

MOOD SELECTION AND DOXASTIC PREDICATES IN YUCATEC SPANISH

by

KATHRYN P. BOVE

(Under the Direction of Pilar Chamorro Fernández)

ABSTRACT

Yucatec Spanish has been considered a contact variety of Spanish that carries many features attributed to years of contact with Yucatec Maya on the Yucatán Peninsula in Mexico. While many studies have documented and discussed mood in Spanish, subjunctive/indicative selection in this contact variety has previously been understudied. Grammatical mood overtly marks modal information in a verb phrase with specific morphology. In Spanish, two moods can be triggered in the subordinate clause embedded under the complementizer *que*: the subjunctive and the indicative. A key distinction in Spanish is the assertion/non-assertion divide (Terrell & Hooper 1974) and (lack of) pragmatic presupposition (Lunn 1989, 1995), which explain the distribution of subjunctive selection. Yucatec Spanish has been identified as an indigenous contact variety in which differences between bilingual and monolingual groups have been observed in phonetics (Solomon 1996, 1999; Michnowicz 2009, 2011), syntax (Michnowicz 2015, Klee 2009), and pragmatics (Bove 2018).

The current dissertation begins with an overview of mood selection in Yucatec Spanish and provides a statistical analysis of mood selection in that contact variety. A forced choice task was distributed to 165 participants throughout the Yucatán Peninsula. Data gathered from the participants show that while some predicate types pattern with prescriptive grammars (such as volitional predicates) or previous accounts of Mexican Spanish (such as emotive predicates), epistemic predicates present unique mood selection patterns. Next, I offer a semantic analysis of mood that focuses specifically on doxastic predicates (or belief predicates). Adopting Giannakidou's (1998, 2015) notions of (non)veridicality and the epistemic subjunctive, I argue that a speaker selects the subjunctive to weaken commitment to a proposition, and while certain structures favor a particular mood selection, the epistemic subjunctive is available any time the speaker interprets that the utterance may be nonveridical (i.e., neither true nor false). Based on these findings, I posit that mood in Yucatec Spanish is motivated by speaker interpretation of the (non)veridicality of a proposition.

INDEX WORDS: Yucatec Spanish, mood selection, Spanish, Veridicality

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GLOSSES

The following glosses are used for the Yucatec Maya and Yucatec Spanish data. I adopt the glosses for other cross-linguistic data as they appear in the original work.

ACT active voice
ANT anti-passive voice
CAUS causative
COMP compulsative
DAT dative
DES unassertive (almost)
FUT future tense
IMP imperative mood
IMPERF imperfective aspect
IND indicative mood
NEG negation particle
PAST past tense
PERF perfective aspect
PRED predictive
PRES present tense
PREV preventative
PROG progressive aspect
PROSP prospective
REL.PERF relative perfect
REM.PERF remote perfect
SUBJ subjunctive mood

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS	iv
LIST OF GLOSSES	vi
LIST OF TABLES	x
LIST OF FIGURES	xi
CHAPTER	
1 INTRODUCTION	1
Introduction	1
The research location	3
The Spanish subjunctive	5
Modality, epistemicity, and doxastic predicates	9
Research questions	17
Dissertation road map	18
2 PREVIOUS ACCOUNTS OF MOOD SELECTION	20
Introduction	20
The subjunctive in Spanish	20
Modal approaches to mood selection	47
Giannakidou's notion of veridicality	54
Conclusions	69
3 MOOD SELECTION IN YUCATEC SPANISH: A DESCRIPTIVE ANALYSIS ..	71

Introduction.....	71
The current study	71
Methodology	74
Results.....	79
Discussion	89
Conclusions.....	96
Implications for semantic acceptability	97
 4 DOXASTIC PREDICATES AND MOOD IN YUCATEC SPANISH: THE CASE OF AFFIRMATIVE AND NEGATED UTTERANCES	 99
Introduction.....	99
Mood selection in Yucatec Spanish.....	101
Pragmatic influence: the role of context	133
Conclusions.....	138
 5 EPISTEMIC SUBJUNCTIVE IN YUCATEC SPANISH: THE CASE OF MODALS AND INTERROGATIVES	 142
Introduction.....	142
Modifying commitment in doxastic predicates.....	145
Modals and the subjunctive	156
Interrogatives and the subjunctive	170
Conclusions.....	180
 6 FORMAL ANALYSIS OF MOOD AND DOXASTIC PREDICATES IN YUCATEC SPANISH	 184
Introduction.....	184

Mood selection in doxastic predicates in Yucatec Spanish	187
Formalizations.....	188
Interpreting propositions.....	190
Conclusions.....	196
7 CONCLUSIONS.....	200
REFERENCES	209

LIST OF TABLES

	Page
Table 1: Anticipated mood selection in Spanish.....	72
Table 2: Participant data	73
Table 3: Verb types and stimuli	76
Table 4: Judgment categories.....	78
Table 5: Percentage of subjunctive responses: Volitional predicates.....	79
Table 6: Percentage of subjunctive responses: Emotive predicates.....	81
Table 7: Percentage of subjunctive responses: Epistemic predicates..	83
Table 8: Yucatec Spanish mood selection..	91
Table 9: Summary of mood in negated doxastic utterances..	114
Table 10: Summary of structure and mood preference.....	116
Table 11: Mood and affirmative doxastic utterances.....	121
Table 12: Summary of mood and parenthetical interpretations.....	125
Table 13: Mood preference in Yucatec Spanish.....	138
Table 14: Summary of nonveridical environments.....	181
Table 15: Summary of person as an indicator of mood selection.....	183
Table 16: Mood selection in modalized doxastics and interrogatives	184
Table 17: Epistemic certainty and resulting mood selection	185

LIST OF FIGURES

	Page
Figure 1: Screenshot from online survey	77
Figure 2: Anticipated subjunctive selection (%).....	86
Figure 3: Anticipated indicative selection (%).	87

CHAPTER 1

INTRODUCTION

1. INTRODUCTION. Identifying the motivation of mood selection cross-linguistically has been the focus of many investigations that propose taxonomies and theories that would encompass or explain patterns of mood selection in Spanish. This type of study has identified intriguing patterns in mood choice, but in searching for concise taxonomies, less attention has been devoted to varieties that present unique patterns. In this dissertation, I will first present data from Yucatec Spanish to argue that pan-hispanic analyses of mood selection do not always correctly portray the use of the subjunctive/indicative in Spanish. Second, I offer an analysis that accounts for the new patterns identified in Yucatec Spanish.

Modality is ‘the linguistic phenomenon whereby grammar allows one to say things about, or on the basis of, situations that need not be real’ (Portner 2009:1). One aspect of modality (and the focus of the present dissertation) is grammatical verbal mood, which Portner (2009:258) ‘provisionally’ defines as ‘dependent sub-sentential¹ modality represented in the form of the verb’. In Spanish, this distinction encompasses the subjunctive/indicative/imperative moods. The following utterances demonstrate the indicative (1a), the subjunctive (1b), and the imperative (1c):

¹ Portner (2009:3) argues that mood is an aspect of sub-sentential modality because mood is determined by sub-sentential modality higher in the structure; for example, *it is possible that S* licenses the subjunctive because of the modality expressed by ‘possible’ in the matrix clause.

- (1) a. *Sé que cada lunes me compra un café.*
 know.IND.1SG that each Monday 1SG.DAT buy.IND.3SG a coffee
 ‘I know that every Monday he buys me a coffee’.
- b. *Quiero que cada lunes me compre un café.*
 want.IND.1SG that each Monday 1SG.DAT buy.SUBJ.3SG a coffee
 ‘I want him to buy me a coffee’.
- c. *Cómprame un café.*
 buy.IMP.2SG-1SG.DAT a coffee
 ‘Buy me a coffee’.

In utterances 1a and 1b, a complement clause is embedded under a matrix verb by the subordinator *que* ‘that’. The complement clause contains the proposition *he buys me a coffee*. In 1a, the factive predicate *saber* ‘to know’ licenses the indicative in the embedded complement. In 1b, the volitional predicate *querer* ‘to want’ licenses the subjunctive. Palmer (1986:186) notes that it is often the predicate in the main clause that provides information regarding notional mood, making the overt morphology (i.e. subjunctive, indicative) in the subordinate clause somewhat redundant. The imperative in 1c is the third mood, but as it does not occur in a subordinate clause, it falls outside the scope of this dissertation.

The current dissertation focuses on mood selection in the contact variety of Yucatec Spanish. A contact variety is spoken in areas in which two (or more) languages are in contact with each other. This contact can have an effect on the languages’ phonology, morphology, syntax, and semantics. The effect of language contact on mood selection in Yucatec Spanish is underdocumented. In order to document the general trends in mood selection in Yucatec Spanish, a forced-task survey was given to 165 participants in Yucatán and the surrounding

states. The results of this test identify unanticipated mood selection in the complements of epistemic predicates, or predicates that reflect a perspective of how the actual world is (i.e. *think*, *seem*, *appear*, *be sure*, etc.). To explain why this selection occurs, I present a semantic analysis of mood selection in doxastic predicates, or belief predicates, in which I argue that mood selection is based on speaker interpretation of the embedded proposition. In this chapter, I describe the research population and the location where I conducted fieldwork for this dissertation (section 2). Next, I give a brief overview of previous research on the subjunctive on which I build my analysis of the Yucatec Spanish subjunctive (section 3). Following this overview, I present information on modality and epistemicity and define doxastic predicates, which are the focus of the current dissertation (section 4). The chapter ends with a presentation of the research questions (section 5) and a road map of the dissertation (section 6).

2. THE RESEARCH LOCATION. To lay the groundwork for this dissertation, this section provides a brief overview of the area, language situation, and the people in Yucatán. The Yucatán Peninsula is made up of three Mexican states: Yucatán, Quintana Roo, and Campeche. To the southeast, Quintana Roo is home to the popular tourist destinations of Cancún, Playa del Carmen, and Cozumel. According to the World Bank (2013), Quintana Roo has a population of 1,325,578 permanent residents, and according to the 2010 census, 196,060 of these residents are Yucatec Maya speakers (14.7%). The state of Yucatán is in the northern central region of the peninsula. Its capital, Mérida, is located near the Gulf of Mexico and has a population of 830,732. Of the 1,995,577 residents of Yucatán, 537,516 speak Yucatec Maya (26.9%) (World Bank 2013). The last state on the Yucatán Peninsula is Campeche, located in the northwest part of the peninsula. Campeche is the least populated state, with only 822,441 residents; 91,094 (11%) of Campeche's residents speak Maya (World Bank 2013).

From the traditional *huipil* to culinary delights such as *poc chuc*, it is hard to separate the Maya from the Spanish traditions of the Yucatán. The blending of cultures is especially reflected in the language of the area, even among monolingual speakers. Phonologically, the people eat *pam* (*pan* ‘bread’), and Yucatecos are excited to share the numerous lexical items that have been adopted from Yucatec Maya into the local Spanish: A curly-haired person is a *mulix* ‘curly’, and crumbs left on a table are *xix* ‘crumb’. They use verb phrases such as *hacer loch* ‘to make an embrace’ (Spanish *hacer* ‘to make’ and Maya *loch* ‘embrace’) instead of *abrazar* ‘hug’, and *rasgar su tuch* (Spanish *rasgar* ‘scratch’, Spanish *su* for ‘his/her/their/your (formal)’, and Maya *tuch* ‘belly’) to describe a person who does nothing.

The primary research site, Valladolid, Yucatán, was selected for this study for several reasons. Valladolid is situated midway between Cancun and Mérida, the largest cities in Quintana Roo and Yucatán, respectively. With a population of 74,217 residents and with 37,342 Yucatec Maya speakers (World Bank 2013), Valladolid has a high rate of bilingualism, and the Yucatec language and culture are interwoven throughout the town. Valladolid is home to several universities, and the two public universities in town, the *Universidad de Oriente* ‘University of the Orient’ (UNO) and *Instituto Técnico Superior de Valladolid* (ITSVA), both provide substantial financial support for students to pursue higher education, particularly for first-generation university students. Due to this financial support, there are a large number of university-age students from the surrounding communities who take advantage of the educational opportunities available at these institutions. Finally, the UNO offers a Maya Culture and Linguistics program of study. The program requires that students speak both Maya and Spanish prior to enrollment, and students study areas that range from pedagogy to anthropology to linguistics. The majority of UNO graduates work as teachers in bilingual schools in the region

after graduation, but some pursue higher education opportunities and collaborate with the notable number of researchers who come to the area to study Yucatec language and culture. In this area, Maya language and culture shape what it means to be a *Vallasoletano*, or someone from Valladolid.

3. THE SPANISH SUBJUNCTIVE. The study of mood selection in Yucatec Spanish presented in this dissertation begins with a descriptive approach. The examples of the subjunctive/indicative that are presented in utterance 1 above capture accounts of pan-hispanic mood selection patterns as reported in a plethora of investigations on mood selection in Spanish, including Bull (1960), Gili y Gaya (1969), Rivero (1971), Terrell and Hooper (1974), Garcia and Terrell (1977), Bell (1980), Blake (1985), Lunn (1989, 1995), Studerus (1995), and Bosque and Demonte (1999).² This dissertation will focus initially on volitional, emotive, and epistemic matrix clauses:

(2) *Quiero que [la entregues mañana].*

want.1SG that it turn_in.SUBJ.2SG tomorrow

‘I want that [you turn it in tomorrow]’.

(3) *Me gusta que [la entregues mañana].*

DAT be pleasing.3SG that it turn_in.SUBJ.2SG tomorrow

‘I want that [you turn it in tomorrow]’.

(4) *No dudo que [la puedes terminar mañana].*

NEG doubt.1SG that it can.IND.2SG finish.INF tomorrow

‘I do not doubt that [you can finish it tomorrow]’.

² It would be an understatement to say there are a lot of studies on mood selection in Spanish. This list is not complete but highlights some of the most influential work. It is important, too, to note that these accounts present pan-Hispanic generalizations rather than a variety-specific account of Spanish.

The volitional predicate in 2 (*quiero*), emotive predicate in 3 (*me gusta*), and negated epistemic predicate in 4 (*no dudo*) embed a proposition with the complementizer *que*. In such cases in Spanish, two distinct moods are triggered: the subjunctive (as in 2 and 3) or the indicative (as in 4).

Overall, many researchers have attempted to explain how each mood is licensed in Spanish. Key distinctions in Spanish include the assertion/non-assertion divide (Terrell & Hooper 1974) and pragmatic presupposition (Lunn 1989). More recently, however, linguists such as Mejías-Bikandi (1998, 2016) and Haverkate (2002) have examined what they identify as pragmatically motivated mood selection in some varieties of Spanish. For example, Mejías-Bikandi (1998) argues that mood alternation reflects pragmatic contrast, particularly with regard to the speaker's commitment to a proposition. Other researchers of Spanish, including Quer (2003), Villalta (2007), and Gielau (2015), provide analyses from a semantic perspective.

The patterns in non-contact and contact varieties have offered insights into how mood selection is motivated in Spanish. A focus on individual contact varieties provides interesting case studies of mood selection, and such studies documenting unexpected patterns are relatively new. The most widely studied cases of contact varieties and mood selection are in U.S. Spanish; particularly notable are studies conducted by Silva-Corvalán (1994) in Los Angeles, Lynch (1999) in Miami, Torres (1989) and Bookhammer (2013) in New York City, and Waltermire (2014, 2017) in New Mexico. Such studies identify a pattern in contact varieties: There are many cases in which speakers select the indicative in linguistic environments in which the subjunctive would be anticipated. Specifically, Silva-Corvalán (1994) suggests that the grammatical mood system has been simplified or undergone reductions in subjunctive use, with the subjunctive

being replaced by the indicative mood. In this dissertation, I follow Silva-Corvalán's (1994) notion of simplification to mean a decreased use of the subjunctive.

Rather than focusing on speaker intention and pragmatic motivation, another approach to mood selection shifts attention to intensional semantics. One key distinction in the discussion of mood and modality highlights the differences between extensional, weak intensional, and strong intensional predicates. Extensional predicates denote events that occur in the real world, or w_0 , and as such, extensional predicates select the indicative mood while intensional predicates reference worlds outside of w_0 (Heim & Kratzer 1992). This dissertation adopts the modal analysis of Giannakidou's (1998, 2002, 2009, 2015) (non)veridicality, which is based on the interpretation of the truth of a proposition. There are three possible interpretations under this theory: VERIDICAL, ANTIVERIDICAL, and NONVERIDICAL. If a speaker interprets a proposition as true, this proposition has a veridical interpretation. Similarly, if a speaker evaluates a proposition as false, it has an antiveridical interpretation. The area between truth and falsity is considered nonveridical. Nonveridical utterances do not require a commitment to the truth of a proposition. Consider the following utterances:

- (5) a. I drink coffee.
- b. I do not drink coffee.
- c. I can drink coffee.

In the utterances in 5, the speaker presents the proposition *I drink coffee* as veridical in 5a, anti-veridical in 5b (which negates the proposition), and nonveridical in 5c (which contains the modal *can* and implies that the proposition can be true or can be false). In other words, in 5c, it is possible that the speaker drinks coffee and also possible that she does not; as the veridicality cannot be determined, this utterance is nonveridical. It is important to note that a proposition's

veridicality is judged with respect to an epistemic state, or in terms of a perceived state based on the world around the speaker. As this state is determined by individual perception, an epistemic state can vary between individuals as well as between evaluation times; the proposition *I drink coffee* may be veridical at a given time t' but may be false at another time t'' . Giannakidou defines veridicality/nonveridicality/antiveridicality as follows (2015:17):

(6) **Veridical/nonveridical epistemic states and commitment**

- a. An epistemic state (a set of worlds) $M(i)$ relative to an individual anchor i is veridical with respect to a proposition p iff all worlds in $M(i)$ are p -worlds (full commitment to p).
- b. If there is at least one world in $M(i)$ that is a $\neg p$ world, then $M(i)$ is nonveridical (weakened commitment to p).
- c. If all worlds in $M(i)$ are $\neg p$ worlds, then $M(i)$ is antiveridical (counter-commitment to p).

The set of worlds in which the proposition is evaluated is referred to as $M(i)$, or the model of the individual. Giannakidou (2015) associates the subjunctive with nonveridical interpretations and the indicative with veridical interpretations. Her definitions of the indicative and subjunctive moods are noted in 7a and 8a below, and she offers the following examples from Greek (Giannakidou & Mari 2016:5) in 7b and 8b:

(7) a. **The indicative as an indicator of objective and subjective veridicality**

The indicative is the indicator of veridical epistemic states and is selected by expressions that are at least subjectively veridical.

- b. *O Pavlos kseri/pistevi oit/*na efije I Roxani.*

The Paul know.3SG/believe.3SG IND/SUBJ leave.PAST.3SG the Roxanne

‘Paul knows/believes that Roxanne left’.

(8) a. **The subjunctive as an indicator of nonveridicality**

The subjunctive is an indicator of a nonveridical epistemic state or modal base and is selected by expressions that are at least subjectively nonveridical.

b. *Thelo na/*oti kerdisi o Janis.*

want.1SG SUBJ/IND win.NONPAST.3SG the John

‘I want John to win’.

In 7b, the selection of the indicative reflects that the proposition has been evaluated as at least subjectively veridical (according to the individual model of the speaker). Since the proposition is veridical, the indicative is the only acceptable mood. On the other hand, the subjunctive communicates at least a subjectively nonveridical interpretation, as seen in 8b. When the subjunctive is used to communicate a nonveridical response, Giannakidou (2015) refers to the subjunctive as the EPISTEMIC SUBJUNCTIVE. Based on the relationship between mood and (non)veridicality, speaker interpretation is the primary determinant of mood selection in Yucatec Spanish, which I will discuss in detail in Chapters 4 and 5.

4. MODALITY, EPISTEMICITY, AND DOXASTIC PREDICATES. In order to create a foundation on which to build the modal analysis of mood selection in Yucatec Spanish, I present several important notions that are crucial for understanding intensional meaning and predicates as discussed in this dissertation. First, I review Kratzer’s theory of modality in section 4.1 and epistemic meaning in section 4.2. Lastly, in section 4.3, I define doxastic predicates, the focus of the current dissertation.

4.1 KRATZER’S MODALITY. While the analysis I provide in this dissertation is based on Giannakidou’s (1998) (non)veridicality framework, I follow a Kratzerian approach to modality as the foundation for my analysis of mood selection. Kratzer (1989, 1991, 2001, 2002, 2006, 2012³) provides an approach that unifies several notions within modality. Kratzer’s theory of modality is based on three key ideas: possible worlds (w), modal force, and conversational backgrounds. First, every proposition is analyzed with respect to a world, and the notion of possible worlds allows reference to worlds other than the actual world (w_0). For example, take the following utterance:

(9) Mary grows kale.

The proposition expressed by 9 identifies a set of possible worlds (W) in which p (Mary grows kale) is true; however, it may not be the case that $p=1$ in every world. Let’s take, for instance, the following possible worlds:

- (10) a. w_1 =Mary has a garden.
b. w_2 = Mary has a green thumb.
c. w_3 = Mary lives in the city with no outdoor space.
d. w_4 = Mary lives in a dry climate that is not conducive to planting a garden.

We see that utterance 9 is only true when the proposition is evaluated in $W=\{w_1, w_2\}$ and false if it is evaluated in either w_3 (10c) or w_4 (10d) or the set of worlds containing w_3 and w_4 . In this sense, the truth of the proposition in utterance 9 can only be considered true or false when evaluated in the appropriate possible world.

According to Kratzer’s (2012) theory, there are three notions that work together in the analysis of modality: modal force, modal base, and ordering source. Beginning with modal force,

³ Kratzer has published a considerable amount of work refining her theory over the years. In future references, I will only cite the most recent work in which her examples appear.

in many languages, there are two modal forces: necessity and possibility.⁴ The modal force distinguishes between the strength of each modal (2012:40):

(11) NECESSITY: A proposition p is a necessity in w with respect to f and g

iff for all $u \in \cap f(w)$ there is a $v \in \cap f(w)$ such that

(i) $v \leq_{g(w)} u$ and

(ii) for all $z \in \cap f(w)$: if $z \leq_{g(w)} v$, then $z \in p$

(12) POSSIBILITY: A proposition p is a possibility in w with respect to f and g iff its negation is not a necessity in w with respect to f and g .

A proposition is a necessity if it is true in the closest accessible world, or most ideal world. On the contrary, a proposition is a possibility if it is not a necessity in the closest accessible world.⁵

Kratzer also notes that modal interpretation can be more complex than the duality presented in 11 and 12 above. Consider the following examples from Kratzer (1991:643):

- (13)
- a. Michl must be the murderer.
 - b. Michl is probably the murderer.
 - c. There is a good possibility that Michl is the murderer.
 - d. Michl might be the murderer.
 - e. There is a slight possibility that Michl is the murderer.
 - f. There is a slight possibility that Michl is not the murderer.
 - g. Michl is more likely to be the murderer than Jakl.

⁴ There are several world languages that have both possibility and necessity meanings but lack this duality (see Deal 2011 or Matthewson 2002 for a discussion of indigenous languages that lack dual modals).

⁵ This is a change from Kratzer's previous definition (1991) of necessity, which, according to Kratzer, is stronger, requiring that a necessity proposition be true in all accessible worlds. This, in turn, makes the possibility stronger (2012:40).

All of these examples communicate possibility, but the variation between *probably* in 13b and *slight possibility* in 13f is not insignificant. Kratzer (1991) notes this gradability and proposes that natural language is able to use the modal base and ordering source (both presented below) to distinguish between degrees of possibility as follows:

(14) a. **Good Possibility of p**

$$w \exists u \forall v : v \in p \text{ if } v \leq_g(w) u.$$

There is a world such that every world is at least as good as it makes p true.

b. **At Least As Good Possibility of p as q in w**

$$\forall u \in q \exists v : v \leq_g(w) u \ \& \ v \in p$$

For every q-world, there is a p-world that is at least as good as it.

c. **Better Possibility of p than q in w**

$$\forall u \in q \exists v : v \leq_g(w) u \ \& \ v \in p, \text{ and not } \forall u \in p \exists v : v \leq_g(w) u \ \& \ v \in q$$

p is at least as good of a possibility as q, but not vice versa.

This analysis allows the natural language speaker to communicate levels of possibility, a significant contribution to the field of modality.

Next, Kratzer proposes that there are two contextually-tied modal concepts, or CONVERSATIONAL BACKGROUNDS, that are motivated by individual context: the MODAL BASE and the ORDERING SOURCE. The modal base determines which worlds are accessible and distinguishes an epistemic modal from a circumstantial (or root) modal. Take the following example:

(15) She must be older than that.

a. Given that I met her 20 years ago, she must be older than that.

- b. Given laws that require alcohol consumers to be of a certain age, she
 must be older than that.

When evaluating the utterance in 15, 15a gives an epistemic modal base that describes the world as the speaker knows it to be. In 15b we see a deontic modal base, connecting the utterance to a conversational background that relies on what the law states. Chapters 4 and 5 of this dissertation focus on doxastic predicates, which have an epistemic modal base. The ordering source, or *g*, is used to create an ordering of the accessible worlds. Kratzer's theories of modality provide a foundation for understanding modal meaning. The majority of this dissertation focuses on epistemic predicates, which are described in greater depth in the following section.

4.2 EPISTEMIC PREDICATES. As we will see in Chapter 3, Yucatec Spanish presents unique mood selection patterns in complements embedded under epistemic predicates. Epistemic modality communicates the (non)factual status of a proposition. A speaker can convey the level of (un)certainty based on personal opinions or what s/he knows to be true about the world. In the following examples, the speaker makes an assertion while taking all available evidence into account (Palmer 1986:25):

- (16) a. John may be in his office.
 b. John must be in his office.
 c. John'll be in his office.

In each of the utterances in 16, the speaker communicates varied levels of certainty regarding the proposition *John is in his office*. In 16a the speaker speculates on John's location, but in 16b he deduces his location based on available evidence; in 16c the speaker infers his location from his knowledge of John's habits, the time of day, and so on. The commonality between all of these statements is the speaker's commitment to the truth according to the best of his knowledge.

As seen in 16 above, epistemic predicates can communicate different levels of certainty. One subcategory of epistemic predicates is attitude verbs, which is a very diverse group of predicates. They can range from factive predicates like *saber* ‘to know’ to doxastic predicates like *creer* ‘believe’ to reactional predicates like *dar gusto* ‘to make happy’. In this section, I will present several examples of attitude predicates. First, FACTIVE ATTITUDE PREDICATES entail the truth of their embedded complements. Consider the following examples:

- (17) Factive
- a. She forgets that his dog is friendly.
 - b. She remembers that his dog is friendly.
 - c. She realizes that his dog is friendly.

In all utterances in 17, the sentences containing factive predicates entail the truth of their embedded proposition (as described in Anand and Hacquard 2014) because factive predicates can only embed veridical propositions. Therefore, it is infelicitous for a speaker to say the following:

- (18) # She forgets that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.
- (19) # She remembers that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.
- (20) # She realizes that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.

Utterances 18 through 20 are infelicitous because the referent denoted by the NP in the first sentence cannot forget/remember/realize a proposition that is known to be false. This is not the case for other attitude verbs such as PERCEPTION VERBS (that communicate the way the speaker

perceives the world, as in 21), MENTAL STATE VERBS (that communicate speaker thoughts, as in 22), and DOXASTIC VERBS (that communicate speaker beliefs, as in 23), which lack a veracity entailment:

(21) Perception

- a. She says that his dog is friendly.
- b. She hears that his dog is friendly.
- c. She sees that his dog is friendly.

(22) Mental state

- a. She guesses that his dog is friendly.
- b. She supposes that his dog is friendly.
- c. She imagines that his dog is friendly.

(23) Doxastic

- a. She thinks that his dog is friendly.
- b. She believes that his dog is friendly.

Because the utterances are evaluated by the referent denoted by the NP in the matrix clause, there is no veracity entailment that the proposition described by the embedded clause is veridical. There are cases in which an utterance is felicitous but the embedded proposition is evaluated as antiveridical, as seen in the following examples:

(24) She says that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.

(25) She guesses that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.

- (26) She believes that his dog is friendly. I know that the dog is not friendly; that dog bit someone yesterday.

The examples in 24 through 26 demonstrate that the utterance can be true while the proposition *his dog is friendly* is false. This is because the proposition is evaluated using a model that involves the perception of the speaker/guesser/believer rather than a model that only reflects what is true in the real world. Therefore, an individual can say/guess/believe something that is not true at all times or to every individual. The following section defines these belief verbs and briefly presents previous analyses of doxastic predicates.

4.3 DOXASTIC PREDICATES. The second portion of the analysis in this dissertation focuses on verbs like *believe* in Yucatec Spanish. As presented above, a Kratzerian analysis categorizes the modal base *f* as *epistemic* while the ordering source *g* is *doxastic*. The majority of current work on epistemic predicates (e.g. von Stechow & Gillies 2007, Anand & Hacquard 2014) adopt a Hintikka (1961) account as a base for analysis, which provides the following definition for *believe*:

- (27) $\llbracket a \text{ believes that } S \rrbracket w = 1$ iff $\llbracket S \rrbracket w' = 1$, for every world w' in which everything that $\llbracket a \rrbracket$ believes in w is true.

The truth conditions in 27 state that a belief statement is true if and only if the proposition is true in all worlds in which the speaker's belief is true. Current theories of doxastic predicates are in agreement that beliefs are not evaluated in the actual world but rather in a model comprised of an individual's beliefs. Truth conditions for doxastic predicates include an epistemic model in which a proposition is evaluated, as in the following from Anand and Hacquard (2013):

- (28) $\llbracket \text{believe} \rrbracket^w = \lambda p_{st}. \lambda x. \forall w' \in ACC_{doxastic}(w, x): [p(w') = 1]$

According to this model, a proposition p is true iff it is compatible with the collection of beliefs that x has. In Chapter 5 of this dissertation, I delve further into what constitutes the individual model of evaluation as it applies to mood selection in Yucatec Spanish.

5. RESEARCH QUESTIONS. In this section, I present the objective of each chapter and the dissertation's specific research questions.

(29) Objectives

OBJECTIVE 1: Capture mood selection patterns in Yucatec Spanish

OBJECTIVE 2: Explore the role of negation in subjunctive selection in doxastic predicates in Yucatec Spanish

OBJECTIVE 3: Explore the contribution of nonveridical linguistic elements to subjunctive selection in doxastic predicates in Yucatec Spanish

(30) Research Questions

RQ1.1 To what degree does Yucatec Spanish mirror mood distribution as presented in prescriptive grammars and mood selection in other varieties of Spanish?

RQ1.2 How does mood selection vary across types of clauses?

RQ1.3 To what extent do monolingual and bilingual speakers' mood selections differ?

RQ2.1 To what extent does negation license the subjunctive in Yucatec Spanish?

RQ2.2 What mood can be licensed under an affirmative doxastic predicate?

RQ2.3 In cases in which either the indicative or the subjunctive could be used, what accounts for this variation in mood selection?

RQ 3.1 What are the implications of the epistemic subjunctive with regard to truth conditions?

RQ 3.2 To what extent is the subjunctive preferred in doxastic predicates that are modified by a modal?

RQ 3.3 To what extent is the subjunctive preferred in doxastic predicates in the matrix clause of an interrogative?

I provide a quantitative analysis of the selection patterns of several predicate types in Chapter 3 and then focus on doxastic predicates in this contact variety in Chapters 4 and 5, answering research questions 1.1–1.3 in Chapter 3, 2.1–2.3 in Chapter 4, and 3.1–3.3 in Chapter 5.

6. DISSERTATION ROADMAP. In the following chapters, I provide extensive data on Yucatec Spanish in order to describe and account for mood selection in this variety. First, I review the literature on mood selection in Chapter 2, providing the reader with background information on mood selection (with a particular focus on the subjunctive/indicative in Spanish) and describing the framework adopted in this dissertation. Based on the previous accounts presented in Chapter 2, in Chapter 3 I present a quantitative analysis of mood selection in Yucatec Spanish. The statistical analysis identifies trends in mood selection among several predicate types and, most notably, highlights the unique extension of the subjunctive in epistemic predicates. To account for the unexpected mood choice found in Yucatec Spanish, Chapter 4 presents additional data from acceptability judgment surveys, by which I explore the role of negation in mood selection in doxastic predicates. To explain this mood selection, I adopt Giannakidou's (1998) framework of (non)veridicality, which focuses on the notion of possible

worlds and speaker interpretation of the truth of an utterance. I extend this analysis in Chapter 5 to include several nonveridical linguistic structures. Chapter 6 presents a formal compositional analysis of doxastic predicates in Yucatec Spanish based on the findings from Chapters 4 and 5. Finally, the dissertation's conclusions and implications for future research are discussed in Chapter 7.

CHAPTER 2

PREVIOUS ACCOUNTS OF MOOD SELECTION

1. INTRODUCTION. There have been a plethora of investigations of Spanish mood, including Bull (1960), Gili y Gaya (1969), Rivero (1971), Terrell and Hooper (1974), Garcia and Terrell (1977), Bell (1980), Blake (1985), Lunn (1989, 1995), Studerus (1995), Bosque and Demonte (1999), Quer (2002), and Kempchinsky (2007), among many other studies with the shared goal of identifying what motivates mood selection in this language. The objective of this chapter is twofold: It reviews selected works from the extensive collection of research on the Spanish subjunctive and introduces modal approaches, which have been used very limitedly in studies of mood in Spanish. In section 2 of this chapter, I will review several classic accounts of mood selection that discuss the role of assertion and presupposition (c.f. Terrell & Hooper 1974, Lunn 1995). Following this review, I will present more recent discussions of negation as well as modal analyses of Spanish mood choice and mood selection in contact varieties (i.e. Mejías-Bikandi 1996, Haverkate 2002, Versterinen 2012, Quer 2001). Finally, section 4 discusses modal analyses of the subjunctive with a focus on Giannakidou's (1998) veridicality theory, specifically as it applies to mood selection.

2. THE SUBJUNCTIVE IN SPANISH. As previously noted, studies on the Spanish subjunctive have been extensive; this section gives an overview of the relevant aspects of Spanish mood selection as they apply to the current investigation of Yucatec Spanish. After a brief discussion of realis/irrealis (section 2.1), I will review some of the classic theories of mood selection in Spanish (sections 2.2 and 2.3). In section 2.4, I present an overview of previous accounts of the

role of negation in mood selection. Finally, in section 2.5, I present research conducted on mood in interrogatives, and the chapter ends with an overview of mood selection in a contact varieties.

2.1 REALIS VERSUS IRREALIS. Like the subjunctive/indicative moods, REALIS/IRREALIS is a grammatical mood that communicates modal information. According to Elliott (2000:67), REALIS is used when there is perceived certainty while IRREALIS identifies an imagined event or an event that occurs in a non-real world. Irrealis is often presented as an umbrella category that contains several modal or aspectual categories within it. Givón (1984) states that the future is a part of the irrealis category, which deals with hypothetical, possible, or uncertain states or with events that have not yet occurred. Roberts (1990) states that irrealis is a category that includes the future tense as well as several moods, such as the imperative and counterfactual moods. Fleischman (1995:13) updates the definition to more thoroughly describe the classification, stating that irrealis is

a prototype category, at the semantic level, expressing a spectrum of meanings that signal a speaker's lack of belief in or lack of commitment to any of the following: the reality or referentiality of a situation; [or] the possibility that an agent's wishes, hopes or intentions will effectively be realized.

While the subjunctive/indicative mood has been traditionally used in studies of Indoeuropean languages, realis/irrealis is more frequently used in studies of indigenous languages.⁶ Although Palmer (1986) points out that the use of the terms realis and irrealis may simply indicate a difference in terminology, there are several key differences between the subjunctive/indicative and realis/irrealis. First, while both are grammatical paradigms, the subjunctive/indicative is

⁶ Examples of this include studies conducted in Australia (McGregor & Wagner 2006) and Papua New Guinea (Roberts 1990), as well as the Pomoan family in Northern California (Mithun 1995), to name just a few.

communicated through verbal inflection, but realis/irrealis can be communicated through verbal inflection or through stand-alone markers. Second, the subjunctive mood is usually limited to subordination⁷ while irrealis can appear in both matrix and embedded clauses. Lastly, the subjunctive is not assertive, but irrealis can be used to make assertions with a future temporal reference.

It is possible to use the realis/irrealis distinction to explain some areas of Spanish subjunctive/indicative selection. The following example from Guitart (1995:385) can be explained using this distinction:

- (1) *Habla con el que está (IND) a cargo.*
 speak.IMP with DET that is.3SG.IND in charge
 ‘Talk with the one who is in charge’. (INTENDED: The specific individual)
- (2) *Habla con el que esté (SUBJ) a cargo.*
 speak.IMP with DET that is.3SG.SUBJ in charge
 ‘Talk with the one who is in charge’. (INTENDED: Whoever is in charge)

This minimal pair demonstrates the traditional indicative/subjunctive distinction in the relative clause. Mood selection relies on the features of the modified NP; the existence of the referent of the modified NP triggers the indicative (as in 1) while an uncertainty of the existence of the referent of the specified NP triggers the subjunctive (as in 2). In this case, one could apply the concept of realis/irrealis to an analysis of the subjunctive/indicative in Spanish with regards to the existence of a specific referent (or the lack thereof).

However, the realis/irrealis distinction cannot explain other cases of the Spanish

⁷ An example of subjunctive mood outside of an embedded clause is adverbs like *quizás*:

- (i) *Quizás venga.*
 perhaps come.SUBJ.3SG
 ‘Perhaps she will come’.

subjunctive. For example, we are unable to account for the following, which I present below: pragmatically motivated subjunctive selection (as seen in 3), dream contexts (as in 4), and dubitative interpretations (as in 5). The following utterance contains an emotive predicate in the matrix clause that introduces a presupposed proposition:

- (3) a. *Me alegre que por fin hayas (SUBJ) leído el libro.*
 DAT.1SG be.happy.1SG that at end have.SUBJ.2SG read the book
 ‘I’m happy that you finally have read the book’.
- b. **Me alegre que por fin has (IND) leído el libro.*
 DAT.1SG be.happy.1SG that at end have.IND.2SG read the book
 ‘I’m happy that you finally have read the book’.

The speaker of utterance 3a is not suggesting that the hearer has not yet read the book, nor does she doubt the truth of the utterance; instead, the speaker is offering an emotive reaction to the proposition. In the case of emotive predicates, the subjunctive mood (irrealis) in the subordinate clause of 3a is felicitous while the indicative mood (realis) in 3b is not.⁸ It is presupposed that the event described by the embedded clause (*has leído el libro* ‘you have read the book’) has occurred. Utterance (4) contains a counterfactual, which is another example for which the (ir)realis distinction falls short:

- (4) a. *Erica soñó que estaban (IND) en la playa.*
 Erica dream.IND.3SG.PST that be.IND.3PL.PST at DET beach.
 ‘She dreamt that they were at the beach’.
- b. **Erica soñó que estuvieran (SUBJ) en la playa.*
 ‘Erica dreamt that they were at the beach’.

⁸ There is some variation with this evaluation, especially in Mexican Spanish. Evidence of this will be presented in Chapter 3 of this dissertation.

As a counterfactual, there is a conventional implicature that the embedded proposition is true. However, it is clear that a dream does not occur in the real world. Therefore, by using (ir)realis, the subjunctive should be permitted in this situation type, as seen in 4b; however, it is not. Another example that can be used to argue against the adoption of the realis/irrealis distinction is matrix clauses that can trigger either the subjunctive or indicative. In 5, the matrix verb *estar seguro* ‘be sure’ remains constant, but 5a is negated while 5b is affirmative:

- (5) a. *No está segura que está (IND) completo.*
 NEG IS.3SG sure that IS.IND.3SG complete
 ‘She is not sure that it is complete’.
- b. *No está segura que esté (SUBJ) completo.*
 NEG IS.3SG sure that IS.IND.3SG complete
 ‘She is not sure that it is complete’.

Utterance 5 offers an example of a doxastic predicate in which the speaker is presenting her opinion regarding the proposition *está completo* ‘it is complete’. The affirmative predicate licenses the indicative in 5a while a negated predicate licenses the subjunctive in 5b. An analysis based on realis/irrealis cannot account for this alternation of mood selection.⁹

Similar to realis/irrealis, the theory of veridicality, as described in section 4 of this chapter, also focuses on notions of certainty and possible worlds. However, based on these three examples of counterevidence in Spanish (and following the majority of research on the Spanish subjunctive/indicative in subordinate clauses), the terms realis and irrealis will not be used in this analysis of mood selection.

⁹ Alternation under negation will be discussed in more depth in section 2.4. For the current discussion, it is simply important to note that this alternation cannot be accounted for when adopting a realis/irrealis distinction.

2.2 PREVIOUS SEMANTIC ACCOUNTS OF MOOD IN SPANISH. Descriptive and functional analyses of the Spanish subjunctive (i.e. Bull 1960; Gili y Gaya 1969; Rivero 1971; Terrell & Hooper 1974; Garcia & Terrell 1977; Bell 1980; Lunn 1989, 1995; Studerus 1995; Bosque & Demonte 1999) are in agreement that mood selection can be explained in terms of assertions and presuppositions. When a speaker's utterance is an assertion, the speaker is presenting the information as fact. In Spanish, an assertion licenses the indicative. On the other hand, a non-assertion does not present any information as fact, nor does it necessarily describe it as false. A non-assertion often licenses the subjunctive in Spanish. In the following examples, the proposition *va a llover* 'it is going to rain' (as seen in 6a) is asserted in utterances 6a, 6b, 6c, and 6d while in utterances 6e and 6f, it is not asserted:

- (6) a. *Va a llover.*
 go.3SG to rain.INF
 'It is going to rain'.
- b. *Sé que va a llover.*
 know.1SG that go.IND.3SG to rain.INF
 'I know that it is going to rain'.
- c. *No dudo que va a llover.*
 NEG doubt.1SG that go.IND.3SG to rain.INF
 'I don't doubt that it is going to rain'.
- d. *Pienso que va a llover.*
 think.1SG that go.IND.3SG to rain.INF
 'I think that it is going to rain'.
- e. *Dudo que vaya a llover.*

doubt.1SG that go.SUB.3SG to rain.INF

‘I doubt that it is going to rain’.

f. *Me alegre que vaya a llover.*

DAT.1SG be happy.1SG that go.SUB.3SG to rain.INF

‘I am happy that it is going to rain’.

Utterances 6a through 6d assert the proposition as true, which is made clear through the use of the indicative. While the matrix predicates are different (know, think, not doubt), all of the matrix clauses assert their embedded proposition. However, in example 6e, the speaker does not assert the information; rather, she suggests her doubts. Both the predicate *dudar* ‘to doubt’ as well as the licensing of the subjunctive in the embedded clause indicate the lack of the assertive force of this utterance.

Among the previous set of examples, 6f presents a proposition introduced by an emotive predicate, *me alegre* ‘I am happy’, which licenses the subjunctive. In cases of emotive predicates, the truth of this complement is presupposed rather than asserted. Since the proposition is presupposed, the subjunctive is licensed in the embedded proposition. For example, 7 and 8 below communicate the speaker’s reaction to the proposition of the embedded clause:

(7) *Me alegre que vaya a llover. >> Va a llover.*

‘I’m happy that it is going to rain’. >> ‘It is going to rain’.

(8) *No me alegre que vaya a llover. >> Va a llover.*

‘I’m not happy that it is going to rain’. >> ‘It is going to rain’.

Utterances 7 and 8 presuppose (represented by >>) the proposition *va a llover*. In many varieties of Spanish, the emotive predicate selects the subjunctive in the embedded clause. While some

cases of mood selection are triggered by negation (as in epistemic predicates like 6e, discussed below), emotive predicates select the subjunctive regardless of the presence or absence of negation in the matrix clause; in other words, both 7 and 8 presuppose that the proposition is true.

Terrell and Hooper's (1974) classic analysis captures three possibilities for the indicative/subjunctive distinction, positing that mood selection is determined by three complement types:

(9) Terrell and Hooper's (1974:486) Complement Types:

- a. Asserted, not presupposed

Sé que va a ir con nosotros.

- b. Presupposed, not asserted

Es maravilloso que estudie tanto.

- c. Neither asserted nor presupposed

No es seguro que vaya con nosotros.

The indicative correlates with assertions in Spanish (9a) and can range from insistence (i.e. *es seguro* 'it is sure') to a weak belief (i.e. *me parece* 'it appears to me') (Terrell & Hooper 1974:486). Both 9b and 9c trigger the subjunctive in many varieties of Spanish. In 9b the proposition *estudia tanto* 'she studies so much' is presupposed. The negation of the matrix emotive *es maravilloso* 'it is wonderful' has no effect on the presupposition of the sentence (as seen in example 8 above); in other words, the presupposition remains constant under negation. The sentence in 9c does not present the proposition as true, nor does it presuppose the proposition; doubt of the truth of the proposition is communicated lexically through the matrix verb *ser seguro*, which, in turn, licenses the use of the subjunctive. In fact, if 9c were not negated

(*es seguro...*), the utterance would once again be considered assertive and, therefore, would license the indicative. This can be seen in examples 10 and 11, which demonstrate the effects of negation on assertion and dubitative meaning (Terrell and Hooper 1974:490):

- (10) a. *Creo que Martín ha (IND) leído ese libro.*
 ‘I think that Martin has read that book’.
- b. *No creo que Martín haya (SUBJ) leído ese libro.*
 ‘I do not think that Martin has read that book’.
- (11) a. *Dudo que Consuelo sea (SUBJ) culpable.*
 ‘I doubt that Consuelo is guilty’.
- b. *No dudo que Consuelo es (IND) culpable.*
 ‘I do not doubt that Consuelo is guilty’.¹⁰

In 10, the first utterance in 10a asserts the proposition *Martin has read the book*, using the indicative in the complement clause. In 10b, the matrix clause is negated, which, according to Terrell and Hooper (1974), introduces an element of doubt; this, in turn, licenses the subjunctive. We see a similar effect in 11: The utterance in 11a communicates doubt lexically through the matrix verb *dudar* ‘to doubt’, which licenses the subjunctive. When this doubt is negated, as shown in 11b, the utterance is once again assertive and the complement is in the indicative. The shifts in certainty (and, therefore, in mood) in examples 10 and 11 demonstrate that mood in some Spanish predicates is sensitive to linguistic elements such as negation. This will be discussed in greater depth in section 2.4 of this chapter.

¹⁰ The claim regarding this mood selection is as cited by Terrell and Hooper (1974:490), but there may be variation with regards to mood selection under *no dudar* ‘to not doubt’:

- (i) *No dudo que Consuelo es (IND) culpable.*
 ‘I do not doubt that Consuelo is guilty’.
- (ii) *No dudo que Consuelo sea (SUBJ) culpable.*
 ‘I do not doubt that Consuelo is guilty’.

Terrell and Hooper's (1974) work on mood was paramount in that it presented a succinct account of mood selection in several predicate types in Spanish. Their contribution to the understanding of mood selection in Spanish has shaped many arguments that are still considered valid today. There are, however, a few shortcomings within their analysis. First, Terrell and Hooper (1974) argue that a lack of presupposition and a lack of assertion license the subjunctive; however, scholars (i.e. Shane 1994, Mejías-Bikandi 1994, Haverkate 2002, Toh 2008) have taken issue with the classification of some predicates, such as commissives like *prometer* 'to promise', that license the indicative but are neither presupposed nor asserted. Second, the role of negation in mood selection is not fully explored beyond the ability of negation to change an assertion to a non-assertion and vice versa (as seen in 10 and 11 above). Indeed, there are variations that cannot be accounted for under this theory. Lastly, while Terrell and Hooper state that belief predicates are assertive, Mejías-Bikandi (1994) points out that belief predicates cannot be totally assertive; the act of embedding a proposition under the matrix *I believe* expresses some doubt of the truth of the complement clause. Take, for example, the following unembedded and embedded propositions:

(12) a. *Está lloviendo, #pero no sé con certeza.*

'It is raining, but I don't know for sure'.

b. *Creo que está lloviendo pero no sé con certeza.*

'I think that it is raining, but I don't know for sure'.

The proposition *está lloviendo* 'it is raining' is the same in both 12a and in the embedded clause in 12b. The unembedded proposition in 12a is asserted, which is made clear by the fact that the clause *pero no sé con certeza* is infelicitous. On the other hand, the proposition 12b is embedded under an epistemic predicate that communicates a level of certainty, but the lack of full

commitment to the truth of the proposition is made clear with the felicity of the clause *pero no sé con certeza*. The first shortcoming is not relevant to the current dissertation, but the role of negation and the assertive force of belief predicates are crucial for this analysis.

2.3 INFORMATION VALUE: PRESUPPOSED UTTERANCES. As presented in the previous section, the subjunctive is licensed under certain predicates if the proposition is presupposed. Like Terrell and Hooper (1974), Lunn (1989) investigates mood selection from a pragmatic perspective and theorizes that pragmatically presupposed propositions appear in the subjunctive. Her approach uses Sperber and Wilson's (1986) RELEVANCE THEORY to explain subjunctive selection in Spanish, arguing that subjunctive-marked VPs share low information value through which the speaker is able to communicate a belief that the utterance is flawed in news value. Lunn (1995) proposes that the subjunctive has an evaluative function through which a speaker is able to demonstrate whether or not an utterance is 'worthy' of an assertion. She outlines the following possibilities (Lunn 1995:430):

- (13) a. The speaker doubts its veracity:
Dudo que sea (SUBJ) buena idea.
'I doubt that it is a good idea'.
- b. The proposition is unrealized:¹¹
Necesito que me devuelvas (SUBJ) ese libro.
'I need you to return that book to me'.
- c. The proposition is presupposed:
Me alegra que sepas (SUBJ) la verdad.
'It makes me happy that you know the truth'.

¹¹ The proposition is unrealized at the time of evaluation.

In 13 the speaker does not assert the truth of a proposition (whether it is a case of doubt as in 13a, unrealized events as in 13b, or a presupposed proposition as in 13c). Lunn's (1995) account of the subjunctive is more detailed than both previous and later accounts of the subjunctive and includes relative clauses such as those with future temporal reference like *cuando* 'when'. Overall, Lunn states that the reason for such a complex mood system in Spanish is that mood cannot be explained exclusively through any one area of linguistic structure; instead, mood alternation reflects semantic, syntactic, and pragmatic changes, and as Lunn points out, mood selection can vary significantly even between native Spanish speakers.

Lunn's analysis of the subjunctive is able to account for pan-Hispanic patterns, but cases of alternation¹² are harder to explain using Lunn's classification. Mood alternation, for which both the indicative and subjunctive are acceptable, results in slightly different interpretations of the embedded proposition. Expanding on the idea of emotive predicates, Achard (2000) notes that there is some alternation in mood in the complement embedded under an emotive predicate. He argues that the alternation of mood in a reactional assertion has a different discourse function, citing the additional pragmatic effect of using the indicative in reactional assertions. He argues that the use of the indicative implies a distancing of the subject from the content in the subordinate clause. Take, for instance, the following (Achard 2000:167):¹³

- (14) a. *Estoy contento de que **hayas visto** (SUBJ) la película.*
 'I am happy that you have seen the movie'.
 b. *Estoy contento de que **has visto** (IND) la película.*

¹² I use the term alternation to refer to cases in which both the subjunctive and indicative are acceptable.

¹³ In this discussion, I present the examples provided by Achard (2000). Arguably, it is hard to see that his account of subjunctive/indicative alternations with respect to context and common ground when contextualized examples are not provided.

‘I am happy that you have seen the movie’.

According to Achard, the utterance in 14a is only appropriate when the speaker presupposes the proposition *you saw the movie*, which Achard argues allows the speaker to align himself with the proposition. In other words, the speaker is presupposing the information to be true. Achard argues that 14a cannot assert new information, and since the information within the proposition is presupposed, there is no information added to the common ground, or the set of information known to be true to all participants in the conversation.¹⁴ In utterance 14b, the speaker positions himself far from the proposition *has visto la película*, making it clear that this proposition is *not* presupposed. As such, 14b asserts the proposition, adding the information to the common ground. This motivation for mood alternation describes mood selection patterns that have been observed in several varieties of Spanish (including Lope Blanche 1987 in Mexican Spanish).

2.4 NEGATION AND MOOD SELECTION. Negation licenses the subjunctive in certain predicate types, often referred to as the polarity subjunctive (Stowell 1993), but it has no effect on mood in sentences containing other types of matrix predicates. In the following examples, negation does not affect mood selection in 15a and 15b; however, there is a difference in 15c:

- (15) a. *Requiere/No requiere que llegue (SUBJ) temprano.*
‘It requires/ it does not require that she arrives early’.
- b. *Me da gusto/ No me da gusto que llegue (SUBJ) temprano.*
‘It pleases me/ it does not please me that she arrives early’.
- c. **Creo/ No creo que llegue (SUBJ) temprano.*
‘I think/ I do not think that she arrives early’.

¹⁴ The matrix clause *estoy contento* does add information to the common ground, but the presupposition in the complement clause does not contribute new information to the common ground.

In this section, I review two cases in which negation does not affect mood selection: volition-type predicates (as in 15a) and the presuppositional subjunctive (as in 15b). I then review two cases in which negation does, in fact, have an effect on mood selection: the reportative subjunctive and epistemic predicates (as seen in 15c).

2.4.1 NEGATION AND VOLITION-TYPE PREDICATES. Volition-type predicates such as desideratives and volitional verbs are lexically-selected subjunctive, meaning that the verb itself triggers the subjunctive mood (Kempchinsky 2007). When a matrix volition-type predicate is negated there is no effect on the mood selection in the embedded clause. The absence of alternation can be seen in the following example:

- (16) a. *Quiero que me ayudes* (SUBJ).
 ‘I want you to help me’.
- b. *No quiero que me ayudes* (SUBJ).
 ‘I do not want you to help me’.

In this example, both 16a and 16b reference a world w' in which the hearer helps the speaker; this world is outside of the actual world w_0 . The matrix predicate *querer* lexically indicates that this occurs in w' instead of w_0 . The negation of *querer* does not block intensional meaning; therefore, there is no effect on mood selection in these cases (Kempchinsky 2007).

2.4.2 NEGATION AND PRAGMATICALLY PRESUPPOSED PROPOSITIONS. Like the lexically selecting subjunctive presented above, subjunctive selection that is not affected by negation occurs in emotive predicates. As seen in 7–8 above, negating a pragmatically presupposed proposition has no effect on mood selection. Introduced by an emotive verb in the matrix clause, the proposition described by the subordinate clause is considered a presupposition, which is constant under negation:

- (17) a. *Me alegro de que Marco haya venido.* >> *Marco vino.*
 ‘I am happy that Marco has come’. >> ‘Marco came’.
- b. *No me alegro de que Marco haya venido.* >> *Marco vino.*
 ‘I am not happy that Marco has come’. >> ‘Marco came’.

Despite the negation of the emotive predicate in the matrix clause in 17b, the presupposition that the proposition (*Marco vino*) is true remains even under negation; only the matrix clause is under the scope of negation. Therefore, we see that negation does not affect the mood choice.

2.4.3 NEGATION AND SPEAKER INTENTION. In the previous two sections, negation is shown to not have an effect on mood selection in the embedded clause. In this section, I will discuss how the matrix clause can license both the indicative and the subjunctive and will explore the different meanings that result from each mood selection. Many pragmatic studies (i.e. Terrell & Hooper 1974, Guitart 1995, Versterinen 2012) have investigated the effects of speaker intention on mood selection in a variety of contexts, specifically with perception verbs such as *ver* ‘to see’ (18a), *notar* ‘to note’ (18b), and *observar* ‘observe’ (18c):

- (18) a. *No vi que llegó (IND)/ llegara (SUBJ) Paula.*
 ‘I didn’t see that Paula arrived’.
- b. *No noté que había (IND)/ hubiera (SUBJ) subido de peso.*
 ‘I didn’t notice that she had gained weight’.
- c. *No observé que estaba (IND)/ estuviera (SUBJ) tomada.*
 ‘I didn’t observe that she was tipsy’.

The utterances in 18 allow for the selection of either the indicative or the subjunctive with different interpretations attached to each mood selection. According to Terrell and Hooper

(1974), a reportative predicate embeds a proposition to report an assertion. Terrell & Hooper (1974:491) provide the following example to demonstrate this assertion:

(19) *Vi que Susana ya se fue* (IND).

‘I saw that Susana was leaving’.

Reportative distance or reservation, in which speakers distance themselves from a commitment to the truth or falsity of a proposition, is one example of the pragmatic motivation of mood selection. In 19 the use of the perception verb *ver* ‘to see’ asserts the truth of the proposition in the subordinate clause. As demonstrated in Chapter 1, affirmative perception verbs like *ver* entail the truth of the proposition. Therefore, the only acceptable mood is the indicative. However, the assertive force of reportative predicates does not hold under negation with perception verbs; if the speaker did not see something, it may or may not have occurred. A negated perception verb produces two possible readings. First, if the speaker chooses to assert the proposition, the only possible grammatical mood is the indicative, which can be observed in the following example from Terrell and Hooper (1974:491):

(20) *No vi que Susana ya se iba* (IND) *pero me lo dijeron después*.

‘I didn’t see that Susana was leaving, but they told me so after’.

In 20 the speaker negates the act of seeing Susana leave, but the speaker’s use of the indicative communicates that she interprets the proposition as true, which is made clear with the additional context *but they told me so after*. However, there is a second reading: It is also possible to negate the act of seeing and withhold commitment to the proposition. If this is the case, the presupposition cannot hold under negation. In other words, the speaker can communicate a higher degree of doubt, as seen in the following example, which Terrell (1995: 349) provides as a followup to the example in 20:

(21) *No vi que hicieran (IND) tanto trabajo.*

‘I didn’t see that they did so much work’.

In example 21, it is not the case that the speaker witnessed the work being done, and the use of the subjunctive suggests that the speaker is unsure of whether or not the work was completed. The speaker chooses to withhold commitment to the truth of the proposition, which can be seen through the selection of the subjunctive in the subordinate VP. Building on Terrell and Hooper’s work, Versterinen (2012) states that the indicative mood is used to indicate that the event denoted by the VP of the complement clause is in accordance with a speaker’s conception of reality. In example 20, the speaker believes that Susana’s departure is within ‘his concept of reality’. On the other hand, Versterinen (2012:52) paraphrases 21 above by saying, ‘I did not see that she/he did so much work, and I still do not see it/believe it’. In summary, this alternation can only be observed when negated perception verbs represent a speaker’s avoidance of committing to the truth of a proposition. The mood selection under negation therefore reflects the speaker’s current belief in or commitment to the truth of the proposition.¹⁵

2.4.4 NEGATION AND EPISTEMIC PREDICATES. Like perception predicates, epistemic predicates present an interesting case of mood alternation in Spanish. Prescriptive grammars state that the subjunctive mood is required in a complement clause when the embedding epistemic matrix clause contains negation. This can be seen in Terrell and Hooper’s (1974) work: When they demonstrate that when an assertion (as in 22a) is negated (as in 22b), they find that the dubitative flavor often triggers the subjunctive:

¹⁵ This conclusion is in line with my proposal for doxastic predicates in Yucatec Spanish, but in this case, it is restricted to alternation under the scope of negation. I will argue in Chapter 4 that there is no such restriction in Yucatec Spanish.

- (22) a. *Está seguro que su mamá viene (IND) hoy.*
 ‘He is sure that his mom is coming today’.
- b. *No está seguro que su mamá venga (SUBJ) hoy.*
 ‘He is sure that his mom is coming today’.

In 22a the indicative is selected because the speaker asserts the proposition. The speaker of 22b, on the other hand, negates this epistemic predicate, giving the matrix clause a dubitative meaning, which licenses the subjunctive. More recent work (e.g. Mejías-Bikandi 1998, Quer 2001, Haverkate 2002, Gielau 2015) presents cases of mood alternation under epistemic predicates in Spanish. Specifically, when an epistemic predicate is under the scope of negation, it is possible to license either the indicative or the subjunctive. Mejías-Bikandi (1996) posits that mood selection can reflect pragmatic contrast regarding speaker commitment to a proposition, as seen in the following examples (Mejías-Bikandi 1996:173):

- (23) a. *Juan no cree que tu hijo está (IND) enfermo.*
 ‘Juan does not believe that your son is ill’.
- b. *Juan no cree que tu hijo esté (SUBJ) enfermo.*
 ‘Juan does not believe that your son is ill’.

According to Mejías-Bikandi, the speaker of 23a commits herself to the truth of the proposition *tu hijo está enfermo* ‘your son is sick’ with the use of the indicative, disagreeing with Juan, who does not believe that the proposition is true. On the other hand, she withholds judgment regarding the truth in 23b,¹⁶ as signaled by the use of the subjunctive. Thus, following Mejías-Bikandi, mood selection in negated epistemics demonstrates a speaker’s commitment to the truth of a statement and can therefore vary. Haverkate (2002) has a similar perspective; the indicative

¹⁶ A speaker’s withholding the commitment to the proposition could reflect uncertainty, intentional withholding of information, or speaker ignorance.

is used to report a proposition that is believed to be true by the speaker while the subjunctive indicates that the speaker is unaware of the veracity of the proposition. Haverkate's account also argues that the subjunctive indicates a lack of assertion, and these approaches (e.g. Mejías-Bikandi 1998, Quer 2001, Haverkate 2002, Gielau 2015) explain why it is acceptable to select the indicative or subjunctive under the scope of negation.

2.5 INTERROGATIVES. There are several similarities between negation and interrogatives, primarily in their non-assertive nature (see Palmer 1986 for a cross-linguistic comparison). As with negation (which was discussed in section 2.4), there has been some research on Spanish mood alternation in interrogatives, although this collection of research is relatively small in comparison to the general literature on mood (i.e. Rivero 1971, Villalta 2007). This section reviews the literature on interrogative structures. While some authors state that interrogatives request a set of assertions that can be answers (Terrell & Hooper 1974) and have a nonveridical characteristic (Quer 2001), Rivero (1971) indicates that mood selection in interrogatives is similar to that of negated matrix clauses in that pragmatically motivated alternation is permitted. First, she demonstrates that the negated *creer* can select both the indicative and the subjunctive (Rivero 1971:307):

- (24) a. *Los corredores no creen que el belga ganara* (SUBJ) *la carrera.*
 ‘The runners don't believe that the Belgian won the race’.
- b. *Los corredores no creen que el belga ganó* (IND) *la carrera.*
 ‘The runners don't believe that the Belgian won the race’.

Rivero notes that although the English translations are identical, the Spanish sentences have very different meanings. She argues that in 24a, the speaker is reporting what the runners believe, and the content of the embedded clause is not presupposed. On the other hand, 24b communicates

that the speaker presupposes the proposition *the Belgian won the race* and believes that it is, in fact, true.

Rivero argues that the same pattern can be found in interrogatives. According to her, the indicative communicates that the speaker presupposes the proposition to be true while a question containing an embedded subjunctive lacks such a presupposition. She provides the following examples (1971:307):

- (25) a. *¿Te parece que venga* (SUBJ)?
‘Does it seem to you that he is coming?’
b. *¿Te parece que viene* (IND)?
‘Does it seem to you that he is coming?’
(26) a. *¿Cree ud. que sea* (SUBJ) *verdad?*
‘Do you believe it is true?’
b. *¿Cree ud. que es* (IND) *verdad?*
‘Do you believe it is true?’

According to Rivero, the use of the indicative in 25b and 26b indicates speaker certainty, and the presupposition remains constant. In contrast, the use of the subjunctive in 25a and 26a demonstrates that the speaker does not presuppose the embedded proposition. Rivero provides additional examples with ties to discourse (1971:320):

- (27) a. *¿No crees que María sea* (SUBJ) *bonita?*
‘You don’t believe Mary is pretty?’
b. *¿No crees que María es* (IND) *bonita?*
‘Don’t you believe Mary is pretty?’

Rivero (1971:320) argues that utterance 27a is appropriate as a repetition of what has already

been established; she claims that the speaker ‘just wants confirmation’. Rivero also notes that *Si creo que es bonita* ‘Yes, I believe she is pretty’ would be a surprising response to this. Utterance 27b communicates that the speaker believes the proposition *es bonita* to be true, and the speaker is only looking to see if the hearer agrees with this belief. The response *Si creo que es bonita* ‘Yes, I believe she is pretty’ would be the anticipated response to a question containing the indicative, as in 27b. In addition to the verb *creer*, Rivero claims that the following verbs have similar patterns (1971:308): *contar* ‘to tell’, *explicar* ‘to explain’, *relatar* ‘to narrate’, *decir* ‘to say’, and *opinar* ‘to be of the opinion’. In summary, mood selection in negated matrix clauses and interrogative matrix clauses is comparable: Speakers are able to communicate belief in the truth of a proposition through mood.

2.6 MOOD SELECTION IN CONTACT VARIETIES. This dissertation investigates mood selection in a contact variety spoken by individuals who are bilingual in Spanish and Yucatec Maya. While little work has been done on mood in Yucatec Spanish, a comparison can be made between this variety and other contact varieties. A contact variety is a variety that arises from a language contact situation in which two languages are in close contact.

One pattern observed in mood selection in contact varieties is the substitution of the conditional in cases in which the imperfect subjunctive would be used in other varieties of Spanish. This has been observed in Spain in language contact between Basque and Spanish (in 28) and in Mexico with Veneto-Spanish contact (in 29):

(28) Basque-Spanish Contact (Fernández Ulloa 1996:109):

Si me iría a Galicia creo que lo primero que haría es aprender gallego.

‘If I were to go to Galicia I think that the first thing that I would do is learn Galician’.

(29) Veneto-Spanish (Barnes 2009:227):

A lo mejor si estaríamos en Italia estaríamos mejor pero bueno pero estamos bien.

‘Maybe if we were in Italy it would be better but, well, but we are good’.

In both 28 and 29, the conditional is used in place of the imperfect subjunctive. Both authors make the claim that this replacement is evidence of the simplification of the imperfect subjunctive, which is common in contact varieties. Another case in which mood selection in a contact variety differs from other varieties of Spanish is the use of the indicative under negated doxastic predicates in a Guaraní-Spanish language contact situation in Paraguay:

(30) Guaraní-Spanish (Granada 1979:275):

a. *No creo que llegó mi amigo.*

‘I do not believe that my friend arrived’.

b. *Los profesores no piensan que salva Juan.*

‘The professors do not think that Juan will pass’.

While the subjunctive mood would prescriptively be licensed under a negated predicate in 30, the indicative is used in Guaraní-Spanish. Lastly, in purpose clauses such as *para que lo sepas* ‘so that you know’, there are cases in which an infinitive is used instead of the subjunctive, which would be licensed in many varieties of Spanish. For example,

(31) Spanish and Portuguese (Elizaincín 2004:113):

Ella viene toda marcada para quebrarse, para usted cortar (INF) la medida que quiere.

‘She comes all marked up for breaking, for you to cut the measurements she needs’.

(32) Guaraní and Spanish (Granada 1979:275):

a. *El patrón nos dijo para venir (INF) hoy.*

‘The boss told us to come today’.

b. *Le encargué para traer (INF) los libros.*

‘I put her in charge of bringing the books’.

In Spanish, a change of referent between the first and second clauses licenses the subjunctive. However, the utterances from Spanish-Portuguese and Guaraní-Spanish contact varieties simplify the finite verb to an infinitive verb. There are several cases in which language contact results in a simplification of the Spanish mood system, or an increase in the use of the indicative in cases in which the subjunctive would typically be licensed. However, the data presented are anecdotal, and there is much to learn about indicative/subjunctive selection in such contact varieties.

The exception to this is the contact variety of U.S. Spanish, on which extensive research has been done, including studies by Silva Corvalán (1994) in Los Angeles, Lynch (1999) in Miami, Bookhammer (2013) in New York City, and Waltermire (2014, 2017) in New Mexico, among others. Silva Corvalán’s (1994) formative research on L.A. Spanish uses natural speech and grammaticality tasks to understand how temporal, aspectual, and modal references reflect language contact between Spanish and English. She finds that speakers who were born in Mexico had a system of verbal morphology that allowed them to convey different degrees of possibility, assertiveness, predictive certainty, and so on, while U.S.-born speakers had a reduced mood system. Overall, there was an extension of the use of the indicative among U.S. Spanish speakers. In fact, the only contexts in which the subjunctive was conserved included the following:

- (33) a. Volitional predicates
Pido que lo mandes. (SUBJ)
 ‘I ask that you send it’.
- b. Causative constructions
Hago que mi hija termine (SUBJ) su tarea.
 ‘I make it so my daughter finishes her homework’.
- c. Purpose clauses
...para que sepa (SUBJ)
 ‘...so that she knows’
- d. Concessive clauses
... aunque llegue (SUBJ) tarde
 ‘...even though he arrives late’

Silva Corvalán suggests that the grammatical mood systems have simplified or have undergone reductions in terms of subjunctive use. This contact variety reflects ‘a reduced system that made it more difficult to distinguish between more or less possible situations in a hypothetical world’ (Silva Corvalán 1994: 91).

In a similar study on the Spanish used by Cuban Americans in Florida, Lynch (1999) looks at grammatical mood in bilingual communities in Miami, comparing first-, second-, and third-generation¹⁷ speakers. He finds that there is a high rate of variability in subjunctive use in second- and third-generation speakers, and he finds that this variation is particularly significant in the following environments:

¹⁷ Lynch (1999:94) uses ‘generation’ to describe birthplace and age of immigration rather than age.

- (34) a. Adjectival clauses
una mujer que sabe (IND)/sepa (SUBJ) hablar español
‘a woman who knows how to speak Spanish’
- b. Comment clauses
Es bueno que llegues (SUBJ) temprano.
‘It is good that you arrive early’.
- c. Modal usage
donde quieres (IND)/quieras (SUBJ)
‘where you want’

With regard to adjective clauses (such as 34a) and comment clauses (such as 34b), there is a statistically significant difference between first and third generations, and there is also a statistically significant difference between first and second generations (34c) (Lynch 1999:176). In other words, in a sentence that usually requires the subjunctive mood, newer generations of speakers of U.S. Spanish often use the indicative rather than the subjunctive in relative clauses when compared to previous generations.

Similarly, Waltermire (2014) finds a significant relationship between mood selection and language preference in Spanish spoken in New Mexico. In this study, speakers who preferred speaking Spanish (established based on language use in sociolinguistic interviews) demonstrated mood selection that patterned more with other varieties of Spanish while those who preferred English demonstrated a simplified mood system and used the indicative more frequently. Furthermore, in his more recent work, Waltermire (2017) argues that speakers with less formal education have a more simplified mood system than their formally educated counterparts.

Bookhammer (2013) looks at the difference between first- and second-generation Spanish speakers in New York City. Bookhammer uses a corpus at City University of New York to identify uses of grammatical mood, concluding that there is a significant difference between first- and second-generation speakers, which supports previous research. He makes an important point when discussing mood selection in contact varieties when he notes that

[w]e have been analyzing and interpreting these data through a comparative scope, which is the framework of our dissertation study. If, however, we temporarily set aside comparisons and simply consider the two generations individually, we are faced with two unique, yet equally complete and systematic, mood grammars. That is, both groups merely have their own approach to, and use of, mood. (Bookhammer 2013:97)

Recognizing the importance of this emerging system, Bookhammer instead notes that they are forming their own, unique mood system representative of their dialect rather than suggesting that second-generation speakers are not fully acquiring the language.

From a slightly different approach, Montrul (2002, 2009) presents language production data from bilinguals who spoke Spanish as a minority language, or HERITAGE SPEAKERS. This group of speakers presents an interesting case because they could be either simultaneous or subsequent bilinguals, but they demonstrate a wide range of proficiency in their minority language. Rather than treating this notion as a simplification of mood that results in increased indicative selection, Montrul cites incomplete acquisition and attrition as possible explanations for this variability. However, she points out that the difference between attrition in adults and incomplete acquisition is the range and extent of language loss; lexical retrieval, phonetic values, and referential-/discourse-related aspects are most challenging in cases of adult attrition, but grammar stays intact. In incomplete acquisition, grammar is affected in addition to the elements

previously mentioned, which is reflected in inflectional morphology and complex syntax (2009: 241). Through judgment and elicitation tasks, Montrul found that many of the Spanish heritage speakers have ‘incomplete acquisition of mood... and a better command of grammatical aspect than mood’ (2009: 265). She concludes by suggesting that future research investigate complexity and age of acquisition.

The research that has been conducted regarding mood selection in varieties of Spanish with high levels of bilingualism, such as Basque-Spanish, Guaraní-Spanish, Portuguese-Spanish, Veneto-Spanish, and U.S. Spanish, concludes that the indicative is currently being used when the subjunctive would typically be licensed for speakers of non-contact varieties. Additionally, this shift increases with each successive generation. From an acquisition perspective, Montrul (2002, 2009) suggests that the simplified mood system is a result of incomplete acquisition. Returning to the discussion of Yucatec Spanish, little is known about mood selection in this contact variety. It is possible that, like U.S. Spanish, there is a simplification of mood systems that is a result of bilingualism. Chapter 3 of this dissertation explores this in greater depth.

2.7 SUMMARY. This section presented several accounts of Spanish mood selection and its motivation. First, a brief discussion of the realis/irrealis distinction demonstrated why irrealis falls short in explaining the subjunctive in Spanish. Next, classic analyses of assertion and presupposition (Terrell & Hooper 1974; Lunn 1989, 1995) were presented. Following that, more recent conversations of pragmatically motivated mood selection and the role of negation were presented (Mejías-Bikandi 1996, Haverkate 2002, Versterinen 2012, Quer 2001). Next, mood selection in interrogatives was presented, though there is admittedly limited research documenting this alternation.

This section has highlighted several important features of the subjunctive as it pertains to the current study. Importantly, the beginning of this section (2.1–2.4) primarily discusses a more pan-hispanic analysis of the Spanish language. When discussing studies that have investigated the contact variety of U.S. Spanish in section 2.5, it was made clear that speakers of contact varieties select mood differently than in other varieties of Spanish. However, the analyses and theories presented in this section cannot account for the mood selection patterns found in Yucatec Spanish. Specifically, as I will demonstrate in Chapter 3 of this dissertation, mood alternation is not limited only to propositions under the scope of negation, and there is an increase in the use of the subjunctive in instances in which the indicative is anticipated. To account for this, I appeal to modal analyses of mood selection, as presented in the following section.

3. MODAL APPROACHES TO MOOD SELECTION. Building on an analysis that focuses exclusively on speaker intention and pragmatic motivation, a modal analysis focuses on quantification over possible worlds. Portner (2011:1268) summarizes that a modal analysis uses quantification over possible worlds to communicate modal meanings of necessity (denoted here by $\Box$) and possibility (denoted by $\Diamond$) (2011:1268):

(35) Modal approaches:

- a. For any world w , $\llbracket \Box S \rrbracket w = 1$ iff $\llbracket S \rrbracket w' = 1$, for every possible world w' accessible from w .
- b. For any world w , $\llbracket \Diamond S \rrbracket w = 1$ iff $\llbracket S \rrbracket w' = 1$, for some possible world w' accessible from w .

In 35a, in order for *necessarily* S to be true, it must be true in every accessible world. This definition is associated with the modal meaning of *must*. In 35b, *possibly* S is true iff it is true in

some accessible world, which is associated with the English modal *may*. In addition to quantification over possible worlds, modal analyses make an important distinction between extensional and intensional predicates. Extensional predicates denote events that occur in the real world, or w_0 . Intensional predicates, on the other hand, reference worlds outside of w_0 , or w' . In this section, I review two modal approaches to mood selection as discussed by Farkas (1992, 2003) and Quer (1998, 2001).¹⁸

In possible worlds semantics, a proposition's truth value is connected to individuals and their respective worlds. With regards to doxastic predicates, Farkas (1999) argues that verbs of belief are similar to assertions in that they are evaluated in an epistemic context, which Farkas (2003:7) defines as follows:

(36) $E^{i,w}$ is the set of worlds compatible with what i believes in w

Within the definition in 36, E is the epistemic context, i refers to the individual anchor, and w refers to the actual world. S is true in the actual world w iff it is also true in the context set E , that is, iff it is true in the set of worlds compatible with what i believes in the actual world w . Belief predicates reflect an individual's perspective within his/her epistemic context. This notion of an individual's worldview specifies only the worlds in the epistemic context that align with the individual's perspective of truth. Therefore, Farkas (2003) defines BELIEF as:

(37) $\llbracket \text{believe} \rrbracket = \lambda p \lambda x \lambda w. E^{x,w} \in p$

A belief is true iff given a set of propositions, an individual, and a world, a proposition is true in the set of worlds compatible with what i believes in the actual world. Farkas (2003:7) states that *believe* is assertive because it adds to the epistemic context $\langle w_i, I, E^{i,w} \rangle$. We can interpret a

¹⁸ The analysis presented later in this dissertation does not adopt either framework for the analysis, but the ideas presented by both Farkas and Quer are key for understanding the basics of modal analyses.

belief statement as follows: A proposition p is true as far as an individual anchor i is concerned iff $p \in E^{i,w}$, or if the proposition is a member of the individual's epistemic context. In the analysis of Yucatec Spanish (Chapter 4, section 2), I will show that affirmative belief predicates can embed propositions that reflect speaker uncertainty with the selection of the subjunctive. If the Spanish subjunctive is analyzed as a reflection of doubt, a belief statement that licenses the subjunctive cannot also have assertive force, as Farkas (2003) posits.

Like Farkas, Quer's (2001) analysis relies on a model of evaluation through which a speaker evaluates a proposition. According to Quer, the indicative is the default mood that marks that a proposition is evaluated with respect to the actual world, which he argues is considered the default world:

(38) *Ella sabe que está (IND) cerca.*

'She knows that it is close'.

The use of the indicative in 38 indicates that the model in which the embedded proposition should be evaluated is $M_E(\text{speaker})$. $M_E(\text{speaker})$ and $M_E(x)$ (or the model of a referent denoted by an NP x) are the defaults since assertion is viewed as a basic conversational move (Quer 1998:87). However, a change of mood from the indicative to the subjunctive indicates a modal shift, overtly marking that the embedded proposition should be evaluated in a world other than the real world. For example,

(39) *Ella prefiere que esté (SUBJ) cerca.*

'She prefers that it be close'.

The use of the subjunctive in 39 indicates that the model of evaluation is *not* the actual world. Modal approaches argue that this anchor is essential for interpretation. According to Farkas (1992), a proposition can be extensionally anchored or intensionally anchored:

- (i) A proposition is EXTENSIONALLY ANCHORED if and only if the modal anchor is a single world (i.e. it is interpreted with respect to a particular world, the one introduced by the extensional predicate)
- (ii) A proposition is INTENSIONALLY ANCHORED if and only if the modal anchor constitutes a set of worlds (i.e. it is interpreted with respect to a set of worlds, those introduced by the intensional predicate)

The differentiation between extensionally and intensionally anchored propositions allows for a modal interpretation; while extensionally anchored propositions limit interpretation to only events that occur in the real world, intensionality allows interpretation to extend to other possible worlds.

- (40) a. *Sé que me devuelve (IND) el libro.*
 know.1SG that DAT.1SG return. IND .3SG the book
 ‘I know that he returns the book to me’.
- b. *Requiero que me devuelva (SUBJ) el libro.*
 require.1SG that DAT.1SG return. SUBJ .3SG the book
 ‘I require that he returns the book to me’.

In 40a the proposition *devuelve el libro* ‘he returns the book’ is embedded under a factive predicate *saber* ‘to know’. The use of the factive predicate extensionally anchors the proposition so that the embedded proposition is evaluated in the actual world, or w_0 . In 40b the matrix predicate *requerer* intensionally anchors the proposition; in the case of 40b, the proposition cannot be evaluated based only on the real world and is instead evaluated with respect to a set of possible worlds in which the proposition may be true or false.

There is a further distinction between weak and strong intensional predicates (e.g. Quer 2001, Kempchinsky 2007). Quer (2001) makes a distinction between the two intensional predicate types: strong intentional predicates and weak intensional predicates. First, Quer (2001:86) argues that strong intensional predicates such as volitional (41a) and directive (41b) predicates denote events that occur outside of the real world:

(41) a. Volition

El Joan prefereix que no li posin deures.

The Joan prefer.3SG that not him put.SUB.PRS.3PL homework

‘Joan prefers not to be given homework’.

b. Directives

El Joan ens va demanar que no li posessim deures.

The Joan us AUX.3SG to-ask that not him put.SUB.PST.3PL homework

‘Joan asked us not to give him homework’.

While Joan prefers not to be given homework (as in 41a), the hearer understands that this statement does not imply that Joan will not be given homework. Likewise, in 41b the hearer understands that Joan’s request for no homework may or may not occur. Strong intensional predicates systematically license the subjunctive in subordinate clauses and model alternative realizations of the actual world according to the perspective of the matrix anchor. Quer uses examples from Catalán, but he argues that all generalizations he makes can be applied to Spanish (Quer 2001:82).

Weak intensional predicates (such as *believe*), on the other hand, introduce a proposition that the subject of the matrix clause presents as an assertion, thus licensing the indicative. The following Catalán examples come from Quer (2001:85):

- (42) a. Epistemic model: $M_E(x)$
- L'Anna creu [que els pingüins volen]_{ME(Anna)}*
- the-Anna believe.3SG that the penguins fly.IND.3PL
- ‘Anna believes that penguins fly’.
- b. Model of reported conversation: $M_{RC}(x)$
- L'Anna diu [que els pingüins volen]_{MRC(Anna)}*
- the-Anna say.3SG that the penguins fly.IND.3PL
- ‘Anna says that penguins fly’.

All of these examples assert the truth of the embedded proposition as evaluated in the epistemic model of Anna (42a) or the reportative model of Anna (42b). In 42a the proposition is evaluated in Anna’s epistemic model, or the way in which she perceives the actual world. In 42b the proposition is evaluated in a reported model, or according to the way that Anna reports the actual world to be. In this evaluation of mood selection, the interpretation of the truth of the proposition appears to be irrelevant. Both utterances license the indicative. According to each model, from the perspective of Anna, penguins fly.

With regards to mood alternation, Quer (2001:91) argues that there are two possibilities in negated epistemics, as seen in the following examples:

- (43) a. *El jurat no creu [que sigui innocent]_{ME(Jury)}*
- The jury not believe.3SG that be.SUB.3SG innocent
- ‘The jury doesn’t believe that s/he is innocent’.
- b. *El jurat no creu [que és innocent]_{ME(Speaker)}*
- The jury not believe.3SG that be.IND.3SG innocent
- ‘The jury doesn’t believe that s/he is innocent’.

Both 43a and 43b contain epistemic predicates, and negation induces a shift in anchor that triggers different moods. According to Quer (1998), the use of the subjunctive in 43a shows that the proposition *és innocent* ‘she is innocent’ is evaluated in the model $M_E(\text{Jury})$. In 43b the individual anchor shifts to the model of the speaker $M_E(\text{Speaker})$. Quer (1998) argues that the alternation of mood is an indication of anchor shift, which indicates in which model the proposition should be evaluated. Standard Italian also has an anchor shift that is visible even when not under the scope of negation (Quer 2001:92):

(44) *Credono che Andrea sia molto stanco* $M_E(\text{They})$

believe.3PL that Andrea be.SUB.3SG very tired

‘They believe that Andrea is very tired’.

The selection of the subjunctive in 44 indicates that the proposition is evaluated in the model of the referent denoted by the NP in the matrix clause rather than by the speaker. If the speaker wanted to reflect that the proposition was evaluated in his model, he could shift the individual anchor to his own model, which would then license the indicative. Nevertheless, Quer (1998, 2001) posits that the subjunctive in an affirmative belief statement is not acceptable in Spanish. For example,

(45) a. *Creen que Andrea está muy cansada.*

believe.3PL that Andrea be.IND.3SG very tired

‘They believe that Andrea is very tired’.

b. **Creen que Andrea sea muy cansada.*

believe.3PL that Andrea be.SUBJ.3SG very tired

‘They believe that Andrea is very tired’.

According to many accounts, including Quer's, only the indicative is accepted under a doxastic predicate (as in 45a); the use of the subjunctive in 45b is unacceptable. In Chapters 3, 4, and 5 of this dissertation, I present data in which the subjunctive and indicative occur under affirmative doxastic predicates in Yucatec Spanish, which is similar to the Italian data presented in 44. Instead of analyzing anchors that trigger the subjunctive/indicative (as in Quer 1998), I turn to Giannakidou (1998, 2002, 2009, 2015) and her theory of (non)veridicality. Within a veridicality analysis, mood is not licensed by operators like negation; instead, an evaluation of the truth of a proposition licenses mood. In the following section, I describe this theory and how it has been applied to mood analysis in several languages.

4. GIANNAKIDOU'S NOTION OF VERIDICALITY. The modal approaches presented in section 3 of this chapter build on the idea that mood is represented through quantification over possible worlds. In this section, I turn to another modal analysis, Giannakidou's notion of VERIDICALITY, to explain mood selection in Yucatec Spanish. I will provide an overview of the theory (section 4.1), review (non)veridicality and mood selection (section 4.2), and introduce Giannakidou's (2015) epistemic subjunctive (section 4.3) as well as evidence for this approach from several languages, including Hungarian and Portuguese.

4.1 DEFINING (NON)VERIDICALITY. The notion of veridicality was first discussed by Montague (1969) and has been primarily shaped by Giannakidou (1994, 2002, 2006, 2011) and Zwarts (1995). As presented in Chapter 1, Giannakidou's (1998, 2002, 2009, 2015) framework relies on a three-part distinction: veridicality, antiveridicality, and nonveridicality. A statement that is VERIDICAL is true while a statement that is ANTIVERIDICAL is false. The third category, NONVERIDICAL, communicates uncertainty with regard to the truth of a proposition. When a statement is evaluated as nonveridical, it is possible that the proposition is true, and it is also

possible that the proposition is false. Consider the following example from Giannakidou (2002:5):

- (46) a. Yesterday, Paul saw a snake. $\rightarrow$ P saw a snake.
 b. Paul didn't leave. $\rightarrow$ It is not the case that P left.

The utterance in 46a is interpreted as veridical because the embedded proposition *Paul saw a snake* has been evaluated as true; this evaluation results from the past temporal reference of the event, which, at present, is known to be true. In 46b the proposition is interpreted as antiveridical because of the negative operator, which makes the proposition *Paul left* false. However, not all utterances can be evaluated as veridical or antiveridical. Consider the following examples from Giannakidou (2002:5):

- (47) a. Did Paul see a snake? $\nrightarrow$ Paul saw a snake.
 b. Paul may have seen a snake $\nrightarrow$ Paul saw a snake.

Neither the interrogative in 47a nor the modal in 47b implies that *p* (Paul saw a snake) is true; when asked if Paul saw a snake, it is possible that he did see it or also that he did not.

Nonveridical utterances do not require the speaker's commitment to the truth of a proposition.

Giannakidou (2002) identifies several other nonveridical environments:

- (48) a. Interrogatives
¿Sabe José a qué hora sale?
 'Does José know what time he is leaving?'
 $\neq$ José knows what time he is leaving.
 b. Non-monotone quantifiers
Casi nadie sabe la información.
 'Almost no one knows the information'.

≠ No one knows the information.

- c. Future temporal reference

Mañana vamos a salir a las cinco.

‘Tomorrow we are going to leave at five o’clock’.

≠ We are going to leave at five o’clock.

- d. Modals

Podemos salir más temprano.

‘We can leave earlier’.

≠ We leave earlier.

- e. Imperatives

Sal ahora.

‘Leave now’.

≠ Sales ahora.

The nonveridical environments presented in 48 do not entail (represented by ≠) that the proposition is true. Instead, the nonveridical structures imply that the proposition may be true or false. The notion of veridicality has also been used in the analysis of negative polarity items such as *none* and *any* (i.e. Giannakidou 2011 in Greek, Paducheva 2015 in Russian, Hoeksema 2010 in Dutch), negation (Yoon 2011 in Korean), and interrogatives (Xie 1996 in Mandarin).

In early versions of the theory, Giannakidou (1999, 2002, 2006) proposes the following definition of (non)veridicality for propositional operators:

- i. A proposition operator F is veridical iff Fp entails or presupposes that p is true in some individual model $M_E(x)$: $Fp \rightarrow p$; otherwise, F is nonveridical

- ii. A nonveridical operator F is antiveridical iff Fp entails that *not* p in some individual epistemic model: $Fp \rightarrow \neg p$ in some $M_E(x)$

Essential in this definition is the individual model $M_E(x)$, which is similar to the anchor incorporated in several modal theories presented above (i.e. Farkas 1992, Quer 1998). The proposition is evaluated in this epistemic model, which represents what is true to the speaker. When producing a veridical utterance, the speaker is fully committing to the truth of a proposition. Consider the following example from Greek (Giannakidou 2015:16):

- (49) a. *O Giannis kerdise to agona.*
 The John won-3SG the race
 ‘John won the race’.
- b. $\llbracket \text{John won the race} \rrbracket M(\text{speaker}) = 1$ iff
 $\forall w [w \in M(\text{speaker}) \rightarrow w \in \{ w' \mid \text{John won the race in } w' \}]$

The truth conditions for the sentence in 49a are presented in 49b, thus offering a proposition that is evaluated as veridical. 49b states that the proposition *John won the race* is true if and only if the proposition is true in the model of the speaker ($M(\text{speaker})$) and the world in which *John won the race* occurs (w'). Giannakidou (2015) emphasizes the importance of anchoring an utterance to the epistemic state of an individual anchor, which she defines as follows:

- (50) **Epistemic state of an individual anchor i:** An epistemic state $M(i)$ is a set of worlds associated with an individual i representing worlds compatible with what i knows or believes.

The proposition must obligatorily be true in both the epistemic model of the speaker and the world in which John won (i.e. the actual world). If not, the utterance becomes unacceptable, as in the following examples:

- (51) a. I know that Sarah won the race. *In fact, *John won the race*.
 b. I wish John had won the race. * In fact, *John won the race*.

In 51 the addition of *In fact, John won the race* is unacceptable. In example 51a, it is clear that the speaker knows Sarah won the race, making the use of *in fact* infelicitous as it contradicts the epistemic knowledge of the speaker. In example 51b, the proposition is true in the model of the speaker but not in the actual world. For an utterance that involves factive predicates to be felicitous, it is essential that both the world in which the event occurs and the epistemic state of the speaker be considered when evaluating the truth of a proposition.

Unembedded, affirmative propositions like the ones discussed above are generally presented as veridical. Embedding a proposition adds additional information that contributes to evaluation. For example, a factive matrix clause asserts the truth of a proposition (Giannakidou 2015:20):

- (52) $\llbracket \text{Nicholas knows that Ariadne left} \rrbracket = 1$
 iff $\forall w [w \in M(\text{Nicholas}) \rightarrow w \in \{w'. \text{Ariadne left in } w'\}]$ and
 $\forall w [w \in M(\text{speaker}) \rightarrow w \in \{w'. \text{Ariadne left in } w'\}]$

In 52 the truth conditions of this proposition require that the proposition be true in the model of both the speaker *and* the referent denoted by the NP in the matrix clause; in order for the proposition to be true, it must first be true in the model of Nicholas and occur in the real world. Consider the following:

- (53) *Nicholas knows that Ariadne left, but I know that she is still here.

This utterance is clearly unacceptable: Nicholas cannot know something that the speaker knows to be false as *know* requires the embedded proposition, *Ariande left*, to be true. As the factive

verb presupposes the certainty of the truth of a proposition, the model of the speaker and the model of the referent denoted by the matrix NP must be obligatorily the same.

Belief predicates differ from factive predicates in that the embedded proposition can be interpreted as veridical, nonveridical, or antiveridical. As noted in Chapter 1, embedding a proposition under a belief predicate adds an element of uncertainty within the matrix clause. An utterance containing a doxastic predicate can be an assertion of what the speaker knows to be true, or the speaker may be reporting a belief belonging to the referent denoted by the NP in the matrix clause. The following is an example from Greek (in 44a) along with its truth conditions (in 54b) (Giannakidou 2015:21):

- (54) a. *O Nicholas pistevi oti efije i Ariadne.*
the Nicholas believe.3SG that-IND left- 3SG the Ariadne
‘Nicholas believes that Ariadne left’.
- b. a $\llbracket \text{Nicholas believes that Ariadne left} \rrbracket$ $M(\text{Nicholas}) = 1$
iff $\forall w [w \in M(\text{Nicholas}) \rightarrow w \in \{w'. \text{Ariadne left in } w'\}]$

Like factive verbs, the proposition in 54 is evaluated in the real world and in the model of Nicholas. However, unlike factive verbs, such as those in 52, which require that the proposition be true in both models, belief predicates like 54 have two possible anchors: the speaker and the referent denoted by the NP in the main clause. It is not necessary that the proposition be true in both models for the utterance to be felicitous. In 55a below, the proposition is true in both epistemic models while in 55b, it is true only in the model of the referent denoted by the NP:

- (55) a. Nicholas believes that Ariadne left, and I know this to be true.
b. Nicholas believes that Ariadne left, but I just saw her over there.

In example 55a, the speaker and the referent denoted by the matrix NP's belief spaces coincide. In example 55b, the speaker knows that Nicholas is incorrect in this belief. In her early work, Giannakidou (1998, 1999) argues that epistemic and factive attitudes are veridical, stating that if x believes that p is true, x is committed to the truth of p . To account for cases like 55b, in which the speaker knows the proposition to be false, Giannakidou (2015) provides an updated definition that states that the speaker does not necessarily need to believe that p is true, but the truth conditions for belief statements require that the believer not have $\neg p$ worlds in her belief space. According to Giannakidou (2015:21), veridicality can be described as follows:

(56) **Veridicality of the belief verb**

If believe (i, p) is true, then $M(i) \subseteq p$

The anchoring of the evaluation of the proposition to an individual epistemic model allows a speaker to believe a proposition that another individual knows to be false, as presented in Chapter 1. Given that a proposition embedded under a belief predicate may only be true to the speaker, Giannakidou (2015) argues that the proposition is evaluated as subjectively true. This is what is referred to as SUBJECTIVE VERIDICALITY:

(57) **Definition: Subjective veridicality:** A function F that takes a proposition p as its argument is subjectively veridical with respect to an epistemic state $M(i)$ of an individual anchor i iff:

- i. Fp entails or presupposes that i knows/believes that p is true.
- ii. If i knows/believes that p , then i 's epistemic state $M(i)$ is such that: $M(i) \subseteq p$.

According to this definition, an utterance is felicitous only if the embedded proposition is true in the model of the speaker. The only entailment is that the speaker believes that the proposition is

true, but there is no entailment that the proposition is true in the actual world. Each proposition is evaluated with regards to the speaker's belief and the appropriate context. Consider the following utterance and its related contexts:

(59) **Utterance: I think that the answer is five.**

- a. *Context:* I am really good at math, and I am very confident in my answer.
- b. *Context:* I've tried to get the answer, but I am not sure that I understand.
- c. *Context:* I know the answer is ten, but I just want to be funny.

In this example, we see a veridical context in 59a; according to the context, five is the only possible answer. On the other hand, 59b is nonveridical because while there is a world evaluated in my model in which the speaker is correct, there is also the possibility of a world in which she is incorrect. Lastly, 59c is antiveridical because, in the speaker's model, all worlds are $\neg p$ worlds.

There are several factors that contribute to a nonveridical interpretation. Giannakidou (2015:16) defines nonveridicality as follows:

- (60) **Subjective nonveridicality:** A function F that takes a proposition p as its argument is subjectively nonveridical with respect to an individual anchor i iff:
- i. Fp does not entail that i knows or believes that p is true.
 - ii. i 's epistemic state $M(i)$ is such that: $M(i) - p$ is not $\emptyset$, which means that
 - iii. $\exists w' \in M(i) : \neg p(w')$.

Like previous modal theories, a proposition is evaluated within an epistemic model. The aspect of Giannakidou's approach that is novel is the notion of nonveridicality and a nonhomogeneous belief space. Giannakidou (2015) argues that belief predicates do not entail that belief is

necessarily true,¹⁹ which allows for an epistemic model that includes worlds in which the proposition is true as well as those in which it is false. While some propositions can be objectively nonveridical (i.e. a modal that implies both p and $\neg p$), the subjective veridicality accounts for differing evaluations of a proposition based on an individual's epistemic model. To summarize her theory, Giannakidou's (2015: 16) definition of (non)veridicality for epistemic states is as follows:

(61) Veridical, nonveridical epistemic states and commitment:

- a. An epistemic state (a set of worlds) $M(i)$ relative to an individual anchor i is veridical with respect to a proposition p iff all worlds in $M(i)$ are p -worlds (full commitment to p).
- b. If there is at least one world in $M(i)$ that is a $\neg p$ world, then $M(i)$ is nonveridical (weakened commitment to p).
- c. If all worlds in $M(i)$ are $\neg p$ worlds, then $M(i)$ is antiveridical (counter-commitment to p).

This definition is an improvement on earlier versions of the theory of (non)veridicality as it includes a scalar measure of certainty in the model of the speaker or the matrix referent of epistemic states. According to Giannakidou (2015), this uncertainty can be communicated through subjunctive selection, which will be explored in the following section.

4.2 MOOD AND (NON)VERIDICALITY. Regarding mood selection, veridical and antiveridical propositions select the indicative while a nonveridical proposition selects the subjunctive. This distinction does not prove problematic when analyzing the mood selection of strong intensional predicates in many languages (see examples 53 through 56 below).

¹⁹ The lack of event realization in doxastic predicates will be discussed in greater detail in section 2 of Chapter 5.

Complements embedded under directive or volitional predicates are clearly cases of nonveridical propositions. Giannakidou (2015:20) provides the truth conditions for these strong intensional predicates, as described below:

(62) Directive:

$\llbracket \text{Nicholas asked Ariadne to leave} \rrbracket M(\text{Nicholas}) = 1$ iff

- i. $\{w \mid w \in M(\text{Nicholas})\} \cap \{w' \mid \text{Ariadne leave in } w'\}$ is not $\emptyset$, and
- ii. $\{w \mid w \in M(\text{Nicholas}) \cap p\} >_{\text{more desirable}} \{w \mid w \in M(\text{Nicholas}) - p\}$

(63) Volitional:

$\llbracket \text{Nicholas suggested that Ariadne leave} \rrbracket M(\text{Nicholas}) = 1$ iff

- i. $\{w \mid w \in M(\text{Nicholas})\} \cap \{w' \mid \text{Ariadne leave in } w'\}$ is not $\emptyset$, and
- ii. $\{w \mid w \in M(\text{Nicholas}) \cap p\} >_{\text{more desirable}} \{w' \mid w' \in M(\text{Nicholas}) - p\}$

In both 62 and 63, there is a scalar element to these intensional predicates, demonstrating that the proposition is more desirable than its alternatives. We see this mood selection in intensional predicates in many languages that have the subjunctive/indicative, including in Persian (in 64), Greek (in 65), Hungarian (in 66), and Spanish (in 67):

(64) Persian (Darzi & Kwak 2015:3):

Reza mi-xad æli kar be-kon-e.

Reza ASP-want.3SG Ali work SUB-do-3SG

‘Reza wants Ali to work’.

(65) Greek (Giannakidou & Mari 2015):

*Thelo na/*oti kerdisi o Janis*

want.1SG SUBJ/IND win.NONPAST.3SG the John.

‘I want John to win’.

(66) Hungarian (Tóth 2008:114)

Peti ar-ra vágyik, hogy legyen egy saját autó-ja

Peti it-ON desires that have.SUBJ a own car-POSS

‘Peti desires to have his own car’.

(67) Spanish

Ana quiere que su novio regrese pronto.

Ana want.3SG that POSS boyfriend return.3SG.SUBJ soon

‘Ana wants her boyfriend to return soon’.

The mood selection of directive and volitional predicates in these languages present a straightforward case in which the set of possible worlds includes both worlds in which the proposition occurs and worlds in which it does not.

The examples noted in 64–67 present similar cross-linguistic patterns in mood selection among strong intensional predicates. Giannakidou (2015:22) suggests that there is a commonality among them: (non)veridicality and the set of worlds in which a proposition is interpreted as true. Therefore, mood is connected to (non)veridicality in the following ways (Giannakidou & Mari 2013):

(68) **Indicative as an indicator of objective and subjective veridicality:** The indicative is the indicator of veridical epistemic states and is selected by expressions that are at least subjectively veridical.

(69) **Subjunctive as an indicator of nonveridicality:** The subjunctive is an indicator of a nonveridical epistemic state or modal base and is selected by expressions that are at least subjectively nonveridical.

Similar to an assertion/non-assertion distinction, the indicative is selected when a proposition is interpreted as true, and the subjunctive is selected when a proposition is interpreted as false. Propositions can be objectively veridical and nonveridical. For example, a modal or interrogative is nonveridical in every epistemic model; it implies both p and $\neg p$ are possibilities. Giannakidou (2015) adds the notion of *subjective* (non)veridicality, which accounts for variation between interpretations resulting from individual epistemic models.

4.3 EPISTEMIC SUBJUNCTIVE. If epistemics indicate how the speaker perceives the world, it is logical that mood embedded under epistemic predicates can communicate epistemic perception and certainty. Giannakidou (2015) argues that the subjunctive is an indicator of nonveridicality in epistemic contexts (as seen in 58 above), indicating uncertainty on the part of the speaker or the referent denoted by the matrix NP. In many varieties of Spanish, doxastic predicates require the indicative mood:

- (70) a. *Ella cree que su madre no está (IND) en casa.*
 ‘She thinks that her mom is not home’.
- b. **Ella cree que su madre no esté (SUBJ) en casa.*
 ‘She thinks that her mom is not home’.

The use of the subjunctive in 70b is not acceptable in many varieties of Spanish. However, crosslinguistically, not all affirmative belief predicates select the indicative mood in their complement clauses. Italian belief predicates select both the indicative and subjunctive moods (see Portner 1992, Giorgi & Pianesi 1997, Quer 2002, Mari 2015), and Brazilian Portuguese allows for both the subjunctive and indicative moods, reflecting a speaker’s degree of commitment (Marques 2004, 2010). Giannakidou (2015) and Mari (2016) argue that mood

selection reflects this epistemic certainty (or lack thereof). Giannakidou (2015:12) defines the epistemic subjunctive, which demonstrates a lack of epistemic certainty, as follows:

(71) $\llbracket \text{Epistemic Subjunctive} \rrbracket w, f, g = \lambda q \langle st \rangle . \cap f(w) \cap q(w')$ is not $\emptyset$;

$\cap f(w)$ is a nonveridical epistemic modal base because not all worlds are p worlds.

According to this definition, the epistemic subjunctive denotes a set of possible worlds that includes worlds in which p is true and worlds in which p is untrue. As such, the use of the subjunctive indicates epistemic weakening. Giannakidou (2015) describes epistemic weakening as a weakened commitment to the truth of a proposition. She describes a scalar quality of commitment strength:

(72) **Commitment strength** ($\gg$ is 'more committed')

Non-modalized p (speaker knows p , added to the common ground) $\gg$

MUST p (speaker does not know p , but is biased towards p) $\gg$

POSSIBLY p (speaker does not know p , and there is no bias)

A speaker shows full commitment to a proposition with a non-modalized assertion. This utterance shows a stronger commitment to the truth of p than a modalized proposition, such as *she must go*. A possibility modal such as *she may go* commits even less to the proposition. With regards to doxastic predicates, by embedding a proposition under a doxastic predicate, the speaker shows more uncertainty. A higher degree of uncertainty is reflected in the proposition when the speaker also utilizes epistemic modals such as *must* and *possibly*, which communicate a certain level of lack of commitment.

The link between the subjunctive and (lack of) certainty has been discussed in research that provides evidence of this link from several languages, including Hungarian. In her study of veridicality in Hungarian, Toth (2008) asked native speakers to rank matrix sentences from most

certain to least certain. The phrases provided included *biztos* ‘certain’, *valószínű* ‘likely’, *elvelig lehetséges* ‘theoretically possible’, *alig elképzelhető* ‘hardly conceivable’, *lehetetlen*, and *elképzелhetetlen* ‘inconceivable’. Tóth (2008:132) concludes that the further we move down the scale (from more certain to less certain), the more likely it is for the subjunctive to appear:

(73) *Lehet, hogy még ma megjön, készítsünk neki vacsorá-t!*

Possible that still today arrives.IND make.SUBJ him.DAT dinner-ACC

‘It’s possible that he will arrive tonight, let’s make him dinner!’

(74) *Elvileg lehetséges, hogy még ma megjön/megjöjjön,*

Theoretically possible that still today arrives.IND/SUBJ

készítsünk neki vacsorá-t?

make.SUBJ him.DAT dinner-ACC

‘It’s theoretically possible that he will arrive tonight, shall we make him dinner?’

(75) *Lehetetlen, hogy még ma megjön/megjöjjön,*

Impossible that still today arrives.IND/SUBJ

ne is készítsünk neki vacsorá-t.

NEG also make.SUBJ him.DAT dinner-ACC

‘It’s impossible that he will arrive tonight, let’s not make him dinner’.

Toth states that the narrow epistemic possibility *lehet* ‘possible’ in 73 reflects a realistic modal base and, therefore, selects the indicative mood. A wide epistemic possibility reflects a weakly realistic modal base, and negative attitudes reflect a nonrealistic modal base. Both *elvileg lehetséges* ‘theoretically possible’ (in 74) and *lehetetlen* ‘impossible’ (in 75) select subjunctive in the examples, but Toth (2007:134) notes that this reflects the speaker’s view of reality as both the indicative and subjunctive are acceptable in these cases.

This analysis of Hungarian data is similar to Márquez's (2004, 2010) approach to mood selection in Brazilian Portuguese. In his analysis of mood selection in Portuguese, Márquez (2004) discusses key differences between Brazilian Portuguese and European Portuguese. According to the data presented by Márquez, European Portuguese patterns more with other Romance languages (i.e. Spanish, Catalan) in its mood selection while Brazilian Portuguese strays from this. Using the theory of nonveridicality as a starting point, Márquez (2004:107) suggests a classification based on a reality/nonreality distinction, as in the following examples:

- (76) a. *Bom que você veio.* [Brazilian Portuguese]
 Good that you came-IND
 'It's good that you came'.
- b. *É bom que tenhas vindo.* [European Portuguese]
 Is good that you have-SUBJ come
 'It's good that you came'.

In European Portuguese in 76b, the subjunctive is obligatorily selected, but in Brazilian Portuguese, in 76a, the indicative is selected. This sentence in 76 is considered veridical; therefore, the theory of veridicality would predict exclusive indicative selection, which supports a nonveridical analysis of mood selection in Brazilian Portuguese, but not for European Portuguese. Another dialectal distinction that Márquez (2004:108) points out is mood selection with the verb *imaginar*:

- (77) a. *Imaginemos que hoje seja domingo.* [Brazilian Portuguese]
 Imagine that today is-SUBJ Sunday
 'Imagine that today is Sunday'.
- b. *Imaginemos que hoje é domingo.* [European Portuguese]

Imagine that today is-IND Sunday

‘Imagine that today is Sunday’.

To capture the mood selection in the two dialects, Márquez proposes two separate categorizations of mood selection in Portuguese: reality/nonreality for Brazilian Portuguese and epistemic/non-epistemic for European Portuguese. Márquez concludes that the difference between European Portuguese (EP) and Brazilian Portuguese (BP) is as follows: In EP, epistemic verbs license the indicative while other predicates license the subjunctive. In BP, the indicative is selected if the sentence is taken to be true in the real world; otherwise, the subjunctive is selected.

5. SUMMARY. Considerable research has been devoted to describing the subjunctive/indicative mood system in Spanish. In this chapter, I have reviewed some theories and made arguments for adopting the framework of (non)veridicality. Several approaches have been proposed to explain alternations between the subjunctive and indicative, including realis/irrealis and assertion/non-assertion; however, in Spanish, emotive predicates, counterfactuals, and mood alternation challenge these binary categorizations. Accounts of (non)assertion and presupposition capture mood selection in many varieties of Spanish, but more recent studies that focus on speaker perspective/intention find much higher rates of alternation that cannot be fully explained by these foundation notions. Similarly, Chapter 3 of this dissertation highlights unanticipated mood selection patterns in Yucatec Spanish that cannot be accounted for by accounts that discuss mood alternation only under negated doxastic predicated (i.e. Mejías-Bikandi 1998, Quer 1998, Haverkate 2002). While alternation has been observed (i.e. in emotive predicates and negated epistemic predicates), it has often been explained under the umbrella of pragmatically motivated mood selection. Instead, I argue that mood selection can

be analyzed from a modal approach, by which the quantification over possible worlds and anchoring of models of evaluation allow for the interpretation of mood. By adopting this type of analysis, propositions are evaluated with respect to possible worlds, and a model of evaluation allows a speaker to determine the veridicality of a proposition. Features such as negation, interrogation, and quantified noun phrases have been briefly explored as possible triggers of mood and will be examined in greater depth in the following chapters. This chapter has reviewed the relevant literature to inform the study that I present in Chapter 3, which provides an overview of mood selection in Yucatec Spanish.

CHAPTER 3

MOOD SELECTION IN YUCATEC SPANISH:

A STATISTICAL ANALYSIS

1. INTRODUCTION. The primary goal of this dissertation is to examine what motivates mood selection in Yucatec Spanish. However, subjunctive/indicative selection in this contact variety has not been previously documented. Therefore, the first step in this dissertation is to capture mood selection patterns within this region. As was presented in Chapter 2, contact varieties present unanticipated mood selection patterns. For example, Spanish-Guaraní contact has resulted in a simplification of mood under doxastic predicates (Granada 1979). Furthermore, as discussed in language contact research, there is a pattern of notably reduced subjunctive use where the subjunctive would be anticipated in other varieties of Spanish.

Like U.S. Spanish, Yucatec Spanish is a contact variety of Spanish. It carries many characteristics attributed to years of contact with another language, Yucatec Maya. Researchers have noted unique qualities of Yucatec Spanish's sound system, syntax, and pragmatics (e.g. Michnowicz 2009, 2012; Solomon 1996, 1999; Bove 2018). While many studies have documented mood selection in other varieties of Spanish and researchers have cited non-standard mood selection in Mexican Spanish (e.g. Lope Blanch 1989), mood selection in this contact variety is understudied.

2. THE CURRENT STUDY. Yucatec Spanish has been identified as 'an Indigenous contact variety that is rapidly undergoing standardization, as speakers reject regional linguistic forms in

favor of pan-Hispanic norms' (Michnowicz 2011:1). Phonetic differences between bilingual and monolingual groups have been observed (Solomon 1996, 1999; Michnowicz 2009, 2011), and syntactically, there are differences between monolingual and bilingual speakers with respect to characteristics such as subject pronoun rates (Michnowicz 2015, Klee 2009). Michnowicz (2015) observed a decreased sensitivity to coreference, a factor that determines pronoun use in Spanish. According to Michnowicz (2011), bilingual speakers identify a primary distinction between categories but complex differences are not recognized; for example, bilingual speakers in his study acquired the phonemes /b/, /d/, /g/, but they often were unsure of when their approximate counterparts /β/, /ð/, /ɣ/ were used.

Bove (2018) found that bilingual mood selection is similar to monolingual mood selection when the subjunctive is syntactically licensed, but there are differences between monolingual and bilingual speakers when mood plays a pragmatic role in discourse. For example, while an utterance containing the temporal adverb *cuando* with a habitual interpretation in Spanish licenses the indicative and an utterance containing the temporal adverb *cuando* with a future interpretation licenses the subjunctive, bilingual speakers do not differentiate between habitual and future meanings and use the subjunctive in all embedded *cuando* clauses (Bove 2018). These findings support previous studies regarding Yucatec Spanish (i.e. Michnowicz 2015), which found that monolingual speakers are sensitive to pragmatically motivated mood selection in a way that bilingual speakers are not.

The goal of this chapter is to provide a description of mood selection in Yucatec Spanish and to identify differences between monolingual and bilingual speakers. To better understand mood selection in this contact variety, I take a quantitative approach to provide a descriptive

overview of mood selection patterns in Yucatec Spanish. Specifically, this research aims to answer the following questions:

RQ1: To what degree does Yucatec Spanish mirror mood distribution as presented in prescriptive grammars and mood selection in other varieties of Spanish?

RQ2: How does mood selection vary across types of clauses?

RQ3: To what extent do monolingual and bilingual speakers' mood selections differ?

Based on the review of subjunctive selection in Spanish, as presented in the previous chapter, my null hypothesis argues that both bilingual and monolingual speakers will select mood in Yucatec Spanish according to previous accounts of Spanish as presented in Chapter 2. Table 1 below presents an overview of the mood selection that I am adopting as the predicted mood selection for the current study.

TABLE 1. Anticipated mood selection in Spanish.

ANTICIPATED MOOD SELECTION ²⁰	
Subjunctive	Indicative
All volitional predicates	Affirmative epistemic predicates
All emotive predicates	Epistemic interrogatives
Negated epistemic predicates	Past epistemics

Given previous accounts of differences between speakers in U.S. Spanish (i.e. Silva-Corvalán 1994, Lynch 1999, Torres 1989) and in Yucatec Spanish (i.e. Klee 2009; Michnowicz 2009, 2011, 2015), my alternative hypothesis is that there are speakers of Yucatec Spanish who select mood in ways that do not follow anticipated mood selection patterns.

²⁰ I adopt this terminology for the current chapter. For full descriptions, see the introduction.

3. METHODOLOGY. In this section, I will present the methodology for data collection for the sociolinguistic investigation of mood selection. A forced choice (FC) task was distributed to a large number of participants throughout the Yucatán Peninsula, specifically in Yucatán, Quintana Roo, and Campeche. The task aimed to compare three types of matrix verbs (epistemic, volitional, and emotive), and the structures included declarative, past temporal reference, interrogative, and negated. The questionnaire was created in and shared through the online survey program SurveyMonkey. As presented in the introduction of this dissertation, data collection occurred primarily in Yucatán Mexico with an overwhelming number of participants from Valladolid and the surrounding communities. Participants from the two neighboring states of Quintana Roo to the south and Campeche to the west were also included in this portion of the dissertation. This section is organized as follows: Section 3.1 provides descriptions of the participants, section 3.2 outlines the data collection process, section 3.3 describes the tasks used for data collection, section 3.4 details the task design, and lastly, section 3.5 describes the data analysis process.

3.1 PARTICIPANTS. As this task aimed to capture data regarding overall mood selection in the region, participants from all three states of the Yucatán Peninsula (Campeche, Yucatán, and Quintana Roo) were represented in this study. Table 2 describes the participants according to social factors.

TABLE 2. Participant data.

Gender	Male n= 62	Female n= 94
State	Yucatán n= 114	Campeche and Quintana Roo n= 42
Education	University educated n= 120	Non-university educated n= 36
Language	Monolingual Spanish n= 88	Bilingual Spanish/YM n= 68

Due to low numbers of participants from other states, participants from Campeche and Quintana Roo were grouped together to form the non-Yucatán group. The same was done for non-university-educated participants. As this study was primarily disseminated through Facebook, there was a large number of young, university-educated participants. There are, however, balanced numbers of each gender and language status (monolingual versus bilingual). Language status was determined based on questions regarding language use and understanding. If participants indicated that they used Yucatec Maya at home/school/work/with family, they were considered bilingual participants.²¹

3.2 DATA COLLECTION. The questionnaire was created in and shared through the online survey program SurveyMonkey, and it was primarily disseminated through community forums on Facebook. From initial contacts made through social media and prior contacts in the community, snowball sampling was used to increase the number of participants. Snowball

²¹ This method of classification for language status was adopted because most monolingual people in Yucatán have relatives or close relations with people who speak Yucatec Maya, and the majority of Yucatecos in this area speak at least some Maya. Therefore, I classified Yucatec Maya speakers as the individuals who use Yucatec Maya at work/school/home/with family.

sampling uses study participants and their contacts to recruit additional participants.²² This sampling technique was especially helpful in entering a community in which the researcher was not a participant. The FC task was completed individually and often without the investigator present. Participants were not compensated for their participation in this study but were extended an opportunity to participate in the second task at the end of the survey.

3.3 TASK 1: FORCED CHOICE TASK. As previous data on the state of the subjunctive in Yucatec Spanish are lacking, the first step in this investigation was to document subjunctive selection trends in Spanish throughout the Yucatan Peninsula. This task targeted several structures that trigger the subjunctive in subordinate clauses: volitional, emotive, and epistemic matrix verb phrases. The objective of this first task was to see if participants were sensitive to changes in subjunctive-licensing triggers. The Forced-Choice (or FC) task was selected because it can establish a contrast in acceptability between two conditions (in this case, the subjunctive and indicative moods) and can detect differences between several conditions (Schütze & Sprouse 2013).²³

3.4 TASK DESIGN. The FC task was presented as dialogues describing three unique storylines: a woman purchasing shoes, friends hosting a party, and a student-teacher interaction. A brief context was provided to introduce each dialogue. Each line of dialogue contained a targeted structure, and each line of dialogue was built upon the previous line(s). Each dialogue contained two participants, and the dialogues had varying levels of formality: one informal dialogue (two friends), one formal yet familiar dialogue (professor and student), and one formal

²² See Buchstaller and Ghada Khattab (2013) for a discussion of the advantages and disadvantages of this technique in linguistic and ethnographic research.

²³ Limitations of an FC task include the inability to describe the size of the difference or how (un)acceptable an utterance is (Schütze & Sprouse 2013). However, as this task provided initial data to be investigated more thoroughly in Task 2, it was decided that the FC task would provide enough data to describe mood selection in the targeted constructions.

and unfamiliar dialogue (employee and client). Each dialogue was composed of two to three sentences of context as well as 12 to 15 lines of dialogue.

The task contained 50 questions²⁴ and aimed to compare three types of matrix verbs: epistemic, volitional, and emotive. For each verb type, there were three verb stimuli, which are listed in Table 3.

TABLE 3. Verb types and stimuli.

Verb Type	Verb in Survey
Epistemic Verbs	<i>Creer</i> ‘To believe’
	<i>Pensar</i> ‘To think’
	<i>Estar seguro</i> ‘To be sure’
Volitional	<i>Querer</i> ‘To want’
	<i>Sugerir</i> ‘To suggest’
	<i>Preferir</i> ‘To prefer’
Emotive	<i>Gustar</i> ‘To be pleasing’
	<i>Ser bueno</i> ‘To be good’
	<i>Lamentar</i> ‘To be sorry’

Each matrix verb was then presented in four ways: an affirmative statement to act as a control, a negated statement, an interrogative, and a past statement. For example:

²⁴ This included seven biographical questions, seven distractors, and 36 target items. I acknowledge that a low level of distractors is a limitation to the current study. With the appropriate number of distractors, participants were not finishing the task. As this was an unpaid task, I opted to shorten the questionnaire by removing some distractors in order to receive more complete responses.

(1) Volitional verb: *Querer*

(a) Affirmative: *Quiero que llegue mañana.*

‘I want her to arrive tomorrow’.

(b) Negated: *No quiero que llegue mañana.*

‘I don’t want her to arrive tomorrow’.

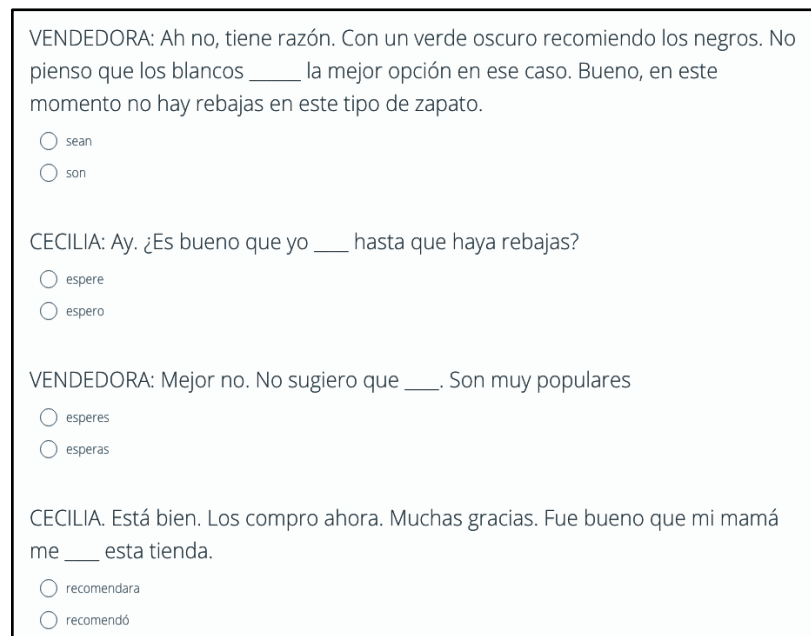
(c) Interrogative: *¿Quieres que llegue mañana?*

‘Do you want her to arrive tomorrow?’

(d) Past: *Quería que llegara mañana.*

I wanted her to arrive tomorrow.

All task items had a similar syntactic structure and included a matrix verb (either epistemic, volitional, or emotive) and a subordinate verb phrase in which the verb was missing. An example of the survey is shown in Figure 1 below.



VENDEDORA: Ah no, tiene razón. Con un verde oscuro recomiendo los negros. No pienso que los blancos ____ la mejor opción en ese caso. Bueno, en este momento no hay rebajas en este tipo de zapato.

☐ sean
☐ son

CECILIA: Ay. ¿Es bueno que yo ____ hasta que haya rebajas?

☐ espere
☐ espero

VENDEDORA: Mejor no. No sugiero que _____. Son muy populares

☐ esperes
☐ esperas

CECILIA: Está bien. Los compro ahora. Muchas gracias. Fue bueno que mi mamá me ____ esta tienda.

☐ recomendara
☐ recomendó

FIGURE 1. Screenshot of online survey.

Participants were asked to read each sentence and select the verb that sounded better for each sentence, and while it was possible to leave questions blank, participants were not able to select both verbs as a preference.

3.5 DATA ANALYSIS. First, each participant was given a score that represented their responses. Each item was scored individually: a lack of response was given a zero (0), an answer that corresponded with the anticipated mood selection was given a one (1), and an answer that contradicted the anticipated mood selection was given a negative one (-1). The anticipated mood selection was based on previous accounts of Spanish mood selection and is listed in Table 4.

TABLE 4. Judgment categories.

Subjunctive	Indicative
All volitional predicates	Affirmative epistemic predicates
All emotive predicates	Epistemic interrogatives
Negated epistemic predicates	Past epistemics

Participant scores were summed with possible scores ranging from -12 to 12 for each predicate type. A higher score indicated that the individual's mood selection followed anticipated mood patterns, and a lower score indicated that the mood selection did not follow anticipated patterns. Using SAS, an Analysis of Covariance (ANCOVA) was performed to determine if there was a significant difference between language groups (monolingual versus bilingual); additionally, other factors were run as covariates (i.e. state, gender, education, and age).

4. RESULTS. First, all data were run together in a single ANCOVA analysis of language status (bilingual versus monolingual) and mood selection. When all verb types were grouped together, the speaker group was approaching statistical significance ($p= 0.0542$). Monolingual

speakers scored higher than their bilingual counterparts, indicating that monolinguals are selecting mood in a way that patterns more closely with the anticipated mood selection (based on previous Spanish accounts). Furthermore, gender had a significant impact ($p= 0.0294$) on selection. In their individual scores, women scored higher than men overall, meaning that women selected mood in line with anticipated selection more than men. While these initial data are informative, previous research on contact varieties suggests that predicate types can behave differently (Silva Corvalán 1994), and as such, it was necessary to distinguish between those verb types. In order to get a clearer picture of how mood selection works in each verb type, each verb type was analyzed separately. In the following section, I will present statistics and discussion of volitional, emotive, and epistemic predicates individually.

4.1 VOLITIONAL PREDICATES. Previous literature suggests that volitional predicates consistently license the subjunctive, and to my knowledge, no alternation in mood selection among volitional predicates in Mexican Spanish has been observed in the literature. The current data support this finding. In Table 5, the number and percentage of subjunctive responses selected in the FC task are presented.

TABLE 5. Percentage of subjunctive responses: Volitional predicates.

	Affirmative	Negated	Interrogative	Past
<i>Sugerir</i> ‘To suggest’	n=154/156 98.7%	n=151/153 98.6%	n=153/154 99.3%	n=152/154 98.7%
<i>Preferir</i> ‘To prefer’	n=156/156 100%	n=150/154 97.4%	n=151/152 99.3%	n=153/155 98.7%
<i>Querer</i> ‘To want’	n=152/153 99.3%	n=153/153 100%	n=153/153 100%	n=149/152 98%
Average	n=462/465 99.3%	n=454/460 98.6%	n=457/459 99.5%	n=454/461 98.5%

Participants indicated that the subjunctive was preferable in all categories of utterance type with little alternation, and it is clear that speakers of Yucatec Spanish select the subjunctive embedded under volitional predicates. Participants unanimously selected the subjunctive for five of these utterances. For example, participants unanimously selected the subjunctive in the sentence containing the verb *querer* ‘to want’ in the interrogative form, as follows:

(2) *BERTA: A ver. ¿A qué hora quieres que llegue/llego?*

‘BERTA: Let’s see. What time do you want me to arrive?’

Almost all items with the verb *querer* ‘to want’ licensed the subjunctive for participants across utterance type. This was true for many of the volitional verbs. The following past temporal reference also licensed the subjunctive for 100% of participants:

(3) *PROFESOR: Pero es verdad. Todos preferían que te mejoraras/mejorabas pronto.*

‘PROFESSOR: But it is true. Everyone preferred that you got better (SUBJ/IND) soon’.

The patterns of subjunctive selection in volitional predicates were consistent across utterance types. According to the response rates, it can be concluded that Yucatec Spanish presents mood selection that patterns with accounts of standard Spanish as described in previous studies.

When the ANCOVA was run only on volitional predicates, SAS outputs for models demonstrate that there was not a statistically significant difference between monolingual and bilingual participants. However, there is one interesting social factor that was found to be statistically significant: Gender had a significant impact ($p = 0.0133$) within volitional predicates. The average score of women participants was 1.2008 higher than men, meaning that women’s scores pattern more with the anticipated mood selection that is described in the literature (i.e. Lakoff 1975).

4.2 EMOTIVE PREDICATES. While many previous accounts of mood selection in the complement clauses of emotive predicates state that emotive predicates select only the subjunctive, some sources such as Lope Blanch (1991) suggest that there is mood alternation in Mexican Spanish. Table 6 presents the percentage of subjunctive responses indicated by participants in the FC task.

TABLE 6. Percentage of subjunctive responses: Emotive predicates.

	Affirmative	Negated	Interrogative	Past
<i>Ser bueno</i> ‘To be good’	n=127/153 83%	n= 155/156 99.3%	n=148/153 96.7%	n= 138/153 90.2%
<i>Lamentar</i> ‘To regret’	n=142/155 91.6%	n= 145/156 92.9%	n=87/155 56%	n=140/156 89.7%
<i>Gustar</i> ‘To be pleasing’	n= 125/153 81.7%	n= 149/153 97.4%	n= 149/153 97.4%	n= 123/153 80.4%
Average	n=394/461 85.4%	n=449/465 96.5%	n=384/461 83.2%	n=401/462 86.7%

Participants clearly preferred the use of the subjunctive for emotive predicates, but the overall preference for the subjunctive is lower when embedded under emotive predicates than under volitional verbs. There were some outliers to this trend, including the emotive interrogative in item 4 below:

- (4) *BERTA: Ah sí tienes razón. ¿Lamentas que no ____ a estar Juan?*

‘BERTA: Oh yeah you are right. Do you regret that Juan will not be there?’

Participants expressed mixed opinions regarding this interrogative with only 56% of participants selecting the subjunctive. However, not all interrogatives selected lower rates of subjunctive; items containing the predicate *ser bueno* ‘to be good’ in the interrogative form presented interesting mood selection patterns:

- (5) *CECILIA: Ay. ¿Es bueno que yo espere/espero hasta que haya rebajas?*

‘CECILIA: Ah. Is it good that I wait (SUBJ/IND) until there are sales?’

The matrix predicate in this sentence only licensed the subjunctive 96% of the time, suggesting that utterance type may have an effect on mood selection.

When the ANCOVA was run, emotive predicates presented a significant difference according to participant language status (as described in section 3.1). The difference between bilingual and monolingual participants is significant at the 0.05 level ($p=0.0267$), and monolingual participants’ average score was 1.1379 higher than bilingual participants. This suggests that bilingual participants’ mood selection patterns less with anticipated mood selection than their monolingual counterparts.

4.3 EPISTEMIC PREDICATES. Previous accounts of Spanish state that negated epistemic predicates select a complement in the subjunctive, but all other structure types (affirmative, interrogative, and past) select the indicative. The current data present a very distinct pattern of unanticipated subjunctive use, as seen in Table 7.

TABLE 7. Percentage of subjunctive responses: Epistemic predicates.

	Affirmative	Negated	Interrogative	Past
<i>Estar seguro</i> ‘To be sure’	n=33/153 21.5%	n= 154/156 98.7%	n= 76/153 49.6%	n= 39/155 25%
<i>Pensar</i> ‘To think’	n=13/153 8.5%	n= 132/153 86%	n= 130/156 83.3%	n= 150/156 96%
<i>Creer</i> ‘To believe’	n=14/142 9.8%	n= 152/153 99%	n= 143/153 93.4%	n= 20/152 13%
Average	n=60/448 13.4%	n=438/462 94.8%	n=349/462 75.5%	n=209/463 45%

High rates of the subjunctive were expected with matrix-clause negated epistemic predicates (as in 6), and the results of this task supported such mood selection:

- (6) *MARTA: No creo que venga/viene esta vez. Está en Mérida este fin de semana.*

‘MARTA: I don’t think he is coming this time. He is in Merida this weekend’.

Stimuli for *creer* ‘to believe’ and *estar seguro* ‘to be sure’ both licensed high rates of the subjunctive. The stimuli with the negated *pensar* ‘to think’ only licensed the subjunctive 86% of the time:

- (7) *VENDEDORA: Ah no, tiene razón. Con un verde oscuro recomendando los negros.*

No pienso que los blancos sean/son la mejor opción en ese caso.

‘SELLER: Ah no, you are right. With a dark green I recommend the black ones. I don’t think that the white ones are (SUBJ/IND) the best option in this case’.

In this sentence, the speaker makes it clear that she does not believe the embedded proposition that the white ones are the best option. It is this lack of commitment that licenses the subjunctive.

Affirmative, interrogative, and past structures present patterns that stray from anticipated mood selection; while previous accounts of mood predict the exclusive use of the indicative, the subjunctive was available for some speakers of Yucatec Spanish. Other than a very brief mention by Rivero (1971), interrogatives and mood selection have not been discussed frequently; however, the current results suggest that there are high rates of subjunctive use when a proposition is embedded under a doxastic predicate in an interrogative:

- (8) MARTA: *A las ocho. ¿Crees que puedas/puedes?*

‘MARTA: At eight o’clock. Do you think you can (SUBJ/IND)?’

- (9) MIGUEL: *Sí, yo sé. Estuve con gripe. Ahora mis papás lo tienen también.*

¿Piensa ud. que pueda/puedo tomar el examen de la semana pasada?

‘MIGUEL: Yes, I know. I had the flu. Now my parents have it, too. Do you think that I can (SUBJ/IND) take last week’s test?’

Item 8 includes the matrix verb *creer* ‘to believe’, and 93% of participants agreed that this licensed the subjunctive. Item 9, with the matrix verb *pensar* ‘to think’, has a slightly lower subjunctive rate at 83%. Both of these present mood selection patterns that contradict previous accounts of Spanish, suggesting that these questions may reflect the uncertainty of an interrogative in the selection of the subjunctive.

Affirmative structures (as seen in 10) have a low rate of subjunctive use in Table 7, but interestingly, *estar seguro* ‘to be sure’ presents unanticipated rates of subjunctive selection.

- (10) VENDEDORA: *Excelente, pues estoy segura de que usted pueda/puede encontrar el par perfecto para su ocasión. Tenemos muchos zapatos que tal vez le interesan.*

‘SELLER: Excellent, well, I am sure that you can (SUBJ/IND) find the perfect pair for your occasion. We have many shoes that perhaps may interest you’.

In an informal conversation about the survey, several participants indicated that the utterance in 10 sounded more polite in the subjunctive form. In particular, they noted that the indicative was not incorrect, but it sounded more ‘right’ for a store clerk to use the subjunctive form. Since this dialogue occurred between a seller/buyer, it is likely that the use of the subjunctive reflects a level of politeness, as seen in previous accounts of Spanish (i.e. Lunn 1995). A similar pattern was found in terms of a high rate of subjunctive use in the item that includes *pensar* ‘to think’ in the past tense:

(11) *MIGUEL: Gracias, muy amable, Profe. Pensaba que me permitieras/permitía tomar el examen ahora.*

‘MIGUEL: Thank you, very nice, Professor. I thought that you were going (SUBJ/IND) to let me take the test now’.

According to some participants, the indicative response was not considered incorrect, but the subjunctive *permitiera* ‘going to let’ sounded more appropriate for a situation in which there was a power differential between participants in the dialogue.

From SAS outputs for ANCOVA models, there is no statistically significant difference between bilingual and monolingual participants. However, there is a statistically significant difference between participants from the state of Yucatán and those from the surrounding states (Campeche and Quintana Roo) ($p = 0.0071$). Participants from the surrounding areas have an average score 1.4828 higher than those from the state of Yucatán. This suggests that participants from the state of Yucatán produce more unanticipated mood selection in epistemic predicates than those from Quintana Roo and Campeche.

5. DISCUSSION. With these results, there are several interesting and unexpected patterns in mood selection in Yucatec Spanish. Figure 3 below shows the indicative/subjunctive rates for matrix clauses that typically trigger the subjunctive.

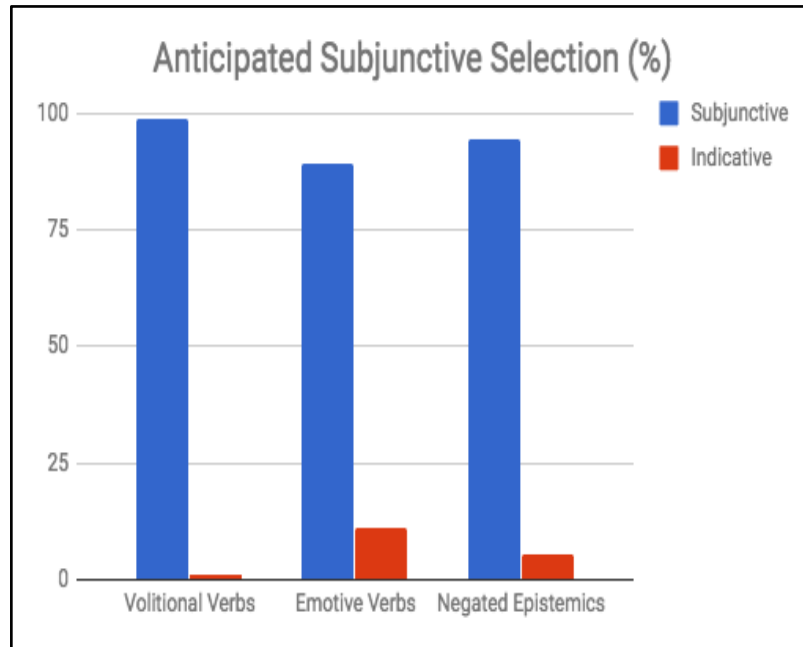


FIGURE 2. Mood selection in environments that anticipate the subjunctive (%).

Figure 2 demonstrates that Yucatec Spanish patterns very similarly to what has been described in previous accounts of Spanish in regards to subjunctive selection when the subjunctive is the anticipated mood selection. There are higher rates of the indicative in the use of emotive verbs and negated epistemics, but it can be concluded that Yucatec Spanish licenses the subjunctive in a way that is very similar to previous accounts of Spanish.

Figure 3 presents the rates of indicative selection in embedded clauses under a matrix clause that typically licenses the indicative and reveals results that contradict previous accounts of Spanish.

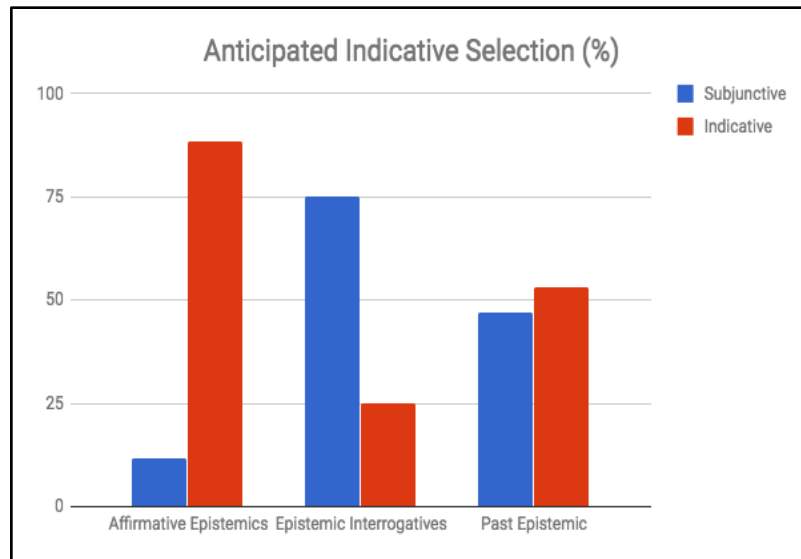


FIGURE 3. Mood selection in environments that anticipate indicative (%).

This figure demonstrates many unique mood selection features of Yucatec Spanish. While affirmative predicates select the indicative most of the time, only half of epistemic stimuli in the past occur in the indicative. Most interesting is the overwhelming preference for the subjunctive in interrogatives containing an epistemic matrix.

Before offering conclusions for this chapter, I will explore mood selection patterns in Yucatec Spanish, pointing out differences in comparison with other varieties of Spanish. Since Yucatec Spanish is a contact variety, it is important to examine mood selection patterns in Yucatec Maya as well. Yucatec Maya is an SVO (subject-verb-object) language with a flexible word order. The language is pro-drop, allowing for overt and null subjects. It is a tonal language with four vowel tones (unmarked, descending, elongated, and rearticulated) and a glottal stop. There is no copula verb required in stative predicates. In Yucatec Maya, preverbal particles convey aspectual and modal information (Bohnenmeyer 2002). These aspectual and modal markers (henceforth AM markers) are required in finite clauses much like temporal, aspectual, or

modal morphology is required in Spanish finite clauses. The following are just two examples of the many AM markers in Yucatec Maya:

(12) (a) Relative Perfect

Sáam in ts'o'oksej

Sáam in ts'o'ok- s- ej

REL PERF 1SG finish-CAUS-ACT- SUBJ

‘A little while ago I finished’.

(b) Compulsory

Yaan in bin Jó.

Yaan in bin-Ø Jó.

COMP 1SG go-ANT.IMPF Merida

‘I will (have to) go to Mérida’.

In both examples in 12, the modal/aspectual information is provided preverbally. In 12a temporal information is provided with the relative perfect *sáam*, glossed REL PERF, and in 12b modal/temporal information is given with the compulsory AM *yaan*, glossed COMP. Some AM markers communicate only aspectual or modal meaning, such as the aspectual meaning communicated with the progressive marker *táan*, but aspectual and modal meanings are often conflated into just one preverbal marker (Bohnenmeyer 2002), as seen in *yaan*, glossed COMP, in 12b, which communicates both temporal and modal meaning.

The subjunctive in Yucatec Maya is a verbal suffix *-ej* that communicates temporal, aspectual, and modal information. Bohnemeyer (2012) creates a formal model that encompasses the variety of functions that the subjunctive performs in Yucatec Maya:

$$(13) \quad \llbracket \text{SUBJ} \rrbracket c = \lambda P. \exists e. \neg(e \leq_s s_{\text{topc}}) \ \& \ P(e)$$

Here, Bohnemeyer (2012:1) analyzes the subjunctive as entailing the realization of the eventuality described by the predicate outside the topic situation at contextual index *c*. In this case, the topic situation is the situation currently under discussion, or at focus. Therefore, the subjunctive can mark possible event realization in the future or realization in other worlds (as in counterfactuals), or it can have past temporal reference. In 12a above, the subjunctive marker *-ej* ‘SUBJ’ is a suffix of the verb *ts’o’ok*²⁵ ‘finish’. The subjunctive is only marked overtly if there is no element that follows, as seen in example 12a. According to Bohnemeyer (2002), examples 14a and 14b show that the AM markers *bíin*, *bik* license the use of the subjunctive.²⁶ The following are examples of all AM markers that require the use of the subjunctive (Chan Dzul 2017):

- (14) (a) *Bíin*: predictive
- Bíin u t’anej.*
- Bíin u t’an- ej.
- PRED 3SG speak-SUBJ
- ‘Maybe she will speak (someday)’.
- (b) *Bik*: preventative
- Bik u t’anej.*
- Bik u t’an -ej
- PREV 3SG speak-SUBJ
- ‘It is recommended that she not speak’.
- (c) *Mika’aj*: prospective

²⁵ *Ts’o’ok* itself is an AM marker marking completed actions, but in this case, it is acting as the verb *finish*.

²⁶ In cases in which the transitive verb, such as *t’aan* ‘speak’ in example 4, is followed by an NP *maaya* ‘Maya’, the subjunctive morphology is null.

Mika'aj u t'anej.

Mika'aj u t'an -ej

PROSP 3SG speak-SUBJ

‘She will speak’.

- (d) *Óolak*: unaccertive (almost)

Óolak u t'anej.

Óolak u t'an -ej.

DES 3SG speak-SUBJ

‘She almost speaks’.

- (e) *Sáam*: Relative perfect

Sáam u t'anej.

Sáam u t'an -ej.

REL_PERF 3SG speak-SUBJ

‘A little while ago she spoke’.

- (f) *Úuch*: Remote perfect

Úuch u t'anej.

Úuch u t'an -ej.

REM_PERF 3SG speak-SUBJ

‘A long time ago she spoke’.

The examples presented in 14 illustrate all AM markers that trigger the subjunctive. Some AM markers with future temporal reference (such as the predictive *bíin* in 14a, preventative *bik* in 14b, and prospective *mika'aj* in 14c) trigger the subjunctive, which is similar to the mood licensed under the Spanish *cuando* ‘when’ with future temporal reference. The subjunctive in

Yucatec Maya extends beyond future temporal reference to also mark past events, including the relative perfective (i.e. ‘just a bit ago’ in 14e) and remote perfective (i.e. ‘a while ago’ in 14f). In general, the subjunctive is used in Yucatec Maya to communicate temporal/aspectual/modal information rather than pragmatic information. With regards to the current study, there is little overlap in terms of subjunctive use between the two languages.

To summarize, Table 8 demonstrates the mood selection patterns of Yucatec Spanish, and the italicized items in the table represent categories that differ from anticipated mood selection.

TABLE 8. Yucatec Spanish mood selection.

MOOD SELECTION IN YUCATEC SPANISH	
Subjunctive	Indicative
All volitional predicates	<i>Affirmative epistemic predicates</i>
All emotive predicates	<i>Past epistemics</i>
Negated epistemic predicates	
<i>Epistemic interrogatives</i>	

Overall, the items for which the indicative was the anticipated mood provided interesting results, particularly by demonstrating that epistemics do not follow the polarity division suggested by previous accounts of mood selection and suggesting that, in addition, epistemic interrogatives and past temporal reference do not strictly follow this pattern.

To continue with the discussion of the data, I will revisit the research questions presented in the introduction of this section, starting with the first research question (RQ1): To what degree does Yucatec Spanish mirror mood distribution as presented in prescriptive grammars and mood selection in other varieties of Spanish? The current study demonstrates that Yucatec Spanish

mirrors anticipated mood selection in some predicate types. First, volitional predicates pattern very closely with other varieties of Spanish; the complement of a volitional predicate systematically occurs in the subjunctive. Secondly, as many researchers have noted, there are some differences in the mood of the complements of emotive predicates. While there is still a preference for the subjunctive, higher rates of the indicative suggest that Yucatec Spanish is similar to other varieties of Mexican Spanish (see Lope Blanch 1987 and Lunn 1995) that allow speakers to select either the indicative or the subjunctive in complements of emotive predicates. Yucatec Spanish does not follow anticipated mood selection in complements of epistemic predicates. Affirmative, interrogative, and past structures present patterns that deviate from anticipated mood selection, with remarkably high rates of subjunctive use with interrogatives. Moreover, informal dialogue with participants suggests that there is a connection between the use of the subjunctive with epistemic predicates and politeness effects. However, this should be more deeply explored in further research.

The second research question (RQ2) asked the following: How does mood selection vary across types of clauses? Volitional predicates licensed mood selection evenly across structure types; however, emotive and epistemic matrix clauses did show differences in mood selection in the different structure types. In both verb types, affirmative and past statements had the lowest rate of the subjunctive. Epistemic interrogatives also allowed, and at times preferred, the subjunctive, which is in line with the alternation observed by Rivero (1971). Some alternation was also observed in emotive interrogatives as well.

The third research question (RQ3) was as follows: To what extent do monolingual and bilingual speakers' mood selections differ? When all stimuli are taken into consideration, there is a significant difference ($p= 0.0542$) between monolingual Spanish and bilingual Spanish/Yucatec

Maya speakers. When focusing on individual predicate types, emotive predicates are the only group that has a statistically significant difference between bilingual and monolingual speakers. Emotive predicates select the subjunctive in pragmatically presupposed utterances (Lunn 1989), making mood selection pragmatically motivated. This supports previous findings (i.e. Bove under review) that suggest that bilingual speakers' mood selection is different from their monolingual counterparts when mood is pragmatically determined.

Mood selection in epistemic predicates is also said to be pragmatically motivated due to the connection to discourse that results in mood alternation in negated epistemic matrix clauses (Iverson et al. 2008). The current findings show that there is not a statistically significant difference between monolingual and bilingual speakers; however, there is a statistically significant difference between Yucatec Spanish speakers and speakers from the surrounding states of Quintana Roo and Campeche. This result could suggest that the pattern of mood selection of epistemic predicates is a varietal feature of the Spanish spoken in the state of Yucatán.

In Yucatec Maya, the subjunctive is not used to mark epistemic predicates, but there is a complex system that can communicate several levels of certainty. In particular, epistemic modal markers in Yucatec Maya mark sources of information. AnderBois (to appear) argues that the Yucatec Maya particle *míin* is a conjectural marker that may be better categorized as an epistemic modal. Similar patterns can be seen in two other conjecturals, *ma'ak* and *bini*. While *míin* marks a first-person belief (similar to 'I think that...'), *ma'ak* and *bini* can only mark a third-person belief, such as 'it is said' or 'people say'. *Ma'ak* denotes a meaning of possibility, and *bini* communicates the idea 'others believe that...'. From a pragmatic perspective, these conjecturals work as discourse markers that highlight 'at issue' content or personal taste.

In summary, Yucatec Spanish presents some interesting patterns in mood selection in complement clauses. In this chapter, I have presented a descriptive overview of what the Yucatec subjunctive looks like. Volitional predicates select the subjunctive as anticipated based on previous accounts of Spanish, but a difference between men and women is evident. Specifically, women pattern more with the mood selection that is described in the literature. This is in line with a large body of sociolinguistic literature that suggests that women adhere to prestige varieties. Emotive predicates present some cases of the indicative, which has been recorded in some accounts of Mexican Spanish with significant differences between bilingual and monolingual speakers. Epistemic predicates present the most variation, and it appears that this is a varietal characteristic as it is statistically different from mood selections by speakers from other states in the area. Interrogatives present surprisingly high rates of subjunctive selection with an average of 75%, and present and past tenses also present higher rates of subjunctive use than anticipated. In addition to this, based on discussions with participants, a new possibility of the politeness subjunctive was found in this study. Further investigation is needed to understand how and why epistemic predicates license the subjunctive at higher rates as well as how and why monolinguals and bilinguals vary with respect to emotive predicates.

6. CONCLUSION. As seen in the previous chapter, there is a plethora of subjunctive research, but until now, mood selection in Yucatec Spanish had not been documented. This chapter fills this gap in the research, presenting a descriptive analysis of mood selection in this contact variety. The forced choice task that was employed in this study aimed to provide an overview of mood selection in embedded clauses in Yucatec Spanish. As a contact variety, special attention was paid to language status (bilingual versus monolingual speakers), and the study found significant differences in mood selection based on participants' language status as

well as their gender. When divided into verb type, volitional verbs patterned with the mood selection as described in previous literature. Emotive verbs suggested a higher rate of indicative use than previously described, and there was a significant difference between bilingual and monolingual speakers. The most noteworthy findings of the study were with epistemic verbs, which reported higher rates of subjunctive use than expected. Therefore, regarding mood selection in Yucatec Spanish, we can arrive at two preliminary conclusions regarding epistemic matrix clauses and their embedded mood selection: (1) The subjunctive is accepted in structures other than those containing negation, and (2) while U.S. Spanish presents an argument for the simplification of mood selection in which the subjunctive is used less, Yucatec Spanish allows for the use of the subjunctive in environments in which the indicative would be anticipated. This unanticipated mood selection with epistemic predicates that was found in the FC task inspired the focus of a semantic analysis, which will be described in the next section.

7. IMPLICATIONS FOR SEMANTIC ACCEPTABILITY. While each section of this survey produced informative results, the most unique mood selection data come from the section on epistemic predicates. There proved to be no significant difference between bilinguals and monolinguals in terms of mood selection with epistemic predicates, but there was a difference between participants from the state of Yucatan and the 42 participants from Quintana Roo and Campeche. This suggests that this mood selection pattern is a trait of Yucatec Spanish. Yucatan has a very high rate of reported bilingualism (26.9%) as compared to Quintana Roo (14.7%) and Campeche (11%), and as such, trends started by bilingual speakers could have carried over into general speech. Therefore, the remainder of the dissertation will be based on data collected during semantic acceptability interviews, referred to as Task 2, which shifts the focus from bilingualism to an analysis of variety that considers language status.

With the unusual subjunctive use in affirmative, negated, interrogative, and past forms in Yucatec Spanish, epistemic predicates, in particular, merit a more thorough investigation in order to identify what features license subjunctive mood selection. The descriptive perspective presented in this chapter does not explain this mood selection with regards to affirmative and interrogative structures. As such, the next chapter shifts the focus from a descriptive perspective to a modal semantic approach (Portner 2011).

CHAPTER 4:
DOXASTIC PREDICATES AND MOOD IN YUCATEC SPANISH:
THE ROLE OF NEGATION

1. INTRODUCTION. In the previous chapter, I presented a quantitative analysis of mood selection in Yucatec Spanish, which identified an extension of the subjunctive in epistemic predicates. This analysis was a necessary first step in that it provided an overview of mood selection to establish basic distributional patterns regarding the subjunctive in Yucatec Spanish. This approach successfully identified a particular pattern in mood selection in Yucatec Spanish: While other contact varieties show an expansion of the indicative into the semantic domain of the subjunctive (e.g. Silva-Corvalán 1994), Yucatec Spanish speakers select the subjunctive in epistemic sentences that license the indicative in other varieties. Based on the mood choice patterns found in these cases, the remainder of the dissertation will focus only on one subcategory of epistemic predicates: doxastic predicates. As presented in the introduction, doxastic predicates refer to attitude verbs that reflect beliefs. Therefore, the following data will focus on Spanish predicates such as *pensar* ‘to think’ and *creer* ‘to believe’. In order to better answer the question of why doxastic predicates can select the subjunctive in Yucatec Spanish, I propose a semantic analysis of mood selection based on modal approaches.

The following data were collected during acceptability judgment interviews conducted in Valladolid, Yucatán. Twelve Yucatec Spanish consultants participated, and all were born and raised in Yucatán and had spent their entire lives in Valladolid or a Maya community within 10

kilometers of Valladolid. Participants were not required to know how to read Spanish, as the data were collected orally by the researcher. Education levels varied from elementary to high school, but none of the participants had any formal education beyond high school. For the purposes of this part of the study, I have chosen not to distinguish between bilingual and monolingual speakers in the discussion of judgments as the findings in Chapter 3 suggest there is no statistical significance between speakers and mood selection in Yucatec Spanish. However, there were five bilingual and seven monolingual participants who took part in this study. All participants who participated in this task also participated in the first task at an earlier date.

The task consisted of an acceptability interview in which the participants met with the interviewer to discuss a total of 34 contexts, and each context included at least four utterances for the participants to judge, resulting in 155 total items. The task was presented in an interview format. Participants were not asked to select which mood was correct; rather, each utterance was judged individually. If both moods were accepted, the researcher and participants discussed possible differences in meaning. As the participants rejected or accepted each utterance, the reasons for selection were discussed, and occasionally, additional sentences were included to explore the reasons behind each selection. All interviews were digitally recorded, and each interview lasted one to two hours.

This chapter presents the data gathered in this task, which focused on mood selection in Yucatec Spanish that contains affirmative and negated doxastic predicates. It further offers an analysis of the data by exploring what motivates subjunctive use in Yucatec Spanish. To this end, I will answer the following questions:

RQ1: What mood is generally licensed in negative doxastic contexts?

RQ2: What mood is generally licensed in affirmative doxastic contexts?

RQ3: In cases in which both the indicative and the subjunctive could be used, what accounts for this variation in mood selection among speakers?

The chapter is organized in the following way: Section 2 presents data related to affirmative and negated doxastic predicates in Yucatec Spanish to explore what motivates mood selection. Section 3 discusses the role of context in mood selection, and section 4 presents the conclusions regarding mood selection based on the analysis presented in previous sections.

2. MOOD SELECTION IN YUCATEC SPANISH. The previous accounts of mood selection in Spanish that were presented in Chapter 2 of this dissertation focused on semantic-pragmatic notions such as assertion, presupposition, and doubt. Within these accounts, mood selection in doxastic predicates is based on the presence or absence of negation, frequently referred to as the POLARITY SUBJUNCTIVE.²⁷ This polarity analysis identifies negation as the trigger for the subjunctive in doxastic predicates, illustrated in the following pair:

- (1) a. *Creo que viene (IND) este jueves.*²⁸
‘I think that he is coming on Thursday’.
- b. *No creo que venga (SUBJ) este jueves.*
‘I don’t think that he is coming on Thursday’.

I summarize previous findings of mood selection in Spanish through an initial empirical generalization:

²⁷ It is important to note that there are other triggers, such as interrogatives, that can license the subjunctive in terms of the polarity subjunctive, but in this chapter, I limit the notion of the polarity subjunctive to mood selection triggered by negation. Mood in interrogatives will be discussed in Chapter 5 of this dissertation.

²⁸ For the remainder of this dissertation, I will mark each verb in the Yucatec Spanish examples with the mood as presented in 1a rather than using the Leipzig glossing rules.

- (2) **Generalization of mood selection in doxastic predicates:** A proposition *p* that is embedded under a belief predicate will contain a VP in the subjunctive iff *p* is under the scope of negation. Otherwise, the indicative mood will be licensed.

This generalization reflects prescriptive mood selection, as in 1a and 1b above. However, pragmatically motivated mood licensing requires that this generalization be reevaluated. There are several observed cases in which both the indicative and subjunctive can be licensed with different implications under a negated doxastic matrix clause. For example, as seen in Haverkate (2002:74):

- (3) a. *Carmen cree que el terrorista mató* (IND) *a su amigo*.
‘Carmen thinks that the terrorist killed her friend’.
- b. **Carmen cree que el terrorista matara* (SUBJ) *a su amigo*.
‘Carmen thinks that the terrorist killed her friend’.
- c. *Carmen no cree que el terrorista mató* (IND) *a su amigo*.
‘Carmen does not think that the terrorist killed her friend’.
- d. *Carmen no cree que el terrorista matara* (SUBJ) *a su amigo*.
‘Carmen does not think that the terrorist killed her friend’.

These examples demonstrate that 3a, as an affirmative belief predicate, is only able to license the indicative, making the subjunctive in 3b unacceptable. On the other hand, in 3c and 3d, both under the scope of negation, mood is pragmatically motivated. According to Haverkate (2002), the indicative in 3c demonstrates the speaker’s commitment to the truth of the proposition while the subjunctive in 3d indicates that the speaker is not committing to the truth of this embedded proposition. Similar to Quer (1998) and Mejías-Bikandi (2016), Haverkate (2002) argues that this pragmatically motivated mood selection occurs under the scope of negation and is not

available under an affirmative doxastic predicate. Therefore, based on this pattern, we can update the generalization of mood selection as follows:

- (4) **Updated generalization of mood selection in doxastic predicates in many varieties of Spanish:** A proposition *p* that is embedded under a belief predicate will contain a VP in the subjunctive iff *p* is under the scope of negation AND the speaker wishes to withhold commitment to *p*. Otherwise, the indicative mood will be licensed.

While this generalization accounts for several varieties of Spanish and can account for mood alternation that reflects pragmatic contrast (as described by Haverkate 2002 in example 3), the data in Chapter 3 strongly suggest that mood selection in Yucatan Spanish does not pattern with prescriptive grammars or previous accounts of mood selection with respect to epistemic predicates. Specifically, examples such as the following, taken from the Yucatec Spanish mood survey, cannot be explained by the generalization in 4:

- (5) *VENDEDORA: Excelente, pues estoy segura de que usted **pueda** (SUBJ) encontrar el par perfecto para su ocasión. Tenemos muchos zapatos que tal vez le interesan.*
- ‘SELLER: Excellent, well, I am sure that you can find the perfect pair for your occasion. We have many shoes that perhaps may interest you’.²⁹

In item 5, participants overwhelmingly selected the subjunctive mood in the complement of the epistemic matrix, which has been traditionally reported to license the indicative in other varieties of Spanish. In order to account for the subjunctive use, I argue that a polarity analysis is not

²⁹ In Yucatec Spanish, the subjunctive can be licensed under the modal adverb *tal vez*:

- (i) *Tenemos muchos zapatos que tal vez le interesen* (SUBJ).
 ‘We have many shoes that perhaps interest you’.

The effects of modal adverbs on mood selection will be discussed in greater depth in Chapter 5.

appropriate for mood selection in this contact variety. Instead, I adopt Giannakidou's (1998, 2002, 2015) theory of (non)veridicality to capture the use of the subjunctive in propositions embedded under doxastic predicates in Yucatec Spanish. According to the theory of nonveridicality, the subjunctive reflects the speaker's commitment to a proposition. As presented in Chapter 1, Giannakidou (2015: 17) describes the relationship between (non)veridicality and commitment in the following way:

(6) **Veridical and nonveridical epistemic states and commitment:**

- a. An epistemic state (a set of worlds) $M(i)$ relative to an individual anchor i is veridical with respect to a proposition p iff all worlds in $M(i)$ are p -worlds (full commitment to p).
- b. If there is at least one world in $M(i)$ that is a $\neg p$ world, then $M(i)$ is nonveridical (weakened commitment to p).
- c. If all worlds in $M(i)$ are $\neg p$ worlds, then $M(i)$ is antiveridical (counter-commitment to p).

The state described in 6a is most similar to an assertion, as defined in Hintikka's (1961) accounts of doxastic verbs. Conversely, 6c describes a negated assertion, or an assertion of $\neg p$. The notion of nonveridicality in 6b can be utilized to describe the lack of certainty/commitment referenced in the previous section. Formally, Giannakidou (2015:17) defines nonveridicality as follows:

(7) **NONVERIDICALITY:**

- i. Fp does not entail that i knows or believes that p is true.
- ii. i 's epistemic state $M(i)$ is such that: $M(i) - p$ is not $\emptyset$, which means that
- iii. $\exists w' \in M(i) : \neg p(w')$.

According to Giannakidou's definition, there are three components of nonveridicality. First, if a proposition is nonveridical, there is no entailment that an individual knows that a proposition is true. Second, if a proposition is interpreted as nonveridical, the model of the individual ($M(i)$) is nonhomogeneous. In other words, if all p propositions were removed from the model of evaluation, $M(i)$ would not be empty. This means that, third, there exists a world in the model in which the proposition is false.

In this section, I argue that mood selection in Yucatec Spanish is based on the interpretation of a proposition by the speaker, and a nonveridical interpretation licenses the use of the subjunctive. The data that inform this argument come from the acceptability judgment interviews with Yucatec Spanish speakers. Preference for mood was determined by majority judgments and were not always unanimous. This section is organized in the following way: The analysis in section 2 discusses of the role of negation in doxastic predicates (section 2.1), belief predicates as assertions (section 2.2), parenthetical interpretations (section 2.3), and belief predicates as communicating (lack of) knowledge (section 2.4). All data presented in the following section are original, novel data gathered as part of my fieldwork unless otherwise noted.

2.1 THE ROLE OF NEGATION IN DOXASTIC PREDICATES. The role of negation in mood selection in Spanish epistemic predicates presents an interesting case. Several taxonomies of mood are able to account for the lexically-selecting subjunctive, such as volitional predicates, but epistemic predicates are often more complicated.³⁰ Mari (2016:66) argues that *believe* cannot be analyzed as one lexical entry; instead, she proposes a distinction based on doxastic and epistemic meanings: On the one hand, doxastic utterances that present a belief as fact are analyzed as pure

³⁰ See Lassiter (2017) for an excellent description of the theories that can account for deontic modality but lack adequate descriptions of epistemic modality.

doxastics (which Mari refers to as EXPRESSIVES), and these expressive doxastic predicates license the indicative; on the other hand, doxastic utterances that license the subjunctive are labeled as INQUISITIVES and have both doxastic and epistemic layers. The following are examples of each:

(8) EXPRESSIVES:

- a. *Creo que es (IND) su derecho.*
‘I believe that it is his right’.
- b. *#Creo que sea (SUBJ) su derecho.*³¹
‘I believe that it is his right’.

(9) INQUISITIVES:

- a. *No creo que va (IND) a hacer lo correcto.*
‘I do not believe that he is going to do the right thing’.
- b. *No creo que vaya (SUBJ) a hacer lo correcto.*
‘I do not believe that he is going to do the right thing’.

Expressives such as the ones in 8 present a belief or credence belonging to an individual. As such, only the indicative is possible. An inquisitive belief verb asserts epistemic certainty (as in 9), but can also communicate epistemic uncertainty (and therefore license the subjunctive), which presupposes a lack of knowledge on the part of the matrix-clause subject (as seen in 9b). In this section, I begin with a presentation of some qualities of epistemic predicates with a focus on doxastics and present negated doxastic utterances in Yucatec Spanish.

2.1.1 VERACITY ENTAILMENT AND NEGATION. Doxastic predicates are unique from other subjunctive-selecting predicates in a number of ways. First, doxastic predicates lack VERACITY ENTAILMENT (Anand & Hacquard 2014), which states that a verb necessarily entails that its

³¹ This is unacceptable in many varieties in Spanish, but as I will show, the subjunctive can be licensed by an affirmative doxastic predicate in Yucatec Spanish.

embedded proposition is true. Without veracity entailment, a doxastic predicate can embed a proposition that is known to be true as well as one that is known to be false. Consider the following examples (Simons 2007:1047):

(10) Henry believes that Louise left town (but he's wrong).

(11) I once believed that some wars are just (but I was wrong).

There is no entailment relation in the previous examples. Utterance 10 does not entail that Louise left town, as it is possible that Henry is incorrect in his belief, which in this case is made clear by the end of the utterance. Similarly, utterance 11 does not entail that *some wars are just* as it can be canceled. Similarly, when the matrix clause is negated, there is no entailment relation; the embedded proposition may be true despite the fact that an individual believes it to be false. This can be seen in the following utterances:

(12) Henry does not believe that Louise left town (but he's wrong).

(13) I did not believe that some wars are just (but I was wrong).

The negated belief utterances communicate that the referent denoted by the matrix NP does not believe that the proposition is true, but the cancellation *but I was wrong* communicates that the proposition is true in the epistemic model of the speaker. This is different from other verbs, such as *discover*. For example, if we revisit the previous examples, we can see there is a difference in entailment relations:

(14) Henry discovered that Louise left town (*but he's wrong).

(15) I once discovered that some wars are just (*but I was wrong).

In these examples, it is clear that *discover* entails the embedded proposition, and the additional content renders the utterance unacceptable. When these sentences are negated, the truth of the proposition is also affected:

(16) Henry did not discover that Louise left town (*but she did/in fact, she is still here).

(17) I did not discover that some wars are just (*but they are/in fact, they are not).

In 16 and 17, the negated *discover* entails that the proposition is false. This difference in entailment highlights a significant trait in doxastic predicates. I argue that this lack of veracity entailment, and therefore both veridical and nonveridical interpretations, are what motivates mood selection in Yucatec Spanish. In the following example, the referent denoted by the NP of the matrix clause and the speaker have differing opinions regarding the embedded proposition:

(18) *Estoy muy ocupada en mi trabajo y en mi vida personal, pero hay un puesto más avanzado que quiero solicitar en el trabajo. Cuando lo solicito, mi jefe me dice que no. Aunque, en mi opinion, puedo dedicar el tiempo necesario...*

‘I am very busy with my job and in my personal life, but there is a more advanced position that I want to apply for at work. When I apply for it, my boss says no.

Although, in my opinion, I can dedicate the necessary time...’

a. *Él no cree que yo tengo (IND) suficiente tiempo.*

‘He does not think that I have sufficient time’.

b. *Él no cree que yo tenga (SUBJ) suficiente tiempo.*

‘He does not think that I have sufficient time’.

In this example, the speaker’s boss does not believe that the speaker has enough time, but the context communicates that the speaker does not agree with this opinion. There was a preference for the indicative in 18a over the subjunctive in 18b. The speaker’s veridical interpretation of the proposition is reflected in the mood selection in the embedded clause. Mood alternation under

doxastic predicates allows a speaker to both report an individual's belief as well as communicate the calculated truth value of the proposition.

2.1.2 NEGATION LOWERING. Similar to what previous studies have reported on other varieties of Spanish, Yucatec Spanish allows both the indicative and subjunctive in the embedded VP. For example, there is a preference for the indicative in the following utterance:

- (19) *Cuando mi suegra nos visita, siempre trae unos caldos. Aunque mi esposo le dice que cocino bien...*

‘When my mother-in-law visits, she always brings some soup. Although my husband tells her that I cook well...’

- a. *Ella no piensa que yo sé (IND) cocinar.*

‘She does not think that I know how to cook’.

- b. *Ella no piensa que yo sepa (SUBJ) cocinar.*

‘She does not think that I know how to cook’.

Contrary to accounts of mood selection in other varieties of Spanish, in Yucatec Spanish, there is a preference for the indicative (19a) over the use of the subjunctive (19b). In both examples 18 and 19, the context communicates that the proposition (*the speaker is a good cook*) is true despite the fact that the referent denoted by the NP of the matrix clause does not believe it to be true. The lack of veracity entailment in doxastic predicates allows doxastic predicates to license mood alternation that reflects the evaluations of an embedded proposition.

Another unique quality of negated epistemics is that they allow negation lowering, which means that the negation can be interpreted in either the matrix or the complement clause. This alternation in interpretation is demonstrated in the following example:

- (20) *Ana no cree que Juan lo sepa (SUBJ).*

‘Ana does not believe that Juan knows it’.

INTERPRETATION 1: It is not the case that Ana believes that Juan knows it.

INTERPRETATION 2: Ana believes that Juan does not know it.

When a belief statement is negated, it is possible that the negation is interpreted as if it were in the lower clause, as seen in INTERPRETATION 2 above. Gielau (2015:70) provides a similar example and formalization of negation lowering:

(21) Sarah doesn’t think that her students are lazy. = Sarah thinks that her students aren’t lazy.

(22) Sarah doesn’t think that her students are lazy. = It is not the case that Sarah thinks that her students are lazy.

In the first utterance in 21, the negation occurs in the matrix clause, but negation lowering allows the negation to be interpreted in the embedded clause, as seen in the second sentence in 21. If negation lowering is allowed, as in 21, the negation can be interpreted in either clause without a loss of meaning. Klooster (1994, 2003) points out that the interpretation of a negated doxastic predicate does not always result in negation lowering, as presented in the example in 22. In cases such as 22 where the negation is not lowered, the speaker may be reserving judgment of the proposition. Mari (2016:70) explains that this interpretation results in a dubitative interpretation rather than an affirmation of *not p*. The location in the syntax of the negation has an impact on interpretation, which also may account for some alternation in Yucatec Spanish. Utterance 19 above (*Ella no piensa que yo sé (IND)/ sepa (SUBJ) cocinar*) is a case of INTERPRETATION 1 in which the negation takes scope over the entire utterance. This conclusion is based on the follow-up question *Does the speaker know how to cook?* If the consultants answered that the speaker knows how to cook, it was clear that the negation did not lower to the embedded clause, as was

the case for utterance 19. However, there were several items for which consultants lowered the negation as in INTERPRETATION 2. In the following examples, I argue that participants interpreted the following utterances as instances of negation lowering:

(23) *Me gusta escribir cuentos en mi tiempo libre, pero no son muy buenos. Mi novio no quiere leerlos.*

‘I like to write stories in my free time, but they aren’t very good. My boyfriend doesn’t want to read them’.

a. *Él no cree que yo escribo (IND) bien.*

‘He doesn’t believe that I write well’.

b. *Él no cree que yo escriba (SUBJ) bien.*

‘He doesn’t believe that I write well’.

Consultants preferred the indicative in 23a over the subjunctive in 23b, which indicates that the speakers have a homogeneous belief space (either all p or $\neg p$ worlds). The context presented here communicates that the proposition *yo escribo bien* ‘I write well’ contradicts the information provided in the context. At first glance, it would appear that the proposition is antiveridical. However, if the negation is lowered so that it is interpreted in the complement, the new proposition becomes *yo no escribo bien* ‘I do not write well’. When asked if the speaker writes well, the consultants believed that she did not, indicating that the negation had lowered in this utterance. Therefore, the proposition *yo no escribo bien* ‘I do not write well’ is veridical. A similar pattern can be seen in the following example of Yucatec Spanish:

(24) *Mi mamá le dice a mi papá que este viernes van a cenar juntos en un restaurante para celebrar su cumpleaños, pero de verdad va a haber una fiesta sorpresa.*

‘My mom told my dad that this Friday they are going to have dinner together in a restaurant to celebrate his birthday, but really there will be a surprise party’.

a. *Ella no cree que él sepa* (SUBJ) *la verdad*.

‘She does not believe that he knows the truth’.

b. *Ella no cree que él sabe* (IND) *la verdad*.

‘She does not believe that he knows the truth’.

In response to 24, the consultants who preferred the use of the indicative in this sentence evaluated the proposition as veridical. When asked directly about the propositions (*Does he know the truth?*), consultants stated that the father did not know the truth, which indicates that the consultants preferred an interpretation with a lowered negator in the complement clause. In fact, many consultants lowered the negation to the embedded clause when repeating back this sentence during discussion. The fact that the negation is being interpreted in the embedded clause suggests that the primary motivation for mood selection does not come from the matrix clause but rather that the interpretation of the proposition licenses the subjunctive. In the items presented in this section, the preference for the indicative results from the homogenous belief space. Veridical and antiveridical interpretations both license the indicative as both represent these homogeneous belief spaces.

2.1.3 NEGATION AND THE ROLE OF PERSON IN MOOD SELECTION. Yucatec Spanish consultants expressed a preference for the indicative whenever the complement contained an affirmative first-person predicate, as seen in 18, 19, and 23. Farkas (2003) argues that, in Italian, the subjunctive communicates disagreement, and as such, it maximizes the contrast between (the lack of) speaker commitment in cases in which an individual other than the speaker is committed to *p* but the speaker is not. This would indicate that first-person doxastic predicates license the

indicative. Mari (2016:65) disagrees with Farkas's claim, however, stating that her account predicts that first-person doxastics should trigger the indicative. Yet, the opposite is true in Italian: The subjunctive is, in fact, the default option with a matrix-clause predicate in the first person. Nevertheless, neither of these accounts can explain first-person mood selection in Yucatec Spanish as both moods can occur when embedded under the first person. In Yucatec Spanish, there were also several cases in which consultants preferred the subjunctive under a first-person doxastic matrix clause. In 25 and 28, Yucatec Spanish consultants expressed a preference for the subjunctive in 25b and 28b and rejected the use of the indicative. Many of these patterns mirror those identified by Mari's (2016) work with Italian, presented in 26 and 27. First, 25 presents a negated doxastic predicate with a future temporal reference:

(25) *Mis amigas quieren salir este sábado, pero ya tengo planes posibles con mi familia. Les digo...*

‘My friends want to go out this Saturday, but I already have possible plans with my family. I tell them...’

a. *No pienso que puedo (IND) salir.*

‘I don't think I can go out’.

b. *No pienso que pueda (SUBJ) salir.*

‘I don't think I can go out’.

Consultants communicated a lack of certainty regarding whether the speaker will go out because she has possible plans. This uncertainty is what contributes most strongly to the mood selection in the previous sentence. A similar pattern can be seen in Italian below (Mari 2016:67):

- (26) SCENARIO: We are organizing a party and John is invited. Usually John does not come to parties, however, he is very much in love with Mary, and Mary is coming for sure.

Credo che venga (SUBJ) anche Gianni questa volta.

‘I believe that even John is coming this time, too’.

According to Mari, the speaker has some doubt regarding whether John will come to the party based on previous experiences with John and, thus, selects the subjunctive. It is also possible to select the indicative with a future temporal reference in Italian (Mari 2016:67):

- (27) SCENARIO: My son has a tendency to forget stuff at school. My husband wants to buy an expensive scarf and asks me whether it is a good idea. I reply:

Credo che la perderà (FUT).

‘I believe that he will lose it’.

In this example, the indicative is licensed because it is commonly accepted that *p* (*he will lose it*) is true, demonstrating the distinction between the indicative and the subjunctive.

Similarly, the following example triggered the subjunctive for the Yucatec Spanish consultants:

- (28) *Mi amigo y yo hablamos de la tarea. Me dice que la respuesta es 90, pero no estoy de acuerdo. Le digo...*

‘My friend and I are talking about the homework. He tells me that the answer is 90, but I don’t agree. I tell him...’

- a. *No creo que es (IND) la respuesta correcta.*

‘I don’t believe that it is the right answer’.

- b. *No creo que sea (SUBJ) la respuesta correcta.*

‘I don’t believe that it is the right answer’.

This item demonstrates doubt on the part of the speaker, which licenses the subjunctive rather than the indicative. Similar to Mari’s analysis of Italian, the use of the subjunctive in Yucatec Spanish presupposes a lack of knowledge. Many researchers (e.g. Hooper & Terrell 1974, Haverkate 2002) have noted the dubitative flavor of a negated doxastic matrix. When this negated doxastic is in the first-person, the speaker is communicating her own doubts. The selection of the subjunctive is the most appropriate mood selection in this case, as the subjunctive communicates the lack of certainty regarding the truth of the proposition.

2.1.4 SUMMARY. In Yucatec Spanish, several patterns surfaced with respect to mood selection and person. First, when the matrix clause contains a first-person doxastic predicate, the subjunctive is frequently licensed. This is due to the dubitative meaning that *no creo* contributes to the utterance, and this uncertainty is reflected in the use of the subjunctive. With regard to first-person complement clauses, the event denoted in the proposition occurs in the speaker’s own belief space. As such, it is easy for the speaker to interpret the truth of a proposition with a first-person referent, resulting in the use of the indicative. On the other hand, a third-person referent in the complement of a doxastic predicate references another individual, and as it is harder for a speaker to calculate the truth of a proposition in which she is not a referent, the subjunctive is often selected. To summarize these patterns, Table 9 presents an overview of mood selection presented in this chapter:

TABLE 9. Summary of mood preference in negated doxastic utterances.

Preference for the subjunctive	Preference for the indicative	Both were accepted (based on context)
First-person negated matrix: <i>No creo que ella regrese.</i> ‘I do not think she is coming back’.	Third-person negated matrix with a proposition in the first person: <i>Ella no cree que tengo el dinero.</i> ‘She doesn’t believe that I have the money’.	Third-person negated matrix with a proposition in the third person <i>Ella no cree que su amiga tiene/tenga el dinero.</i> ‘She doesn’t believe that her friend has the money’.

To summarize, I present a triplet in which the referents denoted by the NP change from third person to first person in either the matrix or the embedded clause while the context remains constant. This triplet demonstrates the shifts in mood selection described in Table 9:

- (29) *En la clase de matemáticas, nuestra profa nos pregunta de la tarea y mira hacia mi amiga. Parece muy nerviosa porque sé que no hizo su tarea.*

‘In math class, our teacher asks us about the homework and looks towards my friend. She looks very nervous because I know that she didn’t do her homework’.

- a. *Pienso para mí mismo...* ‘I think to myself...’:

Yo no creo que ella sepa (SUBJ)/sabe (IND) la respuesta.

‘I don’t believe that she knows the answer’.

- b. *Pienso para mí mismo...* ‘I think to myself...’:

La profesora no cree que ella sepa (SUBJ)/sabe (IND) la respuesta.

‘The professor doesn’t believe that she knows the answer’.

- c. *Mi amiga piensa* ‘my friend thinks’:

La profesora no cree que yo sepa (SUBJ)/sé (IND) la respuesta.

‘The professor doesn’t believe that I know the answer’.

The context provided presents *p* (*sabe la respuesta* ‘she knows the answer’ or *sé la respuesta* ‘I know the answer’) as false. The three utterances, despite being contextualized by the same information, license mood very differently. In 29a, which is a first-person doxastic matrix and a third-person embedded VP, consultants preferred the use of the subjunctive; additionally, while all participants accepted the use of the subjunctive, half of the consultants judged the use of the indicative as infelicitous. The data suggest that in Yucatec Spanish, a complement that is embedded under a first-person doxastic predicate is likely to appear in the subjunctive as the first-person negated doxastic predicate communicates the speaker’s own doubts. In the case of 29b, participants expressed a preference for the indicative. The proposition is evaluated in the model of the speaker. As the context suggests that the friend does not know the answer because she did not do her homework, this selection of the indicative mood demonstrates the homogeneous belief space. Finally, when a third-person matrix embeds a first-person referent as the NP of the complement as in 29c, there is a clear preference toward the indicative, and only half of the consultants accepted the use of the subjunctive. I argue that, in cases of a first-person complement, the speaker evaluates the truth value of the proposition and, therefore, does not need to communicate uncertainty with the subjunctive, resulting in a preference for the indicative.

Based on the Yucatec Spanish data, the following table summarizes the different structures investigated and their respective mood preferences in Yucatec Spanish:

TABLE 10. Summary of structure and mood preference.

Structure	Mood Preference
First-person matrix, third-person complement	<i>Affirmative</i> : Indicative or subjunctive <i>Negated</i> : Subjunctive
First-person matrix, first-person complement	<i>Affirmative</i> : Indicative or subjunctive <i>Negated</i> : Subjunctive
Third-person matrix, first-person complement	Indicative
Third-person matrix, third-person complement	Indicative or subjunctive

The third-person patterns are observed in both negated and affirmative doxastic sentences.

Similar to previous analyses of mood alternation under negated doxastic predicates (i.e. Mejías-Bikandi 1998, Haverkate 2002), I suggest that the element that motivates mood selection is the evaluation of the proposition. However, I appeal to the terminology utilized in the theory of nonveridicality; if the speaker interprets a proposition as veridical, the indicative will be selected. Furthermore, like Mari’s (2016) work on Italian, among other studies, I argue that a homogeneous set of possible worlds will trigger the indicative in Yucatec Spanish. In other words, if the set of possible worlds that comprises the model of the individual includes only worlds in which p is true or false, the indicative will be selected. If the speaker evaluates the proposition as nonveridical³² or if the speaker identifies a set of possible worlds that are nonhomogeneous (comprised of some worlds in which p is true and others in which p is false), the subjunctive will be selected. The next section explores mood selection within the domain of affirmative doxastic predicates.

2.2 BELIEF PREDICATES AS ASSERTIONS. At its most basic, a belief predicate introduces a proposition and presents this proposition as true, thus asserting the truth of p or $\neg p$ (*not p*):

³² The reason for a nonveridical interpretation will be discussed in more detail in section 3.

(30) *Creo que [es su cumpleaños].*

‘I think that [it is her birthday]’.

Many accounts (e.g. Farkas 1992) treat affirmative belief predicates as assertive because they present the embedded propositions as true. On the one hand, descriptive accounts of mood selection in Spanish have uniformly treated affirmative belief statements as assertions, but a distinction has often been made between these statements and negated belief statements. For example, Terrell and Hooper (1974) identify the ‘dubitative’ flavor of negated doxastic predicates and argue that these predicates should be analyzed separately. On the other hand, Farkas (2003) states that both affirmative and negated belief predicates are assertions because they update the epistemic context of what a speaker knows to be true. The modal approach to mood selection argues, with few exceptions, that an affirmative utterance containing a matrix belief verb is an assertion that communicates that a proposition has been evaluated as true, stating that an affirmative belief utterance is true if and only if the proposition is true in all worlds compatible with the belief holder’s epistemic model.

According to Mari (2016), the indicative can yield two meanings for a doxastic predicate: a doxastic meaning which presents a belief or an epistemic meaning that asserts the way a speaker sees the world. In Yucatec Spanish, affirmative doxastic predicates can assert a proposition, triggering the indicative. In other words, if the speaker interprets the embedded proposition as veridical and wants to assert this proposition, there is a preference for the indicative:

(31) *Mi amiga quiere usar mi libro, pero no lo tengo porque se lo di a otra amiga hace meses. Le digo...*

‘My friend wants to use my book, but I don’t have it because I gave it to another friend months ago. I tell her...’

a. *Creo que ella lo tiene* (IND).

‘I think she has it’.

b. *#Creo que ella lo tenga* (SUBJ).

‘I think she has it’.

This item presents a proposition *p* (*Ella lo tiene* ‘She has it’) as an assertion. The context indicates that the likelihood of *p* is high and that the speaker has no reason to believe that it is not true. As such, the indicative was the preferred mood for the Yucatec Spanish consultants, who rejected the use of the subjunctive. Therefore, the notion that an affirmative belief predicate asserts a proposition holds true for utterances such as these in Yucatec Spanish.

For many varieties of Spanish, negated doxastic predicates can trigger both the subjunctive and the indicative, but affirmative predicates only license the indicative mood (as demonstrated in section 2 of Chapter 2). All previous accounts agree on this analysis for mood selection in Spanish. However, Yucatec Spanish presents a unique case of ‘assertive’ mood selection that cannot be explained by the theories of Spanish subjunctive licensing presented up to this point. If we assume that the lack of negation in a matrix clause licenses the indicative, the prediction is that 32b should not be a possible option:

(32) *Necesito comprar fideos para la sopa pero no quiero caminar al supermercado así que voy a la tiendita en la esquina porque a veces se venden productos allá.*

‘I need to buy noodles for a soup, but I don’t want to walk to the supermarket, so I go to the little store on the corner because sometimes they sell products there’.

a. *Creo que esa tiendita los vende* (IND).

‘I think that store sells them’.

- b. *Creo que esa tiendita los venda* (SUBJ).

‘I think that store sells them’.

In this case, the majority of the Yucatec Spanish consultants accepted the subjunctive in 32b, and some rejected the indicative in 32a. In Spanish as a whole, the use of the subjunctive in this context is unprecedented. The mood selection in this sentence bears some resemblance to Italian, as seen in example 33 (as cited by Quer 2001:92):

- (33) *Credono che Andrea sia molto stanco.*

believe.IND.3PL that Andrea be.SUB.3SG very tired

‘They think that Andrea is very tired’.³³

In example 33, the third-person doxastic predicate licenses the subjunctive. Comparing the Yucatec Spanish in 32 to the Italian example in 33, *creer* could be considered what Mari (2016) calls the INQUISITIVE *BELIEVE*. In example 32, *creer* communicates epistemic certainty rather than doxastic knowledge. Specifically, the use of the subjunctive communicates epistemic *uncertainty* despite the use of the affirmative doxastic predicate.

The current data suggest that affirmative doxastic predicates select mood in the same way as negated doxastic predicates.³⁴ Gielau (2015:25) notes this pattern as well, stating that the

³³ However, Quer (2001:92), citing Saltarelli (1974), states that if the matrix NP is in the first person, the only option for the embedded complement is the indicative, as both the matrix and embedded clauses must be interpreted assertively in ME_(speaker):

- (i) a. *Credo che sono stanco*
believe.1SG that be.IND.1SG tired
‘I think I am tired’.
b. **Credo che sia stanco*
believe.1SG that be.SUB.1SG tired
‘I think I am tired’.

He argues that in (i), the indicative in (a) is grammatical while the subjunctive in (b) is ungrammatical. However, Mari (2016) demonstrates a preference for the subjunctive in first-person doxastic predicates in Italian.

proposition may not form part of the epistemic model of the speaker, and the proposition expressed by the complement of a verb like *pensar* ‘to think’, for instance, may be believed to be untrue by the speaker. While Gielau does not discuss mood selection in such cases, Yucatec Spanish demonstrates that this dubitative flavor is available even in affirmative predicates, and evidence of this shift can be seen in the use of the subjunctive by Yucatec Spanish speakers. This suggests that negation is not the primary trigger for mood selection in Yucatec Spanish. Instead, similar to negated doxastic predicates, mood selection depends on how the proposition is evaluated by the speaker. If a speaker is more certain about the truth of a proposition and, therefore, able to interpret the proposition as veridical, the indicative is more likely to be selected. On the other hand, a speaker who is less certain of the truth of a proposition may select the subjunctive in the embedded clause. The following table summarizes the patterns found in this section on affirmative doxastic predicates:

TABLE 11. Mood and affirmative doxastic utterances in Yucatec Spanish.

Preference for the subjunctive	Preference for the indicative	Both were accepted (based on context)
<i>No preference for the subjunctive</i>	Third-person matrix with embedded clause in the first person: <i>Ella cree que tengo el dinero.</i> ‘She believes that I have the money’.	Third-person matrix with embedded clause in the third person: <i>Ella cree que su amiga tiene/tenga el dinero.</i> ‘She believes that her friend has the money’. First-person matrix: <i>Creo que ella regrese/regresa.</i> ‘I think she is coming back’

³⁴ There are some differences in individual patterns; however, these will be discussed in section 2.5 of this chapter.

Similar to negated belief statements, a speaker is able to interpret the embedded proposition when she is the referent denoted by the subject NP in that proposition, resulting in the selection of the indicative. Other utterances containing affirmative doxastic predicates allow for both the subjunctive and indicative mood depending on the context provided. A first-person doxastic utterance can communicate with assertive force (selecting the indicative), and it is also possible for the subjunctive to communicate a speaker's doubts regarding the proposition (selecting the subjunctive). The same can be said for third-person matrix and complement predicates. In the following section, I explore this third-person variation in greater depth.

2.3 PARENTHETICAL INTERPRETATIONS. The previous section demonstrated that there are several issues that arise when evaluating all propositions embedded under affirmative belief predicates as assertions. The first problem with this classification for Yucatec Spanish is that not all doxastic matrices introduce a proposition that is being asserted by the speaker. Like Mari's (2016) distinction between the expressive and inquisitive *believe*, Anand and Hacquard (2013:8–17) state that attitude predicates have two functions: They can either assert information or have parenthetical interpretations (c.f. Urmson 1952, Hooper 1975, Simons 2007). Consider 34 from Simmons (2007:1036):

- (34) a. What is bothering Henry?
 b. He thinks that Louise was with Bill last night.

In 34b it is the proposition *Louise was with Bill last night* that answers the question in 34a. In a parenthetical interpretation, the embedded clause has main point status rather than the matrix clause. We can see that the proposition *Louise was with Bill last night* has main point status as this is what answers the question. The belief predicate that embeds this proposition does not contribute information that is necessary to answer the question. In fact, it has been analyzed as

more of an evidential feature rather than a key contributor of information to the common ground (Simons 2007). The main point of the utterance is the content of the proposition rather than the fact that the referent believes the proposition to be true. In her analysis of parenthetical interpretations, Simons (2007) analyzes doxastic predicates as evidentials that communicate a source of a claim or information about the status of a claim (based on Rooryck 2001). Simons presents the following example (2007:1036):

- (35) a. Who was Louise with last night?
b. i. Henry thinks that she was with Bill.
ii. I heard that she was with Bill.

Both answers in 35b have an embedded proposition that has main point status, contributing the information necessary to answer the question in 35a. Simons argues that the matrix predicate has an evidential flavor or the interpretation of hearsay. Simon (2007:1036) paraphrases this answer as follows:

- (36) The answer to your question might be that Louise was with Bill. The source of the claim that Louise was with Bill is Henry; but Henry is not fully committed to its truth.

Here, the evidential discourse function of the matrix predicate communicates the lack of full speaker commitment. Urmson (1952) observes that embedding a proposition under a doxastic predicate can be used to provide additional information to the hearer that involves the significance, relevance, and source of the proposition. Hooper (1975) also discusses evidentiality and levels of commitment in parenthetical interpretations, and she analyzes these as assertions. Simons (2007:1041) does not adopt this characterization; instead, she argues that this main point content is *not* asserted. With regards to Yucatec Spanish, I follow Simons in analyzing the main

point content as a non-assertion as the speaker may know that the content is false. Consider the following example:

- (37) *Estaba hablando con mi hermana, y me di cuenta de que ella no tiene ninguna idea de lo que hago en mi trabajo. Es verdad que contesto el teléfono, pero también hago fotocopias, hago las compras, y le ayudo mucho a mi jefe. Sin embargo...*

‘I was talking with my sister, and I realized that she has no idea what I do for my job. It is true that I answer the phone, but I also make photocopies, do the shopping, and I help my boss out. Nevertheless...’

- a. *Mi hermana piensa que yo solo contesto (IND) el teléfono.*

‘My sister thinks that I only answer the phone’.

- b. *Mi hermana piensa que yo solo conteste (SUBJ) el teléfono.*

‘My sister thinks that I only answer the phone’.

Yucatec Spanish consultants preferred the indicative in 37a and rejected the subjunctive in 37b.

Based on this context, each utterance communicates that the proposition *yo solo contesto el teléfono* ‘I only answer the phone’ is false. This is similar to the pattern demonstrated in examples 18 and 19 presented above. In each of these cases, the truth of the proposition is known, and the speaker is reporting the belief. Simons (2007:1042) offers the following examples of utterances that contain propositions that are false based on additional lexical contributions:

- (38) Which course did Louise fail?

- a. Henry, the idiot, thinks she failed calculus.

- b. Henry, entirely wrongly, is convinced that she failed calculus.

- c. Henry, falsely, said that she failed calculus.

In these utterances, the speaker clearly communicates that the proposition is false. Simons points out that in these cases, the proposition does not have main point status but the interaction between the proposition and the lexical items indicating that Henry is wrong creates the main point instead. In the following example (originally presented as example 24 in Chapter 4), the speaker reports the belief of her father:

- (39) *Mi mamá le dice a mi papá que este viernes van a cenar juntos en un restaurante para celebrar su cumpleaños, pero de verdad va a haber una fiesta sorpresa.*

‘My mom tells my dad that this Friday they are going to eat dinner in a restaurant to celebrate his birthday, but really there is going to be surprise party’,

- a. *Ella no cree que él sepa (SUBJ) la verdad.*

‘She does not believe that he knows the truth’.

- b. *Ella no cree que él sabe (IND) la verdad.*

‘She does not believe that he knows the truth’.

The proposition *sabe la verdad* ‘he knows the truth’ has main point status in this utterance as it answers the question *Does he know?* while the matrix is reporting the source of the information. In this case, Yucatec Spanish consultants accepted both the indicative and the subjunctive as the proposition could be interpreted as veridical (in 39a) or nonveridical (in 39b).

In this section, I have shown that interpretation is able to account for mood alternation in doxastic predicates. This section described the possible evidential flavor of the doxastic predicate, which provides the source of information but does not contribute to the main point of the utterance. Instead, the embedded proposition contributes all necessary meaning. In these cases, the proposition is *not* asserted, which was the case in example 39. In this example, I argue

that the proposition was not asserted because the speaker communicated the falsity of the belief.

This is unique when compared to other affirmative doxastic utterances that do assert their complements. The following table summarizes the patterns identified in this section:

TABLE 12. Summary of mood and parenthetical interpretations in Yucatec Spanish.

Preference for the subjunctive	Preference for the indicative	Both were accepted (based on context)
<i>No preference for the subjunctive</i>	Parenthetical interpretations with a proposition in the first person: <i>Ella (no) cree que tengo el dinero.</i> ‘She believes (doesn’t believe) that I have the money’.	Parenthetical interpretations with a proposition in the third person: <i>Ella (no) cree que su amiga tiene/tenga el dinero.</i> ‘She believes (doesn’t believe) that her friend has the money’.

In summary, affirmative doxastic predicates in Yucatec Spanish can both assert a proposition or communicate another’s belief without assertive force. If the speaker can interpret the proposition as true or false, the indicative will be used. This is common when the speaker is a referent denoted by the NP of the complement clause. The use of the subjunctive can occur when the speaker is not a referent in the utterance. In such cases, the speaker selects mood based on the evaluation of the proposition. In the following section, I will explore the cases in which speakers communicate uncertainty or lack of commitment through the use of the subjunctive.

2.4 BELIEF PREDICATES COMMUNICATING (LACK OF) KNOWLEDGE. Up to this point, I have presented cases of both affirmative and negated doxastic predicates in Yucatec Spanish. While prescriptive grammars and accounts of other varieties of Spanish identify negation as a trigger for the subjunctive, data from Yucatec Spanish demonstrate that in this variety, mood selection is based on the evaluation of the embedded proposition. When presented with sentences in which

the Yucatec Spanish speaker is uncertain of the truth of a proposition, s/he prefers the use of the subjunctive. Consider the following examples:

- (40) *Mi hermano me contó de su amigo. Nunca aprueba los exámenes, pero ayer, aprobó el examen con un 9.5 sin estudiar la información que estaba en el examen.*

‘My brother told me about his friend. He never passes his exams, but yesterday, he passed his exam with a 9.5 without studying the information that was on the exam’.

- a. *Él cree que su amigo es (IND) tramposo.*

‘He thinks that his friend is a cheater’.

- b. *Él cree que su amigo sea (SUBJ) tramposo.*

‘He thinks that his friend is a cheater’.

- (41) *Le pregunto a mi amiga si ella y su esposo van a visitar a sus padres el sábado. Me dice que ella sí va a ir, pero su esposo no está seguro.*

‘I ask my friend if she and her husband are going to visit her parents this Saturday. She tells me that she is going to go, but her husband is not sure’.

- a. *Ella no cree que él va (IND) este fin de semana.*

‘She doesn’t believe that he is going this weekend’.

- b. *Ella no cree que él vaya (SUBJ) este fin de semana.*

‘She doesn’t believe that he is going this weekend’.

Yucatec Spanish consultants preferred the subjunctive for both of the items listed above despite the fact that 40 is affirmative and 41 is negated. There are several notable similarities between these sentences: Both have third-person matrices and third-person embedded clauses, and both have a context that does not fully communicate the truth of the embedded proposition. In these

cases, the use of the subjunctive communicates that the speaker does not commit to the proposition in question.

Thus, rather than mood being grammatically motivated by a negator as in other varieties of Spanish, I argue that in Yucatec Spanish, mood is pragmatically motivated. In other words, in Yucatec Spanish, when the speaker is unable to interpret a proposition as true or false, the speaker communicates this uncertainty with the use of the subjunctive. Take the following affirmative example that is contextualized by uncertainty:

(42) *Tengo que mover el sofá, y le pregunto a mi vecina si su esposo me puede ayudar.*

Me dice que ahora no porque no está en casa, pero...

‘I have to move the sofa, and I ask my neighbor if her husband can help me. She tells me not now because he’s not home, but...’

a. *Ella cree que él está (IND) disponible esta tarde.*

‘She thinks that he is available this afternoon’.

b. *Ella cree que él esté (SUBJ) disponible esta tarde.*

‘She thinks that he is available this afternoon’.

Neither the speaker nor the referent denoted by the NP of the matrix clause is certain of the husband’s schedule. While previous accounts of Spanish predict that an affirmative predicate will license the indicative in the subordinate clause, participants preferred the use of the subjunctive in 42b over the indicative in 42a. When asked about the use of the subjunctive in this statement, participants commented on the uncertainty of the proposition.

It is not the negation that is licensing the use of the subjunctive, but instead, it is the lack of epistemic certainty regarding the proposition that triggers the subjunctive. The following item presents a negated utterance:

- (43) *Estamos hablando entre amigos, y nuestro amigo Juan, sin decir nada, se levanta y sale. Nos preguntamos qué pasó.*

‘We are talking among friends, and our friend Juan, without saying anything, gets up and leaves. We ask ourselves what happened’.

- a. *Nuestra amiga no piensa que él regresa* (IND).

‘Our friend doesn’t think that he is coming back’.

- b. *Nuestra amiga no piensa que él regrese* (SUBJ).

‘Our friend doesn’t think that he is coming back’.

Similar to 42, the mood selection in the embedded clause of 43 is based on the certainty of the proposition. In this case, the constructed example is contextualized with information that does not allow the speaker to know whether the proposition is true. As such, among the Yucatec Spanish consultants, there was a preference for the use of the subjunctive in the embedded clause.

In elicitations with the Yucatec Spanish consultants, a lack of context that allows for the evaluation of a proposition often licenses the subjunctive. However, there is another key element in the model of evaluation: the speaker’s epistemic perspective of the actual world. In the following context, there is some uncertainty communicated, but the mood selection reflects the speaker’s epistemic knowledge of the actual world:

- (44) *Mis amigas quieren saber si nuestra amiga, Sara, ya ha regresado de vacaciones. No me ha mandado ningún mensaje así que...*

‘My friends want to know if our friend Sara has come back from vacation. She hasn’t sent me any messages, so...’

- a. *No pienso que Sara esté* (SUBJ) *en Valladolid de nuevo.*

‘I don’t think that she is in Valladolid again’.

- b. *No pienso que Sara está (IND) en Valladolid de nuevo.*

‘I don’t think that she is in Valladolid again’.

The presented context does not provide evidence to the participant that allows for the interpretation of the veracity of the proposition *no está en Valladolid de nuevo* ‘she is not in Valladolid again’. As such, all participants accepted the use of the subjunctive in 44a. However, half of the participants also accepted the use of the indicative in 44b. When asked why this mood was also acceptable, they interpreted the lack of contact between friends to mean that she had not returned. Thus, consultants were able to infer the veridicality of the proposition not only based on the context provided but also on the real-world assumptions that contribute to their individual models. Those who inferred that the proposition *no está en Valladolid de nuevo* as true accepted the indicative. Those participants recognizing the uncertainty of the proposition accepted the subjunctive as well.

This section has provided evidence that mood in Yucatec Spanish is licensed by the interpretation of the truth of a proposition. When an utterance is contextualized by a situation that the consultant was unable to judge as clearly true or false, there were high levels of variation in mood acceptance. In order to account for this variation, I turn to the role of context and the individual epistemic model in the evaluation of a proposition, which will be discussed in greater detail in section 3 of this chapter. When interpreting the truth of a proposition, the speakers used both context and real-world knowledge to select mood in the embedded clause.

2.5 SUMMARY. In this section, I presented several patterns of mood selection under doxastic predicates in Yucatec Spanish. First, an analysis of negation identified the first notable difference between this contact variety and other varieties of Spanish with respect to mood

selection. Previous accounts cite negation as a trigger for the subjunctive in doxastic predicates, also known as the polarity subjunctive (i.e. Terrell & Hooper 1974). However, the current data demonstrate that a division based on polarity does not capture mood selection in Yucatec Spanish. Instead, speakers are able to commit to the truth of a proposition or withhold this commitment in complements of both affirmative and negated doxastic predicates, resulting in the selection of the subjunctive in both embedded clauses.

Following Anand and Hacquard (2013) and Mari (2016), I differentiate between doxastic predicates that assert a proposition and those that report a belief. The primary distinction between the meanings is the speaker's ability to calculate the truth value of the proposition embedded under the belief verb. An individual can express a doxastic opinion such as *I believe in Santa Claus*, which cannot be evaluated as true or false; it expresses a doxastic perspective. Contrastingly, an epistemic doxastic such as *I believe it is raining* allows a speaker to communicate how she perceives the world, and this doxastic can be evaluated as true or false. When reporting the beliefs of another person, the speaker can communicate perceptions regarding the truth of the proposition, but she does not necessarily report the truth of the proposition. With regard to mood selection, person (i.e. first-person NP, third-person NP) is also a predictor of mood. In a first-person belief statement, negated belief predicates communicate doubt and, therefore, primarily license the subjunctive, but affirmative belief predicates can license both the indicative and subjunctive based on the evaluation of the proposition. When a third-person matrix embeds another third-person complement, both the subjunctive and indicative are used. However, when a third-person matrix embeds a first-person complement, the indicative is used; this reflects the speaker's firsthand knowledge regarding the truth of the proposition.

3. PRAGMATIC INFLUENCE: THE ROLE OF CONTEXT. The previous section demonstrates some innovated ways in which the subjunctive is used in Yucatec Spanish. However, there are several contexts in which both the subjunctive and indicative were accepted by the Yucatec Spanish consultants. I argue that this acceptability of both the subjunctive and indicative in Yucatec Spanish is motivated by evaluation of the epistemic model. When evaluating the truth conditions of a proposition embedded under a doxastic predicate, the proposition is evaluated based on an individual model; in other words, it is evaluated based on what an individual knows to be true. This epistemic space varies between speakers, which is why two speakers can voice contradicting beliefs with propositions that have similar truth conditions. When describing the individual model, previous approaches (Farkas 1992, Quer 1998, Giannakidou 1998) built upon Stalnaker's (1979, 1999, 2002) theories of common ground. In this section, I will review the concepts of common ground and context to demonstrate that both contribute the interpretation of the (non)veridicality of a proposition, which then licenses mood selection in Yucatec Spanish.

It is well acknowledged within semantics/pragmatics that context contributes to meaning, and there are many factors that contribute to context. The first factor that I will discuss is the proposition. According to Stalnaker (1979), a PROPOSITION can be defined as follows:

- (45) **Proposition:** Let W be a set of indices of possible worlds, then a proposition p can be defined as $p \subseteq W$; and p is true in a world $w \in W$ if and only if $w \in p$, otherwise p is false in w .

A proposition, or p , is an element in the set of possible worlds and is evaluated as true or false in each world. Once a proposition is asserted, then this proposition becomes part of the common ground. The collection of propositions that all interlocutors recognize as true for the sake of the conversation is what constitutes the common ground, which plays a role in defining the CONTEXT

SET, or the contextualized situation in which a proposition is evaluated. Formally, this is defined as follows:

(46) **Context set:**

- i. The set of propositions that the speaker takes for granted constitutes the common ground: $P \subseteq P(W)$.
- ii. The set W of all possible worlds that are compatible with every proposition in the common ground constitutes the context set: $C(P) = \{w: \forall p \in P : w \in p\} = \bigcap P$

According to this definition, a context set is the intersection of all sets of propositions that make up the common ground. Each speaker assertion alters the context set, reducing the set as the conversation continues; the more propositions added to the common ground, the smaller the context set becomes. For example, the context set for the utterance *I have a pet* is rather large; it cannot eliminate possibilities such as *My turtle eats a lot* or *My fish is red*. However, if in conversation I add information to the context set about fur and dog food, the context set can no longer include utterances about fish and turtles. Instead, the context set only includes propositions referencing my pet dog.

Utterances are also interpreted against the common ground as well as several other elements that contribute to context. In her definition of context, Giannakidou (1998) incorporates an element that is key for a modal approach: an individual's epistemic model. This model consists of an individual's knowledge of the real world and as well as any given contextual information. Giannakidou's (1998:11) formalization of what she calls CONTEXT is presented in (47):

(47) **Context:**

- a. Let $c = \langle cg(c), W(c), M, s, h, w_0, f, \dots \rangle$ be a context.
- b. A model $M(x) \in M$ is a set of worlds in c associated with an individual x .
- c. x is an individual anchor.

This definition states that a context is comprised of the common ground, a set of all worlds compatible with the common ground, the epistemic model (defined in 48b), the speaker(s), the hearer (h), the actual world or worlds where the utterance takes place (w_0), and a function assigning values to individual variables (f). Additionally, there is an epistemic mode of an individual (x) that is comprised of this individual's epistemic knowledge. All of these elements contribute to context, which a speaker uses when calculating the truth values of a proposition. These concepts are key to the interpretation of modality, and all of these elements play a role in the evaluation of a proposition.

If the context set includes a model that provides sufficient information by which participants are able to infer the truth of a proposition, consultants prefer the indicative. However, turning to the data, there are several cases in which consultants accepted both the subjunctive and indicative with slightly different interpretations. The next two examples of Yucatec Spanish are presented with a context in which there was information missing from the common ground, and the participants accommodated for this:

- (48) *Mi amiga me contó ayer de sus problemas con su esposo. Su comportamiento es sospechoso—dice que siempre sale sin decirle adónde va por mucho tiempo.*

‘My friend told me yesterday about problems with her husband. His behavior is very suspicious—she says that he always goes out for a long time without telling her where he goes’.

- a. *Ella piensa que él tiene (IND) amante.*
‘She thinks that he has a lover’.
- b. *Ella piensa que él tenga (SUBJ) amante.*
‘She thinks that he has a lover’.

In these cases, Yucatec Spanish consultants accepted both the indicative in 48a and the subjunctive in 48b. When discussing the situation with individual participants, it was clear that the evaluation of the proposition could shift when more propositions were added to the context set. If it was made clear that the speaker knew her friend’s husband had a lover by adding more information to the context set, mood preference shifted toward the indicative. If the speaker maintained that the friend did not know if her husband was a cheater, subjunctive acceptance remained high. Thus, the subjunctive selection reflects this epistemic uncertainty.

In a similar vein, Mari (2016) argues that there are several instances that demonstrate the third person’s personal taste, presenting a unique case of doxastic predicates. In her study of Italian, Mari (2016:66) argues that predicates of personal taste (i.e. *have fun*, *be tasty*³⁵) allow for both the indicative and subjunctive:

- (49) I really believe that you are stupid.
- a. *Credo davvero che sei (IND) un cretino.*
- b. *Credo davvero che tu sia (SUBJ) un cretino.*

In utterances like 49, which contain predicates of personal taste, both the indicative in 49a and the subjunctive in 49b are acceptable, but with slightly different meanings. According to Mari, the use of the subjunctive conveys that the speaker is looking to prove the stupidity of the

³⁵ The interpretation of predicates of personal taste (or PPTs) such as *have fun* or *be tasty* requires that the proposition is interpreted with respect to an individual anchor. In this way, this is similar to the current argument regarding mood selection in Yucatec Spanish. See Pearson (2013) for this approach to analyzing PPTs.

addressee, which can be interpreted as more insulting than 49a. Therefore, Italian and Yucatec Spanish are similar in that there are cases in which both moods are accepted, but each mood produces slightly different implications and interpretations.

In my discussion of affirmative doxastic predicates, I presented the importance of context in interpretations involving truth value. Further, I argue that the same is also true for negated belief predicates. Consider the following example:

- (50) *Alguien nos robó anoche, y la policía encontró a un joven en la calle corriendo afuera de nuestra casa. Sin embargo, una vecina dice que no puede ser él porque lo vio media hora antes en el centro.*

‘Someone robbed us last night, and the police found a young guy in the street running outside of our house. Nevertheless, a neighbor says that it couldn’t be him because she saw him half an hour before downtown’.

- a. *Ella no piensa que él sea (SUBJ) culpable.*

‘She doesn’t think that he is guilty’.

- b. *Ella no piensa que él es (IND) culpable.*

‘She doesn’t think that he is guilty’.

Like example 49 above, in utterance 50, consultants accepted both the indicative (in 50b) and the subjunctive (in 50a). Then, the following utterances were added to the common ground to see how each affected mood selection:

- (51) a. *Puede creer eso, pero en realidad no fue así.*

‘She can believe that, but in reality, it wasn’t like that’.

- b. *Puede creer eso, y de hecho tiene razón. Lo vi también muy lejos de la casa.*

‘She can believe that, and actually, she’s right. I, too, saw him far away from the house’.

When presented with the additional information in 51, many consultants expressed a preference for the indicative. The utterance in 51a provides evidence that the proposition is false, and 51b provides evidence that the proposition is true. The preference for the indicative communicates that the belief space has been updated, and now homogeneously consists of $\neg p$ or p worlds, respectively. The change in the epistemic model demonstrated by acceptability judgments in 50 and 51 suggests that with additional information added to the context set, participant interpretations can also shift.

Overall, if a context allows for several possible outcomes in Yucatec Spanish, speakers use this epistemic uncertainty to motivate their subjunctive selection; in contrast, if a context set provides sufficient information for the speaker to interpret a proposition, the epistemic certainty licenses the selection of the indicative, indicating that the speaker commits to the truth or falsity of p . In this section, I showed that context is a key component to the individual model by which a speaker can evaluate the truth of a proposition, and thus, it plays a significant role in mood selection in Yucatec Spanish. In situations that present a clear context and, therefore, a clear evaluation of the proposition as veridical, there is little alternation in mood selection. However, when the context set does not provide sufficient information for a speaker to evaluate the truth of a given proposition, both the subjunctive and indicative are accepted. This suggests that epistemic certainty plays a significant role in mood selection in Yucatec Spanish.

4. CONCLUSIONS. This chapter provided further evidence that mood selection in Yucatec Spanish deviates from other varieties of Spanish. Most notably, there is an extension of the semantic space that is occupied by the subjunctive, and alternation is accepted in utterances that

would be considered ungrammatical in other varieties (i.e. *Creo que los venda* (SUBJ) ‘I think they sell them’). Regardless of negation, the indicative communicates the epistemic certainty of the proposition. Contrastingly, if a speaker interprets a proposition as epistemically uncertain, this nonhomogeneous model of evaluation licenses the subjunctive. The findings from this portion of the dissertation make a significant contribution to the theory of mood selection because they show that the mood selection of doxastic predicates in this contact variety does *not* depend on overt negation. In Table 13 below, I summarize trends in mood selection in Yucatec Spanish.

TABLE 13. Mood preference in Yucatec Spanish.

Preference for the subjunctive	Preference for the indicative	Both accepted (based on context)
First-person negated matrix: <i>No creo que ella regrese.</i> ‘I do not think she is coming back’.	Parenthetical interpretations with a proposition in the first person: <i>Ella (no) cree que tengo el dinero.</i> ‘She believes (doesn’t believe) that I have the money’.	Parenthetical interpretations with a proposition in the third person: <i>Ella (no) cree que su amiga tiene/tenga el dinero.</i> ‘She believes (doesn’t believe) that her friend has the money’. First-person affirmative matrix: <i>Creo que ella regrese/regresa.</i> ‘I think she is coming back’. Third-person matrix: <i>Su madre (no) cree que ella regrese/regresa.</i> ‘Her mom thinks (does not think) she is coming back’.

To conclude, adopting an analysis focused on veridicality and epistemic certainty has provided important insight into understanding mood selection in Yucatec Spanish. In closing, I situate the findings of this chapter within the research questions presented earlier in the chapter:

RQ1: What moods can be licensed in negative doxastic contexts?

While some linguists suggest that the subjunctive *can* be licensed by elements other than an overt negator (see Mejías-Bikandi [1998, 2016] for an account of quantifiers), there are no accounts of Spanish mood that can be used to capture the use of the subjunctive in Yucatec Spanish. The current data suggest that an overt negator in the matrix clause does not necessarily trigger the subjunctive in doxastic predicates in Yucatec Spanish, as many consultants' interpretations suggested that they lowered the negation to the complement clause. Therefore, I argue that mood selection in Yucatec Spanish is not categorized as polarity subjunctive but instead is motivated by the interpretation of the embedded proposition.

RQ2: What mood can be licensed in affirmative doxastic contexts?

Affirmative doxastic predicates have previously been treated as assertions (as described by Farkas [1992]), but Yucatec Spanish also permits the communication of uncertainty through its mood selection within an affirmative utterance. While it is more frequent to see an affirmative belief predicate select the indicative, the subjunctive mood can be licensed to communicate uncertainty in affirmative clauses as well as in their negated counterparts. The current data have demonstrated the need to move away from a polarity analysis and toward an analysis based on Giannakidou's (1998) modal approach to explain mood selection in Yucatec Spanish.

RQ3: In cases in which both the indicative and subjunctive could be used, what accounts for this variation in mood selection among speakers?

Within a modal approach, variability can be accounted for by the individual model in which the proposition is evaluated. By applying Stalnaker's (1974) notions of context and context set, we are able to explain the variation between participants and alternation in mood selection. In Yucatec Spanish, speakers used context to determine the truth of the proposition. In situations in which the context did not clearly communicate sufficient information for the truth to be evaluated, there were high levels of acceptance of both the indicative and subjunctive moods. However, when more contextual information was added to the common ground, consultants expressed a preference for the indicative mood as the additional information removed epistemic uncertainty.

Using affirmative and negated sentences containing doxastic predicates, I have argued that the use of the subjunctive in both affirmative and negated doxastic predicates reflects epistemic uncertainty. Overall, there is a pattern in mood selection in Yucatec Spanish in which the interpretation of the truth of a proposition is the trigger for mood selection. Throughout this chapter, I have used several concepts such as possibility interpretation, speaker commitment to the truth of a proposition, and speaker uncertainty regarding the interpretation of a proposition, all of which fit under the umbrella term of epistemic uncertainty. I will continue using these notions in the next chapter, in which I turn to Giannakidou's (2015) epistemic subjunctive and focus on other structures that do not entail the truth of the proposition: interrogatives and modal verbs/adverbs. I again argue that this notion of (non)veridicality best captures the alternation in mood selection in Yucatec Spanish.

CHAPTER 5

EPISTEMIC SUBJUNCTIVE IN YUCATEC SPANISH:

THE CASE OF MODALS AND INTERROGATIVES

1. INTRODUCTION. Unlike previous accounts of mood selection in Spanish, Yucatec Spanish presents an extension of the semantic space occupied by the subjunctive, which is available in both affirmative and negated predicates. Following other modal approaches (i.e. Farkas 1992 for Romance languages, Quer 1998 for Catalán, Giannakidou 1998 for Greek), I argue that the indicative functions as an assertion of information and the subjunctive communicates epistemic uncertainty on the part of the speaker; if the speaker selects the subjunctive, she has evaluated the proposition as nonveridical. The following example, originally presented as example 41 in Chapter 4, is used to illustrate a case of nonveridicality:

- (1) *Mi hermano me contó de su amigo. Nunca aprueba los exámenes, pero ayer, aprobó el examen con un 9.5 sin saber la información que estaba en el examen.*
‘My brother told me about his friend. He never passes his exams, but yesterday, he passed his exam with a 9.5 without knowing the information that was on the exam’.
- a. *Él cree que su amigo es (IND) tramposo.*
‘He thinks that his friend is a cheater’.
- b. *Él cree que su amigo sea (SUBJ) tramposo.*
‘He thinks that his friend is a cheater’.

When presented with this item, consultants' preference for the use of the subjunctive in 1b over the indicative in 1a reflects speaker interpretation of the proposition; in the case of 1, the proposition was interpreted as nonveridical, which licensed the subjunctive. However, as demonstrated in Chapter 3 of this dissertation, affirmative and negated doxastic predicates are not the only predicates that license the subjunctive in their complement clauses. Interrogatives with doxastic predicates also license the subjunctive in Yucatec Spanish, illustrated in the following example taken from the survey presented in Chapter 3 and repeated here for convenience:

(2) **MARTA:** *A las ocho. ¿Crees que **puedas** (SUBJ)?*

'MARTA: 'At eight o'clock. Do you think you can?'

Participants expressed a clear preference for the subjunctive in the doxastic interrogative in 2. Expanding upon Giannakidou's (1998) notion of (non)veridicality and Mari's (2016) discussion of epistemic uncertainty, in this chapter, I extend the analysis proposed for affirmative/negated structures in Chapter 4 to sentences with modal auxiliaries, modal adverbs, interrogatives, and doxastic predicates. Giannakidou (1998) identifies these types of structures as nonveridical because they do not entail event realization, as seen in the following examples:

(3) **Interrogative:**

- a. Will you arrive at 8:00 p.m.?
- b. ≠ you will arrive at 8:00 p.m.

(4) **Modal auxiliary:**

- a. You can arrive at 8:00 p.m.
- b. ≠ you will arrive at 8:00 p.m.

(5) **Modal adverb:**

- a. Maybe you will arrive at 8:00 p.m.
- b. $\neq$ you will arrive at 8:00 p.m.

Each of these structures is nonveridical, as none of the utterances entail that the proposition *you arrive at 8:00 p.m.* is true. In other words, the use of any of these structures introduces a set of possible worlds that include worlds in which the proposition is true as well as worlds in which it is false.

With regard to mood selection in these nonveridical environments, I extend my previous analysis of doxastic predicates based on (non)veridicality in Yucatec Spanish and argue that if a speaker evaluates a proposition as veridical, the indicative will be used. The selection of the indicative communicates that the speaker's belief space is homogeneously comprised of worlds in which the proposition is true. On the other hand, if the speaker is uncertain with regards to the truth value of *p*, the subjunctive will be used. The selection of the subjunctive communicates that the belief space of the speaker is nonhomogeneous and contains worlds in which the proposition is true as well as worlds in which it is false. Throughout the remainder of this dissertation, I will refer to this belief space as the individual model or the epistemic model.³⁶

In this chapter, I demonstrate that structures that lack veracity entailment, such as the interrogatives and modals described in examples 3–5, license the subjunctive due to a nonveridical interpretation of the proposition. As seen in Chapter 4, Mari (2016) claims that the subjunctive denotes epistemic uncertainty. This is similar to Giannakidou's (2015) account for the use of the subjunctive, which represents a weakened commitment to a proposition. This use of the subjunctive is referred to as the EPISTEMIC SUBJUNCTIVE. The epistemic subjunctive

³⁶ The elements that contribute meaning to the epistemic model will be discussed throughout this chapter and are presented formally in Chapter 6 of this dissertation.

conveys a meaning similar to the modal interpretation of *might*, as seen in 5. In this chapter, I build my analysis of the subjunctive in Yucatec Spanish on the notion of the epistemic subjunctive and will present data from interrogatives and modals in an attempt to answer the following research questions:

RQ1: What are the implications of the epistemic subjunctive with regards to truth conditions?

RQ2: What licenses the subjunctive in propositions embedded under doxastic predicates that are modified by a modal?

RQ3: What licenses the subjunctive in propositions embedded under doxastic predicates that are in the form of an interrogative?

The organization of this chapter is as follows: Section 2 presents a discussion of the varying levels of speaker commitment to doxastic predicates, section 3 presents and analyzes fieldwork data containing doxastic predicates modified by modal auxiliaries and modal adverbs, and section 4 presents an analysis of interrogatives containing doxastic predicates in Yucatec Spanish. In section 5, I present the conclusions that can be drawn from the analyses proposed in this chapter.

2. MODIFYING COMMITMENT IN DOXASTIC PREDICATES. By definition, a doxastic predicate expresses a speaker's belief: An individual either believes *p* or she does not believe *p*. Hintikka's (1961) definition of doxastic predicates, on which most modern accounts base their analysis, can be seen in 6:

(6) $\llbracket a \text{ believes that } S \rrbracket_w = 1$ iff $\llbracket S \rrbracket_{w_n} = 1$, for every world w_n in which everything that $\llbracket a \rrbracket$ believes in w is true.

For a belief statement to be assertive, the speaker must believe that the proposition is true in all worlds that make up the speaker's belief space. As quoted in 7, Von Finel and Heim (2011:20) argue that a belief statement becomes unacceptable if there is just one world in which the proposition is false:

- (7) [A speaker] believes a proposition iff that proposition is true in all of the worlds compatible with his beliefs. If there is just one world compatible with his beliefs where the proposition is not true, that means that he considers it possible that the proposition is not true. In such a case, we can't say that he believes the proposition.

In this description of belief, an individual is asserting her belief, demonstrating that she has a homogenous epistemic model that contains only worlds in which the proposition is true. Mari (2016) refers to this type of doxastic predicate as *EXPRESSIVE-CREDERE* and notes that such doxastic predicates exclusively communicate *believe* in the truest sense of a doxastic. This includes beliefs such as *I believe that stealing is wrong in all situations* or *She believes that ghosts exist*. Individuals who produce such belief statements are committed to the truth of their doxastic perspective on which 'there is no fact of the matter at stake' (Mari 2016:66).

However, not all doxastic predicates communicate speakers' doxastic perspectives in the same way as the *expressive-credere*. As presented in Chapter 4, Mari's (2016) *INQUISITIVE-CREDERE* reflects epistemic certainty rather than a purely doxastic opinion, allowing for varying degrees of commitment. For example, in English, it is possible to lexically alter commitment:

- (8) I think you can buy it at the store, but I'm not sure.
- (9) I think you can buy it at the store. In fact, I'm pretty sure—I got it there a few months ago.

The utterances in 8 and 9 communicate commitment to the proposition that falls short of full certainty. Despite using a doxastic predicate, utterance 8 communicates a slightly dubitative perspective that lacks full commitment to *p*, made clear through the addition of ...*but I'm not sure*. Utterance 9 communicates a higher level of speaker commitment. Based on the lexical additions in both utterances 8 and 9 (*but I'm not sure* and *In fact, I'm pretty sure*, respectively), we understand that the speakers' perspectives fall short of full epistemic certainty. In the case of Yucatec Spanish, graded uncertainty is reflected by mood selection, which I will argue represents a (non)veridical interpretation.

The notion of gradability in modality suggests that modality, like scalar adjectives such as *completamente* 'completely', can be broken down into degrees, which in this case, are degrees of certainty. This notion has recently been used to explain some aspects of the Spanish subjunctive by Villalta (2007), who argues that the Spanish subjunctive is a result of ordering relations that compare a proposition to its contextually relevant alternatives. Villalta (2008:142) proposes that this is very similar to analyses of focalized arguments (c.f. Rooth 1985, 1992) as seen in the following examples:

(10) Lisa wants John to teach syntax **on Tuesdays and Thursdays**.

(11) Lisa wants **John** to teach syntax on Tuesdays and Thursdays.

An unfocalized argument such as *on Tuesdays and Thursdays* or *John* has the semantic value $\llbracket \alpha \rrbracket_0$ (the actual argument), but a focalized argument has the value $\llbracket \alpha \rrbracket_{ALT}$ (alternative arguments), which ranks all contextually relevant alternatives. For example, it is not the case that Lisa wants John to teach on Wednesday, and Lisa does not want Luis to teach syntax. Villalta (2008:138) proposes that predicates that lexically select the subjunctive, like *want*, create a similar ordering relation of contextually relevant alternatives, as seen in the following formalization:

$$(12) \quad \llbracket \text{want}_C \rrbracket^g = \lambda p. \lambda x. \lambda w. \forall q: q \neq p \ \& \ q \in gc.: p >_{DES \ x, w} q$$

In this definition, there are two sets of propositions (p and q), a speaker (x), and a world (w).

None of the propositions are the same in the two sets, and all are contextually relevant. The

speaker, based on the context, ranks the most desirable p over the least desirable q . The

following is an example by Villalta (2008:138) that provides an abbreviated formalization (13b)

and a set of possible worlds (13c) for the utterance presented in 13a:

- (13) a. *Victoria quiere que Sofía traiga una torta de chocolate.*
 ‘Victoria wants Sofía to bring **a chocolate cake**’.
- b. α wants Φ iff Φ is more desirable to α than its alternatives.
- c. $\lambda w'. \forall q: q \neq [\lambda w. \text{Sofía brings a chocolate cake in } w] \ \& \ q \in$
 $\{\lambda w. \text{Sofía brings a chocolate cake in } w, \lambda w. \text{Sofía brings an}$
 $\text{apple pie in } w, \lambda w. \text{Sofía brings ice cream in } w\}: [\lambda w. \text{Sofía}$
 $\text{brings a chocolate cake in } w]$

In this example, the focalized *una torta de chocolate* is the most desirable of all of its contextually relevant alternatives (i.e. apple pie, ice cream). Thus, the use of the subjunctive in 13 indicates that there is an ordering relation among the options, and the speaker has ranked the contextually available alternatives and identified the most desirable among them (*una torta de chocolate*). In contrast, the indicative mood is infelicitous under ‘want’ because it ‘blocks evaluation of contextual alternatives at the level of the embedded clause’ (Villalta 2007: 507).

Villalta (2007) demonstrates that there is a scalar quality to a predicate by modifying a proposition with the adverb *enormemente* ‘enormously’. If a predicate can be modified by the adverb, it allows for degree modification; if the addition of the scalar adverb is infelicitous, there

is no gradability to the predicate. Consider the following subjunctive-triggering predicates that allow for modification by scalar adverbs, as discussed by Villalta (2008:161):

(14) **Subjunctive-selecting gradable predicates**

- a. *Sofía se alegra enormemente de que la vengan a visitar.*
 Sofía SE glad enormously of that PRO her come:PRES.SUBJ.3PL to visit.
 ‘Sofía is enormously glad that they will visit her’.
- b. *Te sugiero enormemente que no salgas.*
 PRO you suggest enormously that PRO not leave:PRES.SUBJ.2SG.
 ‘I strongly suggest (lit: enormously suggest) that you don’t leave’.

In each utterance in 14, the matrix verb has been modified with the adverb *enormemente*, demonstrating that there is a scalar quality to these verbs and, thus, that the speaker can ‘be glad’ or ‘suggest’ to varying degrees. On the other hand, Villalta (2008:163) argues that indicative-selecting predicates, which include the majority of epistemics, do not allow for degree modification, as seen in the following examples:

(15) **Indicative-selecting non-gradable predicates**

- a. **Sofía sabe enormemente que no puede venir.*
 Sofía knows enormously that PRO not can:PRES.IND.3SG come.
 *‘Sofía strongly knows (lit: enormously knows) that she cannot come’.
- b. **Alberto dijo enormemente que tenía hambre.*
 Alberto said enormously that PRO have:PAST.IND.3SG hungry.
 ‘Alberto strongly said (lit: enormously said) that he was hungry’.
- c. **Elena concluyó enormemente que se podía hacer algo.*
 Elena concluded enormously that PRO SE can:PAST.IND.3SG do something.

*‘Elena strongly concluded (lit: enormously concluded) that something could be done’.

- (d) **Victoria vió enormemente que hacía buen tiempo.*

Victoria saw enormously that PRO make.PAST.IND.3SG good weather.

*‘Victoria strongly saw (lit: enormously saw) that the weather was good’.

These epistemic predicates license the indicative and do not allow for varying commitment; as such, these verbs entail that the proposition is either true or false, and a speaker must commit to its truth or falsity completely. Thus, unlike the subjunctive-selecting predicates in 14, the majority of epistemic predicates, like those in 15, do not allow for degree modification.

While Villalta (2007) briefly discusses cases of what we have called the POLARITY SUBJUNCTIVE, like the doxastic verbs discussed here, Villalta’s analysis focuses primarily on deontic modality and mood selection based on degree modification in Spanish, as seen in 14. However, Villalta points out that doxastics may behave differently than other epistemic predicates. In particular, while other epistemic predicates entail that their embedded proposition is true, doxastic predicates lack this entailment (as seen in Chapter 1). Therefore, based on this theory, unlike the epistemic predicates in 15, which do not allow for degree gradability, doxastic verbs that require the indicative should not produce this gradability. However, Villalta finds evidence of the felicity of the use of scalar adverbs with doxastic predicates, providing the following examples extracted from the Internet that are modified by *enormemente* (2007:164):

(16) **Epistemics and possible gradability**

- a. *Leí en el internet acerca de la epidemia del dengue, y creí enormemente que nuestro centro podría ayudar.*

‘I read on the Internet about the dengue epidemic, and I strongly believed (lit: enormously believed) that our center could help’.

- b. *Creemos enormemente que es una buena herramienta para compartir tu fe.*

‘We strongly believe (lit: enormously believe) that this is a good tool to share your faith’.

- c. *Ana está enormemente convencida de que esto es la mejor solución.*

Ana is enormously convinced of that this is the best solution.

‘Ana is strongly convinced (lit: enormously convinced) that this is the best solution’.

These examples demonstrate that doxastic predicates like *creer* behave differently than other epistemic verbs; a speaker can commit to the proposition at varying degrees of certainty, which shows a certain level of gradability in doxastic predicates, but it also licenses the indicative in many varieties of Spanish.³⁷ If a speaker can believe more or less, the use of the epistemic subjunctive may reflect the lack of full commitment.

On the one hand, if a Villalta-style analysis for the Spanish subjunctive is adopted, predicates that select the subjunctive identify a set of contextually-relevant alternatives, and the most relevant is selected. On the other hand, predicates that select indicative complements do not reference a set of alternatives; these predicates assert the proposition. Based on these ideas, the following example shows an utterance with the subjunctive in 17a that introduces a set of

³⁷ In her analysis, Villalta (2007) does not explore doxastic predicates in depth. She cites Dretske (1972) who claims that *believe* and *say* are not sensitive to contrastive differences and, thus, excludes them from her analysis.

contextually-relevant alternatives while the utterance containing the indicative in 17b only identifies one possible outcome:

- (17) a. *Elena prefiere que Maru llegue (SUBJ) a tiempo.*

‘Elena prefers that Maru arrive on time’.

$W = \{w': \text{Maru llega temprano}, w'': \text{Maru llega a tiempo}, w''': \text{Maru llega tarde}\}$

- b. *Elena sabe que Maru llega a tiempo.*

‘Elena knows that Maru arrives on time’.

$W = \{w': \text{Maru llega a tiempo}\}$

In the context presented in 17, with the verb *preferir* ‘to prefer’, there are three possible worlds that are contextually relevant introduced by this context. Of the set of contextually-appropriate alternatives in 17a, w' (*Maru llega a tiempo*) is the most preferable of the alternatives and is, therefore, the proposition used in the utterance. In example 17b, with *saber* ‘to know’, *Maru llega a tiempo* is the only possible proposition and, therefore, is asserted, triggering the indicative. Yet, doxastic predicates do not follow either pattern presented in 17a or 17b. Like the factive predicate in 17b, doxastic predicates in many dialects of Spanish trigger the indicative in the embedded clause. However, doxastic predicates introduce a set of possible worlds that includes several contextually relevant alternatives:

- (18) *Elena cree que Maru llegue (SUBJ) a tiempo.*

‘Elena believes that Maru arrives (SUBJ) on time’.

$W = \{w': \text{Maru llega temprano}, w'': \text{Maru llega a tiempo}, w''': \text{Maru llega tarde}\}$

In 18 the embedded proposition is in the subjunctive, which Villalta (2007) would argue represents that there is a set of contextually relevant alternatives, which we see in the set of

possible worlds. This follows more closely with the lexically-selecting subjunctive rather than factive predicates. There is no veracity entailment that requires that the proposition be true; instead, the set of possible worlds includes several worlds in which different propositions are true. As argued by Villalta (2007), the most contextually appropriate outcome is selected as the embedded proposition. However, there are still contextually relevant alternatives when the indicative is selected in a doxastic predicate:

(19) *Elena cree que Maru llega (IND) a tiempo.*

‘Elena believes that Maru arrives (SUBJ) on time’.

$W = \{w': \text{Maru llega temprano}, w'': \text{Maru llega a tiempo}, w''': \text{Maru llega tarde}\}$

In this way, doxastic predicates are unique, and this is the primary reason this analysis cannot explain mood selection in Yucatec Spanish. In utterances containing doxastic predicates, the context contributes to the interpretation of the proposition, which ultimately conditions the selection of mood. Consider the following contextualized utterances that contain the scalar adverb *completamente*, which is acceptable in 20 and unacceptable in 21:

(20) I asked Elena if she thought that Maru would be arriving on time for our meeting.

Maru is typically a very punctual person, so...

a. *Elena cree que llega (IND) a tiempo.*

‘Elena believes that she will arrive on time’.

b. *Elena cree completamente que llega (IND) a tiempo.*

‘Elena strongly believes (lit: believes completely) that she will arrive on time’.

(21) I asked Elena if she thought that Maru would be arriving on time for our meeting.

Maru is never on time. In fact, she has been given a formal warning about her

tardiness. I do not have much hope that she will be able to arrive on time, but Elena, as an optimist, believes that she can make the change.

- a. *Elena cree que llega a tiempo.*
- b. *# Elena cree completamente que llega a tiempo.*

There is a contextually communicated difference in the commitment to the proposition in 20 and 21. In 21 context communicates that it is likely that the proposition is true, which allows the speaker to fully commit to the idea that Maru will arrive on time, as is evident with the felicity of the use of the scalar adverb. This utterance can be interpreted as an assertion of the proposition. However, in 21, the context introduces some doubt regarding the truth of the proposition *Maru llega a tiempo* that prevents the utterance in 21b from being felicitous; the use of *completamente*, which communicates full commitment, is infelicitous in this situation. While this is the case in many varieties of Spanish, in Yucatec Spanish, there is a third option, which involves the alternation of mood to reflect epistemic certainty.

(22) I asked Elena if she thought that Maru would be arriving on time for our meeting.

Maru is typically a very punctual person, so...

- a. *Elena cree que llega (IND) a tiempo.*
'Elena believes that she will arrive on time'.
- b. *# Elena cree que llegue (SUBJ) a tiempo.*
'Elena believes that she will arrive on time'.

(23) I asked Elena if she thought that Maru would be arriving on time for our meeting.

Maru is never on time. In fact, she has been given a formal warning about her tardiness. I do not have much hope that she will be able to arrive on time, but Elena, as an optimist, believes that she can make the change.

- a. # *Elena cree que llega* (IND) *a tiempo*.
 ‘Elena believes that she will arrive on time’.
- b. *Elena cree que llegue* (SUBJ) *a tiempo*.
 ‘Elena believes that she will arrive on time’.

Example 22 does not allow for the use of the subjunctive because the speaker asserts the proposition, and the use of the subjunctive in 22b is therefore infelicitous. In most varieties of Spanish, the subjunctive in 22b would also not be felicitous. However, the use of the subjunctive in 23 is felicitous in Yucatec Spanish. In this variety, doxastic predicates like *creer* can communicate an augmented commitment (as seen by the acceptability of scalar adverbs) or a lessened commitment (as seen by a lexical hedging like *but I am not sure*), which is reflected in mood selection in Yucatec Spanish. This mood alternation indicates that these predicates are different from other epistemic predicates like *decir* ‘to say’, *concluir* ‘to conclude’, or *ver* ‘to see’, which can only license the indicative. The scalar quality of doxastic predicates demonstrated by examples 16–21 cannot be accounted for by Villalta’s (2007) analysis of the Spanish subjunctive. While she notes the unusual behavior of doxastics with regard to the felicity of scalar adjectives, Villalta’s (2008) analysis argues that epistemic predicates license the indicative. Furthermore, this approach to analyzing the subjunctive, while attractive, cannot account for the acceptable use of the subjunctive *and* indicative that occurs under doxastic predicates. To account for this, I propose that Giannakidou’s (2015) notion of the epistemic subjunctive can account for the alternation in Yucatec Spanish.

In this chapter, I follow Giannakidou (2015) in the analysis of the subjunctive as an indicator of epistemic uncertainty in Yucatec Spanish. As noted in previous chapters, doxastic predicates in Yucatec Spanish have assertive force when the speaker wants to communicate the

certainty that p is true, but this contact variety also allows for the licensing of the subjunctive in doxastic predicates when the speaker wants to communicate epistemic uncertainty (regardless of negation). Likewise, a negated doxastic can license either the indicative or the subjunctive. Thus, mood selection in Yucatec Spanish is based on the evaluation of the proposition and the speaker's commitment to the truth of this proposition. Giannakidou (2015:26) refers to the use of the subjunctive in the complement of any subjunctive-licensing context in Greek as EPISTEMIC WEAKENING, which is defined in 23a below. In cases of epistemic weakening, the subjunctive can be referred to as the EPISTEMIC SUBJUNCTIVE, which she states is akin to a possibility modal, (Giannakidou 2015:28):

- (24) a. EPISTEMIC WEAKENING is the creation of a nonveridical epistemic space.
 b. $\llbracket \text{Epistemic Subjunctive} \rrbracket^{w,f,g} = \lambda q \langle st \rangle . \cap f(w) \cap q(w')$ is not $\emptyset$

In this definition $\cap f(w)$ is a nonveridical epistemic modal base that contains both p and $\neg p$ worlds. Similar to a gradability analysis, within this model, there are several levels of commitment to a proposition. Adopting this model, in section 3, I will present an analysis of mood selection in modals, and in section 4, I will offer a similar analysis of mood selection in interrogatives.

3. MODALS AND THE SUBJUNCTIVE. In this section, I explore mood selection with modals, which are linguistic expressions that lack veracity entailment, that is, they do not entail that the event denoted by the proposition is true. In Chapter 4, I demonstrated that doxastic predicates themselves lack veracity entailment, as a speaker may assert a belief that is false, and it is this lack of entailment that allows for mood alternation in Yucatec Spanish. Modal auxiliaries and modal adverbs contribute to a nonveridical interpretation: Instead of entailing the truth of the proposition, a modal implies that a proposition may be either true or false. As von Stechow and

Gillies (2007:53) note, '[t]he basic intuition we begin with is that epistemic *might* serves to comment that its prejacent is compatible with the contextually relevant body of information'.

The following example demonstrates the lack of entailment (25a) and the implication (25b):

(25) *Ana puede creer que es (IND)/sea (SUBJ) la respuesta.*

'Ana can believe that it is the answer'.

a. $\nVdash Es\ la\ respuesta = 1$

b. $\rightarrow Ana\ believes\ p\ OR\ \rightarrow Ana\ does\ not\ believe\ p$

The use of the doxastic predicate *creer* 'to believe', which lacks veracity entailment, prevents the entailment seen in 25a; Ana's belief does not entail that the proposition is true in all worlds.

Furthermore, the use of the modal *poder* 'can' in the matrix clause implies two possible interpretations, as seen in 25b. What the presence of the modal in 25 achieves is the introduction of the implication that there are two possible interpretations, as noted in 25b.

The following is a Yucatec Spanish example presenting the modal adverb *tal vez* in 26a and 26b and the modal auxiliary verb *poder* in 26c and 26d:³⁸

(26) *Mis amigas quieren saber si nuestra amiga ya ha regresado de vacaciones. No me ha mandado ningún mensaje así que...*

'My friends want to know if our friend has already returned from vacation. She hasn't sent me a message, so...'

a. *Tal vez creo que ella esté (SUBJ) enojada conmigo.*

'Perhaps I think she is angry with me'.

b. *Tal vez creo que ella está (IND) enojada conmigo.*

³⁸ Admittedly, a limitation of this semantic analysis is that only one modal adverb (*tal vez*) and one modal auxiliary (*poder*) was tested in this study. Further modal data will strengthen the arguments regarding modals in Chapter 5.

‘Perhaps I think she is angry with me’.

- c. *Puedo creer que ella esté* (SUBJ) *enojada conmigo*.

‘I can believe that she is angry with me’.

- (d) *Puedo creer que ella está* (IND) *enojada conmigo*.

‘I can believe that she is angry with me’.

The majority of consultants found both the subjunctive and the indicative acceptable for each utterance, but most expressed a preference for the subjunctive; given the context provided in 26, consultants voiced a preference for the use of the subjunctive (26a and 26c), which communicated a lessened commitment to the proposition. If we continue with the understanding that the use of the subjunctive communicates epistemic uncertainty, an utterance that contains an overt modal element should allow for higher acceptance of the subjunctive. None of the utterances in 26 entail that the proposition *she is angry* is true. Instead, the use of the modals *puede* ‘can’ and *tal vez* ‘perhaps’ lessens the commitment to the proposition. Giannakidou (2015:28) describes this varied strength of commitment to the truth of a proposition as follows:

(27) **Commitment strength (is ‘more committed’)**

- a. Non-modalized p (speaker knows p, added to the common ground) >>
- b. MUST p (speaker does not know p, but is biased toward p) >>
- c. POSSIBLY p (speaker does not know p, and there is no bias)

The assertive force in 27a demonstrates a stronger commitment to the proposition than the utterance containing the possibility modal in 27c. This can be applied to the use of the epistemic subjunctive. If we assume that the epistemic subjunctive is interpreted as possibly p ($\Diamond p$), the use

of the subjunctive shows less commitment to the proposition than the use of the indicative.³⁹ In sections 3 and 4, I will demonstrate that this mood selection can be observed in Yucatec Spanish as well.

Giannakidou (2009:12) discusses the effect of possibility modals on a proposition and demonstrates that the subjunctive can be used to lessen speaker commitment. She provides the following examples:

(28) Nicholas might/must bring dessert.

(29) Nicholas might/must have brought dessert.

In both 28 and 29, It is understood that *might p* does not entail *p* (*Nicholas brings dessert*), and as such, these utterances are nonveridical. When 29 is uttered, the speaker is introducing a set of worlds that includes the proposition *p* and $\neg p$. It is important to note that a proposition containing *must* is stronger than a similar proposition including the modal *may*. Using Greek as an example, she demonstrates the meaning contributed by the subjunctive particle *na*:

(30) *Isos/pithanon (na) efije o Nicholas.*

Maybe/possibly SUBJ left-3SG the Nicholas

‘Maybe Nicholas left’.

Unembedded utterance 30⁴⁰ is acceptable in both the indicative and subjunctive moods. The modal adverb *isos/pithanon* ‘maybe/possibly’ introduces a degree of uncertainty that allows the

³⁹ This is slightly different from the argument regarding Italian presented in Mari (2016:65), which suggests that if the subjunctive communicates a lack of commitment, the sentence would be epistemically incoherent or contrary to fact.

(i) *Credo proprio che Maria sia (SUBJ) incinta.*
‘I really believe that Mary is pregnant’.

I argue that in, Yucatec Spanish, the mood selection of the equivalent of (i) would be unacceptable given the strength of commitment in the matrix clause.

⁴⁰ In Greek, this utterance is unembedded. At present, I only claim the use of the epistemic subjunctive in Yucatec Spanish for complements embedded under doxastic predicates.

speaker to select the subjunctive, but it does not require it. She further demonstrates, in 31b, that the subjunctive *na* is incompatible with probability and necessity modals (Giannakidou 2012:22):

- (31) a. Malon/Sigoura tha kimate o Nicholas.
 Probably/certainly FUT sleep-3SG the Nicholas
 ‘Probably/certainly Nicholas is asleep’.
- b. * Malon/Sigoura na kimate o Nicholas.
 Probably/Certainly SUBJ sleep-3SG the Nicholas
 ‘Probably/certainly Nicholas is asleep’.

This demonstrates that the lack of epistemic uncertainty, as seen with the use of the necessity modal, renders the use of the subjunctive infelicitous. This is due to the fact that, in many languages, possibility modals reflect less certainty while the modal *probably* has a more assertive force.

According to Giannakidou and Mari (2015:7), modals are also objectively nonveridical because *must/may p* does not validate the inference to *p*. In this section, I will explore two modals in Yucatec Spanish: the modal *tal vez* ‘perhaps’ and the auxiliary verb *poder* ‘to be able to’. First, the modal adverb *tal vez* ‘perhaps’ is understood to have a possibility interpretation:

- (32) a. Tal vez te llamo después.
 ‘Perhaps I’ll call you after’.
- b. $\llbracket p \rrbracket = \{\Diamond p, \Diamond \neg p\}$

In this utterance, the proposition is modified by the possibility adverb *tal vez*, which contributes to the interpretation of the proposition *te llamo después* ‘I’ll call you after’; it is understood that the speaker may call or may not call. Second, the modal auxiliary *poder* + infinitive also

contributes a possibility meaning.⁴¹ Applying Giannakidou's (2015) notion of the epistemic subjunctive to Yucatec Spanish, the mood selection in each embedded clause will indicate the possible worlds in which the proposition occurs:

(33) **Interpretations of the indicative and epistemic subjunctive:**

- a. *INDICATIVE*: $\llbracket p \rrbracket = \{p, \neg p\}$
- b. *SUBJUNCTIVE*: $\llbracket p \rrbracket = \{\Diamond p, \Diamond \neg p\}$

If the indicative is preferred, the speaker has interpreted the proposition as veridical and, therefore, identifies the possible worlds as $\{p, \neg p\}$. However, if the subjunctive is selected, the speaker has identified $\{\Diamond p, \Diamond \neg p\}$ as a more appropriate set of possible worlds. This interpretation is based on context; von Stechow and Gillies (2007:59) state that modals are 'instantiations of a core meaning that is contextually filled in'. Therefore, in the following section, I demonstrate that context has a role in mood selection under both modal adverbs and modal auxiliaries in Yucatec Spanish.

3.1 MODAL ADVERBS. A modal adverb such as *tal vez* has a possibility interpretation, contributing a possibility meaning to a proposition, which is then to be interpreted as $\Diamond p$. In the current study, all items begin with the modal adverb *tal vez*. The constructed sentences tested during fieldwork followed a contextualized situation that was meant to convey a level of uncertainty, which was necessary since possibility modals are not accepted in cases of certainty. The objective of the use of the modal adverb *tal vez* is to find out if consultants reject the use of the indicative in favor of the subjunctive in utterances that contain a nonveridical element.

⁴¹ There are several interpretations for the modal auxiliary *poder* + infinitive, but this dissertation includes only cases in which the auxiliary *poder* + infinitive expresses epistemic meaning as described in Olbertz (1998).

The Yucatec Spanish data indicate that both the indicative and subjunctive occur in utterances containing a modal adverb. In some items, consultants preferred the indicative or subjunctive based on the context, which provided information regarding the certainty of the proposition presented. The following example shows affirmative utterances that lack the modal adverb (34a and 34b) as well as utterances containing a modal adverb (34c and 34d):

- (34) *Mi hermano me contó de su amigo. Nunca aprueba los exámenes, pero ayer, aprobó el examen con un 9.5 sin saber la información que estaba en el examen.*

‘My brother told me about his friend. He never passes exams, but yesterday he passed the exam with a 9.5 without knowing the information that was on the exam’.

- a. *Él cree que su amigo sea (SUBJ) tramposo.*

‘He thinks that his friend is a cheater’.

- b. *Él cree que su amigo es (IND) tramposo.*

‘He thinks that his friend is a cheater’.

- c. *Tal vez cree que su amigo haya (SUBJ) copiado las respuestas.*

‘Perhaps he thinks that his friend has copied the answers’.

- d. *Tal vez cree que su amigo ha (IND) copiado las respuestas.*

‘Perhaps he thinks that his friend has copied the answers’.

Among Yucatec Spanish consultants, all four of these utterances were accepted, but in each case, mood selection contributed to slightly different interpretations: As presented in the previous chapter, if the speaker believes that the proposition is true, the indicative (34b) was preferred. However, in a conjectural interpretation of the proposition *the friend has copied the answers*, the use of the subjunctive was preferred (34a). The conclusion in Chapter 4 was that this mood

selection (i.e. the subjunctive in 34a) was determined based on epistemic (un)certainty. The connection between mood and epistemic certainty is also observed in sentences with the modal adverb *tal vez* (34c and 34d). The adverb *tal vez* communicates a lack of certainty, suggesting that a possibility interpretation might be more appropriate. Therefore, a preference for the subjunctive in 34c reflects the epistemic uncertainty that comes from both the context and the modal adverb.

In Giannakidou's (2015) analysis of Greek, there are cases in which both the subjunctive and the indicative are acceptable in an utterance, but each mood contributes different meaning. It is possible that a sentence containing the modal *tal vez* and a doxastic predicate in the matrix clause can be evaluated as veridical and, therefore, license the indicative in its complement. While this is not as common as the licensing of the subjunctive, a veridical interpretation is possible. When a speaker evaluates a proposition as veridical, the overt modal, which does not entail event realization, introduces two actualizations: p and $\neg p$. On the other hand, if the modalized matrix clause licenses the epistemic subjunctive in the embedded clause, this uncertainty is reflected in the set of possible worlds, which contains $\Diamond p$ and $\Diamond \neg p$ worlds. With regard to 34, each mood and their respective set of possible interpretations are presented below:

(35) Possible propositions for *Tal vez cree que su amigo ha* (IND)/*haya* (SUBJ)

copiado las respuestas.

✗ *INDICATIVE*: $\llbracket \text{He is a cheater} \rrbracket = \{ \text{He is a cheater}, \text{He is not a cheater} \}$

✓ *SUBJUNCTIVE*: $\llbracket \text{He is a cheater} \rrbracket = \{ \Diamond \text{He is a cheater}, \Diamond \text{He is not a cheater} \}$

The preference for the subjunctive communicates the epistemic weakening effects of the subjunctive and, thus, communicates higher levels of possibility. Both the modal *tal vez* and the

context contributed nonveridical meaning to the proposition, resulting in the use of the subjunctive.

In the affirmative and negated doxastic sentences in Chapter 4, first-person propositions were more likely to contain an embedded VP in the indicative, as it is easier for an individual to evaluate the truth of a proposition in which she is the referent of either the matrix clause or its complement. However, when the matrix clause contains the modal adverb *tal vez*, this is not the case; regardless of person, the subjunctive is preferable under the adverb *tal vez*. The following context was presented originally as example 16 in Chapter 4, but the modalized matrix clause (36c and 36d) introduces new data:

- (36) *Me gusta escribir cuentos en mi tiempo libre, pero de hecho no son muy buenos y mi novio no quiere leerlos.*

‘I like to write stories in my free time, and actually, they are not very good, and my boyfriend doesn’t want to read them’.

- a. *Él no cree que yo escriba* (SUBJ) *bien.*

‘He does not think that I write well’.

- b. *Él no cree que yo escribo* (IND) *bien.*

‘He does not think that I write well’.

- c. *Tal vez cree que yo no tenga* (SUBJ) *mucho talento.*

‘Maybe he thinks that I do not have much talent’.

- d. *Tal vez cree que yo no tengo* (IND) *mucho talento.*

‘Maybe he thinks that I do not have much talent’.

As presented in the previous chapter, Yucatec Spanish consultants expressed a preference for the indicative in 36b over the subjunctive in 36a. If negation is lowered, the proposition *no escribo*

bien ‘I do not write well’ is true, which licenses the indicative. However, when presented with the utterances in 36c and 36d, consultants preferred the subjunctive in 36c over the indicative in 36d. The selection of the epistemic subjunctive weakens the commitment to the proposition *I do not have much talent*. Rather than communicating a false belief, the use of the adverbial communicates a conjectural interpretation of *p* similar to *He thinks that maybe I do not have much talent*. As this conjecture is not interpreted as true or false, the subjunctive communicates the uncertainty that the conjecture entails.

As the modal introduces both *p* and $\neg p$ worlds to the epistemic model, it is not surprising that the subjunctive was preferred in 34 and 36 above. However, the subjunctive was not preferred in all sentences containing *tal vez*. The next Yucatec Spanish example demonstrates a preference for an assertive interpretation over an epistemic weakening despite the presence of a modal adverb:

- (37) *En el gobierno actual, hay mucha corrupción, y no se considera a los políticos responsables.*

‘In today’s government, there is a lot of corruption, and politicians are not considered responsible’.

- a. *Tal vez la gente cree que los políticos son (IND) irresponsables.*

‘Perhaps people think that the politicians are irresponsible’.

- b. *Tal vez la gente cree que los políticos sean (SUBJ) irresponsables.*

‘Perhaps people think that the politicians are irresponsible’.

In this case, Yucatec Spanish consultants preferred the use of the indicative in 37a over the use of the subjunctive in 37b. The use of the indicative suggests that the set of possible propositions are *p* and $\neg p$ rather than $\diamond p$ and $\diamond \neg p$ as seen in 38 below:

(38) Set of propositions for *Tal vez la gente cree que los políticos son/sean irresponsables*.

✓*INDICATIVE*: $\llbracket \text{Politicians are irresponsible} \rrbracket = \{ \text{Politicians are irresponsible}, \text{Politicians are not irresponsible} \}$

✗*SUBJUNCTIVE*: $\llbracket \text{Politicians are irresponsible} \rrbracket = \{ \Diamond \text{Politicians are irresponsible}, \Diamond \text{Politicians are not irresponsible} \}$

The preference for the indicative conveys a veridical interpretation of the proposition. In discussions with participants, many were adamant that the proposition was true. In cases such as these, the individual epistemic modal contributed to the evaluation of the proposition; several consultants cited the corruption in local government as proof of *p*, information that was not provided by the context but rather by information in the common ground. Therefore, in 37, *tal vez* did not contribute to a possibility interpretation or an epistemic weakening of the proposition. One explanation for this is that *tal vez* only takes scope over the matrix clause, resulting in an interpretation *maybe people believe p (but I do not)*. In this case, the speaker has evaluated the proposition as veridical, and the possibility modal only modifies the doxastic matrix. This follows the mood selection in parenthetical interpretations presented in Chapter 4.

Both the use of a modal adverb and the use of the epistemic subjunctive yield a possibility interpretation of *p*. However, the presence of a modal adverb does not necessarily license the epistemic subjunctive. Instead, based on the set of propositions in the individual model, a (non)veridical interpretation licenses the mood of the VP in the embedded clause accordingly. This finding is similar to that of the affirmative/negated doxastic predicates in Chapter 4. Nevertheless, the subjunctive was preferred more frequently in sentences containing *tal vez*, suggesting that the scope of the modal adverb affected the interpretation of the

proposition. If *tal vez* only takes scope over the matrix doxastic predicate, it is possible to assert *p*. However, if *tal vez* takes scope over the entire utterance, the proposition is interpreted as $\Diamond p$ and $\Diamond \neg p$, and the subjunctive is selected.

3.2 MODAL VERBS. Modal auxiliary verbs behave in a slightly different way than the modal adverbs discussed in the previous section. In this section, I will demonstrate that the modal auxiliary *poder* + infinitive⁴² licenses the subjunctive in Yucatec Spanish. When a doxastic predicate is modified by a modal auxiliary such as *poder*, the doxastic predicate loses assertive force, instead giving the utterance a suggestive flavor. Consider the following utterance, available in many varieties of Spanish:

- (39) Alicia hears a rumor about her friend Diana. When Alicia asks another friend, David, if this rumor is true, he responds:

Puede que sea verdad.

‘It is possible that it is true’.

In 39 the modal *poder* communicates possibility, therefore licensing the subjunctive in the embedded clause. In this section, I present sentences in which *poder* modifies the doxastic predicate in the matrix clause. The first Yucatec Spanish example presents an utterance for which consultants expressed a preference for the subjunctive:

- (40) *En cuanto a varios de los temas políticos, es obvio que hay un consenso:*

‘As for several of the political themes, it is obvious that there is a consensus’

- a. *Puedo creer que el gobierno ya sabe (IND) lo correcto, pero no lo hace.*

⁴² There are several modal interpretations of *can*, such as the deontic or dynamic interpretations (see Palmer 1986:10), but as mentioned previously, the current dissertation focuses on the epistemic meaning of *poder* + infinitive.

‘I can believe that the government already knows the correct thing, but they do not do it’.

- b. *Puedo creer que el gobierno ya sepa (SUBJ) lo correcto, pero no lo hace.*

‘I can believe that the government already knows the correct thing, but they do not do it’.

Similar to cases presented in the previous subsection in which the modal adverb selected the subjunctive, the epistemic weakening indicated by the subjunctive conveys a possibility interpretation, by which alternative propositions are identified. The following are sets of possible propositions that are selected based on mood selection:

- (41) Set of propositions for *Puedo creer que el gobierno ya sabe/sepa lo correcto, pero no lo hace.*

✗ *INDICATIVE*: $\llbracket$ The government already knows the correct thing, but they do not do it. $\rrbracket = \{\text{The government already knows the correct thing, The government does not already know the correct thing}\}$

✓ *SUBJUNCTIVE*: $\llbracket$ The government already knows the correct thing, but they do not do it. $\rrbracket = \{\Diamond\text{The government already knows the correct thing, } \Diamond \text{ The government does not already know the correct thing}\}$

The majority of Yucatec Spanish consultants evaluated the use of the indicative as infelicitous. Rather than asserting the veridicality of the embedded proposition, the use of the epistemic subjunctive indicates that the nonhomogeneous set of possible worlds that make up the speaker’s epistemic model $M(i)$ includes $\Diamond p$ and $\Diamond \neg p$ worlds. Like 40 above, 42 below demonstrates the epistemic weakening of the subjunctive, which introduces $\Diamond p$ and $\Diamond \neg p$ worlds:

(42) *Mis amigas quieren salir este sábado, pero ya tengo planes con mi familia. Si le digo que no salgo con ellas...*

‘My friends want to go out this Saturday, but I already have plans with my family.

If I tell them that I’m not going out with them...’

a. *Mi amiga puede creer que yo no quiero (IND) pasar tiempo con ellas.*

‘My friend can believe that I do not want to spend time with them’.

b. *Mi amiga puede creer que yo no quiera (SUBJ) pasar tiempo con ellas.*

‘My friend can believe that I do not want to spend time with them’.

Consultants preferred the use of the subjunctive in 42b, and many rejected the use of the indicative in 42a. As in the previous example, this selection communicates that the set of propositions includes only possibility interpretations of *p*:

(43) Possible propositions for *Mi amiga puede creer que yo no quiero/quiera pasar tiempo con ellas.*

✗ *INDICATIVE*: $\llbracket \text{I do not want to spend time with them} \rrbracket = \{ \text{I do not want to spend time with them, I want to spend time with them} \}$

✓ *SUBJUNCTIVE*: $\llbracket \text{I do not want to spend time with them} \rrbracket = \{ \Diamond \text{ I do not want to spend time with them, } \Diamond \text{ I want to spend time with them} \}$

Similar to example 42, the context in 43 encourages a nonveridical interpretation, which licenses the epistemic subjunctive in the embedded clause and, therefore, a *possibly p* interpretation.

While the context presented in this example encouraged a nonveridical interpretation, it does not prevent a veridical one. A few consultants did judge the use of the indicative as felicitous in both 42 and 43; however, this is not problematic for the current theory. Similar to 37 above, it is possible that the modal auxiliary only takes scope over the doxastic predicate,

resulting in the interpretation $\Diamond$ *he believes p*, which could license the indicative if the speaker interprets *p* as veridical. However, based on speaker preferences and the analysis of their preferences, I propose that the assertion of the truth of *p* was rare when embedded under the modal auxiliary *poder*. In most cases, the modal takes scope of the entire utterance, resulting in a $\Diamond p$ interpretation.

4. INTERROGATIVES AND (NON)VERIDICAL INTERPRETATIONS. In addition to modals, a second nonveridical environment is the interrogative. As seen above, an interrogative does not entail the veracity of its proposition. Instead, the interpretation of a question corresponds to a set of propositions by which the question can be answered (c.f. Hamblin 1973). This section will discuss the relationship between interrogatives and mood selection in Yucatec Spanish, focusing only on yes/no constructions containing doxastic predicates. In the varieties of Spanish that Villalta (2008:205) studies, Spanish mood alternation embedded under *wh*- interrogatives is considered ungrammatical:

- (44) a. *¿Quien dijo que la comida estaba (IND) /*estuviera (SUBJ) lista?*
 ‘Who said that the food was ready?’
- b. *¿Cuando dijeron que la comida estaba (IND) /*estuviera (SUBJ) lista?*
 ‘When did they say that the food was ready?’

In 44a and 44b, the use of the subjunctive is unacceptable due to the *wh*- interrogative.⁴³

Regarding a yes/no interrogative containing a doxastic predicate in the matrix clause, an

⁴³ Villalta (2008:203) compares mood alternation in interrogatives with that of negation:

- (i) *No notó que la sopa tenía /tuviera sal.*
 PRO not noticed that the soup has:PAST.IND.3SG /has:PAST.SUBJ.3SG salt.
 ‘(S)he didn’t notice that the soup had salt’ (Sastre 1997).
- (ii) *Juan no vió que venían /vinieran los aviones.*
 Juan not saw that PRO come:PAST.IND.3PL /come:PAST.SUBJ.3PL the airplanes.
 ‘Juan didn’t see that the planes were arriving’ (Borrego et al. 1985).

interrogative licenses the use of only the indicative in the complement in many varieties of Spanish. For example:

- (45) a. *¿Piensas que es (IND) la respuesta correcta?*
 ‘Do you think that it is the right answer?’
 b. *¿Piensas que *sea (SUBJ) la respuesta correcta?*
 ‘Do you think that it is the right answer?’
- (46) a. *¿Crees que es (IND) la respuesta correcta?*
 ‘Do you think that it is the right answer?’
 b. *¿Crees que *sea (SUBJ) la respuesta correcta?*
 ‘Do you think that it is the right answer?’

In these interrogatives, only the indicative is considered grammatical in many other varieties of Spanish. In fact, very little research documents the varieties of Spanish in which mood alternation in an interrogative is felicitous. Rivero (1971) discusses the pragmatic use of mood selection based on the presupposition that the proposition is true (indicative) or on the lack of this presupposition (subjunctive). She compares the mood selection in interrogatives to that in negated epistemics (Rivero 1971:307):

- (47) a. *Te parece que venga (SUBJ)?*
 ‘Does it seem to you that he is coming?’
 b. *Te parece que viene (IND)?*
 ‘Does it seem to you that he is coming?’
- (48) a. *Cree ud. que sea (SUBJ) verdad?*

-
- (iii) *Juan no sabía que era /fuera fiesta.*
 Juan not knew that PRO be:PAST.IND.3SG /be:PAST.SUBJ.3SG holiday.
 ‘Juan didn’t know that it was a holiday’ (Borrego et al. 1985).

‘Do you believe it is true?’

- b. *Cree ud. que es (IND) verdad?*

‘Do you believe it is true?’

The indicative in 47b and 48b indicates speaker certainty, and Rivero states that the presupposition <<*it is true*>> remains constant within an interrogative. The use of the subjunctive in 47a and 48a shows that the speaker does not presuppose the truth of the embedded proposition; the speaker has a neutral attitude and only reports the belief (Rivero 1971:307).

As Rivero (1971) indicates, there are slightly different interpretations between the two moods in an interrogative: Rivero (1971) argues that the indicative presupposes the truth of the embedded proposition while the subjunctive indicates that the speaker does not assume that the proposition is true. In the following Yucatec Spanish interrogative, the subjunctive was licensed, and the use of the indicative was considered infelicitous:

- (49) *Necesito comprar fideos para la sopa pero no quiero caminar al supermercado así que voy a la tiendita en la esquina porque a veces se venden productos allá.*

‘I need to buy some noodles for a soup, but I don’t want to walk to the supermarket, so I go to the little store on the corner because sometimes they sell products there’.

- a. *¿Piensas que los vende (IND)?*

‘Do you think they sell them?’

- b. *¿Piensas que los venda (SUBJ)?*

‘Do you think they sell them?’

Yucatec Spanish consultants communicated a clear preference for the use of the subjunctive in 49b over the indicative in 49a. Both of the interrogatives in 49 are requesting information, and

the presupposition/reportative distinction that Rivero (1971) suggests does not seem to capture this alternation. It would seem that, like affirmative, negated, and modalized doxastic predicates, mood selection reflects epistemic (un)certainty. To demonstrate this idea, Giannakidou (2015:48) provides a German example from Zimmerman (2011:2020) that includes the ‘so-called’ modal particle *wohl*:

(50) *Hat Hans wohl Maria eingeladen?*

has Hans so-called Mary invited

‘What do you reckon: Has Hans invited Mary?’

According to Zimmerman (2011:2020), the question in 50 is not a direct question about the proposition, but the use of the ‘so-called’ particle *wohl* communicates a lack of full commitment. This would imply that a nonveridical interpretation licenses the use of the particle *wohl* in German, which according to Zimmerman, gives a *do you reckon?* interpretation that reflects doubt. The interrogative in 50 is an unembedded proposition. In Italian, doxastic interrogatives can also license either the indicative or subjunctive mood. In her work, Rocci (2007:132) first demonstrates that Italian doxastic matrix clauses may select either the indicative or the subjunctive mood in their complements:

(51) *Credo / penso che sia (SUBJ) andato a casa.*

‘I think he’s gone home’.

According to Rocci (2007:132), embedding a proposition under a doxastic predicate ‘modifies the strength’ of the assertion and is, in general, associated with a weakened proposition. This weakened embedded proposition, as Rocci notes, is not limited to assertions. Similar to an epistemic adverb like *might*, an interrogative contributes to a nonveridical interpretation of a proposition. Interrogatives are unable to assert the truth of a proposition, and this nonveridical

environment allows for varying mood selection in some languages. She presents the following examples of mood alternation in interrogatives in Italian (Rocci 2007:137):

(52) *Giovanni è andato* (IND) *a casa?*

‘Did John go home?’

(53) *Credi che Giovanni sia andato* (SUBJ) *a casa?*

‘Do you think John went home?’

Both interrogatives are requesting information, but the possible responses vary slightly in content. The first interrogative in 52 presents a direct interrogative that is a direct request of information and selects the indicative mood. On the other hand, according to Rocci, the second interrogative in 53 may be asking the hearer about her own beliefs (noting that this is especially the case when the speaker has evaluated the proposition as false) or may be indirectly asking about the truth of the embedded proposition. Her analysis proposes the following preconditions for the selection of the subjunctive (Rocci 2007:146):

(54) **Preconditions for *che* + subjunctive**

- a. $p \notin \text{CG}$; $\neg p \notin \text{CG}$, and CG can be updated by either p or $\neg p$
- b. There is no sign that either speaker or hearer knows whether p or $\neg p$
- c. There is some set of facts E in CG, so that E represents non-conclusive evidence in favor of p

As we see within these preconditions, not just any embedding interrogative can select the subjunctive. The proposition cannot be a part of either participant’s model or the common ground, thus reflecting high levels of uncertainty. While Rocci does not directly adopt veridicality as a framework for her study, the general idea is present: The speaker can convey

epistemic uncertainty in regards to a proposition through the use of the subjunctive, communicating a *possibly p* interpretation.

Moving beyond the analysis of propositions embedded under interrogatives, I will return to the idea of the sets of propositions presented in the analysis of modals above, which can be similarly applied to interrogatives, as they introduce sets of possible answers to a question. Heim (2000) proposes that an interrogative is an attempt by the speaker to identify the space of possible answers, noting that

- (55) When an interrogative clause ϕ is uttered in a world w , the utterer thereby requests to be told which of the propositions in $\llbracket \phi \rrbracket^w$ are true in w .

In the discussion of interrogatives, the focus will primarily be on the possible answers identified by the question.⁴⁴ As presented in examples 33 through 42, a doxastic utterance containing a nonveridical element introduces a *possibility* interpretation of the proposition:

⁴⁴ Heim (2000) demonstrates the difference between interrogative types and each type's effect on the set of possible answers through the following question types and possible answer sets:

- (i) Yes/no interrogatives:
Is John a student?
{that John is a student, that John is not a student}
- (ii) Either/or interrogatives:
Is John a student or a professor?
{that John is a student, that John is a professor}
- (iii) Open-ended interrogatives:
Which subway line goes to the airport?
{that the red line goes to the airport, that the blue line goes to the airport, that the green line goes to the airport, that the orange line goes to the airport}

As mentioned in the beginning of this section, the current dissertation only focuses on yes/no interrogatives as in (i). To date, there has been no literature on mood alternation in the other types of interrogatives.

- (56) Set of propositions for *Tal vez la gente cree que los políticos son/sean irresponsables*.

[[Politicians are irresponsible]] = { $\Diamond$ Politicians are irresponsible, $\Diamond$ Politicians are not irresponsible}

This sentence (repeated from example 37) presents a doxastic utterance modified by the modal adverb *tal vez*. The preference for the subjunctive in the embedded clause introduces a *possibility* interpretation of the proposition; instead of *politicians are irresponsible*, the speaker interprets the proposition to be *possibly politicians are irresponsible*.

In this section, I extend this analysis to interrogatives. Following Giannakidou (2015), an interrogative in Yucatec Spanish can contain an embedded clause in the subjunctive or indicative. A veridical interpretation selects from a set of possible worlds including p and $\neg p$, but a nonveridical interpretation selects from a set of possible worlds including $\Diamond p$ and $\Diamond \neg p$. Giannakidou (2015:14) presents the case of Greek interrogatives and explains their mood selection using the following examples:

- (57) *Pjos irthe sto party?*

Who came-3SG to the party

‘Who came to the party?’

- (58) *Pjos **na** irthe sto party?*

Who SUBJV came-3SG to the party

‘Who might have come to the party?’

When comparing the use of the indicative in 57 and the subjunctive in 58, Giannakidou argues that 58 has a modal interpretation as a result of the subjunctive marker *na* and selects the set of propositions that may answer the question:

(59) Without *na*:

[[Who came to the party?]] = {Bill came to the party, Marina came to the party, Ariadne came to the party, Nicholas came to the party...}

(60) With *na*:

[[Who might have come to the party?]] = {◇ Bill came to the party, ◇ Marina came to the party, ◇ Ariadne came to the party, ◇ Nicholas came to the party...}

In the indicative, the interrogative introduces a set of possible answers to the question *Who came to the party?* in 59, each presenting a veridical proposition (*x came to the party*). The correct answer can be any one or combination of these propositions. When the interrogative contains the subjunctive, as in 60, the answers give an epistemic possibility reading. Both Italian and Greek have the option to indicate possibility through the selection of the subjunctive within an interrogative. It is important to note that the subjunctive is not a requirement in either of the languages. Instead, the alternation is available to communicate a speaker's epistemic (un)certainity.

The sociolinguistic data presented in Chapter 3 suggest that Yucatec Spanish is similar to Italian and Greek in that it is possible for a doxastic predicate to embed either an indicative or subjunctive complement, and this mood is determined by the interpretation of the (non)veridicality of a proposition. Interrogatives containing the subjunctive or the indicative were both felicitous for Yucatec Spanish speakers:

(61) *Cuando le pregunta a la gente, no tiene mucha esperanza para el futuro del gobierno. Pregunta...*

‘When she asks people, they do not have much hope for the future of the government. She asks...’

- a. *¿Cree el presidente que está (IND) funcionando el gobierno?*
 ‘Does the president believe that the government is working?’
- b. *¿Cree el presidente que esté (SUBJ) funcionando el gobierno?*
 ‘Does the president believe that the government is working?’

In 61 the interpretation of the embedded proposition is what licenses each mood. If a speaker evaluates the proposition *está funcionando el gobierno* as true, the proposition is veridical, but epistemic uncertainty resulted in the $\Diamond p$ meaning, as seen in section 3 with modalized doxastic predicates. With regard to 61, the following sets of possible answers are available for interpretation:

(62) Set of propositions that can answer the question *¿Cree el presidente que está/esté funcionando el gobierno?*

(✓) Indicative *está*:

[[Does the president believe that the government is working?]] = {He believes that it is, He believes that it is not}

(✓) Subjunctive *esté*:

[[Does the president believe that the government is working?]] = { $\Diamond$ He believes that it is, $\Diamond$ He believes that it is not}

The interrogative that had an embedded proposition with a VP in the indicative was associated most with a general inquiry. The anticipated answers for such a question were p and $\neg p$. The interrogative that contained the subjunctive, on the other hand, anticipated the set of possible answers that include $\Diamond p$ or $\Diamond \neg p$.

Questions in Yucatec Spanish that license the subjunctive have a similar interpretation to that of the German example in 50: *Do you reckon that he believes that it is working?* Like

German *wohl*, the epistemic subjunctive in Yucatec Spanish communicates the speaker's epistemic uncertainty regarding the proposition. In the case of 59, both the indicative and subjunctive were accepted because the context and utterance could be used in a situation of general curiosity (licenses the indicative) as well as a situation of doubt/questioning of the government (licensing the subjunctive). The following Yucatec Spanish example demonstrates this contextual uncertainty:

(63) *Necesito comprar fideos para la sopa pero no quiero caminar al supermercado así que voy a la tiendita en la esquina porque a veces se venden productos allá.*

'I need to buy some noodles for a soup, but I don't want to walk to the supermarket, so I go to the little store on the corner because sometimes they sell products there'.

a. *¿Piensas que los vende* (IND)?

'Do you think they sell them?'

b. *¿Piensas que los venda* (SUBJ)?

'Do you think they sell them?'

Yucatec Spanish consultants had a preference for the use of the subjunctive in 63b. In selecting the subjunctive, the consultants identified the following set of possible answers that could be provided in response to the interrogative:

(64) Set of propositions that can answer the question *¿Piensas que los vende/venda?*

(✗) Indicative *vende*:

[[Do you think they sell them?] =

{They sell them, They do not sell them}

(✓) Subjunctive *venda*:

[[Do you think they sell them?]] =

{ $\Diamond$ They sell them, $\Diamond$ They do not sell them}

By selecting the subjunctive in the interrogative, consultants demonstrated a preference for $\Diamond p$ or $\Diamond \neg p$ answers. As in the previous example (61), this gives the question a dubitative meaning *do you reckon?* Like the epistemic subjunctive in affirmative and negated doxastic predicates, the use of the subjunctive lessens the commitment to the proposition *they sell noodles*.

In summary, mood selection in interrogatives is similar to that of modal auxiliaries and adverbs in that both are linguistic environments that lack veracity entailment. As such, the interpretation of their embedded propositions yields both p and $\neg p$ worlds, resulting in a nonveridical interpretation. Rather than an epistemic model that contains only p or $\neg p$ worlds, modalized doxastic predicates or doxastic predicates within an interrogative that licenses the indicative introduce $\Diamond p$ or $\Diamond \neg p$ worlds. As previously described in cases of Italian and Greek, there are cases in which the indicative is selected within an interrogative in Yucatec Spanish. Within an interrogative, the use of the indicative implies the epistemic certainty of p on the part of the speaker. On the other hand, the subjunctive implies that the set of possible answers is nonhomogeneous and communicates an epistemically uncertain interpretation akin to that of a possibility modal. A doxastic interrogative licenses the subjunctive with a *do you reckon?* meaning that communicates speaker doubt. As in other doxastic predicates, this is primarily motivated by contextual information provided within the example.

5. CONCLUSIONS. In Yucatec Spanish, the subjunctive has extended beyond the semantic domain of the subjunctive in other varieties of Spanish. Chapter 4 demonstrated that the subjunctive is available in both affirmative and negated clauses to communicate doubt or epistemic uncertainty on the part of the speaker. In this chapter, I presented two linguistic

structures, modals and interrogatives, that lack veracity entailment and can therefore be considered nonveridical. The objective of Chapter 5 was to identify to what extent the linguistic environment contributes to the selection of what Giannakidou (2015) calls the epistemic subjunctive. To provide conclusions regarding the findings in this chapter, I return to the research questions presented in section 1:

RQ1: What are the implications of the epistemic subjunctive with regard to truth conditions?

In section 2 of this chapter, I highlighted the notion that belief predicates can be used to express doubt. First, Mari (2016) argues that there are two interpretations of belief predicates: expressive-*credere*, which communicates doxastic belief, and inquisitive-*credere*, which communicates epistemic uncertainty. Building upon this, I argued that there is an element of gradability to doxastic predicates. This is made evident through examples of belief statements modified by the adverb *enormemente* (Villalta 2007). This demonstrates that a speaker can introduce a belief statement with *creo* ‘I believe’ while not believing the proposition completely. Therefore, the matrix clause *creo/no creo* is not the only indicator of belief/lack of belief; the subjunctive can also be used to contribute to this meaning. To describe this use of the subjunctive, I adopted Giannakidou’s (2015) notion of the epistemic subjunctive, which suggests that a proposition marked by the subjunctive offers an interpretation that is similar to a possibility modal. I suggested that this explains the alternation of mood witnessed in Chapters 4 and 5 of this dissertation.

RQ2: To what extent is the subjunctive preferred in doxastic predicates that are modified by a modal?

A modal element introduces two possibilities: p and $\neg p$. When the modalized doxastic predicate in the matrix clause licenses the subjunctive, the possible interpretations for the embedded predicate are $\diamond p$ and $\diamond \neg p$. Consultants usually expressed a preference for the subjunctive in all sentences containing modals, but there was some variation. I suggest that this variation is due to the scope of the modal element. Overall, this section supports the notion that linguistic nonveridicality contributed to the presence of the epistemic subjunctive. As with previous cases of the epistemic subjunctive in Italian and Greek, Yucatec Spanish cases that lack veracity entailment often licensed the subjunctive, but the indicative was available to communicate a veridical interpretation of p when necessary.

RQ3: To what extent is the subjunctive preferred in doxastic predicates that are in the form of an interrogative?

Previous accounts of Spanish, such as Rivero (1971) and Villalta (2007), suggest that the implication of the propositions embedded in an interrogative differ according to mood selection. According to these theories, a question in the subjunctive has a proposition that is presupposed. In Yucatec Spanish, an interrogative containing a doxastic predicate that licenses the subjunctive implies that the answer to the question encourages an interpretation akin to that of a possibility modal. In case of a direct question that is not looking for conjecture, the use of the subjunctive is unacceptable. As in the case of modals, the nonveridical linguistic element contributes to interpretation but does not require the use of the subjunctive.

In conclusion, this chapter has presented an account of mood selection in Yucatec Spanish that analyzes the influence of linguistic elements that encourage nonveridical interpretations of propositions and such elements' impact on mood selection. The following table summarizes the findings presented in this chapter:

TABLE 14. Summary of nonveridical environments and mood selection.

Preference for subjunctive	Preference for indicative	Both were accepted (based on context)
Modal Auxiliary <i>Puedo creer que el gobierno ya sabe/sepa lo correcto.</i> ‘I can believe that the government already knows the correct thing’.	None	Interrogatives <i>¿Piensas que los vende (IND)/venda (SUBJ)?</i> ‘Do you think that they sell them?’ Modal Adverb <i>Tal vez cree que su amigo ha (IND)/haya (SUBJ) copiado las respuestas.</i> ‘Maybe she believes that her friend has copied the answers’.

Based on the consultants’ judgments, I argue that the linguistic environment, such as the inclusion of a modal element or interrogative, contributes to an individual’s interpretation of the truth of a proposition; however, complements embedded under such constituents are not restricted only to nonveridical interpretations. Along with (non)veridicality, ultimately, consultants also relied on their epistemic model M(i) to select their preferred mood in Yucatec Spanish. In the following chapter, I will formalize the findings from both Chapters 4 and 5 in order to conclude the semantic analysis of mood selection in doxastic predicates in Yucatec Spanish.

CHAPTER 6

FORMAL ANALYSIS OF MOOD AND DOXASTIC PREDICATES

1. INTRODUCTION. Yucatec Spanish is a contact variety that presents unanticipated mood selection patterns in sentences with a matrix clause containing a doxastic predicate. In the last two chapters, I have argued that in this type of sentences mood selection is motivated by speaker interpretation of the embedded proposition. In Chapter 4, I presented several patterns of affirmative and negated doxastic predicates. A summary of these findings can be seen in table 15 below:

TABLE 15: Summary of person as an indicator of mood selection

Preference for subjunctive	Preference for indicative	Both were accepted (based on context)
First person negated assertions: <i>No creo que ella regrese.</i> ‘I do not think she is coming back’	Parenthetical interpretations with a proposition in the first person: <i>Ella (no) cree que tengo el dinero.</i> ‘She (doesn’t) believe that I have the money’	Parenthetical interpretations with a proposition in the third person <i>Ella (no) cree que su amiga tiene/tenga el dinero.</i> ‘She (doesn’t) believe that her friend has the money’ First person affirmative assertions: <i>Creo que ella regrese/regresa.</i> ‘I think she is coming back’ Third person assertions: <i>Su madre (no) cree que ella regrese/regresa.</i> ‘Her mom does not think she is coming back’

The analysis in Chapter 4 highlighted a connection between grammatical person of the NP subject of matrix and embedded clauses and interpretation of truth value. Third person doxastic predicates license either mood based on context-driven interpretation, regardless of whether the matrix clause is affirmative or negated; negation had an effect on mood selection in parentheticals and first person predicates. Negated parenthetical interpretations allowed for either subjunctive or indicative based on context, but the affirmative parentheticals were only assertive, selecting only the indicative. First person assertive doxastic predicates were similar to third person assertive predicates; the mood selection was contextually motivated and was possible that either indicative or subjunctive could be licensed. The negated first person doxastic predicates, as they express doubt, most frequently selected the subjunctive. Overall, patterns in person and mood selection reflected speaker evaluation of the embedded proposition.

In Chapter 5, I presented Yucatec Spanish data for three structures that lack veracity entailment: doxastic matrices with modal adverbs, with modal auxiliaries, and interrogatives. There were several patterns that emerged regarding mood selection in these structures, as seen in table 16 below:

TABLE 16: Mood selection in nonveridical doxastic structures

Preference for subjunctive	Preference for indicative	Both were accepted (based on context)
Modal Auxiliary <i>Puedo creer que el gobierno ya sabe/sepa lo correcto.</i> ‘I can believe that the government already knows the correct thing’.	<i>none</i>	Interrogatives <i>¿Piensas que los vende (IND)/venda (SUBJ)?</i> ‘Do you think that they sell them?’ Modal Adverb <i>Tal vez cree que su amigo ha (IND)/haya (SUBJ) copiado las respuestas.</i> ‘Maybe she believe that her friend has copied the answers’.

None of the structures that lacked veracity entailment licensed the indicative. When a doxastic matrix was headed by a modal auxiliary, consultants expressed a preference for the subjunctive. For the other two nonveridical environments (i.e., interrogatives and modal adverbs), speaker interpretation licensed either indicative or subjunctive based on the individual's epistemic model. The patterns regarding person identified in Chapter 4 (in table 15 above) were not relevant in the analysis of structures that lack veracity entailment. Instead, the subjunctive was preferred for all person-structures in Yucatec Spanish.

To summarize the findings of the two chapters, the following table demonstrates the relationship between epistemic certainty, interpretation of a proposition, and mood selection:

TABLE 17: Epistemic certainty and resulting mood selection

Certainty of p	Interpretation of p	Resulting mood selection
Epistemic certainty (Assertion)	Veridical Anti-veridical	Indicative
Epistemic uncertainty (the epistemic subjunctive)	Nonveridical	Subjunctive

If a speaker interprets a proposition as true, she is epistemically certain of p . In such cases, the epistemic model contains only p worlds and therefore selects the indicative. On the other hand, epistemic uncertainty resulting from an epistemic model with both p and $\neg p$ worlds licenses the subjunctive. In this chapter, I will present a generalization for mood selection in Yucatec Spanish in section 2, a brief introduction of the tools used for formalizing mood in section 3, and a formalization for veridical and nonveridical interpretations in section 4.

2. MOOD SELECTION IN DOXASTIC PREDICATES IN YUCATEC SPANISH. In many varieties of Spanish, negation in a doxastic predicate licenses the subjunctive, making doxastic predicates a case of polarity subjunctive. Unlike these varieties, mood selection in Yucatec Spanish is motivated by interpretation of the embedded proposition. Instead of negation, epistemic uncertainty is what licenses the subjunctive while epistemic certainty licenses the indicative. I use Giannakidou's (1998) notions of veridicality, nonveridicality, and antiveridicality as originally presented in Chapter 2 section 4.1 to explain the patterns found in Yucatec Spanish:

- (1) Giannakidou's (Non)Veridicality
 - i. A proposition operator F is veridical iff Fp entails or presupposes that p is true in some individual model $M_E(x)$: $Fp \rightarrow p$; otherwise F is nonveridical
 - ii. A nonveridical operator F is antiveridical iff Fp entails that *not* p in some individual epistemic model: $Fp \rightarrow \neg p$ in some $M_E(x)$

Utilizing these notions of (non)veridicality, I provide an updated generalization based on the preliminary generalization presented in Chapter 4:

(2) Updated generalization of mood selection in Yucatec Spanish belief predicates:

A proposition p that is embedded under a belief predicate will contain a VP in the subjunctive iff the speaker interpretation is nonveridical. If the speaker is able to evaluate p as veridical (1) or antiveridical (0), the indicative mood will be licensed.

This generalization of mood selection in Yucatec Spanish captures the mood alternation that is licensed by interpretation of veridicality rather than by any overt negation operator. If a speaker

interprets a proposition as true or false, the indicative is selected. If a speaker is uncertain of the truth of the proposition, she can communicate this doubt through the use of the epistemic subjunctive. The generalization presented in this section captures the empirical behavior of the expressions under investigation. While negation contributes to an interpretation of doubt, giving the doxastic a dubitative flavor, it does not obligatorily license the subjunctive in Yucatec Spanish as it does in other varieties of Spanish.

3. FORMALIZATIONS. I adopt a Montagovian (1974) truth conditional composition framework in this formalization. A compositional semantics for a natural language translates natural language expressions into (unambiguous) logical language expressions. Compositional semantics follows the Principle of Compositions, which states that meaning of a complex expression is determined by the meaning of individual constituents that comprise the expression. Therefore, we begin by understanding smaller expressions of a sentence and the way in which they are combined. The following are semantic types:

(3) Semantic Types

- a. Basic types: e (entities), t (truth values)
- b. Functional types: if a and b are types, then $\langle a, b \rangle$

(or equivalently $a \rightarrow b$) is a type.

Individual constants ($a, b, c, x, z, y \dots$) name the individuals in the universe of discourse U in a model M . These individual constants are type e . The functional type $\langle a, b \rangle$ is the type of functions from a -type things to b -type things. One-place predicate variables ($R, S, Q \dots$) are type $\langle e, t \rangle$, a function from entities to truth values and two-place predicate variables ($M, N, K \dots$) are type $\langle e, \langle e, t \rangle \rangle$. Variable assignment function g associates each variable x, y, z with an entity in U . All propositions are evaluated with respect to some world: the actual world (w_0) or other

possible worlds ($w, w', w'' \dots$). Sentential meaning can be derived compositionally through functional application. The following are two composition principles (von Stechow 2008):

(4) **Composition principles**

(a) FUNCTIONAL APPLICATION (FA):

If α is a branching node, $\{\beta, \gamma\}$ is the set of α 's daughters, and $\llbracket \beta \rrbracket$ is a function whose domain contains $\llbracket \gamma \rrbracket$, then $\llbracket \alpha \rrbracket = \llbracket \beta \rrbracket (\llbracket \gamma \rrbracket)$.

(b) INTENSIONAL FUNCTIONAL APPLICATION (IFA): If α is a branching node and $\{\beta, \gamma\}$ the set of its daughters, then for any possible world w and any assignment g , if $\llbracket \beta \rrbracket^{w,a}$ is a function whose domain contains $\lambda w' . \llbracket \gamma \rrbracket^{w',a}$, then $\llbracket \alpha \rrbracket^{w,a} = \llbracket \beta \rrbracket^{w,a} (\lambda w' . \llbracket \gamma \rrbracket^{w',a})$.

Functional Application says that a sequence of two categories having names of the form A and A/B arranged in that order, can be combined, the result being a category with the name of form A . Here the category A/B is called the functor category, because it can be thought of as a function which takes category B as its argument (B is called the argument category) and returns category A as value: thus, in this rule A is called the result category. For example, *Juan cocina* ‘Juan cooks’ is derived by applying the denotation of *cocina* (the function from individual to truth value) to the denotation of *Juan*, or the individual Juan. Intensional functional application assigns this to a set of worlds other than the actual world w_0 . After functional application, beta reduction takes place. Also known as Lambda Conversion, beta reduction (or B.R.) states that $\lambda u[\alpha](\beta) \equiv \alpha''$, where α'' is like α but with every free occurrence of u replaced by β . If an n -place predicate applies to n arguments, the proposition is true iff the denotation of the argument is a member of the denotation of the predicate. Thus, in a model, a proposition is true iff the entity the individual constant a refers to in the universe of discourse U_I in the Model M_I is a member of

the set referred to by the constant *M*.

4. INTERPRETING PROPOSITIONS. The epistemic weakening of commitment to the truth of a proposition communicated through the use of the subjunctive in Yucatec Spanish was available in all of the following:

(5) Structures

- a. Sentences containing affirmative doxastic predicates in the matrix clause
- b. Sentences containing negated doxastic predicates in the matrix clause
- c. Interrogatives that containing a doxastic matrix predicate
- d. Sentences containing a modal adverb *tal vez* and a doxastic predicate in the matrix clause
- e. Sentences containing a modal auxiliary verb *poder* and a doxastic predicate in the matrix clause

Epistemic weakening through the use of the epistemic subjunctive was available in all structures, as was the use of the indicative to assert a proposition. Following Giannakidou (2002, 2009, 2015) I argue that each proposition is anchored to an epistemic model to be evaluated.

Giannakidou's (2009:1889) epistemic model is defined as follows:

- (6) **Epistemic state of an individual anchor *i*:** An epistemic state $M(i)$ is a set of worlds associated with an individual *i* representing worlds compatible with what *i* knows or believes.

The epistemic model, as presented in Chapter 4, is a set of all propositions that an individual knows or believes to be true. As doxastic predicates do not entail event realization, a speaker can report another individual's beliefs that she knows to be false. For this reason, the epistemic

model of evaluation presented in this chapter has two models of evaluation: (1) the model of the subject of the matrix that introduces the belief and (2) the model of the speaker which is reflected in the mood selected in the embedded clause. I adopt the following lexical entry for the doxastic predicate *creer* ‘to believe’.

$$(7) \quad \llbracket \text{CREER} \rrbracket^{c,w,g} = \lambda p \lambda x [\text{believe}'(x,w) \wedge \forall w' (w' \in M(x) \rightarrow p(w')) \wedge \\ \text{REFLECT}(M(i) \wedge (p(w')))]$$

The meaning of *creer* is the set of propositions p that the subject (x) believes to be true at w , and that for all worlds w' , if they are compatible with the epistemic model of the subject, then the set of propositions p are true in w' . Additionally, if the speaker has evaluated the proposition as veridical or anti-veridical, then all of the worlds in $M(i)$ are p or $\neg p$ worlds. The REFLECT operator has the following mood selection potential on a proposition p : An assertion of p commits its speaker x to the content of p ; it reflects the epistemic model of an individual other than the referent denoted by the VP of the matrix clause. This reflection of the speaker model in turn licenses mood. If the speaker evaluates a proposition p as veridical or anti-veridical, the indicative will be selected in the embedded clause. If she evaluates the proposition as nonveridical, the subjunctive will be selected.

$$(8) \quad \text{REFLECT}(i, p, w), \text{ where } \forall w: w \in M(i)$$

This operator allows *creer* to introduce the two evaluation models required for interpretation of the belief statement. In the following section, I present the formal derivations for the sentences in (8a) and (8b) below:

- (8) *Mi hermano me contó de su amigo. Nunca aprueba los exámenes, pero ayer, aprobó el examen con un 9.5 sin saber la información que estaba en el examen.*

‘My brother told me about his friend. He never passes his exams, but yesterday, he passed his exam with a 9.5 without knowing the information that was on the exam.’

- a. *Juan cree que su amigo es (IND) tramposo.*

‘Juan thinks that his friend is a cheater.’

- a. *Juan cree que su amigo sea (SUBJ) tramposo.*

‘Juan thinks that his friend is a cheater.’

As both the indicative (in a) and the subjunctive (in b) were felicitous, I present the formalizations for each in the following sections.

4.1 VERIDICAL INTERPRETATIONS. A speaker interprets a proposition as veridical if and only if the epistemic model (M(i)) contains only worlds in which the proposition is true. I define the indicative as the following:

$$(9) \quad \llbracket \text{INDICATIVE} \rrbracket^{c,w,g}: \lambda p \lambda w' [p(w')]$$

The meaning of the indicative states that, given a context c , a world w , and the assignment function g , lambdas introduce sets: λp is a set of propositions p and $\lambda w'$ is a set of worlds. In the formula, the set of p are true in are true in the set of worlds w' . The definition of the indicative is a function from propositions to a function from worlds to truth values $\langle t', \langle w, t \rangle \rangle$. Indicative takes something of type t' and returns something of type $\langle w, t \rangle$; and then $\langle w, t \rangle$ is the semantic

type of what *creer* then takes as its argument. If correct, these truth conditions support the previous prediction that the indicative is selected when the epistemic model of the speaker is homogeneously comprised of only worlds in which *p* is true. To test this, I will first translate the following sentence *Juan cree que su amigo es (IND) tramposo* into logic.

(10) ser-tramposo ‘to be a cheater’	= be.cheater' $\langle e, t \rangle$	Lexical entry
(11) su-amigo ‘his friend’	= a_e	Lexical entry
(12) Juan	= j_e	Lexical entry
(13) su-amigo ser-tramposo	=be.cheater'(a) _t	(10, 11 FA)
(14) INDIC _{VERID: M(i)}	= $\lambda p \lambda w[p(w)]$	Lexical entry
(15) su-amigo es-tramposo	= $\lambda p \lambda w[p(w)]$ (be.cheater'(a)) $\rightsquigarrow \lambda w[\text{be.cheater}'(a)(w)]$	(13, 14 FA)
(16) que ‘that’	= $\lambda p[p]$	Lexical Entry
(17) que su amigo es tramposo	= $\lambda p[p]$ ($\lambda w[\text{be.cheater}'(a)(w)]$) $\rightsquigarrow \lambda w[\text{be.cheater}'(a)(w)]$	(15, 16 FA)
(18) creer _{M(x)} ‘believe’	= $\lambda p \lambda x[\text{believe}'(x, w) \wedge \forall w' (w' \in M(x) \rightarrow$ $p(w')) \wedge \text{REFLECT}(M(i) \wedge (p(w')))]$	Lexical Entry
(19) creer _{M(x)} que su amigo es tramposo	= $\lambda p \lambda x[\text{believe}'(x, w) \wedge \forall w' (w' \in M(x) \rightarrow$ $p(w')) \wedge \text{REFLECT}(M(i) \wedge (p(w')))]$ $(\lambda w[\text{be.cheater}'(a)(w)])$ $\rightsquigarrow \lambda x[\text{believe}'(x, w) \wedge \forall w' (w' \in M(x) \rightarrow$ $\lambda w[\text{be.cheater}'(a)(w)](w')) \wedge$ $\text{REFLECT}(M(i) \wedge (\lambda w[\text{be.cheater}'(a)(w)](w')))]$	(17, 18 FA)

$$\begin{aligned}
& \rightsquigarrow \lambda x[\text{believe}'(x,w) \wedge \forall w'(w' \in M(x) \rightarrow \\
& \text{be.cheater}'(a)(w')) \wedge \\
& \text{REFLECT}(M(i) \wedge (\text{be.cheater}'(a)(w')))] \\
(20) \text{ Juan cree}_{M(x)} \text{ que} & = \lambda x[\text{believe}'(x,w) \wedge \forall w' \\
\text{su amigo es tramposo} & [(\ w' \in M(x) \wedge \text{be.cheater}'(a)(w')) \wedge \\
& \text{REFLECT}(M(i) \wedge (\text{be.cheater}'(a)(w')))](j) \quad (12, 20 \text{ FA}) \\
& \rightsquigarrow \text{believe}'(j,w) \wedge \forall w'(\ w' \in M(j) \rightarrow \\
& \text{be.cheater}'(a)(w')) \wedge \text{REFLECT}(M(i) \wedge \\
& \text{be.cheater}'(a)(w')))]
\end{aligned}$$

First, the Model M includes the individuals Juan and su amigo, which are translated into the individual constants j and a respectively, and the predicate translated into $\text{be.cheater}'$. These lexical entries are introduced in 10, 11, and 12. For simplicity, I am translating *su amigo* as a proper name. Next, a function takes an input argument from some specified domain and yields an output value. Applying a function f to an argument x yields the value for that argument. The mode of combining a function and its argument is called Function Application. For instance, an intransitive verb combines with the subject by function application and returns a truth value: $[[\text{be.cheater}']][[\text{Juan}]] = 1$ or 0 . Line 13 is a result of functional application; the functor $\text{be.cheater}'$ takes the argument a . For simplicity, t' is the semantic type of a sentence without inflection. Next, the lexical entry for the INDICATIVE is introduced in line 14. Again, functional application yields *su amigo es tramposo* when the indicative takes the proposition as its argument, which is seen in 15. After the beta reduction (introduced by $\rightsquigarrow$), 15 presents the entire proposition, in which the VP is in the indicative mood. To embed this proposition under the doxastic matrix clause, the complementizer *que* is introduced as a lexical entry in 16 and

functional application yields 17. Now that the proposition has been embedded under the complementizer *que*, I introduce the lexical entry for *creer* as presented above in 18.

In this definition, there is an individual who has a set of beliefs, and all worlds that are in the subject's model are worlds in which the proposition is true. Additionally, the REFLECT operator represents the model of the speaker ($M(i)$) in which all worlds are also p worlds. Functional application, in which *creer* takes the embedded proposition as an argument, yields 19. In this case, there are two beta reductions: first, the λp is reduced, then the λw is reduced. The last step of this proof is the functional application that assigns j to x resulting in the final sentence. This final step demonstrates the logical language for the sentence *Juan cree que su amigo es tramposo*, stating that an individual j has beliefs in the actual world, and for all worlds that are members of the model of j , then a is a cheater in w '. The REFLECT operator indicates that, in the model of the speaker, all worlds are such that a is a cheater. This demonstrates that the predictions made in Chapters 4 and 5 regarding veridical analyses are accurate. In the following section, I will test the predictions regarding nonveridical analyses.

4.2 NONVERIDICAL INTERPRETATIONS. When *creer* embeds a proposition that has a nonveridical interpretation, the speaker communicates her epistemic uncertainty. The predictions made in Chapters 4 and 5 of this dissertation posit that if a speaker selects the subjunctive, the speaker has evaluated the proposition as nonveridical. This indicates that, within the model of the speaker, there are worlds in which the proposition is true and worlds in which it is false. In (9), I introduce the translation and meaning of the subjunctive in Yucatec Spanish:

$$(21) \quad \llbracket \text{SUBJUNCTIVE} \rrbracket^{c,w,g} = \lambda p \lambda w [(\exists w' [p(w') \wedge \exists w'' (\neg p(w''))]]$$

The subjunctive means that, given context c , world w , and assignment function g , there is a set of propositions and a set of worlds w , compatible with the actual world, such that there exists a

world in which p is true and there exists a world in which p is false. If the predictions made in Chapters 4 and 5 are correct, the subjunctive is selected when the speaker evaluates a given proposition as nonveridical, representing a non-homogeneous belief space. I will provide the translation derivation for the sentence *Juan cree que su amigo sea (SUBJ) tramposo* .

(22) ser-tramposo ‘to be a cheater’	= be.cheater' $\langle e, t \rangle$	Lexical entry
(23) su-amigo ‘his friend’	= a_e	Lexical entry
(24) Juan	= j_e	Lexical entry
(25) su-amigo ser-tramposo	= be.cheater' (a) _t	(22,23 FA)
(26) SUBJ _{M(i)}	= $\lambda p_t [\exists w' (p(w')) \wedge \exists w'' (\neg p(w''))]$	Lexical entry
(27) su-amigo sea-tramposo	= $\lambda p_t [\exists w' (p(w')) \wedge \exists w'' (\neg p(w''))]$ $(\lambda w [\text{be.cheater}' (a) (w)])$ $\rightsquigarrow [\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) (w')) \wedge$ $\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w''))]$ $\rightsquigarrow [\exists w' (([\text{be.cheater}' (a) (w)]) \wedge$ $\exists w'' (\neg ([\text{be.cheater}' (a) (w)]) (w''))]$	(25, 26 FA) (B.R.) (B.R.)
(28) que ‘that’	$\lambda p[p]$	Lexical entry
(29) que su amigo sea tramposo	= $\lambda p[p] ([\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) (w'))$ $\wedge \exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w''))])$ $\rightsquigarrow [\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) (w')) \wedge$ $\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w''))]$	(27, 28 FA) (B.R.)
(30) creer _{M(x)} ‘belief’	= $\lambda p \lambda x [\text{believe}' (x, w) \wedge$ $\forall w' (w' \in M(x) \wedge p(w')) \wedge$ $\text{REFLECT} (M(i) \wedge (p(w')))]$	Lexical entry

(31) creer_{M(x)} que su amigo
sea tramposo

$$\begin{aligned}
&= \lambda p \lambda x [\text{believe}' (x, w) \wedge \\
&\forall w' (w' \in M(x) \wedge p(w')) \wedge \\
&\text{REFLECT} (M(i) \wedge (p(w')))] \\
&([\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) (w')) (w')) \wedge \\
&\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w'')))] \quad (29, 30 \text{ FA}) \\
&\rightsquigarrow \lambda x [\text{believe}' (x, w) \wedge \\
&\forall w' (w' \in M(x) \wedge ([\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) \\
&(w')) \wedge \exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w'')))] (w')) \\
&\wedge \text{REFLECT} (M(i) \wedge \\
&(([\exists w' ((\lambda w [\text{be.cheater}' (a) (w)]) (w')) (w')) \wedge \\
&(\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) \\
&(w''))(w')))]) \quad (\text{B.R.}) \\
&\rightsquigarrow \lambda x [\text{believe}' (x, w) \wedge \\
&\forall w' (w' \in M(x) \rightarrow ([\exists w' ([\text{be.cheater}' (a) (w')]) \wedge \\
&\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w'')))] \wedge \\
&\text{REFLECT} (M(i) \wedge ([\exists w' ([\text{be.cheater}' (a) (w')]) \wedge \\
&\exists w'' (\neg ([\text{be.cheater}' (a) (w'')])]))] \quad (\text{B.R.})
\end{aligned}$$

(32) Juan cree_{M(x)} que
su amigo sea tramposo

$$\begin{aligned}
&= \lambda x [\text{believe}' (x, w) \wedge \\
&\forall w' (w' \in M(x) \rightarrow ([\exists w' ([\text{be.cheater}' (a) (w')]) \wedge \\
&\exists w'' (\neg (\lambda w [\text{be.cheater}' (a) (w)]) (w'')))] \wedge \\
&\text{REFLECT} (M(i) \wedge ([\exists w' ([\text{be.cheater}' (a) (w')]) \wedge \\
&\exists w'' (\neg ([\text{be.cheater}' (a) (w'')]) (j) \quad (24, 33 \text{ FA}) \\
&\rightsquigarrow [\text{believe}' (j, w) \wedge
\end{aligned}$$

$$\begin{aligned}
& \forall w' (w' \in M(j) \rightarrow ([\exists w' ([be.cheater' (a) (w')])]) \wedge \\
& \exists w'' (\neg(\lambda w [be.cheater' (a) (w)]) (w'')) \wedge \\
& REFLECT (M(i) \wedge ([\exists w' ([be.cheater' (a) (w')])]) \wedge \\
& \exists w'' (\neg([be.cheater' (a) (w'')])))))) \quad (B.R.)
\end{aligned}$$

When the indicative was used above, both the subject and speaker evaluated the proposition as true. The initial steps in this proof are identical to those of the indicative proof presented above. The subjunctive is introduced in 26, presenting a set of possible worlds including those in which the proposition *su amigo sea tramposos* is true and those in which the proposition is false. Functional application, in which *creer* takes the embedded proposition as an argument, yields 31. In 31, both the epistemic model of the subject ($M(x)$) and the model of the speaker ($M(i)$) contain both p and $\neg p$ worlds. Crucially, this model is able to show the epistemic model of two individuals through the use of the REFLECT operator. While *creer* introduces the evaluation by the argument of the NP (in this case Juan), it is the REFLECT operator that communicates the evaluation of the speaker. In the final step, j is taken as the argument, yielding the final sentence *Juan cree que su amigo sea tramposos* in 32.

The proofs presented above predict that the indicative must be used if the speaker has an epistemic model in which there is a set of worlds such that all worlds in the set are worlds in which the proposition is true. Additionally, the second proof predicts that the subjunctive must be used if the speaker has an epistemic model in which there are is a set of worlds in which the proposition is true and a set of worlds in which the proposition is false.

5. CONCLUSIONS. The goal of this chapter was to test the predictions made in Chapters 4 and 5 regarding mood in Yucatec Spanish. First, I argue that the indicative or the subjunctive mood in a sentence containing a matrix doxastic predicate is selected in Yucatec Spanish based

on a speaker's evaluation of an embedded proposition. This analysis adopts a new lexical entry for *creer* in which both the model of the speaker and the model of the subject of the matrix clause are represented. In cases in which the speaker evaluates the embedded proposition as veridical, both the model of the speaker and the model of the subject are homogeneously comprised of worlds in which p is true. In section 4.1, the empirical generalizations from Chapters 4 and 5 are supported by this analysis. On the other hand, when a speaker evaluates a proposition as nonveridical, the model of the speaker and the model of the subject are not equivalent.

CHAPTER 7

CONCLUSIONS

In this dissertation, I have presented patterns of mood selection in Yucatec Spanish that are distinct from the patterns found in other varieties of Spanish, and have explored what motivates them. In Yucatec Spanish, the subjunctive is licensed in affirmative and interrogative doxastic predicates, environments known to require the use of the indicative in other varieties. In this chapter, I review the facets of this dissertation, overall conclusions, and implications for further research.

In Chapter 3, I provided a descriptive overview of mood selection in this underdocumented variety as well as identified a difference the ways that bilingual and monolingual speakers differ in their choice of mood under emotive predicates. The results from the forced-choice task indicate that volitional predicates pattern with other varieties of Spanish, and emotive predicates pattern with other Mexican dialects (e.g. Lope Blanch 1987, Lunn 1995). Among Yucatec Spanish informants, emotive predicates present a higher use of the indicative than in other varieties of Spanish, and there was a significant difference between bilingual and monolingual speakers' preferences. As mood selection in emotive predicates is pragmatically motivated, this finding is consistent with previous research arguing that Yucatec Spanish bilingual and monolingual speakers produce pragmatically motivated mood selection differently (Bove 2018). The mood selection patterns observed in epistemic predicates demonstrate that Yucatec Spanish speakers select the subjunctive not only under negation but also in affirmative doxastic predicates—as well as in interrogatives and in utterances with past temporal reference.

A few areas briefly discussed in Chapter 3 merit further investigation. First, as mentioned in Chapter 3, there appears to be some use of the subjunctive as a politeness marker in Yucatec Spanish (similar to Lunn’s 1995 of other varieties of Spanish), that would benefit from additional investigation. Second, the role of structure was not statistically analyzed. The significant differences found between structures in epistemic predicates were discussed in detail, but the difference (albeit much smaller) in structure types was not explored in depth. Additional research on interrogative mood selection in other areas of documented alternation, such as the alternation with emotive predicates, would strengthen the arguments made in this dissertation regarding the nonveridicality of interrogatives.

These initial findings presented in Chapter 3 demonstrate that the subjunctive is accepted in structures other than those containing negation. For many varieties of Spanish, doxastic predicates are considered a case of the polarity subjunctive. Stowell (1993) argues that subjunctive is triggered by the overt negation in the matrix clause. However, the results from Chapter 3 suggest that this may not be the case in Yucatec Spanish. Thus, in Chapter 4 I explored the status of the polarity subjunctive in doxastic predicates and accounted for the variability found in speaker judgments. Based on this finding, I argue that, given two features of doxastic predicates, polarity subjunctive is not an appropriate measure of mood selection in Yucatec Spanish. First, doxastic predicates lack veracity entailments, which are what allow a belief predicate to embed a proposition that is false, and a negated belief predicate to embed a proposition that is known to be true (Anand & Hacquard 2014, Simons 2007). For example:

- (1) a. *Cree que los unicornios son reales. (pero no lo son).*
‘She believes that tigers are real (but they are)’.
- b. *No cree que los unicornios son reales. (pero lo son).*

‘She does not believe that tigers are real (but they are)’.

The speaker believes a proposition in 1a that is known to be false and conversely does not believe a proposition that is known to be true. Unlike other epistemic predicates, doxastics are able to embed propositions that are known to be false. Since this is the case, it is possible that a speaker communicate her own belief or report the belief of others. Second, negation lowering is allowed in doxastic predicates and gives two possible interpretations (see Klooster 1994, 2003):

(2) No cree que existan los unicornios.

‘She does not believe that unicorns exist’.

- a. It is not the case that she believes that unicorns exist.
- b. She believes that unicorns do not exist.

Instead of the interpretation 2a, negation lowering yields an interpretation in 2b. It is these two qualities of doxastic predicates that allow mood alternation under both affirmative and negated doxastic predicates. If negation has semantically lowered to the embedded clause, it cannot be the negation in the matrix clause that licenses the subjunctive.

In Chapter 4, the acceptability judgment tasks indicate that, in Yucatec Spanish, mood selection is based on a speaker’s judgment of the veridicality of a proposition embedded under the doxastic predicate. In order to account for these facts I appeal to Giannakidou’s theory of veridicality (Giannakidou 1998, 2001, 2001, 2015). This theory proposes that when a speaker evaluates a proposition as veridical, the speaker has a belief space or set of possible worlds that are homogeneously veridical. This results in the selection of the indicative. On the other hand, epistemic uncertainty regarding the embedded proposition encourages a speaker to evaluate this proposition as nonveridical, which reflects a nonhomogeneous belief space that includes worlds

in which the proposition is true and worlds in which it is false. This results in the selection of the subjunctive.

Several other patterns regarding grammatical person and mood selection were also observed in Yucatec Spanish. First-person doxastic predicates can license both the subjunctive and indicative in the embedded clause; when negated, there is a preference for the subjunctive, and when affirmed, there is a preference for the indicative; this patterns with other varieties in which mood choice is grammatically constrained by negation. The role of polarity in first-person doxastic predicates in Yucatec Spanish is due to the coreference of the speaker and the referent denoted by the NP in the matrix clause; a negated doxastic in the first-person expresses dubitative belief, while the affirmative expresses certain and uncertain propositions.

Third-person doxastic matrix clauses among Yucatec Spanish speakers also present mood choice alternation based on contextual information. In cases of communicated parenthetical interpretations (Simons 2007), doxastic predicates report a belief, while the proposition has main point status. Doxastic predicates reflect both the epistemic model of the referent of the subject NP, who introduces the belief in the matrix clause, and the model of the speaker, whose judgment is reflected in the mood of the embedded clause. As seen in (1) above, it is possible that the speaker and referent denoted by the subject NP in the matrix clause have similar interpretations, or they can reflect two differing opinions.

In negated and affirmative epistemic predicates, there are cases of variation in which the indicative and the subjunctive are accepted in Yucatec Spanish. The variation in judgments reflected a context that left the embedded proposition open to interpretation. First, each individual evaluates the proposition according to her individual epistemic model. Using Stalnaker's (1974) theory of context, I show that, as more information was added to the context,

each additional proposition alters the context set, eliminating contextually irrelevant propositions and therefore reducing the set as the conversation continues; the more information that is added to the common ground, the smaller the context set becomes. As the context set becomes smaller, speakers can more easily evaluate the proposition, thus encouraging the use of either mood.

In Chapter 5, I extended Giannakidou's (2015) theory of the veridicality to other structures that do not entail event realization: doxastic predicates embedded under interrogatives, modal adverbs, and modal auxiliaries. First, I demonstrated that there is an element of gradability to doxastic predicates. According to Villalta's (2008) analysis of mood in Spanish, the subjunctive indicates that there is a set of contextually relevant alternatives, and the embedded proposition containing the subjunctive is the most contextually relevant. When the indicative is selected, there is only one contextually relevant proposition, which is embedded under the indicative-selecting predicate. Doxastic predicates are unique in that, in many varieties of Spanish, they select indicative, but they have a set of contextually relevant alternatives, which was made evident through testing belief statements modified by the adverb *enormemente*. I argue that it is this gradability that allows for the use of the subjunctive in doxastic predicates in Yucatec Spanish. This gradable interpretation of doxastic predicates allows for levels of speaker commitment.

Next, Giannakidou's (2015) notion of the *epistemic subjunctive* suggests that a proposition marked by the subjunctive offers an interpretation that is similar to a possibility modal. When a speaker in Yucatec Spanish evaluates a proposition as nonveridical, the selection of the subjunctive represents epistemic uncertainty. The notions of gradability and the epistemic subjunctive work in tandem to explain why speakers select the subjunctive in various structures

in Yucatec Spanish; a sentence can present an affirmative *belief* with two possible moods because there are graded levels of commitment within a belief space.

As modals imply that the proposition may be true or may be false, the selection of the indicative identified that the set of possible worlds includes *p* worlds and *not p* worlds. The selection of the subjunctive under a modal indicates higher degree of uncertainty. Following Giannakdiou (2015), I argue that the subjunctive introduces an additional uncertain interpretation to the modal element; instead of identifying the possible interpretations as *p is true/p is false*, the epistemic subjunctive indicates that the set of possible worlds are those in which *perhaps* the proposition *may* be true and those in which *perhaps* it *may* be false. This second interpretation represents more epistemic weakening of the commitment to the proposition. For sentences beginning with the adverb *tal vez*, Yucatec Spanish consultants accepted both the indicative and subjunctive. There were cases in which indicative was felicitous under a modal predicate. When the indicative was selected, this indicated that speakers were more epistemically certain of the evaluation of the proposition. In cases in which the indicative was selected, the modal does not contribute to an weakening of commitment. The subjunctive indicates that the modal has contributed to the possibility interpretation, and the mood choice represents additional epistemic uncertainty. The modal auxiliary *poder*, on the other hand, licenses the subjunctive and often the use of the indicative is infelicitous. This indicates that the possibility meaning of the modal contributes to the interpretation of certainty.

Yucatec Spanish doxastic predicates in yes/no interrogatives select either the indicative or the subjunctive, a choice which reflects different levels of uncertainty. Thus, within an interrogative containing a doxastic predicate, the interaction between an interrogative and the subjunctive produces a possibility interpretation similar to *do you reckon?*. On the other hand, a

direct question for which a conjectural response would be inappropriate licenses the indicative. In direct questions, there is no epistemic uncertainty to interact with the nonveridicality of the interrogative. I followed Giannakidou's (2015) work on Greek mood to explain the primary difference in Yucatec Spanish between the use of the subjunctive and indicative in these structures. As modals and interrogatives are both nonveridical and do not entail realization of the event denoted in the proposition, there is more subjunctive use in these structures, but the indicative is still available. The indicative identifies the set of possible worlds as worlds that include those in which p is true as well as those in which $\neg p$ is true, whereas the subjunctive identifies the set of possible worlds as those including $\Diamond p$ worlds and $\Diamond \neg p$ worlds that produces a more conjectural interpretation.

Overall, there are several contributions of this dissertation. First, in this dissertation, I have contributed to the body of literature on Yucatec Spanish, which exhibits patterns in mood selection that stray from mood selection in other varieties of the language in its extension of the subjunctive to propositions embedded under doxastic predicates. Second, I have shown that an analysis based on veridicality can best account for the mood selection patterns found in Yucatec Spanish. It is the subjunctive in Yucatec Spanish that is different in this dialect; the subjunctive reflects epistemic uncertainty, which indicates a speaker's lack of commitment to the truth of a proposition. While this dissertation makes this argument only for embedded propositions, there are also cases in which the epistemic subjunctive can be used in unembedded structures, such as the following, taken from the Facebook post of a Yucatec Spanish speaker:

- (3) *Sonríe Chetumal, mañana probable tengas (SUBJ) que pagar permiso por vender de ambulante!*

‘Smile, Chetumal, tomorrow probably you will have to pay to sell by cart’.

In this example, the subjunctive appears in an unembedded structure, reflecting the uncertainty of the speaker, giving the sentence a conjectural interpretation. This supports the notion that it is the evaluation of the proposition that licenses the subjunctive in Yucatec Spanish rather than the matrix predicate.

In Chapter 3 of this dissertation, I suggest that the unique subjunctive use in Yucatec Spanish is not due to transfer from Yucatec Maya; the subjunctive in Yucatec Maya is not used to communicate doubt and uncertainty as it can be used in Spanish. While my intention was to stay agnostic on whether this subjunctive use is a result of language contact, I am not rejecting this possibility. In fact, this may be the case. With regards to epistemic predicates in Yucatec Maya, there is a complex system that can communicate several levels of certainty. As mentioned in Chapter 3, there are Yucatec Maya conjectural markers, which may be better categorized as epistemic modals. While *m̃in* marks a first-person belief (similar to ‘I think that...’), *ma’ak* and *bini* can only mark the third person belief such as ‘it is said’ or ‘people say’. *Ma’ak* denotes a meaning of possibility, and *bini* communicates the idea ‘others believe that...’. Furthermore, as demonstrated in Chapter 3, speakers are able to communicate (lack of) doubt through preverbal AM markers. It is possible that speakers use mood in Spanish to communicate epistemic certainty when an AM marker would be appropriate in Yucatec Maya. Further research will hopefully be able to answer this question in the future.

The empirical findings presented in this dissertation demonstrate that the mood selection patterns identified in Yucatec Spanish, specifically those found within doxastic utterances, are a feature of this variety of Spanish. Yucatec Spanish has a system to communicate varied levels of belief and commitment to truth of a proposition embedded under a doxastic predicate, which is not available in all varieties of Spanish. Nevertheless, I believe that extending this project to

other areas of Mexico could identify if subjunctive selection patterns are particular to Yucatán or if it is a feature of other varieties of Mexican Spanish as well. I have explained the patterns found in mood selection in doxastic predicates in Yucatec Spanish on the basis of (non)veridicality and epistemic (un)certainty. If the subjunctive is licensed by evaluation of the proposition, it is possible that a veridicality analysis explain subjunctive use in all embedding (and unembedded) structures. In future research, I will extend this analysis to other constructions like emotive and volitional predicates to test this prediction.

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