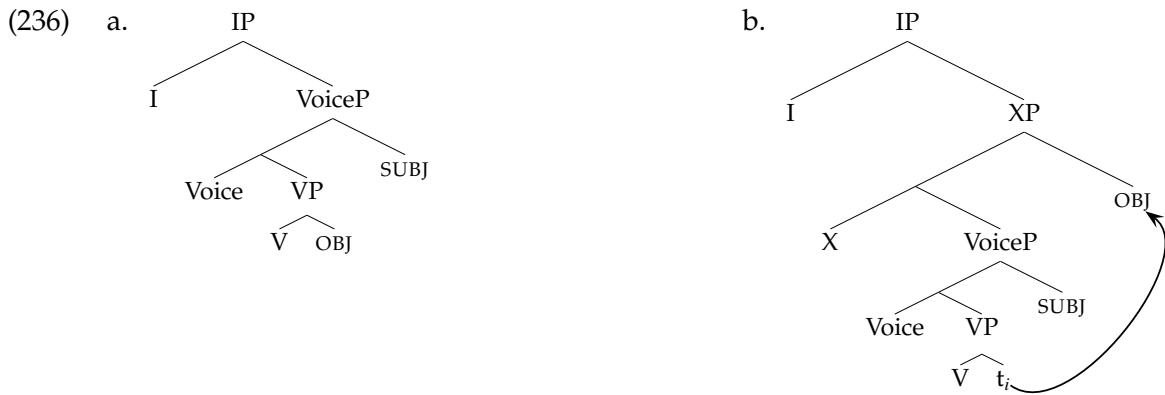
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b. VSO

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graph TD
 IP[IP] --- I[I]
 IP --- Xp[X'P]
 Xp --- X[X]
 Xp --- OBJ[OBJ]
 X --- VP[VP]
 VP --- V[V']
 VP --- SUBJ[SUBJ]
 V --- V[]
 V --- tOBJ[tOBJ]

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Aissen (1992) posits that specifiers of lexical categories are to the right (i.e., V, N and Adj) and functional specifiers are to the left. Subjects are therefore generated in right specifiers, but the specifiers of CPs and DPs are to the left. Left specifiers of CPs and DPs are the landing site for *wh*- or focus-marked constituents. Ultimately, I will support an analysis akin to (236), with updates to account for the ordering of morphemes. For now, I set aside a base-generated analysis and in the next section focus on a phrasal-fronting and a head movement account for verb-initial word order.

### 5.3 Phrasal-fronting and head movement accounts of VOS/VSO

Two recent accounts for VOS/VSO word order in Ch'ol include a predicate-fronting account (Coon, 2010b) and a head movement account from Clemens and Coon (2018). Both these analyses derive VOS by first base-generating SVO. I review how each account captures the word order restrictions from Section 5.2.4, repeated in Table 5.2.

Table 5.2: Ch'ol object restrictions (Coon, 2010b, 363) (repeated)

|    | VOS | VSO |
|----|-----|-----|
| NP | ✓   | *   |
| DP | *   | ✓   |

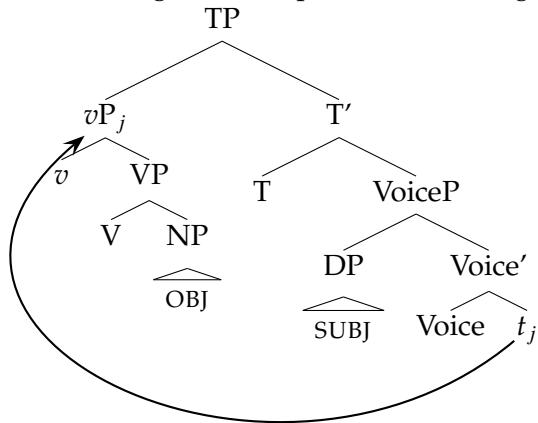
### 5.3.1 Coon's (2010b) predicate-fronting account

A phrasal-fronting syntax has been pursued in Austronesian languages (Aldridge, 2002; Chung, 2006; Massam, 2000), as well as Mayan (Coon, 2010b). Here I provide background on the analysis from Coon (2010b), who derives Ch'ol word order.

Coon (2010b) derives VOS word order by fronting the *vP* containing the verb and object to Spec,TP. Coon (2010b, 355) posits that strong agreement features on T require the verb to move overtly to T. This is modeled in (237). TP appears here, in order to remain faithful to the original work, however TP is what I label IP in this dissertation.

(237) Deriving VOS in a predicate-fronting account

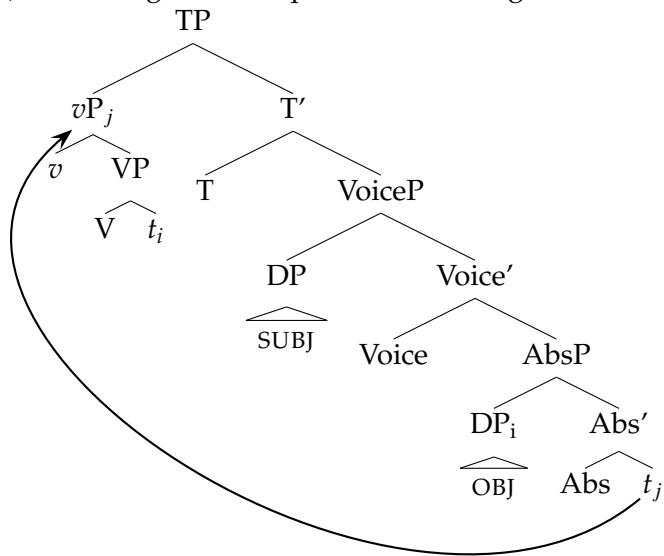
(Coon, 2010b)



To derive VSO word order with DP objects, the DP object first shifts out of the *vP* to a position Coon labels Abs(olutive)P, following Massam (2000); then the *vP* fronts to Spec,TP. Coon's VSO account is modeled in (238).

- (238) Deriving VSO in a predicate-fronting account

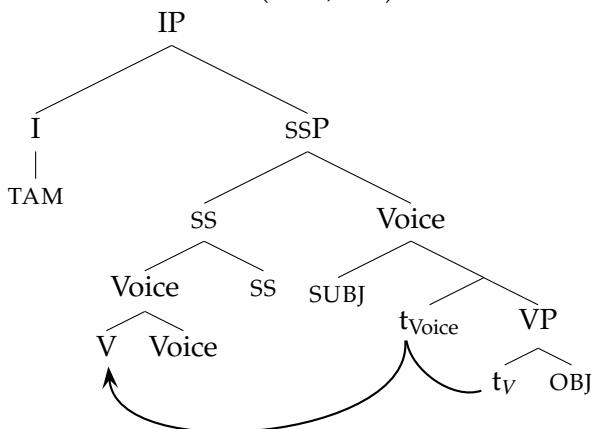
(Coon, 2010b)



### 5.3.2 Clemens and Coon's (2018) head movement account

Head movement accounts of verb-initial syntax have been pursued in a number of languages, i.e., Afro-Asiatic languages (Fassi Fehri, 1993; Ouhalla, 1994) and Celtic languages (Sproat, 1985; McCloskey, 1991). Clemens (2014, 2019) provides such an analysis in Niuean (Austronesian), and Clemens and Coon (2018) apply this account to Mayan. For Clemens and Coon (2018), VSO word order is achieved by base-generating SVO word order then moving the verb via head movement to a projection above the subject. This is modeled in (239).

- (239) Clemens and Coon (2018, 241)



VOS word order is achieved by postsyntactic reordering of the object in order to meet prosodic

well-formedness constraints. These constraints reorder NP objects to be pronounced with the verb that selects them. The prosodic phrasings of VSO and VOS in Ch'ol are given in (240).

- (240) Prosodic phrasings of VSO and VOS clauses in Ch'ol Clemens and Coon (2018, 252)
- a.  $(V)_\varphi(S)_\varphi(O)_\varphi$  (DP Object)
  - b.  $(V O)_\varphi(S)_\varphi$  (NP Object)

The prosodic analysis from Clemens and Coon (2018) is based on Match Theory (Selkirk, 2011) given in (241), under an Optimality Theoretic framework (Prince and Smolensky, 1993). Match constraints, according to McCarthy and Prince (1995), match syntactic input with prosodic output.

- (241) Selkirk (2011) via Clemens and Coon (2018, 256)
- a. MATCH- $\iota$ : CPs/IPs correspond to intonational phrases ( $\iota$ -phrases) and vice versa.
  - b. MATCH- $\varphi$ : Syntactic XPs correspond to phonological phrases ( $\varphi$ -phrases) and vice versa.
  - c. MATCH- $\omega$ : Syntactic  $X^0$ 's correspond to prosodic words (prosodic- $\omega$ s) and vice versa.

Important for deriving the VOS/VSO distinction is MATCH ( $\varphi$ ,XP), which matches an XP to a  $\varphi$ -phrase. The constraints in (241) force isomorphic syntactic and prosodic structure. That is, if the syntactic structure outputs SVO, the prosody favors it to be pronounced as SVO.

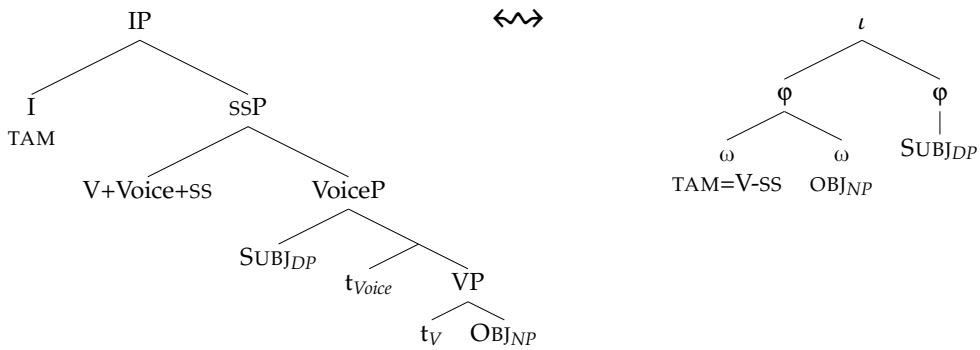
Recall, however, for Clemens and Coon (2018) the verb moves to ssP via head movement, generating VSO order in the syntax. Clemens and Coon (2018) posit another constraint, outranking MATCH, ( $\varphi$ ,XP), which accounts for the fact that the verb and object are both pronounced as one  $\varphi$ -phrase. This constraint, ARG- $\varphi$  in (242), is highly ranked, capturing that the syntactic input and the prosodic output of VOS sentences are not isomorphic.

- (242) Argument condition on phonological phrasing (ARG- $\varphi$ ): A head  $H^0$  with a categorial feature [C] and head  $C^0$  with the same [C] feature must constitute a  $\varphi$ -phrase.  
(Clemens and Coon 2018, 258)

The constraint in (242) says that heads should be phrased together with their arguments, and can force a nonisomorphic syntax and prosody. The constraint in (242) applies to NP objects; DPs, for Clemens and Coon (2018), are phases and spelled out before (242) applies. The argument condition on phonological phrases connects the verb and object via C-selection. This way the verb

and its argument can interact after the verb undergoes head movement. For Clemens and Coon (2018), the syntactic input and subsequent prosodic output of VOS order is given in (243).

- (243) Syntactic input and prosodic output of VOS order<sup>5</sup> (Clemens and Coon, 2018, 258)



The table in (244) demonstrates how the order of constraints and violation of ARG-φ results in a VOS ordering rather than VSO for NP objects. ARG-φ shifts the NP to be pronounced with the verb. An isomorphous VSO ordering is dispreferred, as the verb and its argument are not phrased together.<sup>6</sup>

- (244) Clemens and Coon (2018, 258)

| $[vP \text{ Verb } [VoiceP \text{ [DP Subject]}][VP \text{ [NP Object]}]]]$ | ARG-φ | MATCH ( $\phi, XP$ ) | MATCH ( $XP, \phi$ ) |
|-----------------------------------------------------------------------------|-------|----------------------|----------------------|
| a. (Verb (Subject) $_{\phi}$ (Object) $_{\phi}$ ) $_{\iota}$                | *!    |                      |                      |
| b. ((Verb Object) $_{\phi}$ (Subject) $_{\phi}$ ) $_{\iota}$                |       | *                    | *                    |

Now, ARG-φ only applies to NP arguments as DP objects are phrases, and sent to spell out before the constraint in (242) applies. VOS ordering is generated in (244) as the verb V categorizes for a nominal [N] feature. ARG-φ therefore applies as the head V categorizes for the nominal

<sup>5</sup>While Voice is represented in the syntactic input, it is not always computed in the output if there is no overt Voice morpheme. Overt manifestations of Voice, of course, would not be deleted in the prosodic output. Examples of overt manifestations of Voice are causative morphemes, discussed further below.

<sup>6</sup>An additional requirement is the need for the verb and object to satisfy STRONG START, in (1).

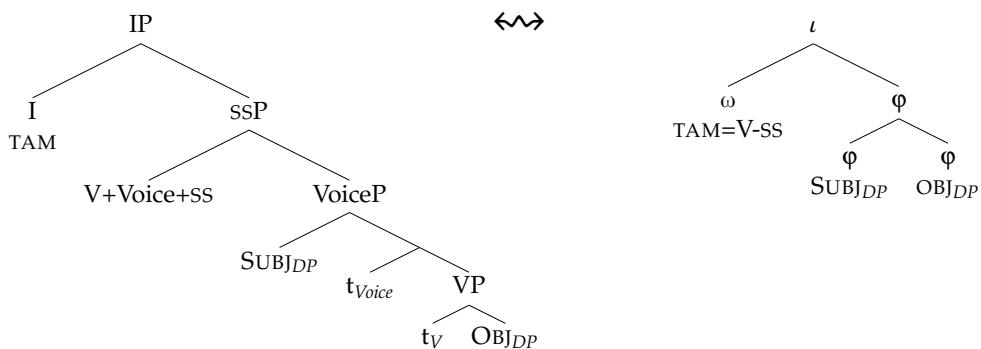
- (1) STRONG START (Selkirk, 2011): A prosodic constituent optimally begins with a leftmost daughter constituent that is not lower in the prosodic hierarchy than the constituent that immediately follows.

STRONG START ensures that the verb and object are phrased together as one prosodic constituent, as in (Verb Object) $_{\phi}$  and not (Verb(Object) $_{\phi}$ ) $_{\phi}$ . The phrasing of (Verb(Object) $_{\phi}$ ) $_{\phi}$  violates STRONG START because it contains two prosodic subconstituents (Clemens and Coon, 2018, 259). The leftmost daughter ends up being lower in the prosodic hierarchy—the verb is phrased as a prosodic word ( $\omega$ ), ranked lower than a prosodic constituent ( $\phi$ ), violating (1).

feature, constituting a  $\phi$ -phrase, which is why the object is pronounced with the verb in the output in (243). NP objects, unlike DP objects, are not phases, therefore according to Clemens and Coon (2018, 261) “both instantiations of the categorial feature relevant to ARGUMENT- $\phi$  (one associated with the object and one with the verb root) are visible to PF during the same spell-out cycle.” If the object is a DP object, the categorial feature is not visible to ARG- $\phi$ , so prosodic reordering does not apply.

The prosodic ordering of a VSO sentence with a DP object under the head movement analysis in Clemens and Coon (2018) is given in (245). In contrast to (243), as ARG- $\phi$  does not apply to DPs, the DP object remains in its base position as the complement to the verb and therefore VSO is the linear output.

(245) Syntactic input and prosodic output of VSO order



### 5.3.3 Summary

Under the predicate-fronting analysis of Coon (2010b), the *vP* fronts to Spec,TP to satisfy strong agreement features on T, generating VOS word order in the syntax. For Clemens and Coon (2018), VOS word order is derived first via head movement of the verb to a position above the subject, generating VSO. Then via prosodic constraints, an NP object is reordered to be pronounced with the verb, generating VOS in the prosody.

One clear difference between the predicate-fronting account and head movement account is

how VSO is derived. For the predicate-fronting account, VSO is derived in the syntax via object shift before the *vP* fronts. Under a head movement account, VSO objects remain in situ in the VP. In the next section, we will see that both accounts can capture different data in Ch'ol but need to be modified in order to explain data from the previous chapters. These differences also bring into question the link between object shift and its effects on word order. A predicate-fronting account derives VSO word order in part via shifting the object. While it is possible to add object shift to a head movement account, this movement does not affect the order of constituents.

## 5.4 Additional empirical considerations

In this section, I consider data on morpheme order, nominalized complements and properties of VSO objects in light of the two analyses presented above. I highlight the link between object shift and its effects on word order. Clemens and Coon's (2018) account can be modified to accommodate object shift, but this movement is vacuous.

### 5.4.1 Order of morphemes

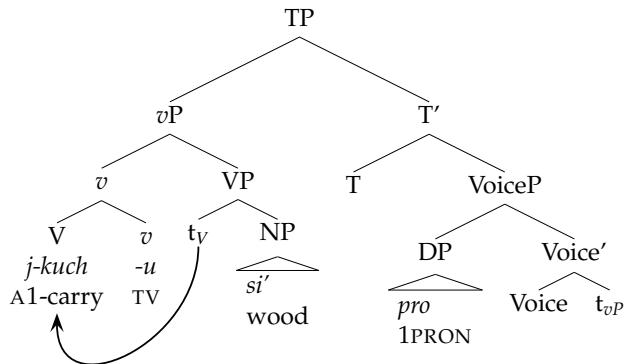
I begin with how each approach derives the morphology of transitive verb stems. Perfective verbs take a verbalizing suffix, in *v* for Coon (2010b), and labeled as a status suffix (ss) in Clemens and Coon (2018). For root transitive verbs, this is a harmonic vowel suffix, assimilating to the vowel of the verbal root. For instance in (246a) the verbal root is *kuch* 'carry' and the verbal suffix is *-u*, as in (246b); the verb *mek'* 'hug' appears with the harmonic vowel verbalizer *-e*.

(246) Transitive verbs

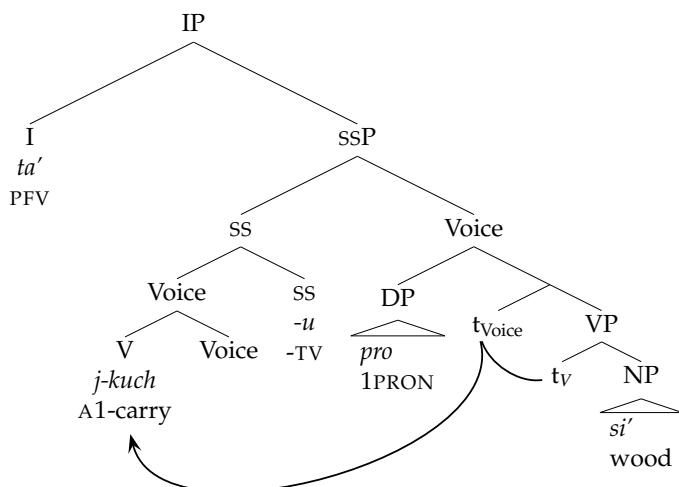
- a. *Ta' j-kuch-u si'.*  
PFV A1-carry-TV wood  
'I carried wood.'
- b. *Ta' i-mek'-e nene aj-Eve.*  
PFV A3-hug-TV baby NC-Eve  
'Eve hugged a baby.'

How each account derives the order of morphemes for the sentence in (246a) is modeled in (247).<sup>7</sup>

(247) a. Predicate-fronting



b. Head movement



Both the predicate-fronting and head movement analyses can account for the placement of the transitive verbalizer *-u*. In the predicate-fronting analysis the *vP*, containing the verbalizer, fronts to Spec,TP and the verb undergoes head movement to *v*. In the head movement analysis, the verb moves through Voice (in this case there is no overt realization of Voice) and then to the verbalizer in ssP.

The placement of the aspect marker in (246a) raises a challenge for the predicate-fronting but not head movement account, as noted by Clemens and Coon (2018). If the *vP* occupies Spec,TP in

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<sup>7</sup>For Coon (2013, 54), under the predicate-fronting account, Voice and the subject enter into an agreement relation and the features on Voice are inherited by *v*, and consequently spelled out on the *vP*, deriving set A agreement morphology on the verb.

(250a), it is unclear where the aspect marker appears<sup>8</sup>—it cannot be in T, as T is below the landing site of the verb. Under a head movement account, on the other hand, this is not a problem: the aspect marker is in IP, above the landing site of the verb.

Another challenge to the predicate-fronting account, pointed out by Clemens and Coon (2018), is what happens when voice morphemes, such as causatives, *are* present, as in (248).

- (248) *Ta' k-ju'b-es-a pok'*.  
 PFV A3-descend-CAU-DTV bowl  
 'I took the bowl down.'

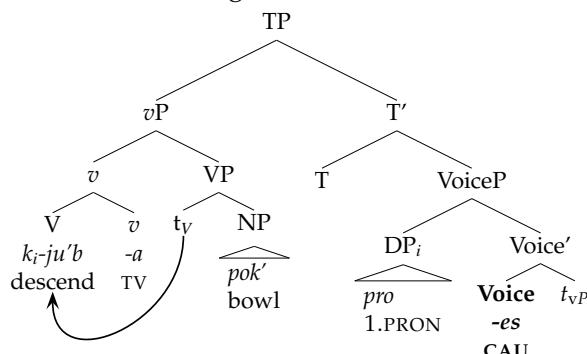
The morphological structure of the verb in (248) is given in (249).

- (249) Morphological template of (248)

|           |             |            |           |
|-----------|-------------|------------|-----------|
| <i>k-</i> | <i>ju'b</i> | <i>-es</i> | <i>-a</i> |
| A1-       | descend     | -CAU       | -DTV      |
| Agreement | V           | Voice      | SS        |

As the verbalizer *-a* is below VoiceP for Coon (2010b), it is unclear what maximal projection fronts. Causatives are associated with Voice and if we place Ch'ol's causative suffix in Voice, how do we derive the correct order of morphemes in (249)? As seen in the tree in (250a), the vP fronts to Spec,TP without the Voice suffix. There is no maximal projection in (250a) that contains both the verb, object and Voice morpheme to the exclusion of the subject. The head movement account from Clemens and Coon (2018), on the other hand, can capture the correct order of morphemes as the verb moves through Voice to the status suffix in (250b).

- (250) a. Predicate-fronting X

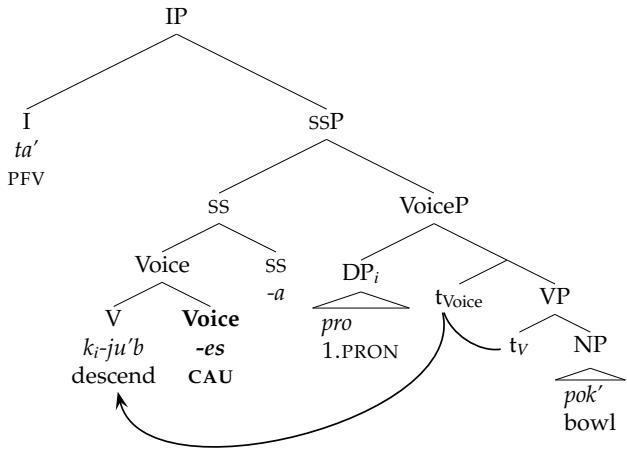



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<sup>8</sup>Coon (2010b) suggests a possible solution where a low Asp(ect)P rather than vP fronts to Spec,TP.

b. Head movement ✓

based on the structure from Clemens and Coon (2018, 241)



While the order of morphemes is not a problem for the head movement account, it poses challenges for a predicate-fronting account. As suggested in Coon (2010b), a possible way to derive the correct order under a predicate-fronting account would be to assume that some morphemes attach via a Morphological Merger from Marantz (1984, 1988). However, the canonical use of Morphological Merger is to account for second position clitic effects and it is often applied to lexical heads (Embick and Noyer, 2001). In this instance, Voice is a functional head, so further investigation would be needed to motivate a Morphological Merger-based account of the causative suffix in Ch'ol.

### 5.4.2 Nonperfectives

While the head movement account can derive the order of morphemes, a modification is needed so that it can capture nominalized complements, discussed in this section. Ch'ol is an ergative-absolutive language; however, as Coon (2010a, 2012, 2013) has demonstrated, nonperfective aspects exhibit a different pattern. For instance the subject of the intransitive verb is marked with the set B first person suffix *-(y)oñ* in (251). The nonperfective forms in (252) mark the intransitive subject with the first person marker *k-*.

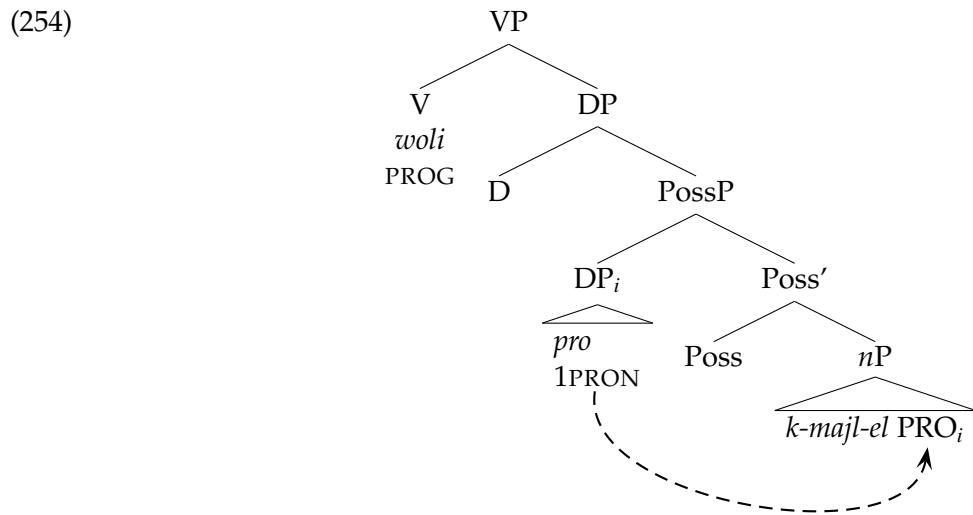
- (251) *Ta' majl-i-yoñ.*  
PFV go-IV-B1  
'I left.'

- (252) a. *Mi k-majl-el.*  
          IPFV A1-go-NML  
          'I go.'
- b. *Woli k-majl-el.*  
          PROG A1-go-NML  
          'I am leaving.'

Coon (2010a, 2012, 2013) argues the verbs in (252) are in fact nominalized complements to an aspectual predicate and the set A markers are possessive markers, as discussed in Chapter 2, Section 2.3.5. The aspect markers *mi* and *woli* differ from the perfective aspect marker *ta'* in that they are predicates and take nominal complements. That is, *kmajl-el* in (252) translates to 'my going' and is the complement to the nonperfective aspect markers in (253). Additionally, the verb root *majl* has the nominalizing suffix *-el* and possessive marker *k-* on it.

- (253) *Woli* [DP *k<sub>i</sub>-* [ *majl-el* PRO<sub>*i*</sub> ] ].  
          PROG      A1-    go-NML  
          'I am going.' Lit. 'My going is happening.'

The structure of (253) is provided in (254) from Coon (2013).



When possessor subjects are overt in nominalized complements they appear *after* the verb. This parallels possessive phrases, where possessors also appear after their possessees, as shown in (255).

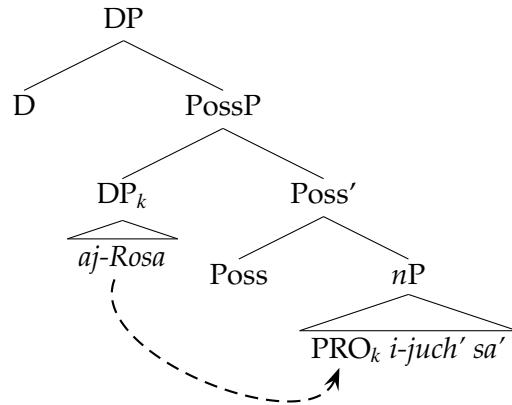
- (255) a. *i-majl-el aj-Rosa*  
          A3-go-NML NC-Rosa  
          'Rosa's going'
- b. *i-wakax aj-Rosa*  
          A3-cow NC-Rosa  
          'Rosa's cow'

Nominalized transitive clauses have a similar structure. The verb is nominalized and the subject is structurally a possessor, co-indexed with a PRO in the nominalized complement. For transitive verbs with nonperfective aspects, morphological differences also provide evidence for their nominalized status. Compare the transitive verb with the perfective aspect in (256b) and the transitive verb with the progressive aspect in (256a). In (256b) the verbalizer *-u*, which is a harmonic vowel suffix with the verb *juch'* 'grind', appears. In (256a) with the progressive aspect, *-u* does not appear—the dependent clause marker *-e'* may optionally surface.

- (256) a. *Woli i-juch'(-e') sa' aj-Rosa.*  
          PROG A3-grind-DEP masa NC-Rosa  
          'Rosa is grinding masa.'  
       b. *Ta' i-juch'-u sa' aj-Rosa.*  
          PFV A3-grind-TV masa NC-Rosa  
          'Rosa ground masa.'

The structure of (256a) according to Coon (2010a, 2012, 2013) is the following. The subject, Rosa, is expressed as the possessor in Spec,PossP and is co-indexed with a PRO in the nominalized complement, as in (257).

(257)



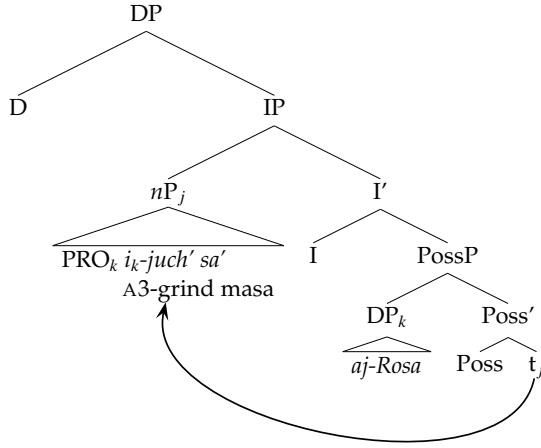
The structure in (257), however, does not capture the correct word order, where *aj-Rosa* appears after the nominalized verb.

Under a predicate-fronting analysis, Coon (2010b) accounts for the word order of VO-Possessor by fronting the *nP* to a position between DP and PossP (labeled as IP, following work on the nominal domain by Slobin (2002)). This parallels *vP* fronting in the verbal domain and cap-

tures the correct word order of nominalized complements, as the subject (structurally a possessor) appears after the verb and object.

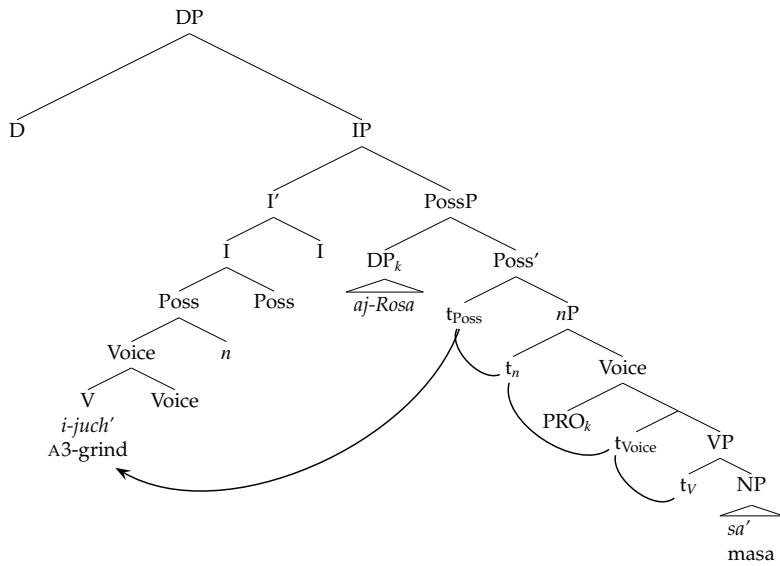
- (258) Predicate-fronting account of nominalized complements

based on Coon (2013, 145)



While Clemens and Coon (2018) do not consider nominalized complements, their analysis could be extended as follows. The verb moves to a position above the possessor, landing at INFL, below DP, as modeled in (259).

- (259) Extension of head movement account for nominalized complements



To achieve the correct word order of VOS, ARG-φ applies and the object *sa'* 'masa' is reordered to be pronounced with the verb that selects it. My extension of the account from Clemens and Coon (2018) parallels their account of the clausal domain; in (259), the verb moves via head movement to a high position within the DP. With this modification, it is possible to derive

the correct order within the nominal domain. It is unclear, however, what could be the motivating factor for movement to the IP projection within the nominal domain. There are no overt morphemes corresponding to IP in the DP domain.<sup>9</sup> In the clausal domain, the verb moves to the ss head, which is spelled out as the verbal status suffix. A similar issue arises for the predicate-fronting account—IP is needed as a landing site for *nP* in (258), but no morphemes or other syntactic properties are associated with it. While these two proposals can account for the word order in nominalized complements, some questions remain, such as if the projection between DP and PossP is really needed. In the analysis supported in Section 5.5, there is no need for an additional projection between DP and PossP.

### 5.4.3 Semantic and syntactic properties of objects (Chapters 3 and 4)

I now compare how each analysis fares with respect to the data on the interpretation of objects from Chapter 3 as well as the subextraction asymmetries from Chapter 4. To begin, I take as a basis for my analysis the proposal from Chapter 3 that existential closure happens at the VP level. For both accounts, VOS objects remain within the VP, so both accounts predict the availability of low scope indefinite interpretations of bare nominals, as argued for in Chapter 3. The difference between both accounts is where VSO objects are interpreted. Under a predicate-fronting account, objects move out of the VP before the *vP* fronts. For the head movement account, the VSO object remains in its base position within the VP, below the subject. The trees in (263) model existential

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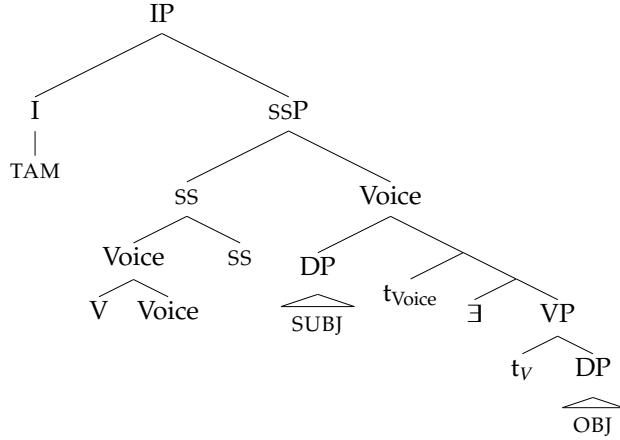
<sup>9</sup>There is evidence for overt morphemes of the Possessor head. For instance, the *-Vl* suffix, glossed here as a relational suffix, turns nonrelational nouns such as ‘cloth’ into relational ones, such as ‘clothing (that one is wearing)’, as shown in the examples in (1). With the addition of this suffix, the relationship between possessor and possessee is intrinsic, in the words of Barker (1995, 2011), in that (i) these nouns must be obligatorily possessed; and (ii) the relationship between possessor and possessee is ‘tighter’. This suffix, hypothesized to be in a Possessive head, also derives part-whole constructions, as in (2).

- (1) Coon (2010a, 86)
  - a. *i-pisil aj-Rosa*  
A3-cloth NC-Rosa  
'Rosa's cloth' (e.g., laundry)
  - b. *i-pisl-el aj-Rosa*  
A3-cloth-**RS** NC-Rosa  
'Rosa's clothing (e.g., that she is wearing)
- (2) *i-tye'-el otyoty*  
A3-wood-**RS** house  
'the wood of the house'

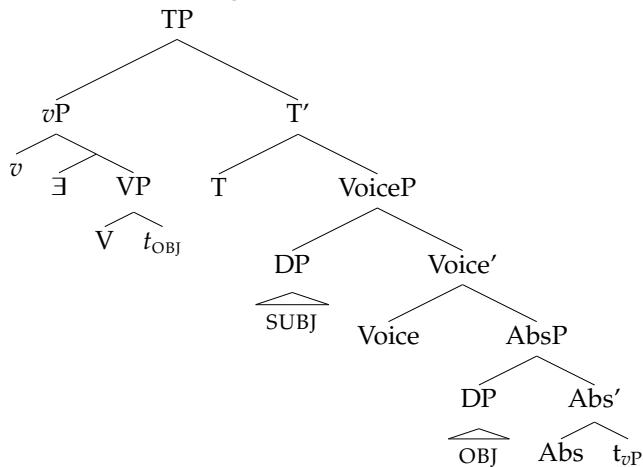
closure and VSO word order for both accounts.

- (260) VSO output with existential closure at the VP

a. Head movement



b. Predicate-fronting



Below, I provide evidence in favor of moving the object out of the VP to derive VSO word order. I begin with how each account models the placement of adverbs with respect to objects. I make a modification to the head movement account in order to add in object shift.

## Adverb placement

To begin, I review facts from adjunct placement from Chapter 4, which were first observed in Coon (2010b). Adjuncts may intervene between DP objects as in (261a) but not NP objects as in (261b). The verb and NP object must appear adjacent to each other, as in (261c).

- (261) a. *Ta' j-k'ux-u ak'bi jiñi waj.*  
          PFV A1-eat-TV **yesterday** DET tortilla.  
          'I ate the tortilla yesterday.'  
       b. \**Ta' j-k'ux-u ak'bi waj.*  
          PFV A1-eat-TV **yesterday** tortilla.  
          'I ate a tortilla yesterday.'  
       c. *Ta' j-k'ux-u waj ak'bi.*  
          PFV A1-eat-TV tortilla **yesterday**  
          'I ate a tortilla yesterday.'

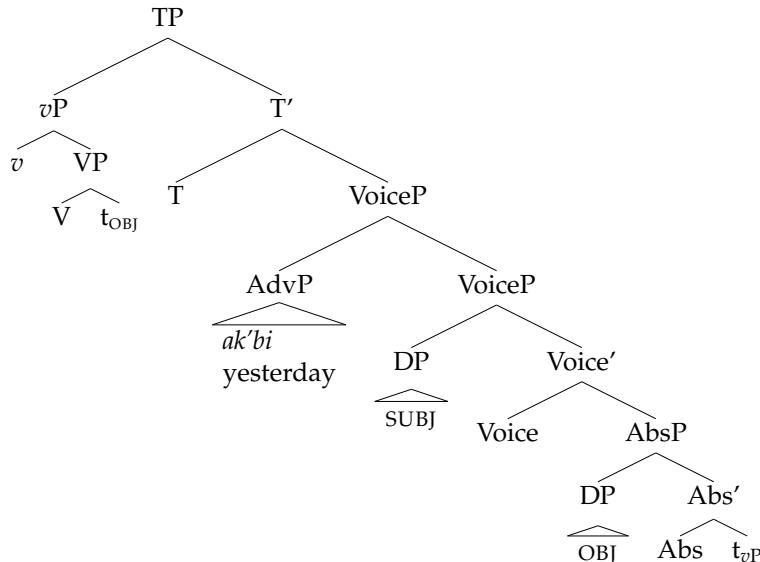
Adjunct placement with respect to VOS and VSO objects in Ch'ol is summarized in (262).

- (262) Adverb Placement in Ch'ol  
       a. NP/VOS objects: V O<sub>NP</sub> XP (S)  
       b. DP/VSO objects: V XP (S) O<sub>DP</sub>

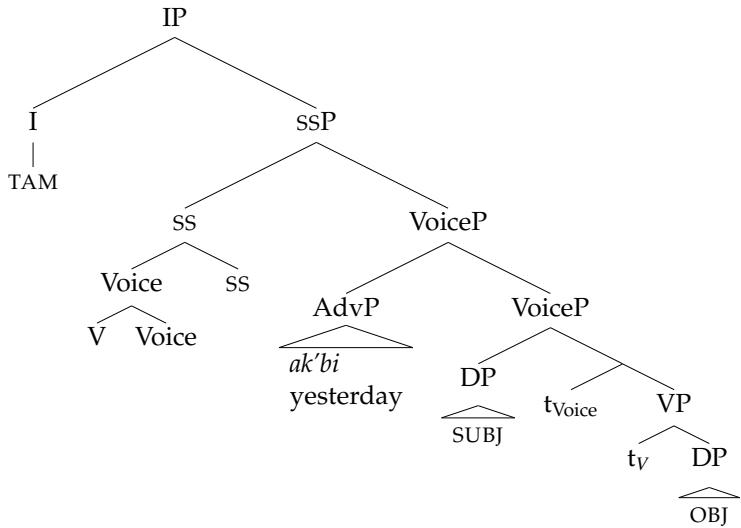
Both a predicate-fronting analysis and a head movement analysis can account for the placement of adverbs. If adverbs appear as left adjuncts to the VoiceP, then it is predicted that the adverb can intervene between the subject and DP object. This is given in (263) for VSO adverbs.

- (263) DP Objects and adjunct placement

a. Predicate-fronting



b. Head movement



The placement of adverbs connects to interpretational differences of objects, as I will demonstrate next.

### Interpretation of the object (Chapter 3)

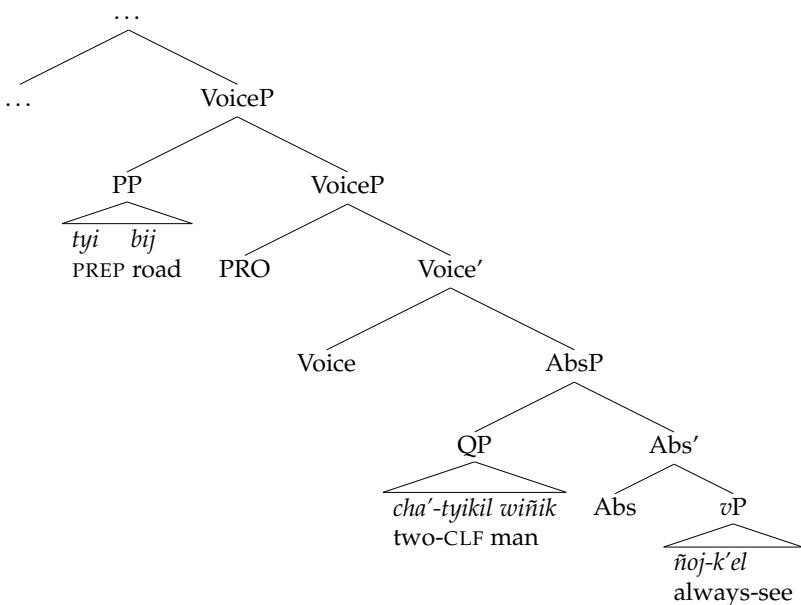
As discussed in Chapter 3, the structural position of a numerals reflects the possible semantic interpretations available to it. In (264a), the object and verb are adjacent and the numeral can take narrow scope with respect to the adverbial prefix *ñoj* 'always'. When there is an intervening PP in (264b), the numeral takes wide scope. More concretely, in (264a) it is possible that the speaker always sees two men on the road but they do not necessarily need to be the same two men. Here, the numeral 'two' takes low scope with respect to the adverb *ñoj*. In (264b) the interpretation is that the speaker always sees two specific men on the road. The numeral 'two' takes wide scope with respect to the adverbial prefix on the verb.

- (264) Context A: There is a road behind my house. I always see two men walking there, sometimes it is Marcos and Rogelio, sometimes Juan and Eladio, and sometimes Jorge and Javier.  
Context B: There is a road behind my house. I always see Nicolás and José walking there.

- Mi k-ñoj-k'el [cha'-tyikil wiñik ] tyi bij.*  
 IPFV A1-always-see two-CLF man PREP way  
 'I always see two men on the road.' ✓A ✓B
- Mi k-ñoj-k'el tyi bij [cha'-tyikil wiñik ].*  
 IPFV A1-always-see PREP way two-CLF man  
 'I sometimes see on the road two men.' ✗A ✓B

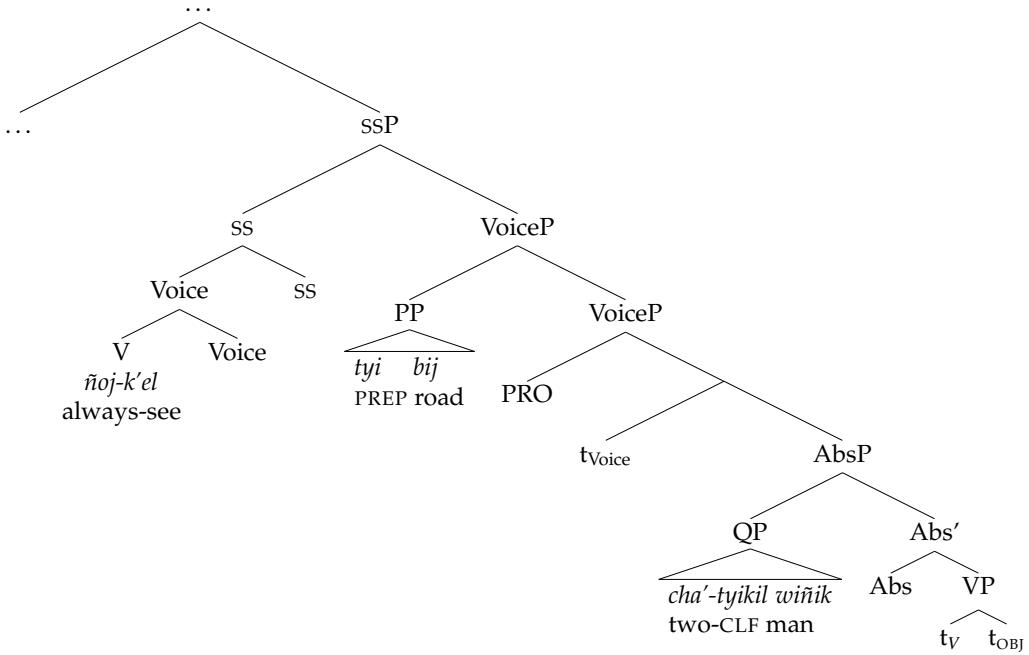
Both accounts can capture the low scope indefinite interpretation of (264a) as the object is adjacent to the verb, and within the VP, i.e., within the domain of existential closure. Where the accounts differ is with (264b). Recall that adverb placement is indicative of object shift for Coon (2010b). A predicate-fronting account can capture the semantic differences in (264). Before *vP* fronting, the object *cha'tyikil wiñik* 'two men' is shifted out of the *VP*, and out of the domain of existential closure. I label the projection containing the numeral and noun in (264b) a *QP*, reflecting that in (264b) the numeral is quantificational (see Chapter 3 Section 3.3.5 for more discussion). Recall that with imperfective aspects, the subject is structurally a possessor, which controls a *PRO* in the nominalized complement. (The *QP* undergoes quantifier raising at LF, as well.)

(265)



For the analysis in Clemens and Coon (2018), it is possible to posit that VSO objects always undergo object shift to a position under the subject, accounting for these semantic differences. An updated account of VSO word order for Clemens and Coon (2018) is given in (266) where the object shifts to the specifier of a projection labeled as *AbsP*. (Clemens and Coon (2018) do not consider object shift in their paper.)

(266) Head movement account updated with object shift



With this modification, the semantic facts from above can be captured, though this raises some questions about the relationship between VSO and VOS word orders. Under a predicate-fronting account, VSO is derived in part by shifting the object overtly in the syntax—linking word order and these semantic differences. By adding in object shift as in (266) for Clemens and Coon (2018), the semantic facts are captured, but this movement is vacuous. That is, the linear order before object shift (after head movement of the verb) is VSO and after object shift it is also VSO. So while this movement is semantically driven, it does not effect constituent order.

### Subextraction asymmetries (Chapter 4)

VOS and VSO objects also exhibit differences with respect to subextraction. As argued for in Little (2020) and in Chapter 4, object shift bleeds subextraction. Objects with overt possessors behave like DP objects: they are banned from appearing in VOS object position. These objects are movement-derived islands, making subextraction from them impossible. This follows from the Freezing Principle (Ross, 1974; Wexler and Culicover, 1977), or a ban on extraction from a moved constituent. This can be seen clearly with numerals. Numeral modifiers are acceptable in VOS

and possible in VSO object position. The numeral may extract from (267a), as in (268a), but not from (267b), as per (268b).

- (267) Numerals may appear in VOS and VSO object position

- a. *Ta' i-k'ux-u* [O *cha'-k'ej waj*] [S *aj-Rosa*].  
PFV A3-eat-TV two-CL tortilla NC-Rosa  
'Rosa ate two tortillas.'
- b. *Ta' i-k'ux-u* [S *aj-Rosa*] [O *cha'-k'ej waj*].  
PFV A3-eat-TV NC-Rosa two-CL tortilla  
'Rosa ate two tortillas.'

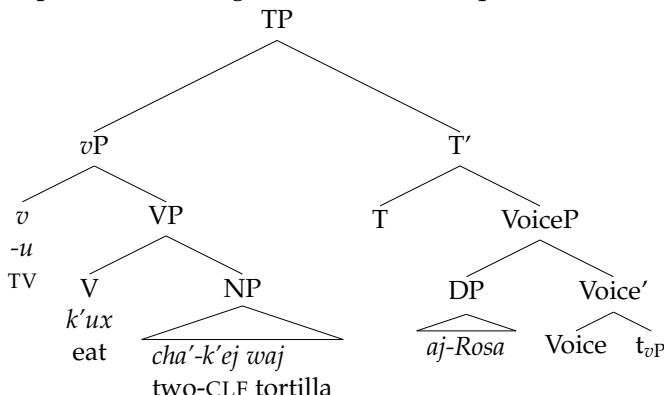
- (268) Numerals may only extract from VOS objects

- a. *Cha'-k'ej i ta' i-k'ux-u* [O *t<sub>i</sub> waj*] [S *aj-Rosa*].  
two-CLF PFV A3-eat-TV tortilla NC-Rosa  
'Rosa ate *two* tortillas.'
- b. \* *Cha'-k'ej ta' i-k'ux-u* [S *aj-Rosa*] [O *t<sub>i</sub> waj*].  
two-CLF PFV A3-eat-TV NC-Rosa tortilla  
Intended: 'Rosa ate *two* tortillas.'

Object shift could be added (motivated by the semantic facts stated above) to account for the observed subextraction asymmetries for the analysis in Clemens and Coon (2018). Under the predicate-fronting account from Coon (2010b), VSO objects do shift, predicting they are islands for extraction, explaining the asymmetries in (268).

As I discussed in Chapter 4 Section 4.6, there is a caveat regarding when extraction from objects is possible. Under a predicate-fronting account, such as the case for VOS numerals, an explanation is needed for why extraction from moved *vP*s is possible. Given the Freezing Principle, the *vP* in (269) should constitute an island, but as shown in (268a), extraction is possible from the object NP.

- (269) A phrasal-fronting account does not predict (268a)



As will be presented in Section 5.5, by base-generating VOS, objects are not embedded in moved constituents and extraction may proceed from them.

### **Interim summary and discussion of object shift**

In this subsection, I compared Coon’s (2010b) predicate-fronting analysis and Clemens and Coon’s (2018) head movement account with respect to the semantic and syntactic properties of objects from Chapter 3 and 4. Semantically, VSO objects take wide scope, which was exhibited with the interpretation of numerals. Syntactically, VSO objects are islands for extraction. The main take away from this section is that object shift can explain both these empirical patterns and is necessary in order to derive VSO word order from VOS. Although object shift can be added to the head movement account, this raises the larger question of the role of object shift in deriving VSO word order in Ch’ol.

Object shift has been linked to word order differences across a number of typologically different languages (e.g., Diesing 1992: German; Gallego 2013: Romance languages; Diesing and Jelinek 1995: Egyptian Arabic; Woolford 2017: Eskimo-Aleut languages; Bhatt and Anagnostopoulou 1996: Hindi; Aydemir 2004; Kelepir 2001: Turkish, Holmberg 1986; Vikner 1994: Scandinavian, etc.). In Ch’ol, object shift explains certain syntactic and semantic properties of VSO objects. This, along with the other studies mentioned, points to a link between object shift and word order in the syntax. While it is possible to modify Clemens and Coon’s (2018) VSO account and add in object shift, this movement is vacuous: the linear order of constituents is unaffected. I believe this misses a more generalizable connection between object shift and its effect on word order.

#### **5.4.4 Summary**

In this section, I began with how Coon’s (2010b) and Clemens and Coon (2018) accounts capture morpheme order in Ch’ol. A head movement account captures the order of morphemes in Ch’ol, but certain questions arise with respect to the placement of the aspect marker and the causative

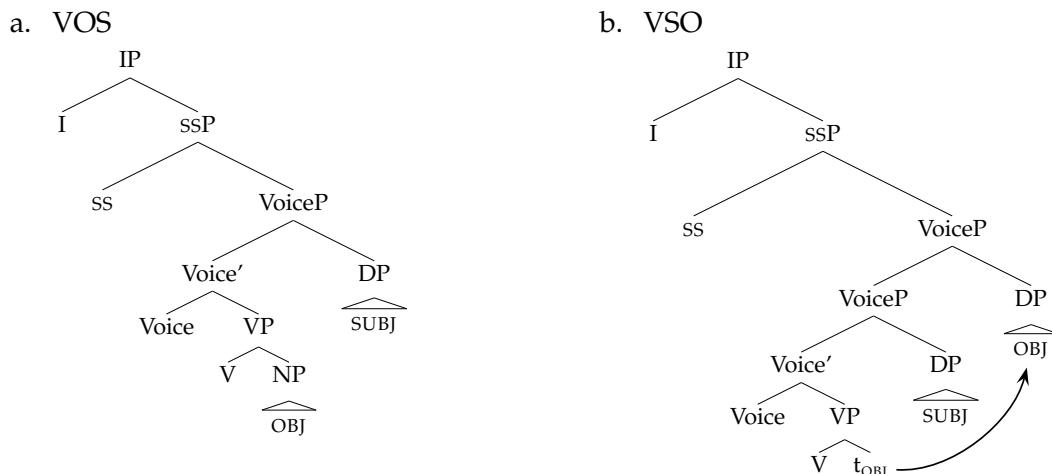
morpheme for the predicate-fronting account. A predicate-fronting account can capture nominalized complements by moving *nP*; under a head movement account, certain additions can be made so that it can also capture nominalized complements. I ended by stressing that object shift must be a factor in deriving VSO in order to explain the syntactic and semantic properties of VSO objects from Chapters 3 and 4. While Clemens and Coon's (2018) account can accommodate object shift, the linear order of constituents is unaffected.

Next, I develop a base-generated account of verb-initial word order, which, I argue, parsimoniously derives the morphological, syntactic, and semantic properties discussed in this section.

## 5.5 Base-generating verb-initial syntax

In this section, I propose an analysis supporting a base-generated account of verb-initial word order, first developed in England (1991) and Aissen (1992), and more recently argued for in Otaki et al. (2019) for the Mayan language Kaqchikel. I update Aissen's (1992) approach with current assumptions about phrase structure and the ordering of syntactic heads from Clemens and Coon (2018). I explain how this approach captures the data above and I then extend the analysis to account for nominals and ditransitive verbs. The analysis for VOS is given in (270a) and VSO in (270b). VOS is base generated with the subject in a right specifier. VSO is derived from VOS where the object shifts to a position above the subject.

(270) Proposal

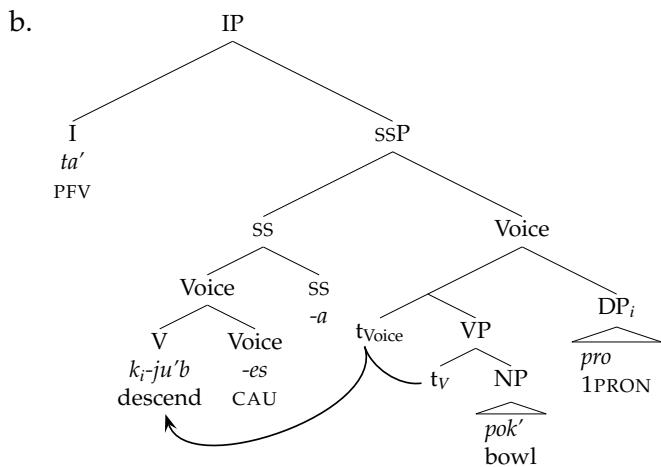


In addition to being applied to Mayan languages (England, 1991; Aissen, 1992; Otaki et al., 2019), other authors have explored base-generating verb-initial syntax. Chung (1998) proposes a base-generation account of VOS word order in Chamorro (Austronesian) and Wojdak (2007) for Nuu-chah-nulth, a Wakashan language. Below, I provide reasons for why base-generating VOS in Ch'ol is a straightforward way of accounting for the aspects of Ch'ol morphosyntax and semantics discussed above.

### 5.5.1 Order of morphemes

A predicate-fronting analysis faced challenges accounting for the order of morphemes in causative constructions. Under the head movement account from Clemens and Coon (2018) the order of morphemes in (271a) can be captured. I adopt the order of phrases from Clemens and Coon's (2018) in that the head moves to the status suffix, via Voice. This achieves the correct morpheme ordering as well as word ordering, as shown in (271b).

- (271) a. *Ta' k-ju'b-es-a pok'*.  
PFV A3-descend-CAU-TV bowl  
'I took the bowl down.'

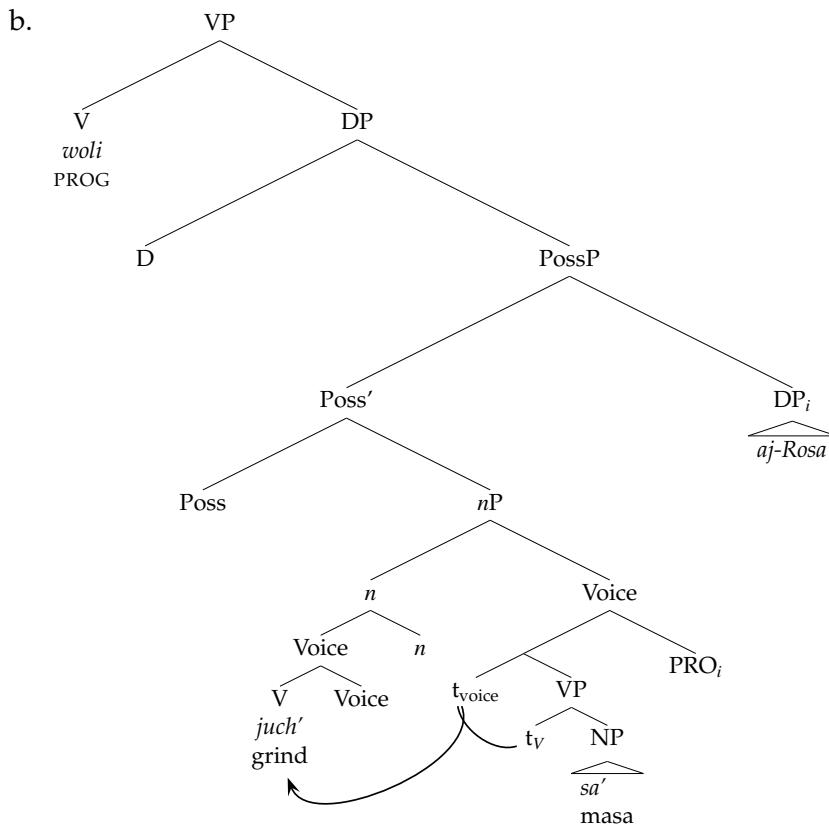


The verbal head moves along the projections of the verbal spine to the status suffix, in line with standard assumptions of the Mirror Principle (Baker, 1985). The perfective aspect marker is in I.

### 5.5.2 Nonperfective complements and nominals

For both the predicate-fronting and head movement analyses, additional structure between DP and PossP is needed to account for word order in nominalized complements. Under an account with right specifiers, the ordering of the possessor with respect to nominalized complements is base-generated. Take, for instance, the nonperfective clause in (272a) where the nominalized transitive verb is the complement of the progressive aspect *woli*. The postverbal order is O-S, where the subject is structurally a possessor. As Aissen (1992) posits, possessors are also structurally on the right. The tree in (272b) captures the structure in (272a). The verb moves to the nominalizing head *n*, below *aj-Rosa* and the correct word order is achieved.<sup>10</sup>

- (272) a. *Woli* [DP [nP *i-juch'* *sa'* PRO<sub>*i*</sub>] *aj-Rosa<sub>*i*</sub>* ].  
 PROG A3-grind masa NC-Rosa  
 'Rosa is grinding masa.'



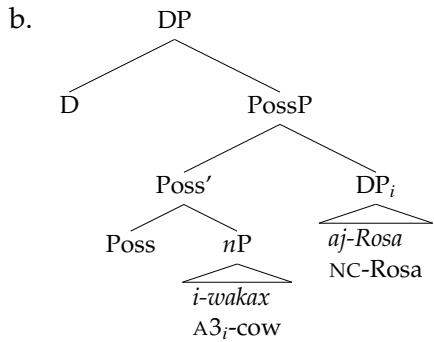
A base-generated structure also captures the correct order for other possessive constructions, as in (273a), with the syntactic structure in (273b). The possessor is base-generated in a right

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<sup>10</sup>The noun may actually move as high as Poss. See footnote 9 above.

specifier above its posseesee, generating the order posseesee–possessor.

- (273) a. *i-wakax aj-Rosa*  
          A3-cow NC-Rosa  
          ‘Rosa’s cow’

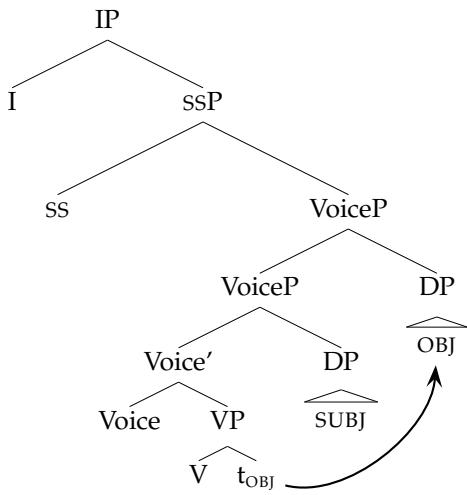


This account does not need an additional IP projection between DP and PossP, unlike for Coon (2010b) and the modification I made to Clemens and Coon (2018). This extra projection served as a landing site for *nP* under Coon (2010b) and the nominalized verb for Clemens and Coon (2018). Otherwise, IP in the nominal domain was not related to any other morphological or syntactic function.

### 5.5.3 VSO objects: Semantic and syntactic features

To derive VSO word order, VSO objects are reordered in the sense of England (1991), or moved to the right, as in Aissen (1992). The structure for VSO is given in (274).

(274) VSO



Additional evidence that the DP object moves to a position above the subject comes from the sentence in (275) where a VSO object may bind into a subject. The animate subject *iyum* 'its owner' is bound by a definite object *ixä machity* 'that machete' in (275).<sup>11</sup>

- (275) *Ta' i-xul-u t<sub>i</sub> [s i<sub>i</sub>-yum ] [o ixä machity ]<sub>i</sub>.*  
PFV A3-break-TV A3-owner that machete  
'Its<sub>i</sub> owner broke [ that machete ]<sub>i</sub>.'

(275) provides further evidence for the analysis of VSO in that the object shifts to a position *above* the subject. This also contrasts with Coon (2010b), where the object shifts to a position below the subject before *vP*-fronting. Under Coon's (2010b) account, the shifted object is syntactically lower than the subject, which would not straightforwardly explain the binding facts in (275). In Clemens and Coon (2018), the VSO object also does not c-command the subject.

As I explained in Chapter 2, absolute case is licensed in situ for objects (Coon, 2017). This is

<sup>11</sup>Speakers judge this sentence acceptable and translate it as 'Its owner broke that machete' (Spanish: *Su dueño quebró ese machete*, with the understanding that 'that machete' binds the possessor in the subject). However, one potential confounding factor that should be further investigated is the fact that the order of the subject and object is the same order expected of possessives and possessors. That is, the linear order of S-O in this sentence corresponds to the Possessee–Possessor order exhibited in the nominal domain ([<sub>DP</sub> *iyum ixä machity*] = the machete's owner). The translations into Spanish of this sentence lead me to believe that these do indeed act as subject and object, however, further tests are needed to confirm this.

This analysis also predicts that quantifiers in object position should be able to bind into the subject. For instance in the sentence 'its owner broke every machete', 'every machete' should be able to bind into the subject given the structure in (274).

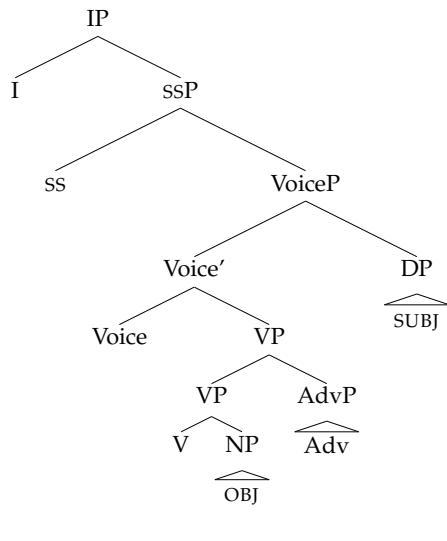
to say, the movement of the object in (274) is *not* case related; rather it is motivated by a need for overt markers of definiteness to vacate the VP, i.e., the domain of existential closure. I discuss this type of movement with respect to syntactic ergativity in Section 5.7.

## Adjuncts

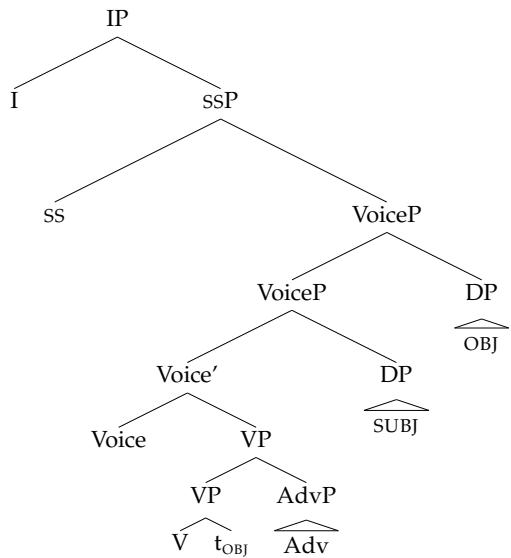
I propose that adjuncts, such as adverbs, are right-adjoined to the VP.<sup>12</sup> This accounts for the ordering of V-O-XP-S for NP objects in (276a) and V-XP-S-O for DP objects in (276b).

(276) Proposal for the placement of adjuncts

a. VOS



b. VSO



The proposals for adjuncts in (276) are important for data related to objects, discussed below.

## Interpretation of objects

Recall the data on numerals in object position from (264), repeated in (277). When the object with a numeral modifier is next to the verb, a low scope indefinite interpretation is possible, in (277a).

<sup>12</sup>Further support for the placement of adverbs at the VP can come from ellipsis. For instance, if it is possible to elide a VP in Ch'ol including the VP adjunct to the exclusion of the subject, this would provide evidence that the adjunct attaches lower than the subject.

When the object shifts out in (277b), it is specific.

- (277) a. *Mi k-ñoj-k'el [cha'-tyikil wiñik] tyi bij.*  
     IPFV A1-always-see **two-CLF** **man** PREP way  
     'I always see two men on the road.' *ñoj > 2; 2 > ñoj*  
     b. *Mi k-ñoj-k'el tyi bij [cha'-tyikil wiñik].*  
     IPFV A1-always-see PREP way **two-CLF** **man**  
     'I always see on the road two men.' *ñoj > 2*

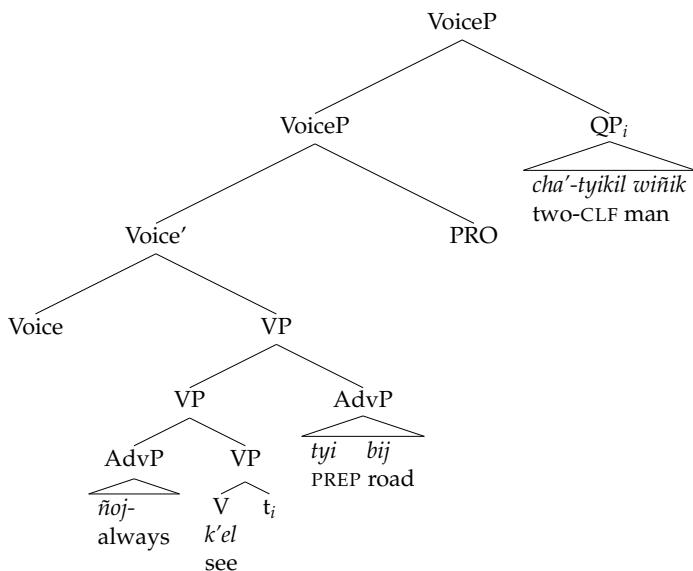
Under a base-generated account, the object moves out of the VP to Spec,VoiceP. It is therefore predicted that the numeral in (277b) does not take low scope with respect to the adverbial quantifier.

- (278) Object moves out of the domain of existential closure



The structure is also provided in (279). Recall that (277b) is marked with the imperfective aspect marker, so the verb is analyzed as being nominalized, hence the PRO in subject position.

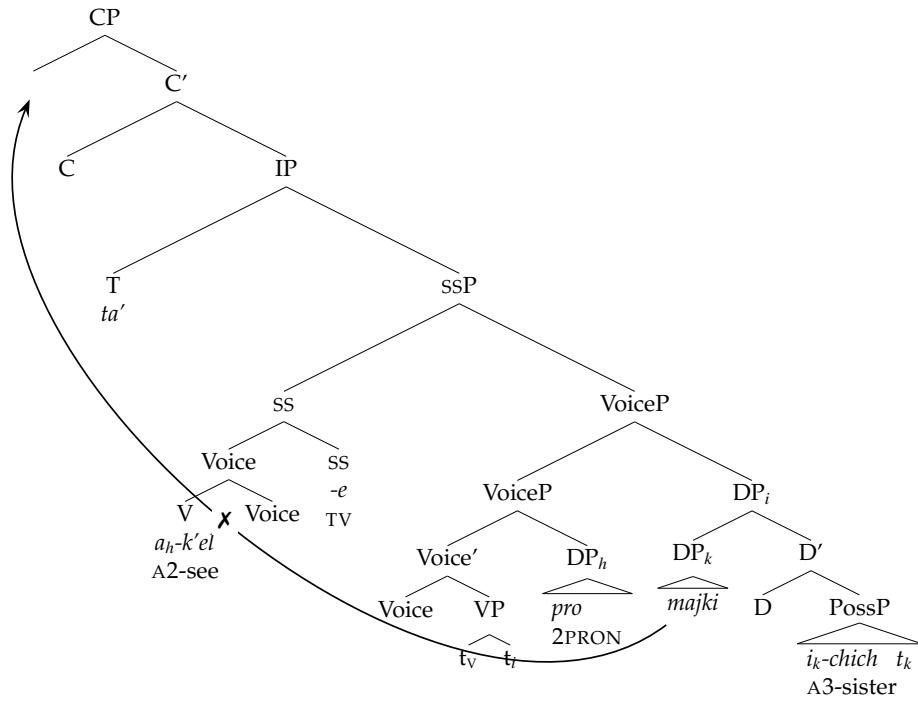
- (279)



## Subextraction asymmetries (Chapter 4)

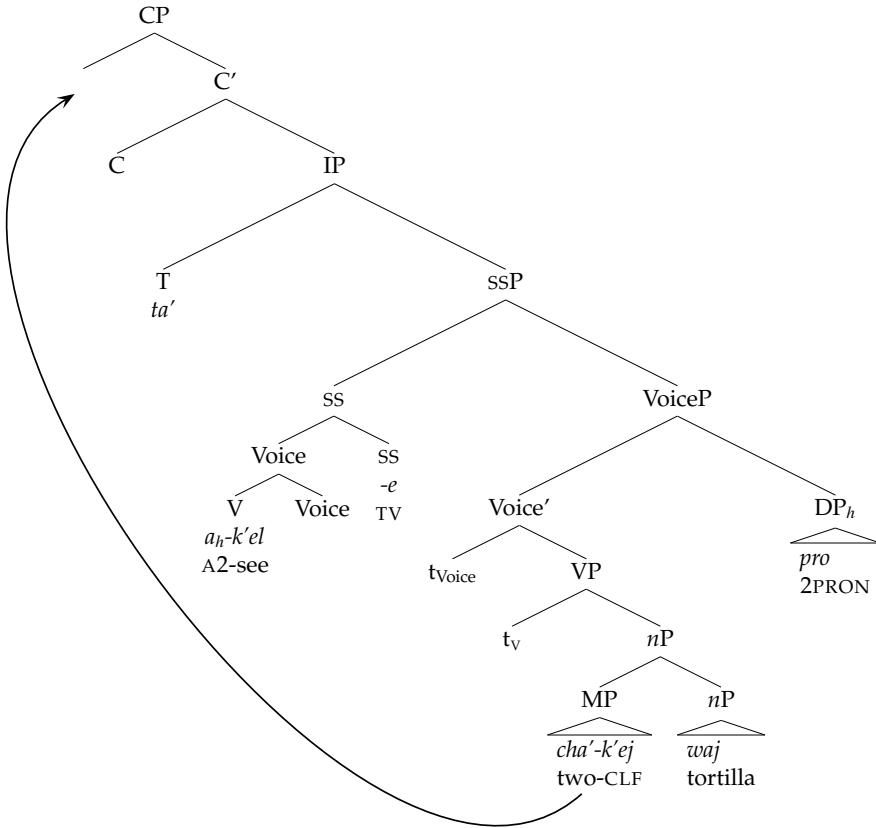
This account can straightforwardly capture the subextraction asymmetries from Chapter 4. For instance, in (280a) the interrogative possessor may not extract from object position as it has been moved and is therefore an island for extraction. This is modeled in the tree in (280b), where *wh*-movement is always to the left. (I discuss how specifier direction is parameterized in Section 5.6.)

- (280) a. \* *Majki<sub>i</sub>; ta' a-k'el-e [ i-chich t<sub>i</sub> ] ?*  
**who PFV A2-see-TV A3-sister**  
 Intended: 'Whose sister did you see?'
- b. Subextraction blocked from moved objects



Recall that VOS objects do permit extraction of numerals, as in (281a). Under a predicate-fronting account the object is within a moved phrase. Given the Freezing Principle, the moved phrase would be an island for extraction, predicting (281a) to not be possible. The account here provides a simpler solution to extraction from VOS objects in (281a): VOS objects remain in their base position and therefore are not islands, so subextraction from them is possible. This is modeled in (281b).

- (281) a. *Cha'-k'ej<sub>i</sub> ta' i-k'ux-u [O t<sub>i</sub> waj ] [S aj-Rosa ].*  
 two-CLF PFV A3-eat-TV tortilla NC-Rosa  
 'Rosa ate *two* tortillas.'
- b. Subextraction possible from objects in their base position



#### 5.5.4 Extension to ditransitives

This account can also be extended to ditransitive constructions in Ch'ol. When the direct object is bare, the most natural ordering of the verb, direct object and indirect object is V-DO-IO, as in (282).<sup>13</sup> Ditransitives are additionally marked with the applicative suffix *-be* on the verb.

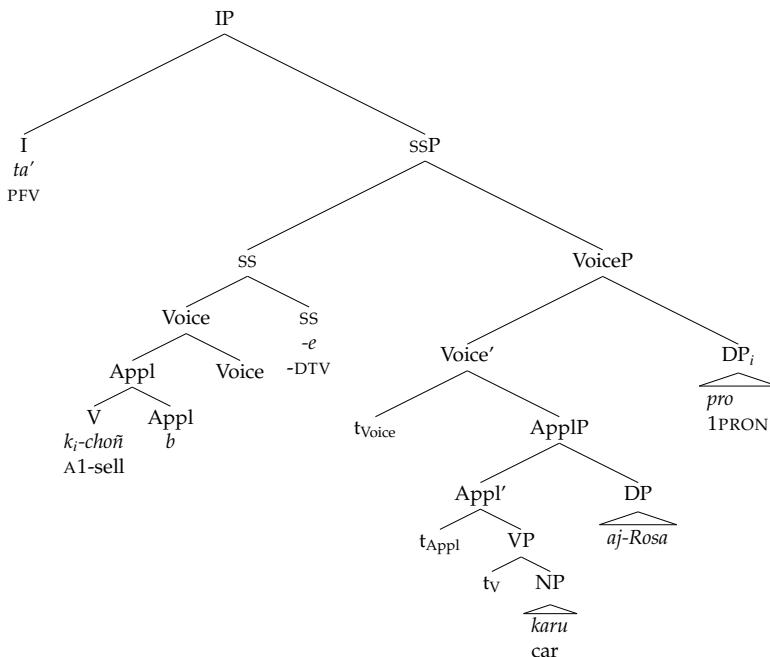
- (282) *Ta' k-choñ-b-e karu aj-Rosa.*  
 PFV A1-sell-APPL-DTV car NC-Rosa  
 'I sold a car to Rosa.'

Ditransitives in Ch'ol are what Pylkkänen (2008) categorizes as low applicatives, as discussed

<sup>13</sup>I have not found any examples of three postverbal verbal arguments in texts. Speakers judged sentences with three postverbal arguments as unacceptable.

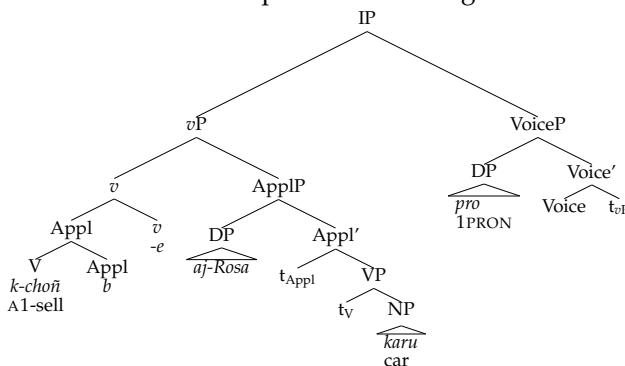
in Coon and Henderson (2010). I follow Georgala et al. (2008) and Georgala (2012) as well as suggestions in Bruening (2010) that some low applicatives are in fact syntactically *above* the VP, diverging from the low applicative structure posited in Pylkkänen (2008). Georgala et al. (2008) call these structurally high low applicatives ‘thematic applicatives’. The structure for ditransitives in Ch’ol is given in (283).<sup>14</sup> This derives the correct order of morphemes as the verb moves via head movement through Appl in (283). Importantly for this analysis, the specifier of ApplP is on the right, deriving the correct postverbal ordering of DO-IO.

(283)



<sup>14</sup>Under a predicate-fronting account, it is unclear how to achieve the correct word order for the objects of ditransitives. Assuming that ApplP is generated below vP, after vP fronting and head movement of the verb, the order that is derived is V-IO-DO in (1), but the attested word order is V-DO-IO in (282).

(1) Ditransitives under a predicate-fronting account?



Additional movement of the object *karu* ‘car’ would need to be motivated to account for the ordering of the postverbal objects in (282), perhaps via roll-up movement.

Under a head movement account, after the verb has moved to ssp from its base position, the direct object NP would be prosodically reordered via ARG-φ and be pronounced with the verb, generating V-DO-IO.

### 5.5.5 Summary

In this section, I have shown how a base-generated account for verb-initial word order can capture VOS/VSO order as well as additional data on morphological, syntactic and semantic properties in Ch'ol. Subjects and possessors are in right specifiers of VoiceP and PossP, respectively. This account capitalizes on the link between object shift and VSO word order, namely that object shift derives VSO word order, in turn capturing the syntactic and semantic properties of objects that were presented in Chapters 3 and 4. It also provides a simpler way of capturing why VOS objects are not islands for extraction. Finally, I extended this account to ditransitive constructions, positing that the indirect object is in a right specifier of ApplP. I also suggested that low applicatives in Ch'ol are syntactically above the VP. Next, I posit that the linearization of specifiers to the right is a parameter setting available to ergative languages and occurs in the narrow syntax.

## 5.6 Formalizing right specifiers

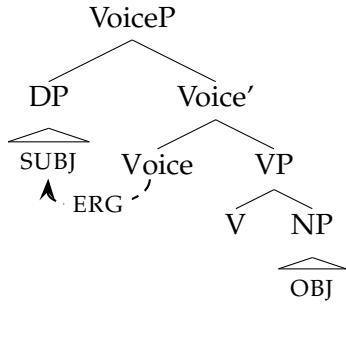
Under Kayne's (1994) antisymmetric approach to syntax, the goal would be to derive VOS or VSO word orders from SVO word order, as phrasal-fronting or head movement accounts do. The approach favored in this chapter is anti-Kayneian in nature, as I have argued for an approach with *right* specifiers. For Kayne (1994), specifiers are on the left. As shown in Section 5.4, deriving verb-initial syntax from a base order of SVO faces certain challenges.<sup>15</sup> In this section, I discuss how right specifiers can be formalized, making a connection between right specifiers and ergative case assignment.

I follow the work of Aldridge (2004, 2008), Coon (2013, 2017), and Legate (2008), in that a low functional head assigns ergative case, as outlined in Chapter 2, Section 2.3.4. I propose that the head that assigns ergative case to its specifier can also encode the direction of the specifier. Under this analysis only ergative languages have the possibility of parameterizing specifiers on the right. Case assignment for ergative and genitive is given below in (284).

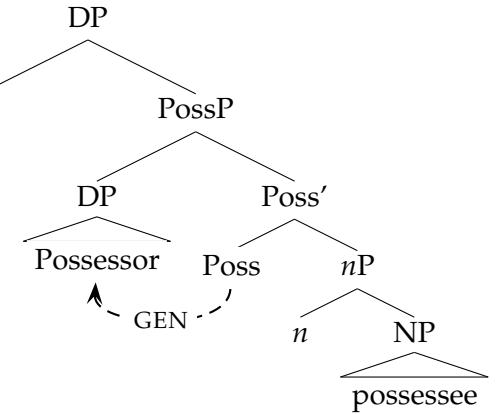
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<sup>15</sup>See also Davis (1999) for a discussion of a Kayneian approach versus a base-generated account for verb-initial word order in St'at'imcets (Salish).

(284) a.



b.



I begin with outlining my theoretical assumptions under a Minimalist approach to syntax (Chomsky, 1995), before I present my proposal for parameterizing right specifiers.

In the Minimalist Program Chomsky (1995), Merge is a set operation that joins two syntactic objects and forms a set as in (285), where L is the label of the set. The label is determined by which of  $\alpha$  or  $\beta$  projects.

$$(285) \text{ Merge}(\alpha, \beta) = \{\text{L } \alpha, \beta\}$$

For instance, if V combines with a direct object NP, the label will be VP, as in (286).

$$(286) \text{ Merge}(V, NP) = \{\text{VP } V, NP\}$$

Now, the sets in (285) and (286) are *unordered* sets. How  $\alpha$  is pronounced with respect to  $\beta$  is not dictated by the set in (285). Linearization of the syntactic objects in (285) is what determines the order in which they appear. It has been posited that precedence relations are determined by structural dominance, or whatever syntactic object is structurally higher is pronounced first (i.e., as per Kayne's (1994) Linear Correspondence Axiom or Yang's (1999) Set Linearization Condition). I depart from this notion and, elaborating on a suggestion in Otaki et al. (2019), formalize a way to linearize right specifiers in the narrow syntax.

To order a set such as in (285), Takita (2020) proposes that the label L of the set containing  $\alpha$  and  $\beta$  triggers linearization in the *narrow* syntax. To account for headedness differences across languages, Takita (2020) motivates an analysis where heads are linearized with their complements

prior to spell out. Takita (2020) proposes the following two linearization rules to derive V-O linearization in English and O-V linearization in Japanese. For Takita (2020) the rules in (287) are parameterized to a given language, accounting for differences in the direction of heads. Linearization, thus, takes place before spell out.

- (287) Linearization of Heads and their Complements (Takita, 2020)

- a. Head-initial rule (e.g., English):  $\{x X, YP\} \rightarrow <X, YP>$
- b. Head-final rule (e.g., Japanese):  $\{x X, YP\} \rightarrow <YP, X>$

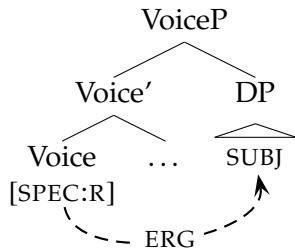
The order of operations to derive linear order of a set of merged syntactic objects is given in

- (288).

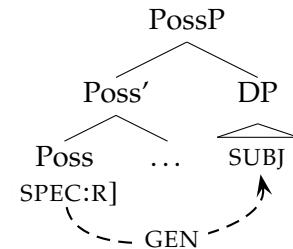
- (288) a. Merge triggers labeling (Chomsky, 1995, 2000)  
 b. Labeling triggers linearization (Takita, 2020)

I propose that the low functional head that assigns ergative or genitive case parameterizes the direction of its specifier, once the subject or possessor is merged. The specifier parameterization is therefore derived in the narrow syntax. Once the set is linearized, it is sent to spell out where uninterpretable features are deleted and then the linearized set is transferred to PF. This derives right specifiers for VoiceP and PossP, i.e., specifiers of case-assigning heads on the right. This includes movement within the VoiceP, where DP objects move. In (289), [SPEC:R] represents a right specifier setting for the VoiceP/PossP, triggered when the subject or possessor is merged and assigned inherent case.

- (289) a.



- b.



Restricting the subject parameterizing to heads assigning inherent case also buoys another fact about the Ch'ol data: A-bar movement to the CP or the edge of DP is always leftward. This

accounts for the fact that *wh*-words and focused constituents appear preverbally, in Spec,CP or Spec,DP.

As mentioned above, this specifier setting is only possible for ergative languages. Nominative-accusative aligned languages do not have this option. This raises questions about rare word orders such as OVS. Dryer (2013) reports 11 OVS languages, and at least eight of them are ergative: Hixkaryana, Tirio and Kuikuro (Cariban), Selknam (Chon), Cubeo (Tucanoan), Asuriní (Tupian), Urarina (Urarinan), and Tuvaluan (Austronesian). A possible way to derive OVS ergative languages is that they are VSO or VOS underlyingly, but the object moves to a position high in the clause, such as in a topic position, generating OVS.<sup>16</sup> Under this approach, the relative rarity of OVS can be ascribed to the extra step of topicalizing the object.<sup>17</sup> Indeed, this seems to be what happens in Tuvaluan, one of the languages listed as OVS in Dryer (2013).

While Tuvaluan is listed in Dryer (2013) as an OVS language, Besnier (2000, 133) describes the basic word order as VSO. He notes, however, that OVS is more frequent than VSO, attributing OVS to direct object preposing (Besnier, 2000, 133), as I suggest in my approach above. That is, Tuvaluan is underlying verb-initial, but by moving the object to a high topic position, OVS word order is achieved. This puts into question the categorization of the other OVS languages—is OVS the basic word order or are there other word order patterns attested? With more language-specific investigation, it will be possible to discern the answer to these questions.

## 5.7 Implications for Mayan languages with fixed VSO word order

Historically, Proto-Mayan word order was VOS, and VSO when the object was more marked in terms of definiteness or animacy (Norman and Campbell, 1978). The analysis argued for in this chapter preserves the idea that VSO in VOS/VSO alternating languages is derived by reordering the object from a base-generated VOS structure. I now discuss implications of this type of analysis

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<sup>16</sup>The OVS language Ungarinjin is described as not being ergative (Rumsey, 1982, 149); however, as Whitman (2008) mentions, it has SV order in intransitive clauses, unlike the other OVS languages which have VS order with intransitive clauses.

<sup>17</sup>There are also four reported cases of OSV in Dryer (2013); however Whitman (2008) raises questions about the validity of analyzing these as instances of true OSV basic word order.

for Mayan languages with rigid VSO word order.

As per Norman and Campbell (1978) and England (1991), strict VSO word order is an innovation of the Mamean and Q'ajonb'alan subgroups. These languages are all found in one geographically fixed zone. As such, fixed VSO word order has been characterized as an instance of diffusion. The languages England (1991) cites with fixed VSO word order are given in (290). There is dialectal variation in Ixil and Chuj: the dialects which do exhibit fixed VSO order are listed after the colon in (290).

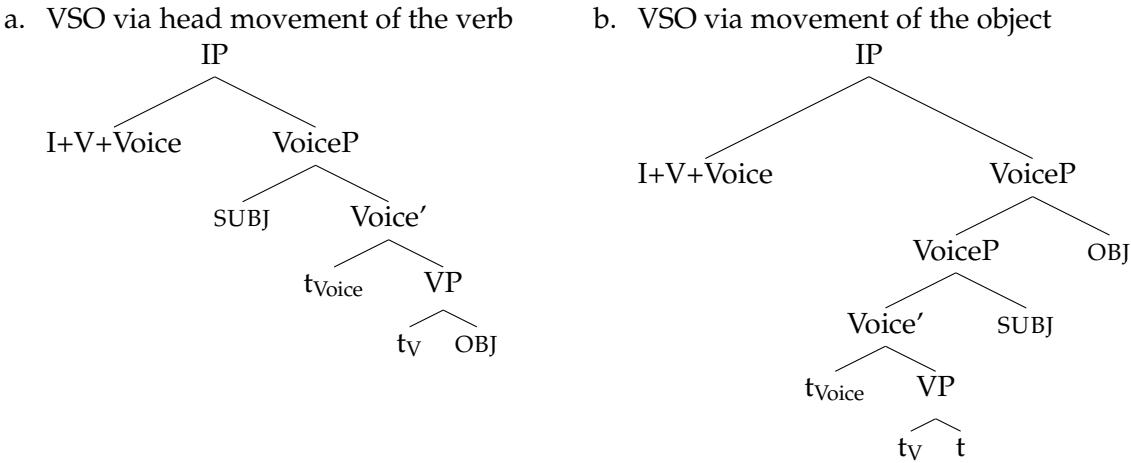
- (290) Mayan languages with fixed VSO England (1991, 451)
- a. Mam
  - b. Tektitek
  - c. Awakateko
  - d. Ixil: Nebaj, Chauj
  - e. Q'anjob'al
  - f. Popti' (Jalkatek)
  - g. Chuj: San Sebastián

An example of VSO in Q'anjob'al is given in (291).

- (291) *Max y-il-a'* [S *ix ix*] [O *naq winaq*].  
ASP A3-see-TV N.CLF woman N.CLF man  
'The woman saw the man.' (Q'anjob'al: Coon et al. 2014, 226)

England (1991) posits that fixed VSO languages generalized the more marked VSO order of Proto-Mayan to be the pragmatically neutral word order. There are two possibilities for how fixed VSO word order in these Mayan languages came about. The possible structures are given in (292).

(292) Two possible structures for fixed VSO in Mayan



In the structure in (292a), SVO order is generated and the verb moves to I, generating VSO. This is essentially the head movement account in Clemens and Coon (2018) without prosodic re-ordering of the object. From a historical perspective, the prosodic constraint which reorders NP objects with the verb that selects them would be deactivated in fixed VSO languages. The structure in (292b), on the other hand, is the same structure I developed for VSO in Ch'ol where VOS is base-generated and the object moves over the subject, generating VSO. From a historical perspective, these languages would have generalized object shift to occur in all VSO instances.

While the structure in (292a) may be simpler, there is evidence pointing towards the structure in (292b) where VSO in fixed VSO Mayan languages *is* derived from VOS via movement of the object over the subject. This comes from two properties of the VSO Mayan languages in (290). These two properties are given in (293).

(293) Properties of Mayan languages with fixed VSO word order

- a. VOS surfaces with reflexives in object position.
- b. Fixed VSO Mayan languages are syntactically ergative.

I review these points below, with data from Q'anjob'al, to support the analysis in (292b) for the languages in (290). I also discuss in Section 5.7.3 why the VSO configuration in (292b) leads to syntactic ergativity in VSO Mayan languages, but not Ch'ol (which is not syntactically ergative).

### 5.7.1 Reflexive objects in fixed VSO languages

The first piece of evidence that points towards deriving VSO from VOS in fixed VSO languages comes from the position of reflexive objects. England (1991, 456) notes that for Mam, a fixed VSO language, VOS word order is observed when the object is reflexive. Coon et al. (2014, 226) cite that the only contexts where Q'anjob'al allows VOS word order are precisely those where the object must be bound locally, as shown in the Q'anjob'al example in (294a). Compare to the VSO sentence in (294b).

- (294) Q'anjob'al

- a. Reflexive: VOS

*Max y-il [O s-b'a ] [S ix ix ].*  
ASP A3-see A3-self N.CLF woman

'The woman saw herself.'

(Coon et al., 2014, 226)

- b. Transitive: VSO

*Max y-il-a' [S ix ix ] [O naq winaq ].*  
ASP A3-see-TV N.CLF woman N.CLF man

'The woman saw the man.'

(Coon et al., 2014, 226)

Under an analysis that posits object shift for fixed VSO, this makes sense. If the base word is VOS, this explains why reflexive objects remain low as they must be bound locally. Under the analysis in (292a), while the subject still c-commands the object and binds it, additional steps would be needed to explain VOS word order in these constructions.

### 5.7.2 Syntactic ergativity and fixed VSO Mayan languages

A property of Mayan languages with fixed VSO word order is that they are syntactically ergative. That is, there are restrictions on certain types of A-bar movement of the ergative subject. This property of VSO Mayan languages can be generalized in the implication in (295).

- (295) *Implication on word order and syntactic ergativity in Mayan:*

If a Mayan language has fixed VSO word order, it is syntactically ergative.

Note that (295) is formulated as a one-way implication: not all syntactically ergative Mayan languages have fixed VSO word order.

To briefly illustrate these restrictions, consider the following data from Q'anjob'al. Q'anjob'al is syntactically ergative as it exhibits extraction asymmetries with respect to absolutive and ergative arguments. In (296a) we see that the *wh*-marked absolutive subject has moved to the preverbal position. In (296b), the sentence is ungrammatical if the ergative subject is extracted. This sentence can only mean 'Who did the man see?', in which case the absolutive object has been extracted.

- (296) Q'anjob'al (Coon et al., 2014, 192)
- a. *Maktxel<sub>i</sub> max way-i t<sub>i</sub>?*  
who ASP sleep-IV  
'Who slept?'
  - b. \* *Maktxel<sub>i</sub> max y-il-a' t<sub>i</sub> naq winaq ?*  
who ASP A3-see-TV CLF man  
Intended 'Who saw the man?'  
Grammatical as 'Who did the man see?'

In syntactically ergative languages, to extract the ergative argument, different structures surface. In Q'anjob'al, the agent focus construction is used, as exemplified in (297). In addition to the agent focus morpheme, the verb also appears with the intransitive suffix (-i), indicating that the structure that surfaces when ergative arguments are extracted is distinct from the syntax in (296).

- (297) [ *Maktxel* ] *max-ach il-on-i?*  
who ASP-2B see-AF-IV  
'Who saw you?' Q'anjob'al (Coon et al., 2014, 215)

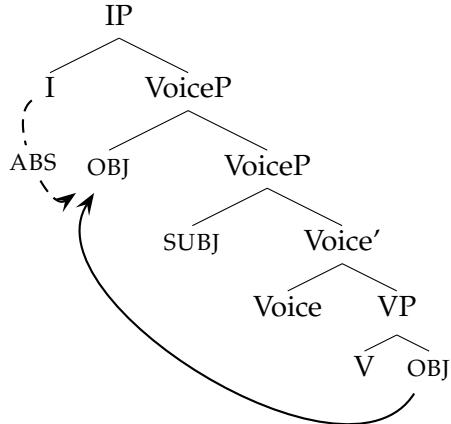
The extraction asymmetries in (296) have led to the characterization of Q'anjob'al as a syntactically ergative language.

To derive syntactic ergativity, many authors have proposed that the object moves above the subject so that it may be case licensed by INFL/T. The difference between syntactically ergative languages and ergative languages that do not have A-bar extraction restrictions is the locus of absolutive case assignment (Aldridge, 2004, 2008; Legate, 2002, 2008; Coon et al., 2014). For instance, Aldridge (2004, 2008, 2012) posits that in transitive clauses INFL/T licenses case to the object. In

order for it to do so, the object must move to a position above the subject, as modeled in (298).<sup>18</sup> I label the projection that introduces the subject as VoiceP for consistency.

(298) Syntactically ergative languages

(Aldridge, 2004, 2008, 2012; Coon et al., 2014)



The movement of the absolute object over the ergative subject in (298) accounts for the “trapping” of the subject, and the extraction restrictions. The reason why syntactic ergativity arises is because the absolute object raises above the subject to check case with INFL/T. For this reason, the ergative argument is trapped inside the VoiceP and may not extract out. An additional stipulation is needed that VoiceP may not project additional specifiers in order to let the ergative argument extract out. Note that Coon et al. (2014) model the movement in (298) as covert, not effecting word order.

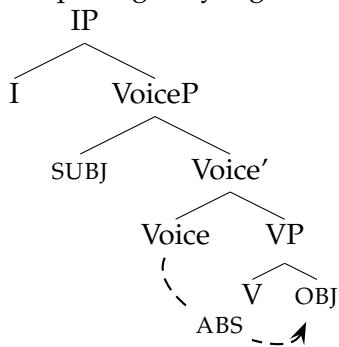
Ch’ol, on the other hand, is morphologically ergative, and, as discussed in Chapter 2, Section 2.3.4, absolute case for the object is licensed in situ by a low functional projection, modeled in (299).

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<sup>18</sup> Aldridge (2004, 2008, 2012) also provides a second way to derive syntactic ergativity where the object is assigned absolute case by a low functional head such as *v*/Voice, but then moves to Spec, VoiceP/Spec, *v*P to check an EPP feature.

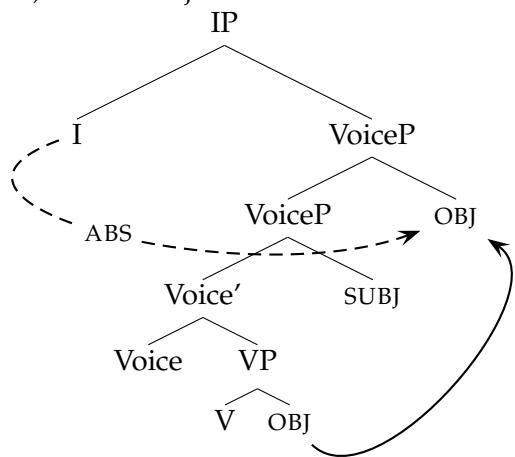
(299) Morphologically ergative languages

(Aldridge, 2004, 2008, 2012; Coon et al., 2014)



I propose that the object movement in (298) is *overt*, to a right specifier of VoiceP in fixed VSO Mayan languages. This is modeled in (300). Consequently, this links case assignment, extraction restrictions, and VSO word order.

(300) Overt object movement and absolute case assignment in a fixed VSO language



Instead of the movement of the object being covert as in (298), the object moves overtly in Q'ajonb'al and other fixed VSO Mayan languages, deriving both syntactic ergativity and VSO word order.

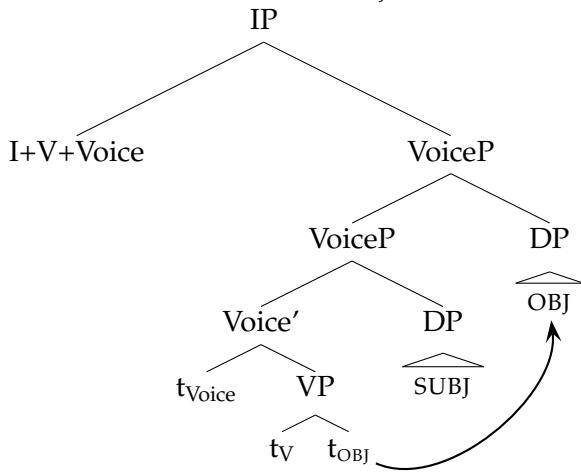
Finally, as presented in Coon et al. (2020), constructions with reflexive objects are precisely where extraction of the ergative argument *is* possible. Above, I posited that reflexives do not move over the subject as they must be bound locally in their base VOS object position. Consequently, since the object has not moved, the subject is not trapped and can extract out. If VSO languages are underlying VOS, under the verb-initial structure argued for here, extraction restrictions and reflexive constructions can be explained.

Next, I provide two options for why the object-over-subject configuration of VSO sentences leads to syntactic ergativity in Q'anjob'al, but not in Ch'ol.

### 5.7.3 VSO and syntactic ergativity

As mentioned above, a significant difference between Ch'ol and the rigidly VSO Mayan languages is syntactic ergativity. This leaves the question as to why the configuration in (301) leads to syntactic ergativity in some languages, but not in Ch'ol.

(301) VSO via movement of the object



Below, I propose two possibilities to derive the differences between a syntactically ergative language, such as Q'anjob'al, and a morphologically, but not syntactically, ergative, language such as Ch'ol.

The first option to derive this difference concerns (i) the type of movement; and (ii) whether VoiceP may project multiple specifiers. For Coon et al. (2014), syntactic ergativity arises because the absolute argument moves above the ergative subject, driven by case-motivated reasons. A question then arises as to why the same configuration proposed for Ch'ol VSO does not ban extraction of the ergative argument. Ch'ol, as shown in (302a), allows ergatives to extract from transitive clauses, in contrast to the Q'ajonb'al example, repeated in (302b). The construction in (302a) has a DP object, as those objects are posited to be in a right specifier of VoiceP, structurally above the

subject.

- (302) a. *Majki<sub>i</sub> ta' i-k'el-e t<sub>i</sub> jiñi wiñik?*  
           who PFV A3-see-TV man  
           'Who saw the man?'  
           Also grammatical as: 'Who did the man see?' Ch'ol
- b. \* *Maktxeli<sub>i</sub> max y-il-a' t<sub>i</sub> naq winaq ?*  
           who ASP A3-see-TV CLF man  
           Intended 'Who saw the man?'  
           Grammatical as 'Who did the man see?' Q'anjob'al

In Aldridge (2004) and Coon et al. (2014), movement of the absolutive argument over the subject is case-driven movement. Aldridge (2004) and Coon et al. (2014) must stipulate that the phase edge (in this case labeled as Voice) cannot project multiple specifiers. I assume that VoiceP is a phase and that in order to extract out of the phase, a constituent must move through the phase edge, following Chomsky (1986, 2000, 2001, 2008). The configuration in (301) blocks the extraction of the ergative argument as the Voice phase head may not project another specifier to let the ergative argument extract out. The difference between the VSO configuration in Ch'ol, I propose, is that in Ch'ol the verbal projection may project multiple specifiers, allowing the ergative argument to extract out.

Indeed the type of movement undergone by DP objects in Ch'ol and objects in VSO Mayan languages is different. In Ch'ol, movement is due to the structure of the nominal but in VSO Mayan languages, object movement is case-driven movement. Recall, that I have assumed that Voice assigns absolutive case to objects in Ch'ol, whereas in VSO Mayan language INFL/T assigns absolutive case.

The first solution for  $\pm$ syntactic ergativity is summarized in (303).

- (303) Multiple specifiers proposal for  $\pm$ syntactic ergativity (option 1)
- a. Syntactically ergative languages cannot project multiple specifiers on the edge of the transitive verbal projection so the ergative argument is trapped after the object moves above it. Movement of the object above the subject is case-motivated.
  - b. Morphologically, but not syntactically, ergative languages allow multiple specifiers so the ergative argument may extract out through a specifier on the edge of the transitive verbal projection. Movement of the object above the subject is not case-motivated.

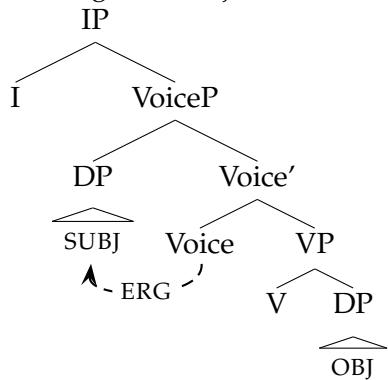
The second option involves changing the head which licenses absolutive case to the transitive object, adopting the case maraudage analysis of Assmann et al. (2015). In Assmann et al. (2015), instead of Voice/*v*, INFL/T always assigns absolutive case.<sup>19</sup> Crucial for their analysis is that in ergative systems Merge occurs before Agree. For Assmann et al. (2015), syntactic ergativity arises due to the ergative argument marauding case on INFL/T when it tries to extract out. Assuming phase-by-phase movement and that IP/TP is a phase, what goes wrong is that when the ergative argument moves through the specifier of INFL/T, it steals, or marauds, the absolutive case feature on INFL/T. This maraudage leaves the internal argument unmarked for case and causes the derivation to crash. Maraudage of the case feature in INFL/T also implies that DPs can check more than one case (i.e., ‘case stacking’ (Andrews, 1996; Sadler and Nordlinger, 2006; Richards, 2013; Assmann et al., 2014)). This leads to syntactic ergativity. These steps are schematized in (304).

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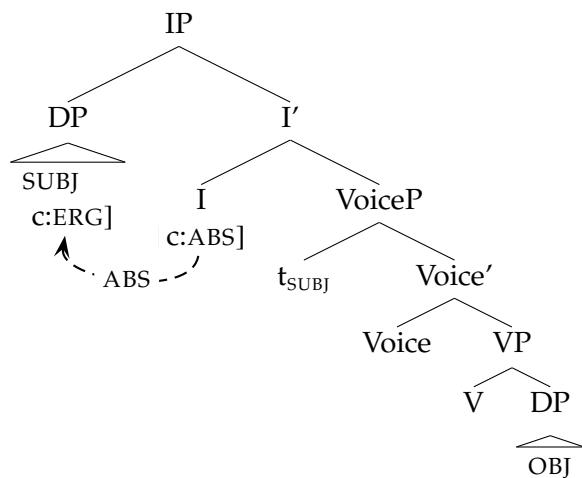
<sup>19</sup> Assmann et al. (2015) use the terms internal case and external case. Internal case is assigned by *v* to ergative arguments in a ergative-absolutive system and external case is assigned by T to objects of transitive verbs or subjects of intransitive verbs. For accusative languages, internal case is assigned to objects via *v* and external case is assigned to external arguments via T. To streamline the discussion, I utilize the labels absolute and ergative case.

- (304) An Assmann et al. (2015)-approach to syntactic ergativity

- a. The ergative subject is first assigned case via Voice

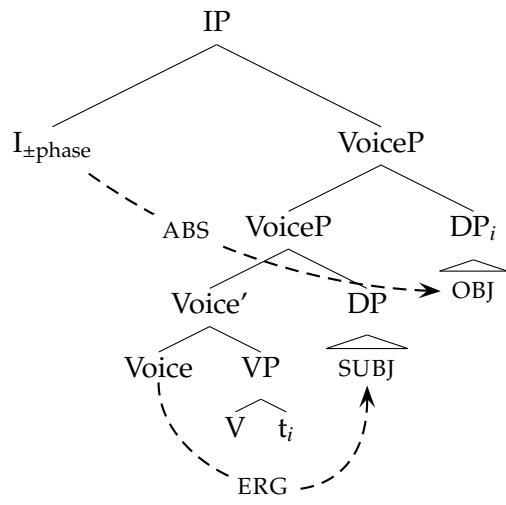


- b. Merge before Agree triggers movement of the ergative-marked subject through Spec,IP, where it marauds the absolute case on I, leaving the object without a case: derivation crashes



Extending this account to verb-initial Mayan languages, the absolute case is assigned as schematized in (305).

- (305)



Under this option, for a language like Ch'ol, it can be assumed that INFL/T is not a phase, so movement of the ergative argument does not maraud the case on INFL/T. That is, the movement in (304b) does not happen as INFL/T is not a phase in Ch'ol. In a language such as Q'anjob'al, INFL/T is a phase, and movement of the ergative subject through INFL/T marauds the absolute case. This minimal difference, under the system of Assmann et al. (2015), is an option for why the configuration in (301) results in syntactic ergativity for Q'anjob'al, but not for Ch'ol. This option is summarized in (306).

- (306) Case maraudage proposal for  $\pm$ syntactic ergativity, based on Assmann et al. (2015) (option 2)
- In syntactically ergative languages, INFL/T is a phase and movement of the ergative argument through INFL/T marauds the ABS case feature, so the object is left caseless and the derivation crashes.
  - In morphologically, but not syntactically, ergative languages, INFL/T is not a phase so movement of the ergative argument does not pass through INFL/T, therefore there is no maraudage of the ABS case.

Adopting the option in (306), however, raises issues for VOS in Ch'ol—if the object must move to Spec,VoiceP for case reasons under the account in Assmann et al. (2015), a stipulation would need to be added that NPs are pronounced in their base position (VOS) whereas DPs are pronounced in Spec,VoiceP (VSO). This extra stipulation may point towards favoring option 1 in (303).

#### 5.7.4 Summary

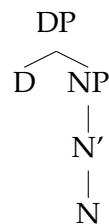
In this section, I argued that VSO in fixed VSO Mayan languages is derived from VOS by moving the object overtly. The proposal that VSO is underlyingly VOS can account for the fact that VOS appears in instances where the object must be bound locally, i.e., when the object is a reflexive. I also posited that overt movement of the object above the subject links VSO word order with syntactic ergativity in these languages. Moving forward, a way to test if the word order analysis for VSO Mayan languages is on the right track is to investigate properties of VSO objects—are they islands for extraction? Can they bind into subjects? Do they always take wide scope? I leave these questions for future investigation.

I also provided two solutions for why the configuration of object-over-subject leads to syntactic ergativity for rigid VSO Mayan languages, but not for Ch'ol. The first option relates to whether multiple specifiers may project at the edge of the verbal domain. The second option involves changing the case licensing heads and adopting a case maurodage analysis from Assmann et al. (2015).

## 5.8 VSO Mayan languages and the NP/DP hypothesis

Before concluding this chapter, I outline areas of future investigation on the nominal and clausal domains in Mayan, with implications for the underlying syntax of noun phrases across languages. Within nominal syntax, a point of contention is whether all languages' nominal expressions have the structure in (307) or if some languages lack a DP layer.

(307)



For instance, the Universal DP Hypothesis states that all languages, no matter if they have overt definite articles or not, have the structure in (307). That is, the head of the nominal projection is D and not N. For instance, in English the definite article 'the' would be a phonological output of D. Early proponents of the Universal DP Hypothesis, summarized in Bruening (2009), include Hellan (1986), Abney (1987), and Szabolcsi (1987). The difference between a language with articles, such as English, and a language without obligatory articles, such as Russian, is phonological. Under the Universal DP Hypothesis, D is projected but not pronounced in Russian.

Some authors have taken issue with the universality of (307), such as in Payne (1993) and Bruening (2009). While Payne (1993) and Bruening (2009) have argued against the DP hypothesis, other authors have argued that the structure in (307) is not universal; rather it is parameterized across different languages (see discussion in Bošković (2005, 2008); Despić (2011, 2013, 2015)). For

the NP/DP hypothesis, a core empirical difference of languages whose nominals are headed by D is that these languages have overt definite articles. NP languages do not have overt definite articles and under this hypothesis, D would not be projected in a language such as Russian. English, under this theory, has the structure in (307). I sketch out some research queries relating to this hypothesis for nominal syntax in Mayan.

As discussed in Chapter 3, Ch'ol does not have obligatory determiners. That is, bare nouns may be definite depending on the context. Throughout this dissertation, I have labeled nominal phrases in Ch'ol with determiners or overt possessors as DPs for descriptive purposes, but recall that Ch'ol does not *obligatorily* mark definiteness. It is the fact that articles are not obligatory that preliminarily supports characterizing Ch'ol as an NP language, under the NP/DP hypothesis.

On the other hand, some Mayan languages seem to have obligatory markers of definiteness. This is exhibited in (308) for Q'anjob'al.

(308) Q'anjob'al

*Max-*Ø *s-tayne-j* [s *naq unin*] [o *te na*].  
 COM-A3S E3S-take.care-TV N.CLF child N.CLF house

'The child took care of the house.'

(Mateo Toledo, 2008, 79)

Noun classifiers such as *naq* and *te* signal an overt definite interpretation.<sup>20,21</sup> As clear for Ch'ol, objects with overt markers of definiteness appear in VSO object position. Since Q'anjob'al has obligatory markers of definiteness, it would be classified as a DP language under the NP/DP hypothesis. If overt markers of definiteness trigger object shift in Ch'ol, is there a connection between VSO in Q'anjob'al and its possible status as a DP language? That is, if Q'anjob'al objects project a D, this could be further support for why objects must shift.

<sup>20</sup>In Chuj, a language related to Q'anjob'al, these nominal classifiers may also appear with numerals and the indefinite article *jun*. But in Chuj [ N.CLF NP ] always arises in a definite interpretation (Royer, 2019).

<sup>21</sup>Extended reflexive constructions such as in (1a) are also an area for further investigation. In the extended reflexive construction in (1a) in Chuj, the possessor of the object in (1a) must be the subject Xun. When there is an overt third person pronoun, bolded in (1b), the subject can no longer bind into the object.

- (1) Chuj (J. Royer, personal communication, July 1, 2020)

- a. *Ix-s-chonh s-wakax waj Xun.*  
 PFV-A3-sell A3-cow CLF Xun  
 "Xun sold his (own) cow."
- b. *Ix-s-chonh s-wakax **winh** waj Xun.*  
 PFV-A3-sell A3-cow CLF CLF Xun  
 'Xun<sub>1</sub> sold his<sub>2/\*1</sub> cow.'

However, not all rigidly VSO Mayan languages have obligatory definite articles. England (1983, 151) notes this for Mam, a Mayan language of the Mamean branch:

There is no definite article in Mam. The indefinite article alone marks a noun phrase as indefinite; its absence implies definiteness. (England, 1983, 151)

An example from Mam is given in (309), with the bare definite nouns bolded.

- (309) *ma Ø-txi7 t-k'aa7ya-n* [<sub>S</sub> ***xiinaq***] [<sub>O</sub> ***axi7n***].  
REC B3-DIR A3-sell-DS      **man**            **corn**

'The man sold the corn.' Mam: (England, 1983, 151) (with my bracketing and emphasis)

This contrasts in two ways with Ch'ol. The first is that in Mam bare nouns must be definite. Recall from Chapter 3 that in Ch'ol bare nouns as objects in VOS word order and absolute subjects in VS word order can be indefinite. According to England (1983), in Mam, bare nouns are always definite and indefinites are lexically marked. The second contrasting point is that Mam is a rigidly VSO language, whereas Ch'ol is VOS/VSO alternating. If VSO objects in Mam can be bare, but must be definite, then this could constitute further support for the proposal for VSO languages. If the object in VSO languages is not within the VP, this would capture that bare objects in Mam can only be definite: it is outside of the domain of existential closure. It would then be predicted that to express indefiniteness, overt markers must be used, and/or incorporating structures. Nevertheless, this point contrasts to the one made above for Q'anjob'al. Unlike in Q'anjob'al, definiteness is not marked in Mam.

Finally, as has been noted in the literature, the presence or absence of an article in a language can have consequences for other properties of that language (see, e.g., Bošković (2008) or Despić (2011) for a list of crosslinguistic generalizations). One generalization that was mentioned in Chapter 4 is that if a language allows left branch extraction, it does not have obligatory articles. This is another aspect that can be further investigated within the Mayan languages. Without a doubt, the connections between nominal and clausal structure across Mayan languages promises to be a rich area for future work.

## 5.9 Conclusion

In this chapter, I compared recent analyses for verb-initial word order in Ch'ol, specifically the head movement account from Clemens and Coon (2018) and Coon's (2010b) predicate-fronting account. I argued for a base-generated approach to verb-initial word order, drawing on analyses from Chapters 3 and 4. This account, I argue, is able to capture the order of morphemes (adopting the order of phrases from Clemens and Coon (2018)), nominals, and syntactic and semantic properties of VOS versus VSO objects. Additionally, this account is extendable to ditransitive constructions. I also provided a formalization for parameterizing the direction of specifiers, based on the head that assigns ergative case. As not all verb initial languages are ergative, it follows that verb-initial languages do not form a homogenous syntactic class.

I additionally proposed that in fixed VSO Mayan languages, the object moves overtly above the subject. This is supported by data on reflexives and syntactic ergativity. More investigation into the syntactic and semantic properties of VSO objects in fixed VSO Mayan languages can further support this analysis. For instance, are VSO objects islands for extraction? Can they bind into the subject? Do they always take wide scope? This account would say yes—these are therefore testable predictions for subsequent work.

## CHAPTER 6

### CONCLUSION

The investigation of mutual dependencies between nominal and clausal syntax can reveal clues to the underlying structure of a language. These clues also inform us about structural consistencies that hold crosslinguistically. I have examined properties of nominal arguments and their dependencies on clausal syntax as a window to investigate underlying structure. While these dependencies may be linearized in different ways, there are robust structural consistencies. This dissertation presents a case study of Ch'ol arguing that certain mutual dependencies of nominal and clausal structure favor a particular analysis for verb-initial word order. The dependencies in Ch'ol are not Ch'ol-specific. Many other languages exhibit similar patterns with respect to object position and interpretation or movement-derived islands. What is different is that using these observations in Ch'ol points towards a particular analysis of word order.

The analyses in this dissertation raise some testable predictions with respect to verb-initial word order and the syntactic and semantic properties of nominals. Some that I listed in Chapter 5 include the scope and islandhood of objects. Verb-initial languages, I argue, do not form a unified syntactic class. While some properties are quite consistent across verb-initial languages, other properties are not. One major difference across these languages is case marking. For instance, VSO languages such as Standard Arabic and Irish are nominative-accusative aligned. I do not claim that the approach from Chapter 5 for VSO in Q'anjob'al would apply to Standard Arabic or Irish. Indeed, my formalization of the direction of specifiers is dependent on ergative case.

Moving forward, of particular interest is the investigation of other word order variations within the Mayan language family. One such language is Chuj, a Mayan language of Guatemala and Mexico, which, like Ch'ol, exhibits VOS word order as in (310). In (310), however, we see that there is a full DP object—the proper name *Xun*, accompanied by an obligatory nominal classifier *waj*. This is in contrast to Ch'ol, where it was shown that proper names were not allowed in VOS object position.

- (310) Chuj VOS (San Mateo Ixtatán dialect)

*Ix-y-il* [o *waj* Xun ] [s *ix* Malin ].  
PFV-A3-see N.CLF Xun N.CLF Malin

'Malin saw Xun.'

Adapted from Royer (To Appear) with my bracketing

On the one hand, a prosodic account from Clemens and Coon (2018) would face challenges analyzing (310), as VOS objects are full DPs, and therefore the prosodic reordering of them with the verb would not be expected. On the other hand, base-generating VOS could account for (310) though further investigation is needed, especially with respect to the syntactic and structural properties of the nominal arguments. For instance, does object shift occur in (310) at all? The placement of adjuncts and the syntactic and semantic properties of the VOS object are important in order to determine the right syntax for (310). Further examination of typologically diverse languages can thus provide us with insight on the relationship between syntactic dependencies and their linearization.

**Kty'añ II**

*Muk'ikax imejlel jts'ijbu'beñ ityijkñäyel ili kty'añ,*

*mi kmel yik'oty xpapañichim.*

*Muk'ikax imejlel jpits'chokoñ ilojwel ili kty'añ,*

*mi kmel che' tyi yoralel tsäñal cha'an che' jiñi mi imek'ob ibä lakbäkel.*

Juana Karen Peñate Montejo

## APPENDIX A

### GLOSSED NARRATIVE: XI'BA

The narrator of this story is Evelina Arcos López, who speaks the Tumbalá dialect of Ch'ol spoken in San Miguel, Municipio de Salto de Agua, Chiapas, Mexico. This story was recorded in June 2016 by Carol-Rose Little, who later transcribed, glossed and translated it with the help of Morelia Vázquez Martínez and Shenia Arcos Álvaro. The following is a story about some farmers who were coming home at night and encounter a pack of *xi'bas* eating an elderly man they have just killed. *Xi'bas* are demons or evil spirits which resemble various animals, making it difficult to tell whether an animal is really an animal or an evil *xi'ba*.<sup>1</sup>

- (1) *Añ abix xcholelob.*  
Añ a=bi=x x-cholel-ob.  
EXT PRT=REP=already NC-field-PL  
'There were some farmers.'
  
- (2) *Ta'bi sujtyiyob tyilel, i'ik'ix abi.*  
Ta'=bi sujty-i-yob tyil-el, i'ik'=ix a=bi.  
PFV=REP return-IV-PL DIR:come-NML black=already PRT=REP  
'They were returning at night.'
  
- (3) *I'ik'ix ya' ta' tyiyiyob tji bij.*  
I'ik'=ix ya' ta' tyiy-i-yob tji bij.  
black=already there PFV come-IV-PL PREP way  
'It was already dark when they were coming down the path.'
  
- (4) *Ya' a ta' ik'ayob tji bij a jiñ xcholelob.*  
Ya' a ta' ik'a-y-ob tji bij a jiñ x-cholel-ob.  
There PRT PFV spend.night-IV-PL PREP way PRT DET NC-field-PL  
'The farmers spent the night on the road.'
  
- (5) *Che' abi joch otyoty.*  
Che' a=bi joch otyoty.  
PRT PRT=REP unoccupied house  
'There was an empty house.'

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<sup>1</sup>Glossing notes: I gloss *a* as a particle (PRT). It often appears with nouns but also can host clitics, as seen with *abi*, the participle with the reportative enclitic. It is unclear if the *a* which appears with clitics is the same *a* which precedes nouns. I suggest in Chapter 2 that *a* could come from the topic marker, which is also *a*. Arcos López (2009) glosses it as a filler word. Nevertheless, it is of note that the distribution of *a*, as in this story, is a distinctive feature of the Tumbalá dialect.

- (6) *Ya' añ tabla tyi ijol otyotyi.*  
 Ya' aña tabla tyi i-jol otyotyi=i.  
 there EXT board PREP A3-head house=ENCL  
 'There was a board on top of the house.'
- (7) *A che jiñi ta' abi letsiyob a uxtyikil wiñik.*  
 A che jiñi ta' a=bi lets-i-yob a ux-tyikil wiñik.  
 PRT PRT=REP det PFV PRT=REP climb-IV-PL PRT three-CLF.HUM man  
 'Then the three men climbed up.'
- (8) *A che jiñi mach abi a wok iña'tyañob majk tyal a wiñikob.*  
 A che jiñi mach a=bi a wo-k i-ña'ty-añ-ob majk tyal a wiñik-ob.  
 PRT PRT DET NEG PRT=REP PRT prog=IRR A3-think-DTV-PL who come PRT man-PL  
 'And, the men weren't thinking who would be coming.'
- (9) *Ya' ta'bi letsiyob tyi wäyel.*  
 Ya' ta'=bi lets-i-yob tyi wäy-el.  
 there PFV=REP ascend-IV-PL PREP sleep-NML  
 'They went up it to sleep.'
- (10) *A che ta' utyi chämel.*  
 A che ta' uty-i chäm-el.  
 PRT PRT PFV finish-IV die-NML  
 'A death had just happened.'
- (11) *Ta'bi chämi wiñik.*  
 Ta'=bi chäm-i wiñik.  
 PFV=REP die-IV man  
 'A man had died.'
- (12) *Jixmeku a xi'ba wo ikuchob tyi a we'el.*  
 Ji=x=me=ku a xi'ba wo i-kuch-ob tyi a we'el.  
 DET=already=PRED=ASV PRT xi'ba PROG A3-carry-PL DIR:come PRT meat  
 'Some *xi'bas* were coming towards them carrying some meat.'
- (13) *Wo ikuchob tyi iwe'el a xi'ba.*  
 Wo i-kuch-ob tyi i-we'el a xi'ba.  
 PROG A3-carry-PL DIR:come A3-meat PRT xi'ba  
 'The *xi'bas* are coming towards them carrying some meat.'
- (14) *Pej xityil abi wo ab ijol a tyi lum.*  
 Pej xity-il a=bi wo ab i-jol a tyi lum.  
 but mouth.down-STAT PRT=REP PROG PRT.REP A3-head PRT PREP ground  
 'They were facing mouth-down with their heads to the ground.'

- (15) *Wo abi ijok'chokob ich'ajañ tyi ikejlab.*  
 Wo a=bi i-jok'-chok-ob i-ch'ajañ tyi i-kejlab.  
 PROG PRT=REP A3-hang-throw-PL A3-string PREP A3-shoulder  
 'They were hanging the string of their bag on their shoulders.'
- (16) *Iyok aba'ila.*  
 I-yok aba'ila.  
 A3-leg like.this  
 'His leg (leg of the dead man) was like this.'
- (17) *Ye a päkpäktyalkob a xwäyelob tyi ipam lamina, tabla abi.*  
 Ye a pák-pák-tyak-ob a x-wäyel-ob tyi i-pam lamina, tabla a=bi.  
 there PRT lying.down-RED-PLIN-PL PRT NC-sleep-PL PREP A3-top roof, board PRT=REP  
 'The sleeping men were lying face-down on top of the roof, on the boards.'
- (18) *Mach abi añik iboptye'elel a otyotyi.*  
 Mach a=bi añ=ik i-boptye'-el-el a otyotyi.  
 NEG PRT=REP EXT=IRR A3-fence-RS-RS PRT house=ENCL  
 'There was no wooden wall around the house.'
- (19) *Mach abi iboptye'elel.*  
 Mach a=bi i-boptye'-el-el.  
 NEG PRT=REP A3-fence-RS-RS  
 'It didn't have a wooden fence.'
- (20) *A che jiñi ye'jach a päkpäktyakob a wiñikob.*  
 A che jiñi ye'=jach a pák-pák-tyak-ob a wiñik-ob.  
 PRT PRT DET PRT=EXCL PRT lying.face.down-RED-PLIN-PL PRT man-PL  
 'The men were just lying on their stomachs.'
- (21) *Che jiñi ta' abi tyiliyob a xi'bajob.*  
 Che jiñi ta' a=bi tyil-i-yob a xi'ba-job.  
 PRT DET PFV PRT=REP A3-come-IV-PL PRT xi'ba-PL  
 'Then the *xi'bas* came.'
- (22) *K'otyi abi ijijañob.*  
 K'oty-i a=bi i-jij-s-a-ñ-ob.  
 arrive-IV PRT=REP A3-rest-CAU-DTV-NML-PL  
 'They came to put something down.'
- (23) *Xxxx che abi k'otyel a xi'ba.*  
 XXXX che a=bi k'oty-el a xi'ba.  
 Shhh PRT PRT=REP arrive-NML PRT xi'ba  
 'Shhh was how the *xi'bas* arrived.'

- (24) *Polok' che a k'otyel a wiñiki.*  
 Polok' che a k'oty-el a wiñik=i.  
 plop PRT PRT arrive-NML PRT man=ENCL  
 'The [dead] man plopped to the ground.'
- (25) *Päkäktyakob wo abi ik'elob tyi lum a jiñi*  
 Päk-pák-tyak-ob wo a=bi i-k'el-ob tyi lum a jiñi  
 lying.down-red-PLIN-PL PROG PRT=REP A3-see-PL PREP ground PRT DET  
*lakpi'älob.*  
 la=k-pi'äl-ob.  
 PART.PL=A1-friend-PL  
 'The guys were watching the ground as they were lying down.'
- (26) *Tax a kaj ijochbeñob ibujk a wiñiki.*  
 Ta=x a kaj i-joch-b-eñ-ob i-bujk a wiñik=i.  
 PFV=already PRT start A3-take.off-APPL-DTV-PL A3-shirt PRT man=ENCL  
 'They started to take off the man's shirt.'
- (27) *Tax kaji ik'uxob.*  
 Ta=x kaj-i i-k'ux-ob.  
 PFV=already start-IV A3-eat-PL  
 'They started to eat him.'
- (28) *Ta' abi ijochbeyob ibujk.*  
 Ta' a=bi i-joch-b-e-yob i-bujk.  
 PFV PRT=REP A3-take.off-APPL-DTV-PL A3-clothes  
 'They took off his shirt.'
- (29) *Ta' abi ich'ojoyob.*  
 Ta' a=bi i-ch'oj-o-yob.  
 PFV PRT=REP A3-munch-TV-PL  
 'They munch into him.'
- (30) *Ich'ojbeyob ijol.*  
 I-ch'oj-b-e-yob i-jol.  
 A3-bite-APPL-DT-PL A3-head  
 'They munched into his head.'
- (31) *Ta' ilok'be isotya.*  
 Ta' i-lok'-b-e i-sotya.  
 PFV A3-take.out-APPL-DT A3-innards  
 'They took out his innards.'
- (32) *Ya' buchul laktatuchi.*  
 Ya' buch-ul la=k-tatuch=i.  
 there sit-STAT PART.PL=A1-grandfather=ENCL  
 'The old man was just sitting there.'

- (33) *Buchul aba laktatuch.*  
 Buch-ul aba la=k=tatuch.  
 seated-STAT PRT PART.PL=A3-grandfather  
 'The old man was just sitting there.'
- (34) *Ta' abi ilok'be iyaty bajche' wo awäli.*  
 Ta' a=bi i-lok'-b-e iy-aty bajche' wo aw-äl=i.  
 PFV PRT=REP A3-take.out-APPL-DTV A3-penis like PROG A2-say=ENCL  
 'They took off his penis as you were saying.'
- (35) *Ta' abi ilok'be iyatyji.*  
 Ta' a=bi i-lok'-b-e iy-aty=i.  
 PFV PRT=REP A3-take.out-appl-dt A3-penis=ENCL  
 'They took off his penis.'
- (36) *Wäle ich'a'an laktatuch ilili.*  
 Wäle i-cha'an la=k=tatuch ilili.  
 now A3-PREP PART.PL=A1-grandfather here  
 'The old man's.'
- (37) *Wo abi ijich'be che'i.*  
 Wo a=bi i-jich'-b-e che'i.  
 PROG PRT=REP A3-hobble-APPL-DTV PRT  
 'They were tying up his feet.'
- (38) *A che jiñi tyulul abi iwutyob a lakpiälob.*  
 A che jiñi tyul-ul a=bi i-wuty-ob a la=k-piäl-ob.  
 PRT PRT DET fixed-STAT PRT=REP A3-face-PL PRT PART.PL=A1-friend-PL  
 'The men had their eyes fixed on them.'
- (39) *K'uxux tatuch, cheyob abi.*  
 K'ux-u-x tatuch che-yob a=bi.  
 eat-IMP=already grandfather PRT-PL PRT=REP  
 'Eat the old man, they said.'
- (40) *Ta' bää'kaj ik'ux laktatuch.*  
 Ta' bää'-kaj i-k'ux la=k=tatuch.  
 PFV then-start A3-eat PART.PL=A1-grandfather  
 'They then started to eat the old man.'
- (41) *Ta' ab ik'uxu a laktatuch.*  
 Ta' ab i-k'ux-u a la=k=tatuch.  
 PFV REP A3-eat-TV PRT PART.PL-A1-grandfather  
 'They ate the old man.'

- (42) *Jäch jäch jäch jäch ik'ux a laktatuch.*  
 Jäch jäch jäch jäch i-k'ux a la=k-tatuch.  
 nom nom nom nom A3-eat PRT PART.PL=A1-grandfather  
 'Nom, nom, nom, nom they ate the old man.'
- (43) *Weñ sumuk abi!*  
 Weñ sumuk a=bi!  
 very tasty PRT=REP  
 'Very tasty!'
- (44) *Weñ sumuk che abi laktatuchi.*  
 Weñ sumuk che a=bi la=k-tatuch=i.  
 very tasty PRT PRT=REP PART.PL=A1=grandfather=ENCL  
 'This old many is very tasty they said.'
- (45) *Wejlañixku a lajk'ajki che abi yälä a*  
 Wejl-añ=ix=ku a la=j-k'ajk=i che a=bi y-äl-ä a  
 blow-DTV=already=AFF PRT PART.PL=A1-fire=ENCL PRT PRT=REP A3-say-DTV PRT  
*xku.*  
 x-ku.  
 NC-owl  
 'Blow on the fire, the owl said.'
- (46) *Ta' abi ibä'wejla a k'ajk a xku.*  
 Ta' a=bi i-bä'-wejl-a a k'ajk a x-ku.  
 PFV PRT=REP A3-then-blow-DTV PRT fire PRT NC-owl  
 'The owl blew on the fire himself.'
- (47) *Che jiñixmeku a jiñi bajlum... lekojix panmil chejob*  
 che jiñi=x=me=ku a jiñi bajlum... lekoj=ix panmil chej=ob  
 PRT DET=already=PREP=ASV PRT DET jaguar disagreeable=already universe PRT-PL  
*xi'bajob.*  
 xi'baj-ob.  
 xi'ba-PL  
 'So, the jaguar said, something is off...said the xi'bas.'
- (48) *Chuk añ?*  
 Chuk añ?  
 what EXT  
 'What's wrong?'
- (49) *Lekojix iyuts'il panmili.*  
 Lekoj=ix iy-uts'il panmil=i.  
 disagreeable=already A3-smell universe=ENCL  
 'Something is off.'

- (50) *Wox ab ijamob its'ak a lakpiälobi.*  
 Wo=x ab i-jam-ob i-ts'ak a la=k-piäl-ob=i.  
 PROG=already REP A3-open-PL A3-medicine PRT PART.PL=A1-friend-PL=ENCL  
 'The men opened up some medicine.'
- (51) *Che'jax a bajche' iyuts'il pajch'...pajch'i yu'bil.*  
 Che'=jax a bajche' iy-uts'il pajch'...pajch'=i y-u'bil.  
 part=EXCL PRT like A3-smell pineapple...pineapple=ENCL A3-feel  
 'It smells like pineapple...like pineapple.'
- (52) *Pajch' cheyob abi a xi'ba.*  
 Pajch' che-yob abi a xi'ba.  
 pineapple PRT=PL PRT=REP PRT xi'ba  
 'Like pineapple, said the xi'bas.'
- (53) *Xxxx chejob a xi'ba.*  
 Xxx che-job a xi'ba.  
 shhh part-PL PRT xi'ba  
 'Shhh said the xi'bas.'
- (54) *La' lajk'e bajche' yilal k'uxtyalob.*  
 la' la=j-k'el bajche' yi-lal k'ux-tyäl-ob.  
 let's PART.PL=A1-see how A3-seem eat-PSV.NML-PL  
 'Let's see how to eat them.'
- (55) *Che jiñi lekux abi wo ibä'ñañob a*  
 Che jiñi leku=x a=bi wo i-bä'ñ-añ-ob a  
 PRT DET disagreeable=already PRT=REP PROG A3-fear-DTV-PL PRT  
*lakpiälobi aña'bä tysi ipam otyoty.*  
 la=k-piäl-ob=i aña-o'=bä tysi i-pam otyoty  
 PART.PL=A1-friend-PL=ENCL EXT-PL=REL PREP A3-top house  
 'And the men on top of house were very afraid of them.'
- (56) *Wolobix ata ibä'ñañob kome bajche' aki*  
 Wol-ob=ix a=ta i-bä'ñ-añ-ob kome bajche' a=ki  
 PROG-PL=already PRT=REA A3-fear-DTV-PL because how PRT=INTER  
*ju'belob kome i'ik'ix abi.*  
 ju'b-el-ob kome i'ik'=ix a=bi.  
 get.down-NML-PL because black=already PRT=REP  
 'They were very scared as how were they going to get down, as it was already night.'
- (57) *Mach añaobik ipoko.*  
 Mach aña-ob-ik i-poko.  
 NEG EXT-PL-IRR A3-flashlight  
 'They didn't have a flashlight.'

- (58) *Che jiñix ameku jiñobjax a lakpiälobi ta'*  
 Che jiñi=x a=me=ku jiñ-ob-jax a la=k-piäl-ob=i ta'  
 PRT DET=already PRT=PRED=ASV DET-PL=EXCL PRT PART.PL=A1-friend-PL=ENCL PFV  
*abi ijamäyob its'aki.*  
 abi i-jam-ä-yob i-ts'ak=i.  
 PRT=REP A3-open-DTV-PL A3-medicine=ENCL  
 'Then the men opened up the medicine.'
- (59) *Tamaku iwelchoko... iwelchokota ju'bel.*  
 Ta=ma=ku i-wel-choko... i-wel-chok-o=ta ju'b-el.  
 PFV=PRED=ASV A3-throwADV-throw-TV A3-throwADV-throw-TV=REA DIR:descend-NML  
 'They threw it down.'<sup>2</sup>
- (60) *Ta abila yajlyiob ju'bel a xi'ba.*  
 Ta abila yajl-i-yob ju'b-el a xi'ba.  
 PFV like.this fall-IV-PL DIR:down-NML PRT xi'ba  
 'The xi'bas fell down.'
- (61) *Woxol a jiñi ts'ak mu'bä ik'äñob.*  
 Woxol a jiñi ts'ak mu'=bä i-k'äñ-ob.  
 round.shape PRT DET medicine IPFV=REL A3-use-PL  
 'The medicine they used was ball-like.'
- (62) *Piäläi, mutyo imel kmama wajali.*  
 Piäl-äi mu=tyo i-mel k-mama wajali.  
 friend-DEINAL IPFV=still A3-make A1-mother back.then  
 'My mother used to make this kind of medicine.'
- (63) *Woxol mi ijuch' tyi molino.*  
 Woxol mi i-juch' tyi molino.  
 round.shape-STAT IPFV A3-grind PREP grinder  
 'She grinds it into a round ball in the grinder.'
- (64) *Mi ijuch' che mi iwojxiñ bajche' ilili.*  
 Mi i-juch' che mi i-wojx-iñ bajche' ilili.  
 IPFV A3-grind PRT IPFV A3-ball-DTV.NML like this  
 'She grinds it then balls it up, like this.'
- (65) *Mutyo iweñk'ux kmama wajalix.*  
 Mu=tyo i-weñ-k'ux kmama wajali=x.  
 IPFV=still A3-very-eat A1-mother back.then=already  
 'My mother used to eat it a lot, back then.'

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<sup>2</sup>The adverbial preverb *wel* relates to the form in which an object is thrown.

- (66) *Che' bajche' tyañi.*  
 Che' bajche' tyañ=i.  
 PRT like lime=ENCL  
 'Like a lime.'
- (67) *Che amek ta' ikujujyobi ubiyi.*  
 Che a=me=k ta' i-kuj-u-y-ob=i ubiyi.  
 PRT PRT=PRED=ASV PFV A3-hit-DAT-PL=ENCL they.say  
 'Then it hit them, they say.'
- (68) *Che' ameki ta' ichokoyob ju'bel.*  
 Che' a=me=k=i ta' i-chok-o-yob ju'b-el.  
 PRT PRT=PRED=ASV=ENCL PFV A3-throw-DAT-PL DIR:down-NML  
 'They threw it down.'
- (69) *Tameki yajliyob a xi'ba.*  
 Ta=me=k=i yajl-i-yob a xi'ba.  
 PFV=PRED=ASV=ENCL fall-IV-PL PRT xi'ba  
 'The xi'bas fell.'
- (70) *Puts'iyob a wiñiki.*  
 Puts'-i-yob a wiñik=i.  
 flee-IV-PL PRT man=ENCL  
 'The men fled.'
- (71) *Wuu wuu a wiñiki.*  
 wuu wuu a wiñik=i.  
 whoa whoa PRT man=ENCL  
 'The men were like whoa...'
- (72) *Puts'iyob amek majlel.*  
 Puts'-i-yob a=me=k majl-el.  
 flee-IV-PL PRT=PRED=ASV DIR:go-NML  
 'They fled away.'
- (73) *Majliyob abi wiñikob.*  
 Majl-i-yob a=bi wiñik-ob.  
 go-IV-PL PRT=REP man-PL  
 'The men went away.'
- (74) *Tyo'ochejax abi ta' majliyobi kome mach añobiki*  
 Tyo'ol-che=jax a=bi ta' majl-i-yob=i kome mach añ-ob=ik=i  
 EXCL-PART=EXCL PRT=REP PFV go-IV-PL=ENCL because NEG EXT-PL=IRR=ENCL  
*ipoco.*  
 i-poco.  
 A3-flashlight  
 'They just went away because they did have a flashlight.'

- (75) *Che'eñ cha'kaj a tyi ty'an a waxi.*  
 Che'eñ cha'-kaj a tyi ty'an a wax=i.  
 then again-start PRT PREP noise PRT grey.fox=ENCL  
 'The grey fox started to make noise.'
- (76) *Jix ameku a waxi ta' ka iyajñesañob*  
 Ji=x a=me=kü a wax=i ta' ka iy-ajñ-es-añ-ob  
 DET=already PRT=PRED=ASV PRT grey.fox=ENCL PFV start A3-run-CAU-DTV-PL  
*majl el.*  
 majl-el.  
 DIR:go-NML  
 'The grey fox went after them.'
- (77) *Ta'bi iyajñesa wax.*  
 Ta'=bi iy-ajñ-es-a wax.  
 PFV=REP A3-run-CAU-DTV PRT grey.fox  
 'The grey fox went after them.'
- (78) *Wax che' a baje ts'i'.*  
 Wax che' a baje ts'i'.  
 grey.fox PRT PRT like dog  
 'Grey foxes are like dogs.'
- (79) *Che bajche' mis.*  
 Che bajche' mis.  
 PRT like cat  
 'Like a cat.'
- (80) *Juñachich bajche' mis a wax.*  
 Juña=jach=ix bajche' mis a wax.  
 quite=EXCL=already like cat PRT grey.fox  
 'These grey foxes look like cats.'
- (81) *Pero xi'ba abi je wax.*  
 Pero xi'ba a=bi je wax.  
 but xi'ba PRT=REP DET grey.fox  
 'But the grey fox was also a xi'ba.'
- (82) *Chejiñi ya' lätsä iximi.*  
 Chejiñi ya' läts-äl ixim=i.  
 then there stacked-STAT corn=ENCL  
 'There was some stacked corn.'
- (83) *Ya' ta' majiyob tyi puts'el ili wiñikob ba ixim.*  
 Ya' ta' maj-i-yob tyi puts'-el ili wiñik-ob ba' ixim.  
 there PFV go-IV-PL PREP flee-NML this man-PL where corn  
 'The men fled into the corn.'

- (84) *Che' bajche' añbä tyi aktwarto.*  
 Che' bajche' añ=bä tyi a-kwarto.  
 PRT like EXT=REL PREP A2-room  
 'Like there is in your room.'
- (85) *Ta' ab ochi a lakpi'äil ba' iximi.*  
 Ta' ab och-i a la=k-pi'äil ba' ixim=i.  
 PFV REP enter-IV PRT PART.PL=A1-friend where corn=ENCL  
 'The men went into the corn.'
- (86) *Ta' abi ijok'oyob ixim a wiñikob.*  
 ta' a=bi i-jok -o-yob ixim a wiñik-ob.  
 PFV PRT=REP A3-dig-TV-PL corn PRT men-PL  
 'The men dug into the corn.'
- (87) *Mach ata yomobik k'uxtyäl che'.*  
 Mach a=ta y-om-ob=ik k'ux-tyäl che'.  
 NEG PRT=REA A3-want-PL=IRR eat-PSV.NML PRT  
 'They certainly did not want to be eaten.'
- (88) *Jok'oyo' abi a iximi.*  
 Jok'-o-y-o' a=bi a ixim=i.  
 dig-tv-PL PRT=REP PRT corn=ENCL  
 'They dug into the corn.'
- (89) *P'uchu aba ixim ta' k'otyi tysi iwuty a lakpi'älob.*  
 p'uch-ul aba ixim ta' k'oty-i tysi i-wuty a la=k-pi'älob.  
 amass-STAT like corn PFV arrive-IV PREP A3-face PRT PART.PL=A1-friend-PL  
 'The corn was amassed in a pile and it got into the faces of the men.'
- (90) *Añ abi yalä machity a ixim.*  
 Añ abi y-alä machity a ixim.  
 EXT rep A3-DIM machete PRT corn  
 'The corn had a machete.'
- (91) *Añ abi ich'ujlel a ixim.*  
 Añ a=bi i-ch'ujlel a ixim.  
 EXT PRT=REP A3-spirit PRT corn  
 'The corn has a spirit (it was alive).'
- (92) *Ts'inlaw abi bajche' machity ta' imele a ixim.*  
 Ts'inlaw a=bi bajche' machity ta' i-mel-e a ixim.  
 swish PRT=REP like machete PFV A3-do-TV PRT corn  
 'The corn went 'swish' with the machete.'

- (93) *Ta' abi ikotyayob a jiñ wiñikob.*  
Ta' a=bi i-koty-a-yob a jiñ wiñik-ob.  
PFV PRT=REP A3-help-DTV-PL PRT DET man-PL  
'It helped the men.'

- (94) *Che' a baj kwentu bajche' jiñi.*  
che a baj kwentu bajche' jiñi.  
PRT PRT like.this story like DET  
'That's the story.'

- (95) *Che' bajche' jiñi.*  
che' bajche' jiñi.  
PRT like DET  
'That's it.'

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