BUILDING MEANING IN NAVAJO

A Dissertation Presented

by

ELIZABETH BOGAL-ALLBRITTEN

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ELIZABETH BOGAL-ALLBRITTEN

Approved as to style and content by:

Rajesh Bhatt, Chair

Seth Cable, Member

Angelika Kratzer, Member

Margaret Speas, Member

Alejandro Perez-Carballo, Member

John Kingston, Head of Department
Linguistics

DEDICATION

To my parents, Rose and Bill.

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ABSTRACT

BUILDING MEANING IN NAVAJO

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ELIZABETH BOGAL-ALLBRITTEN

B.A., SWARTHMORE COLLEGE

Ph.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Professor Rajesh Bhatt

This dissertation contributes to the growing tradition of work in which detailed exploration of understudied languages informs formal semantic and syntactic theory and probes the tension between crosslinguistic grammatical variation and crosslinguistic commonality in communicative goals. The dissertation focuses on two topics in Navajo (*Diné Bizaad*): (i) attitudes of 'thinking' and 'desiring' and (ii) the expression of adjectival meaning and degree constructions.

The first part of the dissertation presents the methodological and linguistic background for the rest of the dissertation. Chapter 1 discusses the project of crosslinguistic semantic research and fieldwork methodology. Chapter 2 gives a broad introduction to the Navajo language and the literature which has explored it.

The second part of the dissertation focuses on the expression of attitudes in Navajo. Chapter 3 presents an empirically rich description of the morphological, syntactic, and semantic characteristics of Navajo sentences that report distinct at-

titudes of 'thinking' and 'desiring' despite containing the same attitude verb, *nisin*. Chapter 4 argues that the meaning of the embedded clause — not *nisin* — determines what attitude is reported. The exploration of Navajo is guided by investigation of English and German attitude reports begun by Kratzer (2006, 2013a) and developed by Moulton (2009, 2015). These authors develop a fully compositional account that presents an alternative to familiar verb-driven analyses of attitude reports; in their account, key aspects of the semantics of attitude reports come from material in the embedded clause. It is argued here that Navajo is a limiting case within the empirical landscape explored by Kratzer and Moulton, in which the attitude verb only determines the attitude holder.

The third part of the dissertation (Chapter 5) builds on work published as Bogal-Allbritten (2013) and investigates the syntax and semantics of Navajo adjectival expressions and degree constructions, e.g. comparative and equative constructions. Chapter 5 argues that while all Navajo adjectival expressions have the same semantic type, their syntactic structure differs depending on the morphology they bear. The proposed syntactic heterogeneity explains differences in degree constructions which contain adjectival expressions of different morphological shapes.

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INTRODUCTION

This dissertation explores the linguistic expression of attitude reports and comparison in Navajo (*Diné Bizaad*, Athabaskan). The investigation has three goals. First, to present detailed documentation of the morphological, syntactic, and semantic strategies used to express these meanings in Navajo. Second, to investigate how the findings from Navajo may inform formal accounts of comparison and attitude reports while shedding light on points of crosslinguistic semantic similarity and variation. Third, to detail the methodologies that led to the findings which are presented here and which may be helpful in the investigation of similar meanings in other languages.

These three goals are of a piece with a much larger tradition of research. In the past twenty years, investigation of typologically diverse understudied languages has challenged and informed formal semantic and syntactic theories. Topics that have particularly benefited from such work include quantification, nominal meaning, temporality, modality, and comparison. In many cases, the languages that have done the most to enrich our theoretical understanding are also underdocumented, understudied, and endangered. The careful investigation of these languages' semantics and syntax produces new documentation that may be useful not only to researchers but to individuals who wish to learn or teach these languages.

The dissertation is divided into three parts comprised of shorter chapters. I summarize each part in turn. The **first part** of the dissertation (Chapters 1 and 2) presents background for the rest of the work. Chapter 1 discusses the goals and methodologies of crosslinguistic and fieldwork-based semantic research. Chapter 2 gives a short overview of Navajo linguistics and briefly surveys certain aspects of the Navajo language that will be useful to later discussion.

The **second part** of the dissertation (Chapters 3 and 4) presents a case study in the expression of attitudes of thinking and attitudes of desire in Navajo. Chapter 3 gives a descriptive overview of the semantic, morphological, and syntactic characteristics of the **attitude reports** in (1), which I refer to collectively as *nisin*-sentences. These structures are of theoretical interest since they all seem to contain the same verb (*nisin*) but are shown to express different attitudes (e.g. 'thinking' vs. 'wanting').[1] I demonstrate that the interpretation of *nisin*-sentences is correlated with the morphosyntactic shape of the clause embedded by *nisin*. I highlight the importance of temporal morphology and particles like *sha'shin* (1a) and *laanaa* (1b). Only sentences of the shape in (1d) are ambiguous between expressions of thinking and expressions of desire: diagnostics for their ambiguity are presented in Chapter 3.

(1) a. [Nahodoołtį́ł sha'shin] nisin.

ArealS.rain.FUT probably 1S.ATT.IMPF
'I **think** it will probably rain.'

('Thinking' about future)

b. Kii [nahałtin laanaa] nízin.

Kii ArealS.rain.IMPF wishful 3S.ATT.IMPF
'Kii **wishes** it were raining now.'

(Desire about future)

[1] As will be discussed in Chapter 2, Navajo verbs change shape for person, number, and temporal orientation (e.g. aspect). *Nisin* is the imperfective form of the verb marked for a first-person singular subject. I use *nisin* to refer collectively to all instances of this verb. I choose the first-person imperfective form since this is the form of all verbs used as entry labels in Young and Morgan's (1987) dictionary and grammar of the Navajo language.

c. [Nahodoołtįįł yęę] nisin.

ArealS.rain.FUT YEE 1S.ATT.IMPF
'I **wish** it were raining,' 'I **wish** it would rain.'

(Desire about present or future)

d. Kii ['atoo' bił 'adeeshįįł] nízin.

Kii stew 3O.with.1S.eat.FUT 3S.ATT.IMPF
'Kii **wants** to eat stew,' 'Kii **thinks** he will eat stew.'

(Desire or 'thinking' about future)

Chapter 4 focuses on one puzzle posed by ***nisin***-sentences: what piece, or pieces, of a ***nisin***-sentence determine what kind of attitude is reported? I will argue that the difference in truth conditions of sentences like (1) cannot be attributed to the interpretation of ***nisin*** but instead should be attributed to material in the clause embedded by ***nisin***. I further demonstrate that this embedded material is also found in main clauses. I compare and contrast the interpretation of this material as it occurs in main clauses and as it occurs in ***nisin***-sentences. Finally, I summarize theoretical work on constructions from other languages which appear to share with ***nisin***-sentences the following characteristics: an embedded clausal structure in which embedded material is central to the truth conditions of the construction as a whole.

My investigation of the expression of attitudes in Navajo is guided by the questions and answers in addressed the research program begun by Kratzer (2006, 2013a) and subsequently developed by Moulton (2009, 2015). Kratzer and Moulton explore a rich range of evidence from English and German that demonstrate that even in these languages,'familiar,' verb-driven analyses of attitude reports may not be correct. On the basis of the evidence from English and German, Kratzer develops an alternative picture of attitude reports in which key aspects of the semantics of attitude reports are contributed by material contained in clauses embedded by attitude verbs. The attitude verb works in concert with the embedded material to determine the attitude

reported. I show that the Navajo facts fit naturally into the empirical landscape explored by Kratzer and Moulton. Navajo acts as limiting case within this landscape, in which the attitude verb has an evidential-like meaning — it establishes the holder of the reported attitude — similar to the kind explored for 'parenthetical' uses of attitude verbs in English discussed by Urmson (1952), Rooryck (2001), Simons (2007), Lewis (2013), and others. In this chapter, I do not provide a compositional treatment for *nisin*-sentences; however, the compositional proposals which are worked out by Kratzer and Moulton provide a model for the development of such a treatment.

The **third part** of the dissertation (Chapter 5) presents the second case study: the expression of adjectival and comparative meaning in Navajo. This chapter gives an updated and reorganized version of my work published in 2013 in *Natural Language Semantics* (volume 21: 3). Comparative constructions are the site of particularly rich typological and theoretical investigation (Stassen 1985; Beck, Oda, and Sugisaki 2004; Kennedy 2007; Beck et al. 2009; Pearson 2010; Schwarzschild 2010, 2011, 2014; Bhatt and Takahashi 2011; Hohaus 2012; Shimoyama 2012; Bochnak 2013, 2015; among others). To this rich base I add work on Navajo. I investigate degree constructions like those in (2) and the adjectival verbs they contain (e.g. *'áníłnéézz*, *nizhóní*).

(2) a. Shimá shideezhí=gi 'áníłnéézz.

1poss.mother 1poss.little.sister=LOC 3S.tall.CA
'My mother is as tall as my little sister.'

b. Shimá shideezhí=gi 'áť'ée=go nizhóní.

1poss.mother 1poss.little.sister=LOC 3S.be=GO 3S.tall.AA
'My mother is as pretty as my little sister.'

I develop a theoretical account in which all Navajo adjectival verbs have the same semantic type — they denote relations between degrees and individuals — but differ in their syntactic structure. Whereas an adjectival verb like *nizhóní* in (2b) projects

a structure with only one argument position, adjectival verbs like *'áníłnéézz* in (2a) are associated with two positions, one for a DP (the subject) and one for a degree expression (e.g. the equative phrase *shideezhí=gi* in (2a).

I argue that by positing morphologically-determined syntactic heterogeneity among the set of Navajo adjectival verbs, we can explain various differences in degree constructions which contain adjectival verbs of different morphological shapes. I argue that syntactic differences among adjectival verbs have semantic consequences for their participation in degree constructions, e.g. equative constructions as in (2). I build on proposals by Schwarzschild (2010, 2011, 2014) and argue that while the degree expression in (2a) directly manipulates the adjectival verb's degree argument, the degree argument of the adjectival verb in (2b) is indirectly manipulated via domain restriction.

Taken together, the case studies of attitude reports and degree constructions in Navajo illustrate the following tension, paraphrased from Bittner (2014): while languages may have in common broad communicative goals — the expression of attitudes of 'thinking' or attitudes of desire, the expression of comparison and adjectival meaning — close investigation of these goals in typologically distinct languages may reveal diversity in the grammatical strategies used in their expression. In turn, however, investigation of this diversity may support or shed new light on alternative theoretical views of data from better-studied languages.

PART I: THE RESEARCH AND LINGUISTIC CONTEXT

CHAPTER 1

THE PROJECT OF CROSSLINGUISTIC SEMANTIC INVESTIGATION

The investigation of attitude reports and comparison in Navajo fits into the rich, but still relatively young, tradition of work in which formal semantic theories are shaped by detailed investigation of understudied languages. This section introduces the goals and methodologies used in work of this kind. A question that is central both to my work and to this tradition of work as a whole is the tension between crosslinguistic grammatical variation and crosslinguistic universality in communicative goals. I take up this issue first in section 1.1.

1.1 Universality and variation

At the heart of crosslinguistic semantic research is tension between universality (or, at least, crosslinguistic commonality) and variation. This tension has been addressed by authors including Sapir (1949), Katz (1976), Keenan (1978), van Benthem (1991), and von Fintel and Matthewson (2008). In her recent investigation of crosslinguistic expressions of temporality, Maria Bittner (2014) summarizes the tension as follows:

> "Languages agree on communicative goals, but disagree on grammatical means. A discourse in one language can be translated into any other language, but there is no one-to-one correspondence at any grammatical level: morpheme-to-morpheme, word-to-word, phrase-to-phrase, and for some languages, even sentence-to-sentence."
>
> (Bittner 2014: 298)

This tension can be illustrated using the following example of comparative constructions in English and in Washo, an isolate spoken in California and Nevada,

originally discussed by Bochnak (2013, 2015). Both English speakers and Washo speakers have a way to communicate in context (1a) that the height of *the man* is greater than the height of *the girl*.

(1) a. *Context:* Comparing a man and a girl. The man is six feet tall, the girl is five feet tall.

b. The man is taller than the girl.

c. t'é:liwhu delkáykayi? k'é?i šáwlamhu delkáyayi?é:s k'á?aš.

man 3S.tall.NMLZ 3S.be girl 3S.tall.NMLZ.NEG 3S.be
Lit: The man is tall, the girl is not tall.

(Bochnak 2013: (271), (272))

As Bochnak demonstrates, however, while speakers of neither language would be at a loss for how to describe the situation in (1a), the two sets of speakers use distinct grammatical strategies to achieve this particular communicative goal. In the English sentence in (1b), the linguistic expression of comparison involves specialized morphemes like *more/-er* and *than*. As has been argued extensively for English (e.g. Cresswell 1976, von Stechow 1984, Kennedy 1999, among many others), these morphemes indicate that the topic of comparison (here, *the man*) exceeds the standard of comparison (here, *the girl*) in terms of the property described by the adjective (here, *tall*). These morphemes are assigned meanings which, once combined, yield a sentence with truth conditions consistent with the context in (1a). The Washo sentence in (1c), on the other hand, lacks specialized morphemes in comparative constructions. Instead, as Bochnak discusses, Washo uses two conjoined clauses: the subject of the first clause is described as being *tall* while the subject of the second clause is described

as being *not tall*. Bochnak argues that conjunction of these two clauses produces an expression with truth conditions consistent with the context given in (1a).[1]

In Bittner's terms, Washo and English 'agree on the communicative goal' of being able to compare individuals in terms of their properties. However, the languages 'disagree on the grammatical means' used to express this goal. Not only do Washo and English differ in their inventory of comparative morphology, neither do the Washo and English sentences in (1) have fully identical truth conditions. Bochnak (2013, 2015) makes this point by investigating the same Washo and English sentences in the new context in (2a). Here, the English sentence in (2b) (=(1b)) is judged to be true but the Washo sentence in (2c) (=(1c)) is judged to be false.[2,3]

(2) a. *Context:* Comparing a man who is five feet tall and a woman who is four and a half feet tall (i.e., both are clearly short).

b. The man is taller than the woman.

c. #t'é:liwhu delkáykayi? k'é?i da?mó?mo? delkáyayi?é:s k'á?aš.

man 3S.tall.NMLZ 3S.be woman 3S.tall.NMLZ.NEG 3S.be

Lit.: The man is tall, the woman is not tall.

(Bochnak 2013: (316))

---

[1]Conjoined comparison is attested in a range of other languages, including Fijian (Pearson 2010), Motu (Beck et al. 2010), and Samoan (Hohaus 2011).

[2]I follow Bochnak (2015) in describing these sentences as (semantically) false as opposed to (pragmatically) infelicitous. As I discuss below, later discussion of data from Navajo will blur this line and refer to any grammatical sentence rejected by consultants in a particular context as 'infelicitous,' a term that I will use to cover the ground of both truth-conditional falsity and various types of pragmatic failures, following McKenzie (2012).

[3]The crucial difference between the English and Washo sentences is whether the compared individuals are also required to meet the contextual norm for the adjective *tall*. Bochnak demonstrates that Washo 'conjoined comparatives' require both compared individuals not only to stand in the relationship described by the comparative — the man is taller than the girl — but both individuals must also 'count' as *tall people* relative to the usual contextual norms. As a result, the Washo comparative is judged false in the context. By contrast, English comparative constructions generally do not impose this requirement imposes no such requirement and is judged true in the context given here.

Comparison is certainly not the only semantic domain where we find languages agreeing on communicative goals but disagreeing on grammatical means. Other areas that have been the subject of similar investigation include quantification — the ability to indicate what relative quantities of individuals (e.g. *a lot, a few*) took part in some state of affairs — temporality — the ability to indicate when a state of affairs took place relative to some reference time — modality — the ability to express that some state of affairs is possibly or definitely true in light of various types of evidence and considerations — and comparison — the ability to compare objects in terms of their properties.[4]

We can organize our investigation of semantic universality and diversity in terms similar to those discussed by von Fintel and Matthewson (2008) in their overview of crosslinguistic semantic investigation and the search for semantic universals:

(3) a. **Universality and variation in lexical inventories:**

What morphemes does the language use and what is the semantic content of these morphemes?

b. **Universality and variation in manner of composition:**

How do these morphemes fit together — both syntactically and semantically — to build complete meanings?

The first question concerns the contents of languages' lexical inventories. I include both content morphemes and functional morphemes in this category. Content morphemes allow speakers to describe the world by labeling and characterizing objects, states, and events. By contrast, functional morphemes encode grammatical notions

[4]Selected typological and theoretical works that investigate these domains of meaning include Jelinek (1993), Bach et al. (1995), Matthewson (2001), Everett (2005), and Lima (2014) on quantification; Bohnemeyer (2002), Ritter and Wiltschko (2005), Tonhauser (2006), Smith, Perkins and Fernald (2007), and Bittner (2014) on temporality; Palmer (1986), Bybee, Perkins, and Pagliuca (1994), de Haan (1997), van der Auwera and Plungian (1998), Rullmann et al. (2008), Deal (2011), and Matthewson (2014) on modality; Stassen (1985), Kennedy (2007), Beck et al. (2010), Hohaus (2012), Pearson (2012), Bochnak (2013), and Bogal-Allbritten (2013) on comparison.

and include determiners, comparative modifiers (e.g. *more, very*), morphology relating to case (person, number, gender), morphemes expressing relative quantities (*a lot, a few*), expressions indicating possibility and probability relative to evidence (modals, evidentials), and morphemes locating an event or state in time.

The second question concerns strategies of composition (semantic and syntactic) employed by languages to form complete meanings from an array of content and functional morphemes. Potential points of crosslinguistic variation include languages' inventories of compositional principles, the range of semantic types that lexical items may have, and the argument structure of particular languages.

Note that the distinction between variation in lexical inventories and strategies of composition is more useful for expository purposes rather than for characterizing the focus of a particular piece of semantic research. It is necessary to consider both lexical and compositional variation in order to develop a full picture of ways that languages may vary in their expression of particular meanings. Furthermore, it is particularly difficult — if not impossible — to distinguish fully between the investigation of the semantics of functional morphemes and the study of strategies of composition. In the terminology of von Fintel and Matthewson (2008), both functional morphemes and strategies of composition act as "semantic glue" to relate content morphemes to one another.

In their discussion of this tension between variation and universality, von Fintel and Matthewson (2008) note the following recurring theme: "what language X expresses simply is also expressible in language Y but at the price of some complexity" (2008: 144). While it is difficult to characterize Washo or English's strategy for expressing comparison as more complex overall, we might describe the two languages' strategies as exhibiting tradeoffs in their complexity. The English lexical inventory involved in comparison is more complex in that it contains morphemes with specialized meanings (e.g. *more/-er*) that Washo lacks. On the other hand, we might claim

that Washo introduces complexity lacking in English via its manipulation of norms or standards in order to make comparisons. This notion of a tradeoff in complexity will return in our discussion of attitude reports and comparison in Navajo in subsequent chapters.

1.2 Developing initial hypotheses about meaning

In order to address scientifically the tension between shared communicative goals and (potentially) differing grammatical means, crosslinguistic semantic investigation must be hypothesis-driven. Hypotheses guide the research process by temporarily reducing the practically infinite range of potential analyses to a single starting point. This hypothetical analysis is tested against the available data which (generally) shows it to be insufficient, and is subsequently revised. The revised hypothesis is then tested again, and so on.

Following Haspelmath (2014), I categorize the kinds of hypotheses important to crosslinguistic semantic research into the following categories:

(4) a. **Comparative Hypotheses:** Hypotheses that start with the assumption of commonality with the results of earlier theoretical work on the phenomenon of interest as realized in some other language.

b. **Descriptive Hypotheses:** Hypotheses that are informed primarily by data from the language under investigation and which do not focus on previous analyses.

Sometimes, a hypothesis that counts as 'comparative' may also count as 'descriptive': the phenomenon under investigation in some language may seem to naturally suggest an analysis in terms familiar from earlier theoretical investigation of other languages. In many cases, however, there will be tension such that a hypothesis that seems to fit closely the new data is far-removed from familiar theoretical ground.

To a certain extent, this tension isn't especially worrying: most projects in crosslinguistic semantics — and certainly the ones discussed in this dissertation — consider both kinds of hypotheses at various points. If one is — as I am — interested in universality and variation in the expression of particular meanings, it does not seem possible to eschew either type of hypothesis entirely. The adoption of a particular initial hypothesis does not commit a research to a particular eventual analysis. The case studies discussed by Davis et al. (2014) demonstrate how a comparative initial hypothesis may give way to an analysis of crosslinguistic variation (see also Matthewson 2001 and Bittner 2014).

However, a topic of debate in the recent literature is whether the initial hypothesis should lean 'descriptive' or 'comparative,' where the two conflict. While the initial hypothesis is almost never maintained in its precise original form, the choice of an initial hypothesis may influence the course of early research and further data collection. Each type of initial hypothesis brings potential benefits and drawbacks that the researcher should weigh.

On one hand, initially positing a strongly descriptive hypothesis — which I take to be one that does not worry at all about making contact with prior theoretical literature — removes the threat of an Anglocentric perspective. Since much theoretical work concerns English and its close linguistic relatives, the concern is that earlier theories may actually reflect accumulated understanding of the operation of English rather than our accumulated understanding about how languages operate more generally. As long as we recognize this, however, this particular concern about comparative hypotheses seems entirely avoidable. For instance, Matthewson (2001) and Bittner (2007) develop comparative hypotheses about English data based on analyses previously developed on the basis of St'át'imcets (Lillooet Salish) and Kalaallisut (West Greenlandic) data, respectively.

A second point in favor of descriptive initial hypotheses is discussed by Haspelmath (2014): entering a project with the goal of developing a descriptive initial hypothesis may encourage the study of phenomena that are not readily comparable to previously-studied constructions. If such phenomena are encountered by a researcher committed to a comparative initial hypothesis, the worry is that these phenomena will be set aside in favor of studying another topic that is better-attested crosslinguistically. Descriptive initial hypotheses encourage openness of the field of investigation.

At the same time, however, descriptive initial hypotheses may leave the theoretical side of the investigation *too* open. A comparative initial hypothesis is clearly falsifiable: either language A can be demonstrated to use the same grammatical strategy as language B, or it cannot be. Beginning with a clearly falsifiable hypothesis provides the researcher with a ready list of predictions to test.

Both comparative and descriptive initial hypotheses are at work in the two case studies from Navajo presented here. I have already noted how a comparative initial hypothesis informs my investigation of Navajo adjectival meaning (Chapter 5). My investigation of Navajo attitude reports (Chapters 3 through 4) considers a series of comparative hypotheses in which Navajo attitude reports compose via strategies previously posited for other languages. The hypothesis that I ultimately argue is supported by the Navajo data is both descriptive and comparative, however: while the basis of the hypothesis is comparative — it is based on hypotheses about the composition of attitude reports developed for other languages by Kratzer (2006, 2013) and Moulton (2009) — its details are further shaped by novel data from Navajo.

1.3 Studying meaning in the field

This section discusses methodologies in fieldwork-based linguistic research. As part of the discussion, I present examples of contexts that I used in field elicitation interviews.

1.3.1 Fieldwork as a research paradigm

Much linguistic research has been accomplished via introspection by linguists who speak natively the language of study and are able to investigate their own linguistic intuitions. While the validity of introspection as a primary mode of data collection has received recent debate,[5] I did not use introspection to collect any of the Navajo data reported here for the simple reason that I am not a fluent native speaker of Navajo. All Navajo data reported here were collected in one-on-one interviews with fluent native Navajo speakers, whom I refer to as 'consultants.' The remainder of this subsection discusses the logistics and the methodology of my research.

I refer to this paradigm of linguistic research as 'fieldwork.' I do not take the defining characteristic of fieldwork to be the 'field' — the physical location where the research is conducted — but rather intensive investigation conducted with a relatively small number of fluent speakers. Fieldwork can be compared with experiments. Semantic fieldwork and experimental semantics both involve the collection of other individuals' intuitions about language. As such, a crucial step in both research paradigms is the construction of materials that elicit these intuitions in a controlled and careful way. While later discussion will refer specifically to the creation of elicitation materials to be used in fieldwork, readers who are familiar with the construction of experimental materials will see many similarities. For detailed discussion of elicitation materials, see the papers collected in the recent volume edited by Bochnak and Matthewson (2015).

The similarity in materials and methodology employed in fieldwork and experiments means that the line between the two paradigms is not always clear. Perhaps the clearest line between fieldwork and experiments is the number of participants. Experiments generally involve larger number of participants, such that the data pro-

[5]The validity of introspection as a method of linguistic investigation is discussed at length by den Dikken et al. (2007), Featherston (2007), and Phillips (2010), among others.

duced is amenable to quantitative investigation. Collection of data from a larger number of participants can also help to eliminate 'noise' that arises when only the judgments of a single speaker are considered. In her investigation of nominal individuation and counting in Yudja (Juruna, Tupi), Lima (2014) used similar materials in both elicitation sessions and in experimental work with larger numbers of speakers. Lima writes that her motivation for including experimental work in addition to fieldwork interviews was to establish the consistency of intuitions across a larger number of speakers of different genders and ages.

The number of participants in the research project also determines the degree to which participants are able to interact directly with the researcher and participate more deeply in the research process. As noted by McKenzie (2012), fieldwork is generally conducted so that consultants have more freedom to provide further comments and intuitions beyond those explicitly requested by the researcher. Fieldwork consultants are often extremely linguistically aware: the judgments and comments they provide can provide important clues about linguistic meaning and inspire the construction of later test items. In addition, fieldwork can be conducted in such a way that consultants can gain skills from the experience such that they can ultimately direct future research on their language.

1.3.2 Fieldwork elicitation methodology

The methods that I employed in fieldwork sessions come from the the methodology elaborated by Matthewson (2004). The topic of fieldwork methodologies has received increasing attention in recent years: in addition to Matthewson's work, key references include Whalen and McDonough (2015) — who consider the use of new research-related technologies in a fieldwork context — and the collection of papers in Bochnak and Matthewson (2015).

As noted above, fieldwork as it is used here involved targeted elicitation with a small number of consultants. Consultants were generally presented with a context in English followed by a sentence in Navajo. (I return to variations on this paradigm below.) Consultants were asked whether the Navajo sentence sounded 'good,' or like something they, or another fluent Navajo speaker, might say in the kind of situation described by the context. While consultants were able to reliably judge when a sentence sounds 'bad,' consultants were not asked to determine the source of this 'badness.' Following Matthewson (2004), consultants were never explicitly asked to produce such 'metalinguistic' judgments.

I illustrate the process of elicitation with the example in (5). Consultants were first read the context in (5a). I then asked about each of the Navajo sentences in (5b) and (5c) in turn. The diacritics shown reflect the judgments and comments received about each sentence, discussed below.

(5) a. *Context:* You just drove past Mary's house. You saw her inside as you went by. You say:

b. *Mary sha'shin hooghandi sidá.
Mary probably home.LOC 3S.be.IMPF

c. #Mary hooghandi sidá sha'shin.
Mary home.LOC 3S.be.IMPF probably

Following linguistic convention, I indicate **ungrammaticality** in (5b) with *. Grammaticality judgments concern whether under any circumstance, the grammar can produce the string in question. I determined that (5b) was ungrammatical by tracking consultant comments and, in particular, whether the string was ever accepted in any other context. I obtained comments like (6) for (5b) which suggest that (5b) is not a good string in Navajo:

(6) *Comment* about (5b): "You meant to put ***sha'shin*** at the end. This sounds like you're just learning [Navajo]."

To confirm the ungrammaticality of (5b), I tested it in contexts like (7a) and obtained the same kinds of judgments and comments:

(7) a. *Context:* You just drove past Mary's house. You saw her car parked outside. You conclude that she's probably at home.

b. *Mary sha'shin hooghandi sidá.

Mary probably home.LOC 3S.be.IMPF

By contrast, the sentence in (5c) is marked with # to indicate that it is **infelicitous**, as opposed to ungrammatical. I treat a sentence as felicitous if it truthfully and appropriately describes a particular state of affairs.[6] I tested (5c) in contexts like (8a) and found that speakers accepted it. I took the comment shown below as a clue that this sentence was not only grammatical but was felicitous in the context given.

(8) a. *Context:* You just drove past Mary's house. You saw her car parked outside. You conclude that she's probably at home.

b. Mary hooghandi sidá sha'shin.

Mary home.LOC 3S.be.IMPF probably
Comment: "This sounds good. You can say this."

Since sentence (5c) was independently found to be grammatical but it was still judged to be unacceptable in the context (5a), I determined that its unacceptablity there must be due to infelicity in the context. This conclusion was further supported

[6]Felicity can be divided into semantic and pragmatic felicity, but I use the term loosely here. I refer to any sentence which is grammatical but unacceptable in a particular context as 'infelicitous.' For further discussion of differences between semantic and pragmatic felicity, see Matthewson (2004) and articles in Bochnak and Matthewson (2015).

by the kinds of consultant comments I obtained about sentences like (5c) in the context in (5a), one of which I replicate below:

(9) *Comment* about (5c): "You saw her there? This doesn't right."

As I use the term here, sentences' felicity concern (in part) the truth conditions of a particular sentence. Thus, as Matthewson (2004) discusses, felicity can only be determined for grammatical sentences presented in particular contexts. The contexts establish the targeted truth conditions: what does the world look like when the sentence of interest is uttered? If the sentence is accepted in the context as given, its truth conditions must be consistent with the state of the world as described by the context. Testing the same sentence in a range of contexts allows the researcher to hone in on the sentence's truth conditions: what is the range of situations that can be truthfully described by the sentence of interest?

1.3.3 Using contexts in fieldwork

Given the crucial role that contexts play in studying meaning, it is important to take care when setting up contexts. Contexts can be presented verbally or with visual or tactile stimuli. Most contexts used in the research discussed here were presented verbally by means of short stories designed to establish relevant background information and to elicit a particular sentence. Alternatively, contexts can be presented via tactile stimuli — as were used by Bochnak (2013, 2015) in his study of Washo conjoined comparatives — or via visual stimuli. An example of visual stimuli is storyboards, which are consecutive series of pictures which present a simple narrative. Storyboards can be designed to elicit particular constructions. For discussion of the design and uses of storyboards, see Burton and Matthewson (2015).

Regardless of how the context is presented, however, the researcher and the consultant will generally rely on a shared language to communicate about particular aspects of the context. If the context is presented verbally, the choice of language

takes on heightened importance. All Navajo consultants that I worked with are fully fluent in both English and Navajo. Since I am not fluent in Navajo, English was used as the language of context communication in all elicitation sessions. Discussion of other factors that may lead one to use different languages for this purpose — the language of study as opposed to a language of wider communication (Grenoble and Whaley 2006) — can be found in Matthewson (2004) and McKenzie (2012).

As noted above, the research presented here largely relied on verbal presentation of contexts. In (10), I give an example of a more complex context used to elicit judgments about the expression of desires in Navajo. I had previously elicited the target sentence in (10b) in another context, so I was confident that it was a complete and grammatical sentence. However, I was unsure whether this sentence could be used felicitously in contexts like (10a), which was designed to target an attitude of desire about what the world is currently like.

(10) a. *Context:* You are talking to Sally, who gave her infant son up for adoption 20 years ago. She has not seen her son since, and has no idea what her son looks like. You and Sally are talking about what she wants for her son to be like at the present time. In this scenario, can you say...

b. Sally biyáázh k'ad nineez doolecł nisin.

Sally 3poss.son now 3S.tall FUT 1S.ATT.IMPF

c. *Judgment and comment:* "You can't say this. She's saying she wants him to grow up tall. You want to say..."

d. Sally biyáázh k'ad nineez laanaa nisin.

Sally 3poss.son now 3S.tall wishful 1S.ATT.IMPF

As discussed by Matthewson (2004), comments can provide valuable clues to meaning. In addition to reporting that (10b) would not sound right in the context as given, the consultant gave the comment in (10c) — a paraphrase of the conditions under which (10b) would have been acceptable — and volunteered the sentence in

(10d) as a sentence that would have been acceptable in the context as originally given. While comments cannot provide direct evidence for meaning (e.g. truth conditions), they were valuable clues that informed subsequent elicitation session. In later sessions, the sentence in (10d) became the new target sentence for the context in (10a) so that I could confirm the felicity of this utterance in this particular context.[7]

1.3.4 The role of translations in fieldwork

In many cases, the target sentences that I asked consultants about were modeled on sentences that I found in Navajo dictionaries (Young and Morgan 1980, 1987; Young, Morgan, and Midgette 1992) and in previous research on Navajo (e.g. Willie 1996, or my own fieldwork). At some points, however, I was unsure how to begin constructing a particular kind of sentence in Navajo. In such cases, I made limited use of translations from English into Navajo. As discussed by Matthewson (2004), translations were only requested for entire and grammatical English sentences presented in contexts. An example of this method of elicitation is given in (11). The Navajo sentences in (11c) and (11d) were volunteered by a different consultant in response to the context and prompt in (11a-b). The consultant then spontaneously translated the sentence back into English.

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[7]McKenzie (2012) refers to contexts like (10) a *lead-in contexts*, contrasting them with *lead-out contexts* like the one exemplified below for an English sentence:

(i) You say, *I am going to be the Super Bowl MVP...*
   a. Could you say that if the Super Bowl was halfway through?
   b. What about the morning of the Super Bowl? The day before?
   c. Could a little kid say it?
   d. Could you say it if the game is over but the MVP hasn't been selected yet?

(McKenzie 2012: 15)

In my own fieldwork, I generally avoided multiple follow-up questions for a single target sentence in order to avoid muddying the intended context. As McKenzie notes, the lead-out strategy is "risky, because it forces speakers to come up with the details of the scenario, which might make the truth-conditions they are judging about substantially different from those you expect" (2012: 16). As such, if I was curious about the felicity of a sentence in a variant of a previously-introduced context, I would repeat the constant parts of the context to the consultant, making modifications where necessary.

(11) a. *Context:* You and I are town inspectors. We visit towns and tell them what they need to fix, and what will be possible given their budgets. You think the roads in this town need to be fixed, but you have seen that the town is very low on money and will not be able to afford it. You're telling me about the situation.

b. *Prompt:* You say, *There need to be new roads, but I don't think it's going to happen.* How would you say this in Navajo?

c. **'Atiin t'áá yá'adát'éé́h=ígíí 'ádadoolníił, 'ákondi doo 'ádadoolníił da.**

road 3plS.good=IGII 3S.be.FUT but NEG 3S.be/do.FUT NEG
Consultant translation: 'There need to be new roads, but it's not going to happen.'

d. **'Atiin t'áá yá'adát'éc=go 'ánáhodoolníił, ndi bééso bá 'ádin.**

road 3plS.good=GO ArealS.again.be.FUT but money there.is.none
Consultant translation: 'They need to repair the roads, but there's no money for it.'

In later sessions, I used the Navajo sentences in (11c) and (11d) in conjunction with modified contexts.

I only asked consultants to translate entire and grammatical English sentences presented in detailed contexts. Linguistic researchers cannot directly ask consultants what an individual morpheme 'means' or the conditions on this morpheme's use. As Matthewson (2004) points out, such 'metalinguistic' inquiry at best yields clues to meaning, but will not result in generalizations clear enough to have predictive power. Producing such generalizations and analyses is the task of the linguist, who has the luxury of a fuller set of data and more time to consider the evidence.

In addition, it also may be the case that the target language does not have an obvious counterpart to a particular English morpheme. In the context in (11a), the English prompt sentence contains the lexical item *need* while the Navajo sentences in

(11c) and (11d) expressing necessity contain only future-marked verbs (underlined). As such, asking a consultant directly how to translate English *need* into Navajo would be unfruitful and potentially frustrating for the consultant.

1.3.5 Elicitation vs. corpora

I am only concerned with fieldwork which involves the elicitation of consultants' judgments about the grammaticality and felicity of particular sentences presented in specific context. This is a very narrow definition of fieldwork. More broadly construed, fieldwork may also involve the elicitation of lexical items or grammatical paradigms and the collection of narratives and naturalistic speech.

The collection of narratives and naturalistic speech not only generates documentation of the language's cultural, social, and historical context, but can provide the linguistic researcher with a corpora of grammatical sentences in the language of study. In early stages of my research, I searched for morphemes of interest in the corpus of sentences drawn from naturalistic speech in Young and Morgan's (1987) *The Navajo Language*. These sentences not only gave me ideas about what kinds of sentences might be interesting to test in later elicitation sessions, but also suggested the existence of certain patterns which informed my initial hypotheses.

However, corpora present incomplete picture of languages. Perhaps most notably, corpora can only show the researcher what sentences have been naturally produced and recorded for a particular language. However, the development of testable hypotheses and theories relies on the existence of negative data — examples of ungrammatical or infelicitous sentences — alongside positive data: the researcher must be able to see what differentiates ungrammatical or infelicitous sentences from their grammatical and felicitous counterparts.

In addition, the positive data presented by corpora is also likely to be incomplete. Even in a long and linguistically rich story, certain constructions may never appear

because the meanings they express were not relevant to the narrative. For instance, while it is a rich source of information about many other constructions, an hour long oral history interview conducted entirely in Navajo contains no examples of adjectival comparative constructions (e.g. *bigger*, *shorter*, *taller*) (Kerley 1994). The absence of comparative constructions from such a textual source does not mean that Navajo speakers are in any way unable, or even reluctant, to form comparatives when prompted in an elicitation session, however (Bogal-Allbritten 2013).

A final shortcoming of corpora is the potential for lack of contextual clarity. The elicitation of a felicity judgment about a sentence depends crucially on establishing a very specific context. While a corpora may provide some clues about a sentence's context in the form of surrounding sentences, other aspects of the context — the physical environment, certain assumptions which the speaker does not voice, background knowledge which is shared by the speaker and the interlocutor but not the researcher — may be unable to be reconstructed.

CHAPTER 2

BACKGROUND ON NAVAJO

2.1 Navajo linguistics

The empirical and theoretical focus of this dissertation is the expression of two kinds of meanings in the Navajo language: attitudes and comparison. This project not only relates to the broader goals and methods of crosslinguistic semantic research but also bears on topics of relevance to those interested in the Navajo language more generally. In this section, I present a broad introduction to the Navajo language, its speakers, and the literature that has been published about it. I also discuss the logistics and nature of the fieldwork that I conducted to obtain findings reported here.

2.1.1 The Navajo language and its speakers

Navajo is a member of the Athabaskan (also Athabascan, Athapaskan, and Athapascan) branch of the Na-Dené language family, which also includes Eyak and Tlingit. The Athabaskan languages are alternatively referred to as the 'Dene languages,' where *dene* is morphophonologically similar to many Athabaskan languages' words for 'people' (e.g. Navajo: *diné*). As Figure 2.1 shows, the Athabaskan language family extends across western North America, from Alaska to the northwestern part of Mexico. The Athabaskan language family is divided into three groups on the basis on their geographical distribution. Northern Athabaskan languages are spoken in Alaska and Canada and include Ahtna, Koyukon, Slavey, Gwich'in, Dëne Sųłiné (Chipewyan), and Tłı̨chǫ Yat'ìì (Dogrib). The Pacific Coast Athabaskan languages are spoken in Washington, Oregon, and northern California and include Hupa, Chilcotin,

and Tolowa. Southern Athabaskan languages are spoken in the southwestern United States and in northwestern Mexico and include Navajo and all of the Apache languages.[1]



Figure 2.1. Map showing range of Athabaskan languages

According to 2000 U.S. Census data, 298,197 individuals identified themselves as Navajo (or, *Diné*). Of this group, 178,014 reported themselves to be speakers of Navajo (or, *Diné Bizaad*). The vast majority (94.4%) reside in Arizona (50.5% of speakers), New Mexico (38.6% of speakers), and Utah (5.3%), both on the Navajo Nation and in adjacent areas. The Navajo Nation covers an area of 27,425 square miles in northeastern Arizona, northwestern New Mexico, and southeastern Utah, as shown by Figure 2.2.[2]

[1]Map from `https://en.wikipedia.org/wiki/Athabaskan_languages`. Based on map in Mithun (1999).

[2]Image taken from `https://en.wikipedia.org/wiki/Navajo_Nation`.

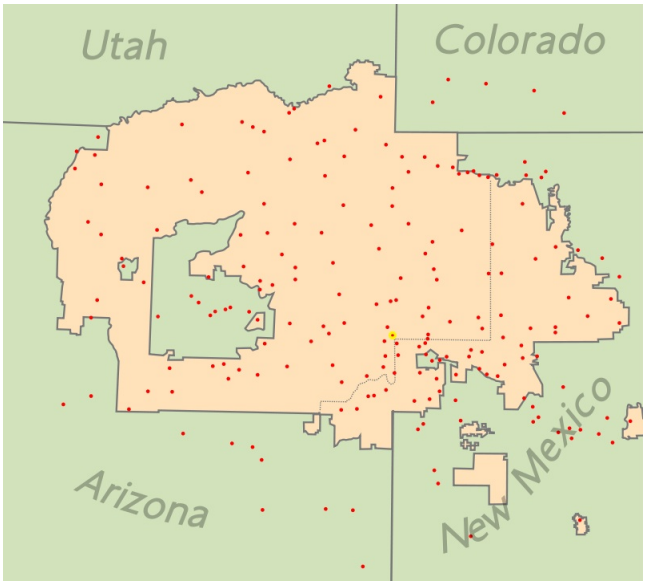


Figure 2.2. Map of the Navajo Nation

While Navajo is the most widely-spoken indigenous language in the United States, research points toward an ongoing shift toward English (Parsons-Yazzie 1995, Platero 2001, Schaengold 2004, Benally and Viri 2005, Lee 2009). Only 2.9% of self-identified Navajo speakers reported themselves to be monolingual (American Community Survey 2010). According to a 2008 report on Navajo Nation programs, census data demonstrate that the percentage of Navajo youth (ages 5-17) who were monolingual English speakers rose from 12% to 43% between 1980 and 2000 (University of Arizona 2008).

The process of language shift was driven by a long history of linguistic imperialism and efforts — both active and passive — to discourage the use of the Navajo language. The advent of Navajo boarding schools in 1882 and the subsequent initiation of compulsory school attendance in 1887 led to widespread acquisition of English among Navajo young people (Schaengold 2004: 11). Boarding schools were frequently located far from home communities and physical punishment was frequently used to discourage children from speaking in any language other than English (McCarty 2002). The progress of English was further spurred throughout the 20th century by the economic

incentives and cultural appeal that English was perceived to offer in contrast with Navajo.

However, Navajo community members have responded to the endangerment of Navajo. Schools both on and off the Navajo Nation increasingly offer Navajo language programs which, in general, begin with total Navajo immersion for kindergarten students and add English back into the curriculum for students in higher grades. According to Hutchinson (2013: 63), all schools on the Navajo Nation are mandated to offer some type of Navajo instruction, but the degree of institutional support varies widely: while some schools offer over an hour of language instruction daily, other schools only offer 30 minutes of Navajo instruction per week. Navajo language classes, and instruction on other subjects conducted in the Navajo language, are also offered by institutions of higher education both on and off the Navajo Nation, including Diné College in Tsaile, Arizona, Navajo Technical University in Crownpoint, New Mexico, the University of New Mexico, Arizona State University, and Northern Arizona University. In addition, Navajo language proficiency is a prerequisite for the receipt of tribally-administered scholarships and for admission to the Miss Navajo competition.[3]

2.1.2 Research on Navajo

The earliest significant documentation of the Navajo language was Berard Haile's series of books *Ethnologic Dictionary of the Navaho Language*, *Vocabulary of the Navaho Language*, and *Manual of Navaho Grammar*, published in 1910, 1912, and 1926, respectively. Haile later published a four volume series *Learning Navajo*, between 1942 and 1949. Haile's work was followed by significant academic contributions to the study of Navajo grammar by authors including Pliny Earle Goddard (1933),

[3]Previously, Navajo language fluency had been required for candidates for President and Vice President of the Navajo Nation. In July 2015, however, Navajo voters passed a referendum to loosen fluency requirements. The outcome of this process is still in flux at the time of writing.

Edward Sapir (1936, 1949), Sapir and Hoijer (1967), Harry Hoijer (1938, 1945, 1974), Gladys Reichard (1949, 1951), and Ken Hale (1970, 1973).

The most extensive description of the Navajo language came in 1943, with the publication of the first edition of *The Navajo Language, Grammar and Dictionary* by the non-Navajo linguist Robert W. Young and Navajo linguist William Morgan. Young and Morgan's collaboration included work on Navajo particles and vocabulary and culminated in the revision and publication of two massive volumes on the structure of the Navajo language and its lexicon, *The Navajo Language: a Grammar and Colloquial Dictionary* (1980, 1987). Young and Morgan collaborated with non-Navajo linguist Sally Midgette to produce the *Analytical Lexicon of Navajo* in 1992. In 2000, Young published a discussion of the structure of the Navajo verb system.

Taken together, the four volumes produced by Robert Young, William Morgan, and Sally Midgette provide an incredibly detailed picture of the Navajo grammar and lexicon. All dictionary entries are accompanied by multiple examples of the entry used in naturalistic speech produced by native speakers. Entries for verb forms provide detailed information on the morphological components comprising the verb, noting other verbs in which the same morphology can be found.

In the past 40 years, theoretical interest in the Navajo language has only increased in vigor. Space only permits me to highlight certain strands of research: I refer the interested reader to Fernald's (2006) bibliography of materials on the Navajo language. Research on Navajo has been especially enriched by dissertations and publications by Navajo linguists, including Paul Platero (1974, 1978, 1982), Ellavina Perkins (1974, 1978, 2000), MaryAnn Willie (1989, 1991, 1996, 2000), Nicole Horseherder (1998), Alyse Neundorf (2000), Melvatha Chee (2007), and Michele Kiser (2014). A particularly rich dialogue directed by Navajo linguists concerns the syntax of Navajo relative clauses (Perkins 1974, Platero 1974, Willie 1989).

Important work has also emerged from collaboration between Navajo and non-Navajo linguists (Speas and Parsons-Yazzie 1996; Hale and Platero 1996, 2000; Willie and Jelinek 2000; McDonough and Willie (2000); and Smith, Perkins and Fernald 2007).

In addition, a large amount of research has been published independently by non-Navajo linguists in cooperation with Navajo consultants and language experts. Some areas of work undertaken by non-Navajo linguists include the semantics of temporal morphology (Midgette 1995, Smith 1996), the morphosyntax of the Navajo verb (Speas 1986, 1990; Faltz 1998, 2000; Hale 2000, 2001), the morphology, phonology, and phonetics of the Navajo verb (Kari 1976; Hardy 1979; Slate 1989; McDonough 1990, 1999, 2000, 2002, 2003; McDonough and Wood 2008), the syntax of Navajo clauses (Schauber 1979; Krause 2001), the syntax and semantics of Navajo adjectives (Bogal-Allbritten 2008, 2013, 2014), the intersection of language and culture (Witherspoon 1977), and language contact between Navajo and English (Schaengold 2004).

A rich literature on issues of language change, revitalization, and maintenance has also developed. Work on the linguistic outcomes of contact between Navajo and English has been done by Schaengold (2004) and Hutchinson (2013). Research on the acquisition of Navajo has been undertaken by Saville-Troike (1996), Gentner and Boroditsky (2009), and Shepard (2012). Discussion of the intersection of language with identity, culture, language revitalization, and/or education can be found in work by Lee (2009), McCarty (2002), Spolsky (2008), Webster (2009), and Jacobsen (2012).

A center for current research on issues relating to the Navajo language is the Navajo Language Academy (NLA; *Diné Bizaad Naalkaah*). Founded in 1997, the NLA is an annual three-week workshop organized by Navajo linguists, language advocates, and allied external linguists. The NLA provide Navajo language researchers and language educators with training in linguistic theory, research methodology, and the

use of existing reference materials, such as Young and Morgan's (1980, 1987) Navajo dictionaries and grammars.

2.1.3 Logistics of my research

This research is based on fieldwork that I conducted between July 2013 and July 2015. Initial and exploratory fieldwork was conducted with Ellavina Perkins via Skype. All other fieldwork was conducted at the Navajo Language Academy (*Diné Bizaad Naalkaah*) in July 2013, July 2014, and July 2015. At the NLA, I worked with six fluent Navajo speakers: Ellavina Perkins, Leroy Morgan, Louise Ramone, Johnny Harvey, Irene Tsosie, and Louise Kerley. I employed the methodology for semantic fieldwork outlined in 1.3.

Fieldwork and research prior to 2015 was funded by a Graduate Research Fellowship from the National Science Foundation (NSF) and by a grant awarded by the Selkirk Linguistics Outreach Fund at the University of Massachusetts. Later fieldwork was funded by a Doctoral Dissertation Research Improvement Grant from the NSF ([#BCS-1451265]). My thesis committee chair, Rajesh Bhatt, is listed as Primary Investigator on this grant for administrative purposes only: I conducted all fieldwork. Additional funding for research and the dissemination of findings came from a NSF grant ([#BCS-1322770]) awarded to Seth Cable.

Interviews conducted prior to 2015 were recorded by field notes. Interviews conducted after 2015 (i.e. as part of research funded by the NSF Doctoral Dissertation Research Improvement Grant) were, with the consent of participating speakers, digitally recorded and securely stored on an external hard drive.

I have tried to write both descriptive chapters (Chapter 3 on attitudes, Chapter 5 on adjectival and comparative meaning) so as to be accessible and of interest both to linguists and Navajo speakers with less (or no) background in linguistic theory. My hope is that the data presented here will be useful to speakers interested in

language documentation, language revitalization, and the development of pedagogical materials. I have already used a subset of my findings to develop lectures for a course on fieldwork and Navajo modality that I taught at the Navajo Language Academy in 2013.

2.2 A sketch of Navajo grammar

This section presents a basic introduction to topics in Navajo grammar that will aid the reader in parsing Navajo sentences key to the analysis presented here. Section 2.2.1 addresses the morphological structure of verbs. Section 2.2.2 discusses basic syntactic characteristics of Navajo sentences. Section 2.2.3 discusses the morphosyntactic properties of embedded clauses. Secion 2.2.4 gives a brief overview of temporal expressions in the language that will be of relevance to later discussion of attitude reports.

2.2.1 Navajo verb structure

Navajo verbs are famously complex. They express information about aspects of an event or state including the number and identity of participants, location in time, whether the event was repeated or not, the direction of motion, etc. A Navajo verb can, on its own, constitute a full and well-formed sentence: verb-external nominal expressions corresponding to, e.g., subject and object are completely optional. That is, (1a) is just as much a well-formed sentence in Navajo as (1b) is.

(1) a. Yiztał.

3O.3S.kick.PERF
'It kicked it.'

b. Łíį́' dzaanéézˊ yiztał.

horse mule 3O.3S.kick.PERF
'The horse kicked the mule.'

This subsection explores the morphological makeup of the Navajo verb. Verbs consist of a stem (at the right edge of the verb) and prefixes that occur in fixed order relative to one another.[4] Prefixes are generally monosyllabic, although we will see some that are phonologically null and others (at the left edge of the verb word) that are multisyllabic. I illustrate the relative order of verbal prefixes with the following examples. The variety of prefixes shown in the following verbs is far from exhaustive, but the prefixes shown demonstrate many of the positions to be discussed below.

(2) a. ch'í'níshkǫǫh

ch'í' = ni = sh = l = kǫǫh

out.horizontally = *ni*.IMPF= 1.subject = classifier = swim.IMPF

adverb = Mode = subject = classifier = stem

'I am swimming out horizontally'

b. ch'í'níłkǫǫ'

ch'í' = ni = sh = l = kǫǫ'

out.horizontally = *ni*.PERF = 1.subject = classifier = swim.PERF

adverb = Mode = subject = classifier = stem

'I swam out horizontally'

c. ch'í'deeshkǫǫł

ch'í' = di = sh = l = kǫǫł

out.horizontally = *di*.FUT = 1.subject = classifier = swim.FUT

adverb = Mode = subject = classifier = stem

'I will swim out horizontally'

(Young and Morgan 1987: d288)

[4]As in other Athabaskan languages, Navajo verbs are traditionally represented by means of a templatic structure. For discussion of the verb template, see Young and Morgan (1980, 1987), Young, Morgan, and Midgette (1992), Faltz (1998), and Young (2000).

I start by discussing morphology that relates to temporal, aspectual, and modal properties of verbs. I then turn to morphology that marks nominal arguments, including subject and object marking. Finally, I consider verbal morphology that neither marks Mode nor nominal arguments.

2.2.1.1 Morphological Mode

I start by discussing the stem and the prefixes labeled 'mode' in (2). The verbs in (2) are clearly related — they all describe events of swimming out horizontally. However, they are semantically and morphophonologically distinct. The three forms are referred to as Modes. The Mode of a particular verb word appears relates to various temporal, modal, and aspectual properties borne by that verb word. In addition, Mode forms are often associated with different Mode prefixes and different forms of the verb stem. For the three Modes shown in (2), I give morphophonological and informal semantic characteristics of each. The semantic descriptions follow terminology from the 'Reichenbachian' theory of aspect: the term Event Time is defined as the time at which the event takes place whereas the term Reference Time refers to some temporal point of reference (e.g. the time which the sentence is about) (Reichenbach 1947, Klein 1994).[5]

(3) a. Mode of (2a): Imperfective Aspect

(i) Morphophonological: Mode prefix *ni*, stem *-kǫ́ǫ́h*

(ii) Semantic: Event Time contains Reference Time

[5]Note that the Imperfective and Perfective Modes do not always involve the exact prefixes shown in (3). For instance, while the verb words describing events of 'swimming out horizontally' use a prefix *ni* to mark Imperfective Mode, other verb words use other prefixes to mark Imperfective Mode: these prefixes are ∅, *ni*, *si*, and *yi*. Comparable variation can be found for different verb words in the Perfective Mode, as well. For detailed discussion of which prefixes are associated with each Mode, see Young and Morgan 1987: g144-164.

b. Mode of (2b): Perfective Aspect

   (i) Morphophonological: Mode prefix *ni*, stem *-kǫ́ǫ́'*

   (ii) Semantic: Reference Time contains Event Time

c. Mode of (2c): Future

   (i) Morphophonological: Mode prefix *di*, stem *-kǫ́ǫ́ł*

   (ii) Semantic: Event Time follows Reference Time

Future Mode will be important in our discussion of attitudes in Chapters 3 and 4. I discuss the Future Mode in somewhat more depth in section 2.2.4.

These three Modes are not the only modes in Navajo. I list all seven Modes in (4). Smith et al. (2007) note that the Modes do not correspond to a coherent semantic category, but further observe that the temporal, modal, and aspectual information conveyed by Mode morphology can be thought of as related concepts (Steele and Akmajian 1981, Dahl and Velupillai 2005). A given verb can only be marked for one Mode at a time. That is, the forms listed in (4) are in complementary distribution.

(4) **Modes for Eventive Verbs**

a. Imperfective (IMPF)

b. Perfective (PERF)

c. Future (FUT)

d. Usitative (USIT)

e. Iterative (ITER)

f. Progressive (PROG)

g. Optative (OPT)

Basic semantic characteristics of Imperfective, Perfective, and Future Modes were already described in (3). Verbs in the Usitative Mode describe events that occur on a usual or customary basis. Verbs in the Iterative Mode describe events that repeat a regular intervals. As Faltz (1998: 15) notes, Usitative and Iterative Mode

are not only semantically similar, but morphologically similar as well: the two Modes have verb stems with the same shape and are only distinguished by the adverbial prefix *ná*, found on the Iterative Mode but not the Usitative Mode. Verbs in the Progressive Mode describe events which are ongoing at the Reference Time. According to Midgette (1995) and Smith et al (2007), the Progressive Mode is only available for verbs describing motion.[6]

Verbs in the Optative Mode will be of interest to us when we investigate attitudes of desire. Verbs in the Optative Mode occur with special particles (including *laanaa* and *lágo*) to express positive or negative desires:

(5) a. Nahóółtąą' laanaa.

ArealS.rain.OPT wishful
'I wish it would rain.'

b. Nahóółtąą' lágo.

ArealS.rain.OPT hope.not
'I hope it does not rain.'

In addition, Optative-form verbs can occur alone to express negative desires:

(6) Tsásk'eh yik'inaogeeh.

bed 3O.from.3S.fall.OPT
'Don't let him fall off the bed.'

(YM 1987: d208)

I return to the temporal contribution of Optative Mode in section 2.2.4 below.

So far, we have only discussed verbs describing events or actions. I now turn to stative verbs. Stative verbs do not vary by Mode but instead only differ according to

[6]Where a verb can be marked for both Progressive and Imperfective modes, Midgette (1995) reports that the interpretation of the verb marked for Progressive Mode is similar, but not identical, to the interpretation of the same verb marked for Imperfective Mode. According to Smith et al.'s (2007) summary of Midgette (1995), Midgette reports that the "Progressive often conveys a strong feeling of motion and immediacy" (2007: 57).

person marking. Although stative verbs do not themselves vary for Mode, different stative verbs can be described as looking morphologically similar to Imperfective and Perfective Mode forms for related verb stems. For instance, the stative verb ***niteel*** 'it is wide' in (7a) is similar in shape to the Imperfective Mode form of verb words that describe events of 'widening.' Similarly, the stative verb ***hastin*** 'it is frozen' in (7b) is similar in shape to the Perfective Mode form of verb words that describe events of 'freezing.'

(7) Stative verbs

a. **niteel** 'He/she/it is wide'

b. **hastin** 'It is frozen'

The relation with Imperfective and Perfective Modes is no longer semantically active, however (Smith et al. 2007). Both of the verbs in (7) describe states.

Since stative verbs lack a Future Mode form, the futurity of a state (e.g. 'it will be wide,' 'it will be frozen') is indicated using a postverbal particle, ***dooleeł*** ((8)), which I will return to in section 2.2.4.

(8) **Nineez dooleeł.**

3S.tall FUT
'He/she/it will be tall/long.'

Before continuing, I note that in general, glosses for later examples will not have as much detail as was shown above. All information about Mode will be indicated via suffixes on the verb stem, as exemplified in (9) (compare with (2c)). Subject and object prefixes will be indicated via abbreviations like '1S.'

(9) **ch'í'deeshkǫǫł**

out.1S.swim.FUT
'I will swim out (horizontally).'

2.2.1.2 Morphology related to nominal arguments

This section discusses verbal morphology that marks nominal arguments. As noted earlier, all Navajo verbs obligatorily bear morphology which records any nominal participants in the event or state described by the verb. While verb-external nominal expressions can add additional detail, they are never required.

It is a topic of long debate in the Navajo literature whether nominal expressions like *łį́į́'* and *dzaanéézz* in sentences like (10) are arguments of the verb or, instead, adjoined higher in the clause. If the latter, the idea is that the argument positions of the verb are instead satisfied by the pronominal morphology it bears (the 'Pronominal Argument Hypothesis').

(10) Łį́į́' dzaanéézz yiztał.

horse mule 3O.3S.kick.PERF
'The horse kicked the mule.'

For arguments on both sides of the debate, see Speas (1990), Willie and Jelinek (2000), and Hale (2000, 2003). I do not commit myself to a particular side of the debate for nominal expressions, although Chapter 5 will return to the question of whether any verb-external material can function as an argument of a verb.

Nominal arguments (subject and direct object) are indicated on the verb via special prefixes. A minimal pair is given below to illustrate the relative location of subject and object prefixes. I give full glosses and simplified glosses.[7]

[7]In some cases, morphophonological rules apply to obscure the presence of particular prefixes, e.g. the second person subject prefix *ni* in (11b) (Kari 1976, Faltz 1998).

(11) a. hanishteeh

ha = n = ∅ = sh = ɬ = teeh

up = 2.object = ∅.IMPF = 1.subject = classifier = carry.IMPF

up.2O.1S.carry.IMPF *Simplified gloss*

'I'm carrying you (sg.) up.'

b. hashíɬteeh

ha = sh = ∅ = ni = ɬ = teeh

up = 1.object = ∅.IMPF = 2.subject = classifier = carry.IMPF

up.1S.2O.carry.IMPF *Simplified gloss*

'You (sg.) are carrying me up.'

(Faltz 2000: 112-113)

Navajo also has special prefixes (*ho, ha*) for subjects and objects that describe 'areal' arguments, such as the subjects of weather verbs like *nahałtin* in (12). The areal subject in (12) is given in boldface.

(12) na**ha**ɬtin

ArealS.rain.IMPF

'It is raining.'

The morphophonological shape of subject and object prefixes depends on several factors. One point of note is that the third-person object marker is covert except when the subject is also third-person. The examples in (13) demonstrate variation in the realization of the third-person object marker. As (13a) shows, the object marker is realized overtly as *yi* when the verb is marked with a third-person subject. The sentences in (13b) and (13c) demonstrate that *yi* is not present when the verb is marked for a first- or second-person subject. In these sentences, the third-person object marker is covert.

(13) a. Mary bilasáana ła' yinízin.

Mary apple INDEF.DET 3O.3S.ATT.IMPF
'Mary wants an apple.'

b. Bilasáana ła' nisin.

apple INDEF.DET 3O.1S.ATT.IMPF
'I want an apple.'

c. Bilasáana ła' ninízin.

apple INDEF.DET 3O.2S.ATT.IMPF
'You want an apple.'

Third-person object markers are complicated in another way, as well: *yi* is not the only way in which the third-person object can be realized. On some verbs, the third-person object marker is instead realized as *bi*. The conditions governing the shape of the third-person object marker are complex and include sentential word order. If the subject precedes the object, the verb generally bears the object marker *yi* ((14a)); if the object precedes the subject, the object marker *bi* is generally used instead ((14b)).[8]

(14) a. Łįį' dzaanéézyiztał.

horse mule 3O.3S.kick.PERF
'The horse kicked the mule.'

b. Łįį' dzaanéézbiztał.

horse mule 3O.3S.kick.PERF
'The mule kicked the horse.'

Nominal expressions in addition to the subject and object are introduced via postpositions. Postpositional phrases (the postposition plus object prefixes) may —

[8]Additional factors conditioning the choice of argument marker include discourse structure and animacy of nominal arguments. For discussion of object markers as they relate to these factors, I refer the reader to work by Creamer (1974), Perkins (1978), Platero (1978), Sandoval (1984), Speas (1990), Willie (1991, 2000), Thompson (1996), and Willie (2000).

but are not always — written as part of the verb word. (15) gives an example of a postpositional phrase *bich'į́* 'to him' written separately from the verb word.

(15) Bich'į́ 'i'deeshniił

3O.to away.3O.1S.move.FUT

'I will cause it (round object) to move **to him**.'

Regardless of whether they are orthographically linked to the verb word, however, it appears that postpositional phrases such as the one shown in (15) must occur adjacent to the verb word (Faltz 2000): it is not possible to insert, e.g., markers of negation between *bich'į́* and the verb in (15). The inability of material to intercede between postpositional phrases and verbs may indicate that these expressions form a syntactic unit that is not reflected in the orthography.[9]

2.2.1.3 Other verbal morphology of interest

This section discusses morphology found on Navajo verbs that neither relates to Mode nor nominal arguments. In turn, I consider thematic prefixes, classifier prefixes, and additional adverbial prefixes and particles.

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[9]While postpositional phrases canonically precede the verb word, Young and Morgan (1987) contains a number of sentences in which postpositional phrases instead follow the verb. This is shown in (i), where the postpositional phrase *bil* 'with him/her/it' and the noun *sitsilí* 'my little brother' follow the verb *neiits'ǫǫd*:

(i) Tsínaabąąs bine'dęęʼ ch'ééh neiits'ǫǫd, sitsilí bił.
wagon 3O.behind.from in.vain 1plS.rubberneck.IMPF 1poss.little.brother 3O.with
'My little brother and I peered from behind the wagon.'

(YM 1987: d593)

The conditions under which material can appear postverbally are unclear. For discussion of postverbal nominal material in other Athabaskan languages, see Rice (1989) on Slavey, Jung (2000) on Apachean, Thompson (2000) on Koyukon, and Lovick and Tuttle (2014) on Alaskan Athabaskan languages more generally. The Navajo example in (i) may be particularly interesting since it is an example of a comitative construction. While other kinds of postverbal material may be able to be analyzed as afterthoughts, it seems unlikely that a comitative phrase as in (i) can be viewed as an afterthought, particularly since the plural subject marking on the verb reflects the argument introduced postpositional phrase. I leave further investigation of such constructions to future work.

Many verbs bear what Young and Morgan (1980, 1987) refer to as **thematic prefixes**. Roughly, thematic prefixes are prefixes that always appear in conjunction with particular verb stems. Examples of thematic prefixes identified by Young and Morgan (1987) are given in (16):

(16) a. *di*: thematic prefix occurring with verbs that relate to actions involving movement of arms or legs. (YM 1987: d14)

b. *ni*: thematic prefix relating to the mind, e.g. *nisin* 'I think, I want, etc.' (YM 1987: d656)

While we may be able to make generalizations about the kinds of meaings expressed by verb words with contain these thematic prefixes — e.g. 'verbs that relate to actions involving the arms or legs' — it does not generally seem possible or desirable to give lexical entries to thematic prefixes in isolation (Cable 2010).

Another prefix whose contribution is often difficult to characterize in isolation is the **classifier**.[10] The classifier position is closest to the verb stem and can be filled by any one of the following four forms: ∅, *ɬ*, *d*, or *l*. For some pairs of verbs, the choice of classifier seems to reflect the argument structure of the verb. As shown in (17), alternation between ∅ and *ɬ* correlates with the addition of an argument via causativization (Hale and Platero 1996; Hale 2000, 2001). I will return to discuss apparently meaningful uses of the classifier in much more detail in Chapter 5.

[10]In Athabaskan languages, the classifier prefix does not encode information about the nature of nominal arguments, e.g. their physical properties. This makes the term distinct from 'classifier' as it is used in descriptions of many languages, e.g. Swahili. For discussion of the historical origins of the term 'classifier' as it is used in Athabaskan studies, see Kibrik (1996).

(17) a. sétłts'il

∅ = si = sh = **ɬ** = ts'il

3O = Mode.PERF = 1S = classifier = stem.PERF

3O.1S.shatter.PERF

'I shattered it.'

b. sits'il

si = ∅ = ∅ = ts'il

Mode.PERF = 3S = classifier = stem.PERF

3S.shatter.PERF

'It shattered.'

(Hale and Platero 1996: (4))

In many other verb words, however, the choice of classifier is apparently idiosyncratic. For instance, *nahałtin* 'it is raining' in (18) features the classifier *ɬ* but does not involve two nominal arguments. I give the full morphological breakdown in (18), as well as the simplified gloss.

(18) nahałtin

na = ha = ∅ = **ɬ** = tin

thematic = ArealS = Mode.IMPF = classifier = stem.IMPF

ArealS.rain.IMPF

'It is raining.'

In contrast with thematic prefixes and classifiers, it is easier to characterize the semantic contribution of adverbial prefixes. It is fairly easy to find sets of verbs like (19), which only differ in their choice of leftmost prefix. In the case of these verbs, the leftmost prefix describes the direction of motion. In the following examples, I only separate out the adverbial prefixes.

(19) a. **ch'í**=níshʼnéél

out.horizontally = 1S.crawl.IMPF

'I am crawling out horizontally.'

b. **tsíłtsʼá**=níshʼnéél

away.from.fire/water = 1S.crawl.IMPF

'I am crawling away from fire or water.'

c. **ʼahéé**=níshʼnéél

in.circle = 1S.crawl.IMPF

'I am crawling in a circle.'

2.2.2 Navajo sentential syntax

This section briefly sketches three topics in sentential syntax in Navajo: (i) word order, (ii) negation, (iii) conjunction, and (iv) subordination.

First, **word order**. Navajo is generally described as having default SOV (subject-object-verb) word order ((20)). Sentences that contain embedded clauses also generally exhibit SOV word order, as shown in (21). I count the embedded clause as the object in (21).

(20) Łįį́ʼ dzaanéézz yiztał.

horse mule 3O.3S.kick.PERF
S O V

'The horse kicked the mule.'

(21) Mary [Bíl dibé yiyiisxín]=ígíí yoodlą́.

Mary Bill sheep 3O.3S.kill.PERF=IGII 3O.3S.believe.IMPF
S O V

'Mary believes that Bill killed the sheep.'

(Schauber 1979: 26)

Subject-object inversion (OSV word order) is also attested in Navajo, both for sentences with nominal objects ((22)) and sentences that contain embedded clauses instead of nominal objects ((23)).

(22) Łį́į' dzaanéézbiztał.

horse mule 3O.3S.kick.PERF
O S V

'The mule kicked the horse.'

(23) [Bíl hooghan góne' yah 'íiyáh]=igíí Mary yoodlą́.

Bill house in into 3S.go.PERF=IGII Mary 3O.3S.believe.IMPF
O S V

'Mary believes that Bill went into the house.'

(Schauber 1979: 46)

Second, **negation**. Negation in Navajo is a frame consisting of two pieces, *doo* and *da*. In general, negation wraps around the verb word ((24a)). However, negation does not separate the verb words from otherwise adjacent particles ((24b)), postpositional phrases ((24c)), or negative polarity items ((24d))

(24) a. Naaltsoos doo dzídzááłtsooz da.

paper NEG 3O.1S.handle.flat.object.PERF NEG
'I didn't put the paper into the fire.'

(Fernald and Willie 2001: (31)

b. Doo dah dideeshááł da.

NEG out,up 1S.start.go.FUT NEG
'I won't start out.'

(YM 1987: d716)

c. Diné Bináhásdzo bikáa'gi tó tsi'nda'iiłáhígíí doo

Navajo reservation 3O.on.LOC water intoxicating NEG

bee haz'ą́ da.

3O.with.ArealS.exist NEG
'Intoxicating beverages are not allowed on the Navajo Reservation.'

(YM 1987: d423)

d. Shizhé'é doo ha'át'íída nayiisnii' da.

1poss.father NEG anything 3O.3S.buy.PERF NEG
'My father has not bought anything.'

(Hale and Platero 2000: (1b))

The preferred placement for negation with (at least certain kinds of) clausal embedding is slightly different. The examples in (25) demonstrate that the negation frame surrounds the embedded clause (bracketed) rather than the verb (*nízin* in (25a), *ní* in (25b)).

(25) a. Alice [doo nahałtin da] nízin.

Alice NEG ArealS.rain.IMPF NEG 3S.ATT.IMPF
'Alice thinks it isn't raining.'

b. Shizhé'é [doo náá'deeshdlį́ɬ da] ní.

1poss.father NEG 1S.drink.FUT NEG 3S.say.IMPF
'My father says he won't drink anymore.'

(adapt. YM 1987: d350)

Third, **conjunction**. Clauses as well as smaller phrases (e.g. nouns) can be conjoined via Navajo coordinators including *dóó* 'and.' (26) demonstrates the conjunction of nominal expressions. (27) demonstrates the conjunction of multiple embedded clauses.

(26) 'At'ééd léi' dóó bimá dóó bimá sání dóó

girl INDEF and 3poss.mother and 3poss.grandmother and

bicheii nda'alkidígóó naaskai.

3poss.grandfather movies.to 3plS.go.PERF
'A girl, her mother, her grandmother, and her grandfather went to the movies.'

(Fernald and Perkins 2006: (2))

(27) [Níyoltsoh nihich'į' yigáał]=go dóó chidí naat'a'í

hurricane 1plO.to 3S.move.PROG=GO and airplane

naashta']=go baa neiséyeel.

3O.1S.fly.IMPF=COMP 3O.about.1S.dream.PERF
'I dreamed about a hurricane coming towards us and flying a plane.'

(Fernald and Perkins 2006: (185))

Finally, **subordination** of clauses. The most common mode of clausal subordination is by placing the morpheme *=go* at their right edge. This mode of subordination can be used to mark clauses used as temporal adverbial expressions ((28a)), *because*-clauses ((28b)), and *if*-clauses ((28c)).

(28) a. [Shizhé'é níyáa]=go da'diidįįl.

1poss.father 3S.come.PERF=GO 1plS.eat.FUT
'When my father comes, we'll eat.'

(Schauber 1979: 224)

b. Łįį' sínígoh=go shizhé'é neidiyoołnih.

horse 3O.2S.rope.PERF=GO 1poss.father 3O.3S.buy.FUT
'If you rope a horse, my father will buy it.'

(Schauber 1979: 224)

c. Mary shaaníyáa=go Jáan bił hózhǫ́.

Mary 1O.3S.come.PERF=GO John 3O.with.ArealS.good
'Because Mary came to see me, John is happy (*things are good with him*).'

(Schauber 1979: 223)

The morpheme =*go* is not the only morpheme to be found in these environments. The morphemes (*y*)*ęę* or =(*d*)*ąą'* also can be used to mark clauses a temporal adverbial expressions. Both expressions are shown in (29a). In addition, the morpheme =(*d*)*ąą* is also found on *if*-clauses ((29b)).

(29) a. ['Ashkii nishłín]=ęę=dąą' dóola shił naalgeed ńt'éé'.

boy 1S.be=YEE=DAA bull 1O.with about.3S.buckride.IMPF NTEE
'When I was a boy, I used to buckride a bull.'

(Smith et al. 2007: (8d))

b. [Yidzaaz]=dąą' doo 'ólta'góó deesháát da.

3S.snow.IMPF=DAA NEG school.to 1S.go.FUT NEG
'If it snows, I won't go to school.'

(YM 1987: 307)

The markers (*y*)*ęę* and =(*d*)*ąą'* both convey some notion of pastness which is not conveyed by the subordinator =*go*. I will return to (*y*)*ęę* when I survey certain Navajo temporal morphology in section 2.2.4.

The final expression found in subordinate clauses is the particle *ńt'éé'*. This particle also conveys a notion of pastness: the action described by the bracketed clause in (30) was taking place in the time leading up to the action described by the main clause ('it began to rain on me').

(30) [Kingóó 'aneeshkał] ńt'éé' shee nikihoníłtą.

store.to 1S.herd.PROG NTEE 1O.with begin.ArealS.rain.PERF
'As I was herding (sheep) toward the store, it began to rain on me.'

(Smith et al. 2007: (8c))

The particle *ńt'éé'* is not only found in subordinate clauses. It is also found in main clauses, as at the end of (29a). I return to this particle in section 2.2.4 below.

2.2.3 Clausal subordination

This section briefly introduces the morphosyntactic structures associated with subordinate clauses in Navajo. This section focuses on subordinate clauses which are embedded by clause-embedding verbs (e.g. *know*, *hear*, *believe*) but also discusses the use of subordinate clauses in other capacities (e.g. antecedents of conditionals, relative clauses, etc.). The discussion is divided by the shape of morphology on the subordinate clause. I first discuss subordinate clauses which bear either =*go* or =*ígíí*. I then turn to subordinate clauses which do not bear any overt subordinating morphology.

2.2.3.1 Subordinate clauses marked by =*go*

The first kind of subordinate clauses that I discuss are those marked with =*go* at their right edge. I first illustrate with examples of *go*-marked clauses embedded by clause-embedding verbs. In each of the examples in (31), =*go* is obligatorily present: its deletion from (31a) or (31b) would result in ungrammaticality.

(31) a. [Shilíį' 'ałtso dínóonéeł]=go baa niséyeel.

1poss.horse all 3S.die.FUT=GO 3O.about 1S.dream.PERF
'I dreamt that all my horses would die.'

(Schauber 1979: 242)

b. [Tó yílą̨d]=go baa ntséskees.

water 3S.rise.PERF=GO 3O.about 1S.think.IMPF
'I'm thinking about the water rising.'

(adapt. Perkins and Fernald 2006: (190))

The morpheme =*go* is not only found on embedded clauses. As Schauber (1979) discusses, =*go* also occurs on subordinate clauses like (32). The subordinate clause in (32a) adds temporal information while the subordinate clause in (32b) gives the antecedent to a conditional.

(32) a. [Shizhé'é níyáa]=go da'diidį́į́l.

1poss.father 3S.come.PERF=GO 1plS.eat.FUT
'When my father comes, we'll eat.'

(Schauber 1979: 224)

b. [Tł'ízí chǫ́ǫ́h bich'į' kójít'į́į]=go hach'į' báháchįįh.

billy.boat 3O.to 4S.do.this=GO 3S.get.mad.IMPF
'If you do this to a billy boat, he gets mad.'

(YM 1987: d499)

The morpheme =*go* can also mark verbs that function as a clauses on their own. In some cases, such *go*-marked expressions seem to take on conventionalized meanings. For example, *yiską́* 'it dawned' marked by =*go* is the standard way of expressing 'tomorrow.'

(33) yiską́ + =go = yiską́ągo

3S.dawn.PERF + GO = 'tomorrow,' 'when it has dawned'

(Schauber 1979: 227)

In all of the cases seen so far, =*go* marks a clause consisting of (minimally) a verb. One case where =*go* seems not to mark a clause is its use on numerals. For instance,

the numeral 'two' can be variably realized either as *naaki* or as *naakigo* (i.e. *naaki* + *=go*).

2.2.3.2 Subordinate clauses marked by *=ígíí*

The second kind of subordinate clause I discuss bears the marker *=ígíí* at its right edge. The sentence in (34) illustrates how an *ígíí*-marked clause can be embedded by a clause-embedding verb like *yiyíínii'* 'he hears it.' Deletion of *=ígíí* from (34) would result in ungrammaticality.

(34) Kii [naakaii tl'óół yizhbizh]=ígíí yiyíínii'.

Kii Mexican rope 3O.3S.braid.PERF=IGII 3O.3S.hear.PERF
'Kii heard that the Mexican braided the rope.'

(Schauber 1979: 31)

The marker *=ígíí* is not only found on subordinate clauses which are embedded by other verbs. (35) shows *=ígíí* being used as a relative clause marker. The clause *'ashkii 'ałhosh* 'the boy is sleeping' is marked by *=ígíí* at its right edge.[11]

(35) ['Ashkii 'ałhosh]=ígíí 'ałhąą'.

boy 3S.sleep.IMPF=IGII 3S.snore.IMPF
'The boy who is sleeping is snoring.'

(Platero 1974: (7))

When *=ígíí* marks a clause which only contains a verb, the outcome is akin to nominalization ('the one who *verbs*'):

[11]For discussion of the syntax of relative clauses in Navajo, see Perkins 1974, Platero 1974, and Willie 1989.

(36) [tsé ndeiłkaah]=ígíí.

rock 3O.3S.investigate.IMPF=IGII
'Petrogeologists' (Lit. 'those who investigate the rocks').

(YM 1987: d731)

Thus far, all of the examples we have seen show *=ígíí* marking a full clause which contains (minimally) a verb. There are also cases of *=ígíí* marking nouns to indicate definiteness. Compare (37a) with (37b).[12]

(37) a. 'Atiin nihá 'áhodoolníił.

road 2plO.for ArealS.be.FUT
'We need a road.'

(YM 1987: d768)

b. Nihidá'ák'eh k'ad 'atiin=ígíí bee 'ałch'áádzo.

2plposs.fields now road=IGII 3O.with 3plS.separated
'Our fields are now separated by the road.'

(YM 1987: d87)

While I will not give a semantics or syntax for *=ígíí*, I note that it is not strange to find overlap between the distributions of relative clause markers, definite determiners, and embedded clause markers (i.e. complementizers). Building on early observations by Kiparsky and Kiparksy (1970), Schauber (1979) considers a unified treatment of *=ígíí* in its full range of uses, discussing similarities in the licensing conditions observed when *=ígíí* marks relative clauses and when it marks embedded clauses.

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[12]Note that *=ígíí* is not obligatory in order to invoke definiteness, cf. (i):

(i) 'Atiin 'ałch'ishjí 'aníť'i'.
road both.sides.LOC 3S.fence.extends.IMPF
'There's a fence on both sides of the road.'

(YM 1987: d87)

2.2.3.3 Unmarked subordinate clauses

The final kind of subordinate clause bears no special morphology (neither =*go* nor =*ígíí*). I refer to these clauses as 'unmarked.' Unmarked subordinate clauses can be embedded by the mental attitude verb *nisin* and by the verb of speech *ní*.[13]

(38) a. Alice [nahałtin] nízin.

Alice ArealS.rain.IMPF 3S.ATT.IMPF
'Alice thinks it is raining.'

b. Alice [nahałtin] ní.

Alice ArealS.rain.IMPF 3S.say.IMPF
'Alice says it is raining.'

c. Jáan Mary [chidí nahidíiłnih] yiłní.

John Mary car 3O.2S.buy.FUT 3O.with.3S.say.IMPF
'John told Mary to buy a car.'

(Schauber 1979: 23)

The sentences in (38) become ungrammatical if the embedded clause is marked with either =*go* or =*ígíí*. I illustrate with *nisin*:

(39) Alice [nahałtin]*=go/*=ígíí nízin.

Alice ArealS.rain.IMPF=GO/IGII 3S.ATT.IMPF
(*Intended:* 'Alice thinks it is raining.')

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[13]Verbs which embed unmarked clauses — *nisin* and *ní* — can be distinguished from many other clause-embedding verbs in Navajo by their lack of object marking corresponding to the embedded clause. Compare the grammatical (ia) with the ungrammatical (ib). The sentence in (ib) could only be repaired by removing the object prefix *yi-* from *nisin*:

(i) a. Kii [naakaii tl'óół yizhbizh]=ígíí yiyíínii'.
Kii Mexican rope 3O.3S.braid.PERF=IGII 3O.3S.hear.PERF
'Kii heard that the Mexican braided the rope.'
(Schauber 1979: 31)

b. *Alice [nahałtin] yinízin.
Alice ArealS.rain.IMPF 3O.3S.ATT.IMPF
(*Intended:* 'Alice thinks it is raining.')

I return to this point in section 3.2.1.

Given the absence of =*go* and =*ígíí*, clauses embedded by ***nisin*** and ***ní*** above are indistiguishable from main clauses. Compare the bracketed material in (38a-d) with the sentences in (40):

(40) a. **Nahałtin.**

ArealS.rain.IMPF
'It is raining.'

b. **Mary chidí ncidiyoołnih.**

Mary car 3O.3S.buy.FUT
'Mary will buy a car.'

c. **Chidí nahidíiłnih.**

car 3O.2S.buy.FUT
'You will buy a car.'

Given the parallels between main clauses and clauses which I claim to be embedded by ***nisin***, the careful reader might wonder whether the bracketed clauses in (38) are truly embedded by ***nisin***. I return to this question in Chapter 3 (section 3.2.2). To preview, I will claim that the bracketed clauses in (38) are, indeed, syntactically embedded by ***nisin***.

2.2.3.4 Selectivity for embedded clauses of a certain shape

Above, we saw examples of *go*-marked, *ígíí*-marked, and unmarked clauses embedded by verbs. As Schauber (1979) discusses in detail, certain clause-embedding verbs are selective with respect to the morphological shape of the clause they embed. That is, certain verbs require the embedded clause to be either *go*-marked, or *ígíí*-marked, or unmarked. Other clause-embedding verbs are not selective, however: these verbs allow embedded clauses which are *go*-marked or *ígíí*-marked. The patterns of (un)selectivity discussed by Schauber are summarized in the table below.

Table 2.1. Patterns of clausal embedding

Verb	**Translation**	*=go*	*=ígíí*	nothing
nisin	'think, want, etc.'	*	*	✓
ní	'say, order, etc.'	*	*	✓
'ádzaa	'imagine'	✓	*	*
baa neiséyeel	'dream that'	✓	*	*
shił bééhózin	'know that'	✓	✓	*
yishniih	'hear that'	✓	✓	*
shił yá'át'ééh	'be happy that'	✓	✓	*
shił nizhóní	'be glad that'	✓	✓	*
baa 'ákonisin	'be aware that'	✓	✓	*
baa ntséskees	'think about'	✓	✓	*
yinishdlą́	'believe that'	*	✓	*
bi'diit'á	'be bothered that'	*	✓	*

I leave for future work the very interesting question of why these patterns might arise.[14]

2.2.4 Temporality in Navajo

The last topic in Navajo grammar that I take up here is the expression of temporal meaning. The discussion below focuses on two topics: (i) expressions relating to the past, and (ii) expressions relating to the future. For a much more detailed discussion of temporality in Navajo, see Smith et al. (2007).

2.2.4.1 Markers of past

In section 2.2.1, we saw that verbs appear in different Modes that encode information about the temporal nature of the event described by the verb. We used Reichenbachian terminology to describe the temporal contribution of Imperfective, Perfective, and Future Modes (Reichenbach 1947, Klein 1994). The term Event Time is defined as the time at which the event takes place whereas the term Reference

[14]For discussion of possible semantic differences in clauses with the same verb (e.g. *shił bééhózin*) but different markers on the embedded clause (*=go* vs. *=ígíí*), see Schauber 1979.

Time refers to some temporal point of reference (e.g. the time which the sentence is about).

The verb in (41) illustrates a verb in the Imperfective Mode. Verbs in this mode are used when the Event Time contains the Reference Time, i.e. where the event is going on during the span of time under discussion.

(41) ch'í'níshkǫ́ǫ́h

out.1S.swim.IMPF
'I am swimming out (horizontally).'

As Smith et al. (2007) discuss, the default Reference Time is the speech time. Thus, verbs marked for Imperfective Mode receive, by default, a reading comparable to a present tense interpretation.

(42) Jáan nídii'nééh.

John up.3S.crawl.IMPF
'John is getting up.'

(Smith et al. 2007: (19b))

Navajo Imperfective Mode should not be conflated with a present tense, however. Particles can be added to override this default interpretation. One such particle is *ńt'éé'*, which appears to cast the Reference Time into the past. The sentence in (43) describes an event that was ongoing throughout some Reference Time which was prior to the time of speech.

(43) Dóola shił naalgeed ńt'éé'.

bull. 1O.with about.3S.buckride.IMPF NTEE
'I used to buckride a bull.'

(Smith et al. 2007: (8d))

We already saw *ńt'éé'* in our earlier discussion of subordination (section 2.2.2), where it marked clauses describing a event ongoing during a span of time (e.g. 'As I was herding sheep') prior to the speech time, as in (44).[15]

(44) [Kingóó 'aneeshkał] ńt'éé' shee nikihoníłtą.

store.to 1S.herd.PROG NTEE 1O.with begin.ArealS.rain.PERF
'As I was herding (sheep) toward the store, it began to rain on me.'

(Smith et al. 2007: (8c))

Two other morphemes that Smith et al. (2007) relate to a notion of pastness are *(y)ęę* and *=(d)ąą'*. We saw both of these morphemes in our earlier discussion of subordination, as well. As (45) shows, these morphemes can be used to mark clauses that function as temporal adverbial expressions. The bracketed clause in (45) describes a state occurring in a frame of time prior to the speech time.

(45) a. ['Ashkii nishłín]=ęę=dąą' dóola shił naalgeed ńt'éé'.

boy 1S.be=YEE=DAA bull 1O.with about.3S.buckride.IMPF NTEE
'When I was a boy, I used to buckride a bull.'

The morpheme *(y)ęę* is found elsewhere, as well. As (46) shows, it also marks relative clauses in which the event or state described by the embedding verb occurred prior to the speech time.

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[15] I label *ńt'éé'* a temporal adverbial rather than a tense marker largely because its presence is not obligatory in order for a past interpretation to arise. For instance, Perfective Mode verbs can — and do, in typical contexts — describe events taking place in the past:

(i) Shimá ch'iyáán ła' bá nahálnii'.
1poss.mother food some 3O.for 3O.1S.buy.PERF
'I bought some groceries for my mother.'

(Smith et al. 2007: (19d))

(46) hooghan ’íishłaa=yęę

hogan 3O.1S.build.PERF=YEE
‘the hogan that I built.’

The same morpheme is also found in postnominal position, as in (47). In this use, it is translated as ‘the late’ or ‘the aforementioned’:

(47) ’Áko télii yęę hanáánáádzíí’.

and.then burro YEE again.speak.PERF
‘And then the (aforementioned) burro spoke again.’

(YM 1987: d757)

The past markers *nt’éé’* and *(y)ęę* will return in our discussion of attitudes of desire in Navajo (section 3.4). In those constructions, we find the past markers co-occurring with future-marked verbs, which I turn to now.

2.2.4.2 Future morphology

As discussed in section 2.2.1, verbs can also be marked for Future Mode. Verbs that are marked for Future Mode are most frequently used to describe events taking place at some point in time subsequent to the speech time. This is illustrated by (48).

(48) a. *Context:* You’re telling me about what Alice is going to do next year.

b. Alice Hoozdogóó donéél.

Alice California.to 3S.move.FUT
‘Alice will move to California.’

I will refer to verbs like *donéél* as ‘future-marked,’ which implies a link to future tense. If we want to claim that the verb in (48b) is marked for future tense, however, it must be a relative tense in the sense as described by Comrie (1985: 56), such that “the reference point for location of a situation is some point in time given by the context, not necessarily the present moment [i.e. the time of speech].” That is, while (48b)

describes an event occurring subsequent to the speech time, future-marked verbs can also be used where the Reference Time is a point prior to the time of speech. This state of affairs is illustrated in (49). Here, the Reference Time is the doctor's time of speaking, which is given by the time adverbial *'ashdla' yikąąnidąą'* 'five days ago.' The future-marked verb *'adíiłchíił* describes an event of birth that occurs after this Reference Time.

(49) **'Ashdla' yikąąnidąą' 'azee'íił'íní [naaki yiskąągo 'adíiłchíił]**
five day.past doctor two day 1S.give.birth.FUT
shidiiniid.
1O.3S.say.PERF
'Five days ago, the doctor told me I would give birth in two days.'

Given the relative nature of future-marked verbs, we might follow other authors and treat Future Mode in Navajo not as a tense but as a marker of prospective aspect (Kratzer 2011, Matthewson 2014) or, equivalently, as an overt realization of *woll* (Abusch 1985, 1988). I maintain the term 'future-marked' largely to keep a connection with the Athabaskanist term 'Future Mode.'

We also saw in section 2.2.1, stative verbs do not allow multiple Modes. Lacking a morphological Future Mode, a stative verb like *nineez* in (50) can be given a future interpretation if it is followed by the particle *dooleeł*, sometimes shortened by speakers to *doo*.

(50) a. *Context:* The doctor is examining your baby. Given his growth so far, the doctor says that your baby is going to be tall when he grows up.

b. **Ne'awéé' nineez dooleeł.**
2poss.baby 3S.tall FUT
'Your baby will be tall.'

Smith et al. (2007) note that there do not seem to be any discernible semantic differences between morphological Future Mode and the particle *dooleeł*. The particle *dooleeł* is just like the morphological Future Mode in that it can describe a state occurring in the future of some point in the past. In later discussion, I treat both as semantically equivalent markers of futurity. Verbs marked for Future Mode and verbs followed by *dooleeł* will both be described as 'future-marked.'

2.2.4.3 The temporal contribution of Optative Mode

In section 2.2.1, we discussed Optative Mode as a verb form that appeared in conjunction with particles relating to desires ((51a)) and in isolation to express prohibitive meanings ((51b)):

(51) a. Nahóółtąą' lágo.

ArealS.rain.OPT hope.not
'I hope it does not rain.'

b. Tsásk'eh yik'inaogeeh.

bed 3O.from.3S.fall.OPT
'Don't let him fall off the bed.'

(YM 1987: d208)

It seems that sentences with Optative-marked verbs and particles like *lágo* can describe ongoing events ((52)) or events occurring in the future ((53)).

(52) a. *Context:* You look outside and see that it is raining. You are not happy about this because it means you can't go for a walk. You say:

b. Nahółtąą' lágo.

ArealS.rain.OPT hope.not
'I wish it weren't raining!'

(53) a. *Context:* You are playing baseball later and don't want it to rain. You look outside and see dark clouds gathering on the horizon. You say:

b. Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
'I hope it doesn't rain!'

Optative-marked verbs are not accepted in sentences that express negative desires about past events, e.g. (54):

(54) a. *Context:* You just got home from vacation. You see that it has rained a lot while you were gone, which means that your garden was flooded and destroyed. You say: I wish it hadn't rained!

b. #Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
(*Intended:* I wish it hadn't rained!')

Comment: "You're saying, 'I hope it doesn't keep on raining.'"

2.3 Summary

This chapter has provided an overview of aspects of Navajo grammar that will be key to later discussion of attitude reports and comparative constructions in the language. Additional detail about these, and other, topics in Navajo grammar will be addressed in subsequent sections as the need arises.

PART II: ATTITUDE REPORTS IN NAVAJO

CHAPTER 3

ATTITUDES OF THINKING AND DESIRING IN NAVAJO

3.1 Introduction

This chapter provides an empirically rich description of the morphological, syntactic, and semantic characteristics of Navajo sentences which express attitudes of 'thinking,' 'wanting,' and 'wishing' like those in (1) and (2). Each of the sentences below contains some form of the Navajo verb *nisin* in the main clause.[1] I refer collectively to such sentences as ***nisin*-sentences**. Some *nisin*-sentences contain (maximally) one member of a set of special particles, such as *sha'shin* ((1d)), *laanaa* ((2d)), or *lágo* ((2e)); other *nisin*-sentences lack one of these particles.

(1) Attitudes of 'thinking'

a. [Nahałtin] nisin.

ArealS.rain.IMPF 1S.ATT.IMPF
'I **think** it is raining.'

b. [Nahodoołtį́ł] nisin.

ArealS.rain.FUT 1S.ATT.IMPF
'I **think** it will rain.'

[1] As discussed at length in Chapter 2, Navajo verbs change shape for person, number, and temporal orientation (e.g. aspect). *Nisin* is the imperfective form of the verb marked for a first-person singular subject. I use *nisin* to refer collectively to different forms of this verb since this is the form of all verbs used to organize entries in Young and Morgan's (1987) dictionary and grammar of the Navajo language.

c. Kii [nahóółtą́] nízin.

Kii ArealS.rain.PERF 3S.ATT.IMPF
'Kii **thinks** it rained.'

d. Hastiin [nahodoołtį́į́ł sha'shin] nízin.

man ArealS.rain.FUT probably 3S.ATT.IMPF
'The man **thinks** it will probably rain.'

(2) Attitudes of desiring

a. [Nahodoołtį́į́ł] nisin.

ArealS.rain.FUT 1S.ATT.IMPF
'I **want** it to rain.'

b. Sandy [Hoozdodi nighan doo yę́ę́] nízin.

Sandy California.LOC 2S.live FUT YEE 3S.ATT.IMPF
'Sandy **wishes** you lived in CA (now),' 'Sandy **wishes** for you to live in CA.'

c. Mary [Alice Hoozdogóó donéé́ł ńt'éé'] nízin.

Mary Alice California.to 3S.move.FUT NTEE 3S.ATT.IMPF
'Mary **wishes** Alice had moved to California.'

d. [Níneez laanaa] nisin.

2S.tall wishful 1S.ATT.IMPF
'I **wish** you were tall.' (YM, 1987: d513)

e. Alice [nahółtą́ą́' lágo] nízin.

Alice ArealS.rain.OPT hope.not 3S.ATT.IMPF
'Alice **hopes** it won't rain.'

The structure of the chapter is as follows. Section 3.2 discusses key syntactic characteristics of *nisin*-sentences as well as key morphological characteristics of *nisin* itself. Section 3.3 discusses the semantics and morphosyntactic properties of *nisin*-sentences that express attitudes of thinking ((1)). Section 3.4 does the same for *nisin*-sentences that express attitudes of desire ((2)). Section 3.5 discusses *nisin*-sentences

that are ambiguous between attitudes of thinking and attitudes of desire ((1b), (2a)). Section 3.6 summarizes the key findings.

As an appendix to this chapter, I present the data in section 3.7. While the theoretical discussion in subsequent chapters will not focus on these data, I include them here to illustrate more fully the uses of ***nisin***. Unlike the sentences in (1) and (2), the sentences discussed in section 3.7 contain the verb ***nisin*** but do not contain an embedded clause.

Before continuing, I would like to note that I will only be concerned here with attitude reports that contain the verb ***nisin***. The range of meanings expressible by such sentences is restricted to attitudes of thinking and attitudes of desire. These are, of course, not the only kinds of attitudes that can be expressed in Navajo. In our introductory discussion of clausal embedding (section 2.2.3), we saw many examples of other attitudes. Two examples are repeated below.

(3) a. [Ch'é'étiingóó naanée]=go shił bééhózin.

entrance.toward 3S.play.IMPF=GO 1O.with 3S.know
'I know that he is playing in the yard.'

Lit: 'It is known to me that he is playing in the yard.'

b. Kii [naakaii tl'óół yizhbizh]=ígíí yiyíínii'.

Kii Mexican rope 3O.3S.braid.PERF=IGII 3O.3S.hear.PERF
'Kii heard that the Mexican braided the rope.'

(Schauber 1979: 31)

I will not be concerned here with the analysis of sentences like (3): all focus will be on ***nisin***-sentences.

3.2 Basic morphosyntactic properties of ***nisin***-sentences

This section gives an overview of general morphological and syntactic characteristics of ***nisin***-sentences. Section 3.2.1 discusses morphological properties of ***nisin*** itself.

Section 3.2.2 discusses syntactic properties of *nisin*-sentences, including their word order and properties of the clause embedded by *nisin*. Section 3.7 discusses additional verbs related to the verb *nisin* considered here; these additional verbs will be noted for descriptive purposes but not discussed in depth.

3.2.1 The morphology of clause-embedding *nisin*

In section 2.2.1, we discussed Modes in the context of Navajo verbal morphology. The tables below show the surface forms of *nisin* marked for various subjects (not all subjects are shown). Table 3.2.1 shows Imperfective Mode and Table 3.2.1 shows Perfective Mode. The only morphological difference between the two Modes is the shape of the stem: Imperfective *-zin* vs. Perfective *-zíí'*.[2]

Table 3.1. Imperfective Mode Paradigm of *nisin*

Person	Verb
1S	*nisin*
2S	*nínízin*
3S	*nízin*
1pl	*niidzin*
4S	*jinízin*

Table 3.2. Perfective Mode Paradigm of *nisin*

Person	Verb
1S	*niizíí'*
2S	*ninizíí'*
3S	*niizíí'*
1pl	*niidzíí'* '
4S	*jiniizíí'*

[2]The first-person subject prefix in the Imperfective Mode changes the verb stem from *-zin* into *-sin*.

All Modes for which *nisin* can be marked are shown in the table below. The verb words shown are marked for first-person subjects. Young and Morgan (1987: d650).[3]

Table 3.3. Modes of *nisin* (first-person subject)

Mode	**Surface Form**
Imperfective:	*nisin*
Perfective:	*niizį́'*
Future:	*dinéessį́ł*
Iterative:	*nániisdzį́h*
Usitative:	*niisdzį́h*
Optative:	*noossį́h*

Key pieces of morphology within *nisin* include the thematic prefix *ni* and the stem in its various forms shown in (3). This thematic prefix is found in all Modes of *nisin* and, according to Young and Morgan (1987: d679), relates to mental processes. The same thematic prefix appears to occur in the verb *n(i)tséskees* 'I think, I cogitate.' Furthermore, the verb stem found in *nisin* seems to also appear in other verb words relating to mental processes, including the verb words *shił bééhózin* 'I know that' (literally, 'with me it is known') or *sohidizin* 'to be said (as a prayer).'

As with other verbs (*viz.* section 2.2.4), when *nisin* occurs in Imperfective Mode, it is by default interpreted as expressing an ongoing state of mind (thinking, desire). This is illustrated by the translations given for the sentences in (4).

(4) a. [Nahałtin sha'shin] nisin.

ArealS.rain.IMPF probably 1S.ATT.IMPF
'I think it is probably raining.'

b. [Nahałtin laanaa] nisin.

ArealS.rain.IMPF wishful 1S.ATT.IMPF
'I wish that it were raining.'

[3]Young and Morgan (1987: d670) name the (first-person subject-marked) form *niissį́h* and *nissin* as alternative forms of *nisin*. Phonologically, these verbs are extremely similar to *nisin*. In the absence of any evidence to the contrary, I will treat these verbs as equivalent to *nisin*.

The sentences in (5) demonstrate that when *nisin* instead occurs in Perfective Mode, its default interpretation is as describing a state of mind held in the past.

(5) a. [Nahałtin sha'shin] niizįį'.

ArealS.rain.IMPF probably 1S.ATT.PERF
'I thought it was probably raining.'

b. [Nahałtin laanaa] niizįį'.

ArealS.rain.IMPF wishful 1S.ATT.PERF
'I wished that it was raining.'

In addition to using Perfective Mode, attitudes of thinking and desire which held in the past can also be expressed by using the past particle *ńt'éé'* in postverbal position:

(6) a. [Nahałtin sha'shin] nisin ńt'éé'.

ArealS.rain.IMPF probably 1S.ATT.IMPF NTEE
'I thought that it was probably raining.'

b. [Nahałtin laanaa] nisin ńt'éé'.

ArealS.rain.IMPF wishful 1S.ATT.IMPF NTEE
'I wished that it was raining.'

When the verb *nisin* embeds clauses, it never bears object marking corresponding to the embedded clause.[4]

(7) a. *Alice [nahółtąą' laanaa] yinízin.

Alice ArealS.rain.OPT wishful 3O.3S.ATT.IMPF
(*Intended:* 'Alice wishes it were raining.')

---

[4]As Schauber (1979) points out, the verb of speech *ní* also lacks object marking corresponding to the embedded clause:

(i) *Alice [nahałtin] yiní.
Alice ArealS.rain.IMPF 3O.3S.say
(*Intended:* 'Alice says it is raining.')

b. *Alice [nahałtin] yinízin.

Alice ArealS.rain.IMPF 3O.3S.ATT.IMPF
(*Intended:* 'Alice thinks it is raining.')

The absence of object marking on clause-embedding ***nisin*** sets this verb apart from many other clause-embedding verbs in Navajo. The examples in (8) are repeated from section 2.2.3.

(8) a. [Tó yílą̨d]=go baa ntséskees.

water 3S.rise.PERF=GO 3O.about.1S.think.IMPF
'I'm thinking about the water rising.'

(adapt. Perkins and Fernald 2006: (190))

b. Kii [naakaii tl'óół yizhbizh]=ígíí yiyíínii'.

Kii Mexican rope 3O.3S.braid.PERF=IGII 3O.3S.hear.PERF
'Kii heard that the Mexican braided the rope.'

(Schauber 1979: 31)

Both of the verbs in (8) feature object marking corresponding to the embedded clause.

It is not the case that the verb ***nisin*** never bears object-marking, however: rather, this seems to be a property which only arises when ***nisin*** embeds a clause. When ***nisin*** embeds a nominal expression ((9)) rather than a clause, ***nisin*** obligatorily bears an object prefix corresponding to the object.

(9) Mary [bilasáana ła'] yinízin.

Mary apple INDEF.DET 3O.3S.ATT.IMPF
'Mary wants an apple.'

I discuss examples like (9) at greater length in the appendix to the chapter (section 3.7).

3.2.2 On the properties of clauses embedded by *nisin*

This section investigates the properties of clauses which I have assumed to be embedded by the verb *nisin*. I first address in more detail the assumption that *nisin* embeds clauses. I then present diagnostics from Schauber (1979) and Speas (2000) which demonstrate that these embedded clauses should not be analyzed as a quotation (direct discourse).

3.2.2.1 Evidence for clausal embedding by *nisin*

In the discussion above, I have tacitly assumed that the clauses like the one shown bracketed in (10) are embedded by *nisin*:

(10) [Nahałtin (sha'shin)] nisin.

ArealS.rain.IMPF probably 1S.ATT.IMPF
'I think it is (probably) raining.'

This assumption requires a bit more motivation. we saw above that clauses embedded by *nisin* (e.g. (9)) are syntactically indistiguishable from main clauses. Furthermore, clauses embedded by *nisin* do not even bear any subordinating morphology (e.g. *=go*, *=ígíí* (section 2.2.3). I repeat illustrative examples of marked embedded clauses below:

(11) a. [Ch'é'étiingóó naanée]=go shił béézhózin.

entrance.toward 3S.play.IMPF=GO 3O.1S.know.IMPF
'I know that he is playing in the yard.'

b. Kii [naakaii tl'óół yizhbizh]=ígíí yiyíínii'.

Kii Mexican rope 3O.3S.braid.PERF=IGII 3O.3S.hear.PERF
'Kii heard that the Mexican braided the rope.'

(Schauber 1979: 31)

Furthermore, we saw in section 3.2.1 that unlike the clause-embedding verbs in (10), *nisin* never bears object marking corresponding to the (purportedly) embedded

clause. That is, there is no morphological marking on the verb *nisin* in (10) to indicate that *nisin* stands in any kind of grammatical relation with the bracketed clause.

Before continuing, then, we should motivate the assumption that *nisin* can embed clauses by ruling out an alternative hypothesis in which (10) contains two paratactically-related clauses: the bracekted clause and the clause containing (only) *nisin*.

There are several pieces of evidence which point away from this alternative hypothesis. First, the word order of *nisin*-sentences with overt subjects. In Navajo, *nisin*-sentences with overt subjects exhibit the same default SOV word order as sentences with nominal subjects and objects (section 2.2.2):

(12) a. Kii [nahóółtą́] nízin.

Kii ArealS.rain.PERF 3S.ATT.IMPF
S O V

'Kii thinks it rained.'

b. Łį́į́' dzaanéézz yiyiiłtsą́ą́.

horse mule 3O.3S.kick.PERF
S O V

'The horse saw the mule.'

If *nisin* in (12a) stood in a paratactic relation with the bracketed clause, it is unclear why *Kii*, the subject of *nisin*, should occur to the left of the bracketed clause. After all, *Kii* cannot possibly be the subject of the bracketed verb *nahóółtą́* 'it rained.' If the bracketed clause is syntactically embedded by *nisin*, however, the position of the subject makes sense: it occurs where we expect to find subjects in relation to objects of verbs.

A second piece of evidence that clauses shown bracketed above are embedded by *nisin* comes from data like (13), first discussed by Willie (1989) and discussed by Speas (2000). Willie demonstrates that in Navajo, coference is not possible between

a third-person subject on the verb in the bracketed clause and a third-person subject on *nisin*:

(13) [Ndoolnish] nízin.

Kii 3S.work.FUT 3S.ATT.IMPF
'S/he$_i$ thinks s/he$_{*i/j}$ will work.'

(adapt. Willie 1989: 511)

By contrast, Navajo clauses whch actually stand in a paratactic relation (e.g. (14)) allow coreference between third-person subjects in adjacent clauses:

(14) Kinłánígóó 'íiná. 'Akǫǫdi bił yá'át'éél.

Flagstaff.to 3S.move.PERF there.LOC 3O.with.3S.be.good
'S/he$_i$ moved to Flagstaff. S/he$_{i/j}$ likes it there.'

Thus, if the bracketed clause in (13) stood in a paratactic relation with *nisin*, it is not clear why (13) and (14) should differ in their coreferential possibilities.

I will conclude, then, that we were correct to assume that *nisin* can embed clauses. However, this conclusion does not explain the morphosyntactic differences between *nisin*-sentences and other examples of clausal embedding in Navajo. I have not offered any answer as to why *nisin* lacks object marking corresponding to the embedded clause, or why clauses embedded by *nisin* lack overt subordinating markes *=go* and *=ígíí*. We must leave consideration of these questions to future investigation.

3.2.2.2 Clauses embedded by *nisin* are not quotations (direct discourse)

Although the evidence discussed above seems to indicate that *nisin* embeds clauses, Schauber (1979) and Speas (2000) observe that these embedded clauses exhibit properties reminiscent of quotations (direct discourse). In comparison with indirect discourse ((15a)), direct discourse ((15b)) behaves less like it is truly embedded by the verb of speech. One contrast between indirect and direct discourse is in the behav-

ior of indexical expressions, such as the first-person pronoun. In indirect discourse ((15a)), the first-person pronoun is interpreted as referring to the speaker of the entire utterance (i.e. not Mary). In direct discourse ((15b)), by contrast, the first-person pronoun is interpreted as referring to the subject of the verb of speech (i.e. Mary).

(15) a. Mary says/said (that) I bought a book. *Indirect discourse*

b. Mary says/said, "I bought a book." *Direct discourse*

As Schauber (1979) and Speas (2000) observe, Navajo ***ní***-sentences ((16)) as well as ***nisin***-sentences ((17)) permits the first-person subject on an embedded verb to refer either to the speaker of the entire utterance (i.e. not John) or to the subject of the verb ***ní/nisin*** (i.e. John). That is, a ***nisin***-sentence like (16) allows both an indirect discourse-like interpretation as well as a direct-discourse-like interpretation.[5]

(16) **Jáan [chidí nahálnii'] ní.**

John car 3O.1S.buy.PERF 3S.say.IMPF

(ii) 'John$_i$ says I$_{speaker}$ bought a car.' *Indirect discourse-like*

(i) 'John$_i$ says I$_i$ bought a car.' *Direct discourse-like*

(Speas 2000: (1), from Schauber 1979: 19))

(17) **Jáan [chidí nahałnii'] nízin**

John car 3O.1S.buy.PERF 3S.ATT.IMPF

(i) 'John$_i$ thinks I$_{speaker}$ bought a car.' *Indirect discourse-like*

(ii) 'John$_i$ thinks I$_i$ bought a car.' *Direct discourse-like*

(Schauber 1979: 19)

[5]Parallel behavior is also exhibited by embedded second-person pronouns (Schauber 1979, Speas 2000).

Ní- and ***nisin***-sentences behave like examples of direct discourse in another way, as well. Recall from above that embedded third-person subjects cannot be interpreted as coreferent with a third-person subject of ***nisin*** ((18)).

(18) [Ndoolnish] nízin.

Kii 3S.work.FUT 3S.ATT.IMPF
'S/he$_i$ thinks s/he$_{*i/j}$ will work.'

(adapt. Willie 1989: 511)

In English, examples of indirect discourse permit coreference between third-person pronouns in the main and embedded clauses ((19a)). By contrast, examples of direct discourse ((19b)) behave like the Navajo sentence in (18): the main clause and embedded third-person pronouns cannot be coreferent.[6]

(19) a. She$_i$ says/said that she$_{i/j}$ bought a book.

b. She$_i$ says/said, 'She$_{*i/j}$ bought a book.'

Thus, there are certain notable similarities between ***nisin***- and ***ní***-sentences in Navajo and examples of direct discourse in English.

In spite of initial appearances, however, Speas (2000) argues that the 'direct discourse-like' interpretations of ***ní***- and ***nisin***-sentences should not be analyzed as true cases of direct discourse. Speas studies in detail the properties of ***ní***-sentences like (18) to make this point. In the following paragraphs, I step through two key examples presented by Speas (2000) in favor of the second hypothesis. I present examples of ***nisin***-sentences which make the same points. The observations about ***nisin***-sentences come from original fieldwork (in the case of (21)) or from observations originally due to Schauber (1979) which I replicated in fieldwork (in the case of (24) and (25)).

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[6]I thank Angelika Kratzer (p.c.) for pointing this out to me.

First, Speas (2000) discusses examples of *ní*-sentences that demonstrate that clause embedded by *ní* does not have to replicate perfectly what was originally said. This sets such clauses apart from true examples of direct discourse quotes. Among the examples she considers is (20), in which the bracketed clause in the *ní*-sentence (20d)) contains a deictic term, *yiskąągo* 'tomorrow,' which was not used — and could not have been used — in the original utterance ((20b)). *Yiskąągo* in (20d) is evaluated with respect to the perspective of the speaker of the utterance in its entirety rather than the perspective of Kii.

(20) a. *Context, part 1:* On Wednesday I talk with Kii, and Kii says:

b. **Damóo Kinłánígóó deeshá.**

Sunday Flagstaff.to 1S.go.FUT
'I will go to Flagstaff on Sunday.'

c. *Context, part 2:* On Saturday, I talk to you, and I say:

d. **Kii [yiskąągo Kinłánígóó deeshá] ní.**

Kii tomorrow Flagstaff.to 1S.go.FUT 3S.say.IMPF
'Kii says he is going to Flagstaff tomorrow.'

Lit: Kii says, I_{Kii} will go to Flagstaff tomorrow.

(Speas 2000: (11))

I adapted Speas's materials for use in elicitation sessions and found that *nisin*-sentences exhibit the same behavior. The bracketed clause in the *nisin*-sentence ((21d)) contains a deictic term *yiskąągo* 'tomorrow' that is evaluated relative to the utterance perspective. That is, Kii's desire on Wednesday was not *that I go to Flagstaff tomorrow.*[7]

[7]I changed the choice of verb of motion from *deeshá* ((20)) to *deeshąął* ((21)) on the suggestion of consultants. Nothing hinges on this.

(21) a. *Context, part 1:* On Wednesday I talk with Kii about what he wants to do on the upcoming weekend. Kii says:

b. **Damóo Kinłánígóó deeshááł.**

Sunday Flagstaff.to 1S.go.FUT
'I will go to Flagstaff.'

c. *Context, part 2:* On Saturday, I am talking to you about Kii. I say:

d. **Kii [yiskąągo Kinłánígóó deeshááł] nízin.**

Kii tomorrow Flagstaff.to 1S.go.FUT 3S.ATT.IMPF
'Kii wants to go to Flagstaff tomorrow.'

Lit: Kii ***nízin***, I_{Kii} will go to Flagstaff tomorrow.

The sentence in (21d) exhibits 'local perspective': the embedded first-person subject refers to the attitude holder, *Kii*. However, the sentence in (21d) contains an adverb (***yiskąągo*** 'tomorrow') that was not in Kii's original utterance in (21a). Thus, the bracketed material in (21d) cannot be an example of direct discourse.

The second kind of evidence discussed by Speas (2000) builds from work by Schauber (1979), who observed that *wh*-expressions can be extracted from clauses embedded by ***ní***. In (22a), the *wh*-expression ***háadilá*** has moved out of the bracketed clause, past the subject (***Kii***) of the main clause verb of speech (***yiłní***).

(22) **Háadilá$_i$ Kii [Mary t$_i$ díníłnish] yiłní.**

where.LOC.Q Kii Mary 2S.work.FUT 3O.to.3S.say.IMPF
'Where did Kii tell Mary to work?'

Lit: 'Where did Kii say to Mary$_j$ you$_j$ work.'

(Speas 2000: (8a), Schauber 1979: (41))

The availability of extraction is another strike against a direct discourse account. Authors including Partee (1973), Schlenker (1999), Speas (2000), and Anand and Nevins (2004) have observed that direct discourse behaves like an impermeable chunk of structure that cannot interact grammatically with the embedding clause. In En-

glish, *wh*-movement is not permitted out of direct discourse complements ((23a)) but is licit out of indirect discourse complements ((23b)):

(23) a. *Who$_i$ does she say, "I like t$_i$."?

b. Who$_i$ did she say that she likes t$_i$?

(Speas 2000)

We find parallel observations made by Schauber (1979) for ***nisin***-sentences. Schauber gives the following example to demonstrate that *wh*-extraction is possible from ***nisin***-sentences.

(24) **Ha'át'íish Jáan [t$_i$ nahideeshnih] nízin?**

WH.Q John 3O.1S.buy.FUT 3S.ATT.IMPF
'What does John want to buy?'

(Schauber 1979: (42))

I replicated data like (24) using the context in (25a). The elicited sentence in (25b) demonstrates that *wh*-extraction is also possible out of ***nisin***-sentences that express thinking:

(25) a. *Context:* At the picnic, Kii ate a hamburger bun that had a brown patty on it. Kii thought he ate beef, but he actually ate a mushroom! He still thinks he ate beef. You know that Kii ate a mushroom, but aren't sure what he thinks he ate. You say:

b. **Ha'áti'íílá$_i$ Kii [t$_i$ yíyą́ą́'] nízin?**

WH.Q$_i$ Kii 3O.1S.eat.PERF 3S.ATT.IMPF
'What does Kii think that he ate?'

In the sentence in (25b), the first-person of the verb in the bracketed clause ***yíyą́ą́'*** refers to Kii: thus, the embedded clause exhibits what we have referred to as local perspective. It is from this clause which I claim the *wh*-expression ***ha'át'íílá*** has been

extracted. In the bracketed clause, ***ha'át'íílá*** functions as the object of the verb ***yíyą́ą́'*** 'I ate it.' Looking at (25b), we can tell that ***ha'át'íílá*** has moved into the main clause because it occurs to the left of *Kii*, which must have originated at the subject of the main clause. In turn, we know that *Kii* originated in the main clause because it could not have originated in the embedded clause. If it had, it would share the clause with a verb marked for a first-person subject. As shown in (26), this is an ungrammatical configuration:

(26) *Kii yíyą́ą́.
Kii 3O.1S.eat.PERF
(*Intended:* 'Kii ate it.')

To summarize, I have used the reasoning and diagnostics developed by Speas (2000) to demonstrate that — as Speas did for *ní*-sentences — the verb ***nisin*** is capable of embedding clauses. Furthermore, despite interesting behaviors on the part of indexical expressions, clauses embedded by ***nisin*** cannot be obligatorily treated as direct discourse (quotes). In later discussion of ***nisin***-sentences, I will consider only structures in which clauses shown bracketed above are syntactically embedded by ***nisin***.[8,9]

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[8]The fact that the bracketed clauses in ***nisin***-sentences do not *have* to be treated as direct discourse does not mean, however, that they should never be treated as cases of direct discourse: perhaps the 'direct discourse-like' examples which I discussed above are string ambiguous with actual direct discourse structures. If this were an available alternative structure in Navajo, we would predict them to be infelicitous and ungrammatical, respectively, in the contexts given in (21) and (25).

[9]This does not, of course, answer the question of how the 'direct discourse-like' interpretations arise for ***ní***- and ***nisin***-sentences in the first place. The phenomenon exhibits the hallmarks of 'indexical' shift, in which embedded indexicals can be evaluated relative to some more local context of utterance, i.e. the one introduced by a verb of speech. Indexical shift has been discussed in depth for a number of languages, including Slave (Rice 1986), Amharic (Schlenker 2003), Zazaki (Anand and Nevins 2004), Uyghur (Shklovsky and Sudo 2013), Turkish (Özyildiz 2013), Korean (Park 2014), and Nez Perce (Deal 2014).

3.2.3 Summary

The foregoing discussion has highlighted key morphological and syntactic properties of *nisin*-sentences. In the next sections, we will examine the morphosyntactic and semantic characteristics of attitude reports that contain *nisin*. I begin with attitudes of thinking in section 3.3 and continue with attitudes of desire in section 3.4.

3.3 Attitudes of thinking

This section investigates *nisin*-sentences which are felicitous in contexts in which the subject of *nisin* thinks that the world is a certain way (i.e. the world is consistent with the proposition (set of possible worlds) determined by the embedded clause).

(27) a. Hastiin [nahodooł**ţ**į́ł sha'shin] nízin.
man ArealS.rain.FUT probably 3S.ATT.IMPF
'The man **thinks** it must be going to rain.'

b. Kii [nahałtin] nízin.
Kii ArealS.rain.IMPF 3S.ATT.IMPF
'Kii **thinks** it is raining.'

c. Kii [nahóółtą́] nízin.
Kii ArealS.rain.PERF 3S.ATT.IMPF
'Kii **thinks** it rained.'

d. Kii [nahodooł**ţ**į́ł] nízin.
Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii **thinks** it will rain.'

The discussion below divides the sentences in (27) into two sets. First, *nisin*-sentences that contain a particle (*sha'shin*) in the embedded clause ((27a)). When we discuss *nisin*-sentences that contain *sha'shin* in the embedded clause, we will also see that *sha'shin* can occur in main clauses. Second, *nisin*-sentences that do not contain any particles in the embedded clause ((27b-d)). Sections 3.3.1 and 3.3.2 survey each

set of sentences in turn. In addition, section 3.3.2 compares the meanings of ***nisin***-sentences with and without the particle ***sha'shin***.

3.3.1 'Thinking' with particles

This section 3.3.1 explores ***nisin***-sentences that contain the particle ***sha'shin*** in the embedded clause. I demonstrate that ***sha'shin*** not only occurs in clauses embedded by ***nisin*** but in main clauses as well. I argue that in both environments, ***sha'shin*** makes a contribution similar to English epistemic modals *probably* or *must*.

I start with the sentences in (28), in which ***sha'shin*** is embedded by ***nisin***.

(28) a. **Kii [nahałtin sha'shin] nízin.**

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it must be raining.'

b. **Kii [nahóółtą sha'shin] nízin.**

Kii ArealS.rain.PERF probably 3S.ATT.IMPF
'Kii thinks it must have rained.'

c. **Kii [nahodoołtį́ł sha'shin] nízin.**

Kii ArealS.rain.FUT probably 3S.ATT.IMPF
'Kii thinks it must be going to rain.'

As suggested by the translations shown above, the sentences in (28) were judged to be felicitous in contexts which dealt with thoughts about present ((29)), past ((30)), and future ((31)) matters.

(29) a. *Context:* Kii is inside in a windowless room so he does not know what the weather is like. He hears a pattering sound on the roof.

b. **Kii [nahałtin sha'shin] nízin.**

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it must be raining.'

(30) a. *Context:* Kii was out of town yesterday and does not know what the weather was like. Upon returning home, Kii notices that the flowers and grass looks fresher, as though it has recently rained.

b. Kii [nahóółtą́ sha'shin] nízin.

Kii ArealS.rain.PERF probably 3S.ATT.IMPF
'Kii thinks it must have rained.'

(31) a. *Context:* Kii looks outside and sees dark clouds in the distance. The air smells like rain is on the way.

b. Kii [nahodoołtį́į́ł sha'shin] nízin.

Kii ArealS.rain.FUT probably 3S.ATT.IMPF
'Kii thinks it must be going to rain.'

A brief aside: later on, we will see that some ***nisin***-sentences can express attitudes of desire (section 3.4). However, no ***nisin***-sentence that contains ***sha'shin*** can express desire. The sentences in (29) — (31) are never felicitous in contexts targeting such meanings:

(32) a. *Context:* Kii is a farmer. He wants it to rain.

b. #Kii [nahodoołtį́į́ł sha'shin] nízin.

Kii ArealS.rain.FUT probably 3S.ATT.IMPF
'Kii thinks it must be going to rain.'

Comment: "He's predicting that it's going to rain.''

Returning to the contribution of ***sha'shin***, I observe that the contexts in (29) — (31) have a key property in common: Kii is drawing a conclusion on the basis of indirect or inferential evidence. That is, Kii thinks what he does on the basis of evidence of it raining (the aftermath of rain, the signs of rain to come) but Kii has not himself witnessed the rain.

If we try to use ***sha'shin*** in a context in which Kii has **direct evidence** that it is raining, the result is infelicitous. In the context in (33a), Kii sees it raining. Consequently, the sentence with ***sha'shin*** is infelicitous:

(33) a. *Context:* Kii looks outside and sees it raining.

b. #Kii [nahałtin sha'shin] nízin.

Kii ArealS.rain.IMPF possibly 3S.ATT.IMPF
#'Kii thinks it must be raining.'

The particle ***sha'shin*** is also found in main clauses. When it occurs in main clauses, the conditions on the use of ***sha'shin*** seem to be the same. Pairs of examples like (34) and (35) demonstrate that main clause occurences of ***sha'shin*** are only felicitous in contexts in which, for example, the truth of it raining is concluded on the basis of indirect or inferential evidence ((34)). Infelicity results if direct evidence is available ((35)).

(34) a. *Context:* You see people coming in wearing wet clothes and carrying umbrellas. You haven't looked outside so you don't know for sure whether it is raining. You say:

(Context from von Fintel and Gillies 2010)

b. Nahałtin sha'shin.

ArealS.rain.IMPF probably
'It must be raining,' 'it's probably raining.'

(35) a. *Context:* You look outside and see rain falling. You say:

b. #Nahałtin sha'shin.

ArealS.rain.IMPF probably
#'It must be raining,' #'It's probably raining.'

Removing ***sha'shin*** from (35) would render the sentence felicitous:

(36) a. *Context:* You look outside and see rain falling. You say:

b. Nahałtin.

ArealS.rain.IMPF
'It is raining.'

Observe that the English translations of sentences with ***sha'shin*** were also marked as infelicitous when direct evidence was available in the context. The expressions ***sha'shin*** and *must* (under its epistemic, or knowledge-oriented, interpretation) both impose a requirement of 'indirectness' on the evidence available in the context. This observation is developed in detail for sentences with English *must* by authors including Westmoreland (1998), Drubig (2001), and von Fintel and Gillies (2010). The link between ***sha'shin*** and indirectness of evidence will be confirmed in discussion below. When we turn below to expressions of 'thinking' without particles, we will see that removing ***sha'shin*** from sentences like (33b) and (35b) results in felicitous sentences in the presence of 'direct evidence.'[10]

Before moving on, I make a final observation: in sentences with ***sha'shin*** the presence vs. absence of ***nisin*** is key to determining *whose* indirect evidence we are interested in. In main clauses with ***sha'shin***, we are interested in the speaker's evidence

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[10]We should be careful not to confuse 'direct evidence' with logical certainty. The example in (i) demonstrates that ***sha'shin*** is felicitous in context where the evidence is conclusive but still indirect in nature: the speaker in (i) has not seen the pebble.

(i) a. *Context:* You are playing a game with three cups. Mary asks you to figure out which cup is hiding the pebble. You have already asked her to turn over Cup 1 and Cup 2: the pebble wasn't under either one of them.

b. Díí tsé biyaa si'ą́ sha'shin.
this.one rock 3O.under 3S.sit.IMPF probably
'It must be under this one.'
Comment: "***Sha'shin*** is good because that one is the only one left."

and thoughts.[11] By contrast, when ***sha'shin*** is embedded by ***nisin***, it is the subject of ***nisin*** whose evidence and knowledge is important.

This point is illustrated by (37). Here, even though the speaker — who is not the subject of ***nisin*** in (37b) — is certain that it is raining, ***sha'shin*** is still felicitous because *Kii*, the subject of ***nisin***, only has indirect evidence that it is raining.

(37) a. *Context:* I have just come inside, where I saw it is raining. My friend Kii has been inside this windowless room all day and does not know that it is raining. He sees the my clothes look damp. I report Kii's thinking to you, saying:

b. Kii [nahałtin sha'shin] nízin.

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it must be raining.'

When ***sha'shin*** is embedded by ***nisin***, we can further observe that it is *only* the subject of ***nisin*** whose evidence is taken into account. The speaker's evidence is never relevant. The following context-sentence pair demonstrates that ***sha'shin*** cannot be used in a ***nisin***-sentence where the subject of ***nisin*** has direct evidence but the speaker only has indirect evidence.

(38) a. *Context:* Kii just came in from the outside, so he knows what the weather is like. Kii sees that I have been inside all day, but overhears me saying that I've noticed that everyone has wet clothes, so it must be raining. I report Kii's thinking to you, saying:

[11] A topic that merits further investigation here is whether it is only the speaker whose evidence and knowledge is relevant. For discussion of main clause epistemic modals in English that permit other perspectives, see von Fintel and Gillies 2011).

b. #Kii [nahałtin sha'shin] nízin.

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
(*Intended:* 'Kii thinks the following: Given my evidence about the world, it must be raining.')

The same is true for English epistemic modals embedded by verbs like *think*. Speas (2004), Hacquard (2006), and Stephenson (2007) observe that the modal *might* in (39) takes into account the evidence available to Dave. This sentence could be uttered even if, for instance, the speaker is completely certain that Sandy is stupid.

(39) Dave thinks Sandy might be stupid.

(adapt. Hacquard 2006: (206b))

On the basis of the data seen so far, I make the following generalizations for Navajo. In the following generalizations, ϕ stands in for the proposition embedded by ***sha'shin*** and, as in the main text ***nisin*** is intended to stand in for the verb marked for any subject.

(40) **Main clauses and *nisin*-sentences with *sha'shin*:**

a. ϕ ***sha'shin***: given the indirect evidence available to the speaker, ϕ must be true.

b. [ϕ ***sha'shin***] ***nisin***: given the indirect evidence available to the subject of ***nisin***, ϕ must be true.

3.3.2 'Thinking' without particles

Nisin-sentences can also express attitudes of 'thinking' when they do not contain ***sha'shin***:

(41) a. Kii [nahałtin] nízin.

Kii ArealS.rain.IMPF 3S.ATT.IMPF
'Kii thinks it is raining.'

b. Kii [nahóółtą́] nízin.

Kii ArealS.rain.PERF 3S.ATT.IMPF
'Kii thinks it rained.'

c. Kii [nahodoołtʦ́ił] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii thinks it will rain.'

I will refer to sentences like (41) as 'particleless' *nisin*-sentences. Like *nisin*-sentences that contain *sha'shin*, the particleless *nisin*-sentences in (41) can concern the present ((41a)), past ((41b)), or future ((41c)).

We saw earlier that *nisin*-sentences with *sha'shin* could only express attitudes of thinking. When we turn to particleless sentences like (41), we find that temporal morphology on the embedded verb is key to determining whether the sentence unambiguously expresses an attitude of thinking or not.The sentences in (41a) and (41b) contain embedded verbs marked for imperfective and perfective aspect, respectively. These sentences are infelicitous in contexts targeting desires, like the one in (42):

(42) a. *Context:* Kii is a farmer. It has been very dry recently and rain is badly needed. Kii has not been outside yet today, but his desire is for it to be raining right now.

b. #Kii [nahałtin] nízin.

Kii ArealS.rain.IMPF 3S.ATT.IMPF
(*Intended:* 'Kii wants it to be raining.')

By contrast, particleless *nisin*-sentences that embed a future-marked verb ((41c)) are ambiguous between expressing attitudes of thinking and attitudes of desire. As shown by the following duo of context-sentence pairs, the same sequence of Navajo words is felicitous in contexts that concern thoughts about the future ((43)) and in contexts that concern desires about the future ((44)):

(43) a. *Context:* Kii looks outside and sees dark clouds in the distance. The air smells like rain is on the way. Kii has to drive this afternoon, however, so he does not want it to rain.

b. Kii [nahodoołt̨i̱ɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii thinks it will rain.'

(44) a. *Context:* Kii is a farmer. It has been very dry recently and rain is badly needed. Kii's desire is for it to rain. He looks at the sky and sees it is clear, however, so he doesn't think it will rain.

b. Kii [nahodoołt̨i̱ɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii wants it to rain.'

I return in section 3.5 to discuss this ambiguity at greater length.

We are now in a position to compare and contrast particleless ***nisin***-sentences expressing attitudes of 'thinking' with those that contain ***sha'shin***. We find that there are contexts in which both particleless sentences and ***nisin***-sentences with ***sha'shin*** are accepted.

One such context is shown below, repeated from earlier discussion. Here, the subject of ***nisin***, *Kii*, has indirect evidence that it is raining: he has not seen that it is raining, however. In this context, ***sha'shin*** is felicitous ((45b)) as is a particleless ***nisin***-sentence ((45c)).

(45) a. *Context:* Kii is inside in a windowless room so he does not know what the weather is like. He hears a pattering sound on the roof.

b. Kii [nahałtin sha'shin] nízin.

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it must be raining.'

c. Kii [nahałtin] nízin.

Kii ArealS.rain.IMPF 3S.ATT.IMPF
'Kii thinks it is raining.'

However, there is not total overlap between sentences with and without ***sha'shin***. The following context illustrates the infelicity of ***nisin***-sentences with ***sha'shin*** ((46b)) where the attitude holder has direct evidence. By contrast, consultants found particleless ***nisin***-sentences ((46c)) to be felicitous in the same context.

(46) a. *Context:* We are all talking about where Mary is. I do not know. Kii says he saw Mary at her home just a moment ago. I report Kii's thinking to you, saying:

b. #Kii [Mary hooghandi sidá sha'shin] nízin.

Kii Mary home.LOC 3S.sit.IMPF probably 3S.ATT.IMPF
#'Kii thinks Mary must be at home.'

Comment: "If he actually saw her, then I'd say [(46c)]."

c. Kii [Mary hooghandi sidá] nízin.

Kii Mary home.LOC 3S.sit.IMPF 3S.ATT.IMPF
¿Kii thinks Mary is at home.'

Comment: "You're reporting that's what he's thinking, it's okay."

Note that the English translations make a slightly different cut. As in Navajo, it is the case that the sentence with epistemic *must* is infelicitous in the context shown. Both ***sha'shin*** and English epistemic *must* appear to impose a requirement of indirectness on the evidence used (Westmoreland 1998, Drubig 2001, von Fintel and Gillies 2010). However, the English translation in (46c) also sounds odd to at least some speakers. I indicate this oddness with the '?' diacritic. The use of *think* seems to imply uncertainty which is not consistent with the context. By contrast, the Navajo sentence with ***nisin*** in (46c) was judged felicitous by speakers. I will set aside this mismatch between English and Navajo for now; I return to it in section 4.3.3.

In section 3.3.1, we saw examples that demonstrated that main clauses with and without *sha'shin* show the same contrast. (47b) (repeated from above) is infelicitous in a context in which the speaker has direct evidence that it is raining. Removing *sha'shin* ((47c)) produces a sentence that is felicitous in the same context:

(47) a. *Context:* You look outside and see rain falling. You say:

b. #Nahałtin sha'shin.

ArealS.rain.IMPF probably
#'It must be raining,' #'It's probably raining.'

c. Nahałtin.

ArealS.rain.IMPF
'It is raining.'

I summarize the contrast between *nisin*-sentences with, and without, *sha'shin* in (48):

(48) **The link between *sha'shin* and indirect evidence:**

a. Contexts in which the attitude holder uses indirect or inferential evidence to conclude that ϕ is true: both *nisin*-sentences with and without *sha'shin* are felicitous.

b. Contexts in which the attitude holder has direct evidence for the truth of ϕ: only particleless *nisin*-sentences are felicitous.

3.4 Attitudes of desire

This section investigates *nisin*-sentences in which the attitude holder expresses an attitude of desire. Each of the sentences in (49) can be felicitously used in contexts targeting desires.

(49) Attitudes of desire

a. [Níneez laanaa] nisin.

2S.tall wishful 1S.ATT.IMPF
'I **wish** you were tall.'

b. Alice [nahółtą́ą́' lágo] nízin.

Alice ArealS.rain.OPT hope.not 3S.ATT.IMPF
'Alice **hopes** it won't rain,' 'Alice **wishes** it wouldn't rain.'

c. Kii [nahodoołtį́į́ł] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii **wants** it to rain.'

d. Sandy [Hoozdodi nighan doo yę́ę] nízin.

Sandy California.LOC 2S.live FUT YEE 3S.ATT.IMPF
'Sandy **wishes** you lived in CA (now),'

'Sandy **wishes** for you to live in CA.'

e. Mary [Alice Hoozdogóó donéé́ł ńt'éé'] nízin.

Mary Alice California.to 3S.move.FUT NTEE 3S.ATT.IMPF
'Mary **wishes** Alice had moved to California.'

Just as we did for *nisin*-sentences expressing attitudes of 'thinking,' we will divide the sentences in (49) into two sets. First, *nisin*-sentences that contain a particle (*laanaa*, *lágo*) in the embedded clause ((49a,b)). As we did for *sha'shin* above, it will be shown that both of these particles also occurs in main clauses. Second, 'particleless' *nisin*-sentences ((49c-e)). These sentences each contain a future-marked verb in the embedded clause. In sentences (49d) and (49e), the embedded clauses also each contain morphemes associated with the expression of past temporality, first introduced in section 2.2.4. When we discuss the truth conditions of (49d) and (49e), we will consider how particleless *nisin*-sentences with past markers differ from those without past markers.

Before we begin, a signpost. The reader will notice that different English attitude verbs (generally, *wish* vs. *want*) were offered in translations for the sentences in (49). I return briefly in section 3.4.3 to discuss what this choice of translation might indicate.

3.4.1 Desires with particles

This section explores ***nisin***-sentences and main clauses that contain the particles *laanaa* or *lágo*.

3.4.1.1 Desires with *laanaa*

I begin with the particle *laanaa*, which can be found both in ***nisin***-sentences ((50)) and in main clauses ((51)).[12] The particle *laanaa* is licit with verbs marked for any Inflectional Mode. The examples below show *laanaa* used felicitously with verbs in Imperfective ((50a)), Future ((50b), (51a))[13], Perfective ((50c), (51b)), Optative ((50d), (51c)), and Progressive ((50e)) Modes.

(50) a. [Mary hooghandi sidá laanaa] nisin.
Mary home.LOC 3S.be.IMPF wishful 1S.ATT.IMPF
'I wish Mary were at home.'

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[12]Young and Morgan (1987: d514) identify a second particle, *le'* which they suggest is can be used interchangeably with *laanaa*. I set aside discussion of *le'* here.

[13]This seems to be one place where the choice between Future Mode and the future particle *dooleeł* is important, at least for a subset of consultants. While it was accepted by two consultants, one consultant strongly rejected the sentence in (ib), where *laanaa* follows *dooleeł*. The alternatives in (ic) and (id) were suggested. I leave open the question of why *laanaa* should not be able to co-occur with *dooleeł*.

(i) a. *Context:* I hope that my son grows up to be tall. I'm telling you this.
b. *Shiyáázh nineez dooleeł laanaa.
1poss.child 3S.tall FUT wishful
(*Intended:* 'I wish my son would be tall (in the future).'
c. [Shiyáázh nineez dooleeł] nisin.
1poss.child 3S.tall FUT 1S.ATT.IMPF
'I want my son to be tall.'
d. Shiyáázh nineez dooleeł yęę nisin.
1poss.child 3S.tall FUT YEE 1S.ATT.IMPF
'I wish my son would be tall.'

b. Kii [nahodoołtįįł laanaa] nízin.

Kii ArealS.rain.FUT wishful 3S.ATT.IMPF
'Kii wishes it would rain.'

c. Sandy [ch'ééh jiyáán daneest'ą laanaa] nízin.

Sandy watermelon 3plS.ripe.PERF wishful 3S.ATT.IMPF
'Sandy wishes the watermelons were ripe (had ripened).'

d. [Shik'éí ła' daostse' laanaa] nisin.

1poss.relatives INDEF.DET 3plO.1S.see.OPT wishful 1S.ATT.IMPF
'I hope to see some of my relatives.'

(adapt. YM 1987: d308)

e. ['Eesh'įį laanaa] nisin.

1S.see.PROG wishful 1S.ATT.IMPF
'I wish that I could see.'

(adapt. YM 1987: d513)

(51) a. Nahodoołtįįł laanaa.

ArealS.rain.FUT wishful
'I wish it would rain.'

b. 'Adąądąą' nahóółtą laanaa.

yesterday ArealS.rain.PERF wishful
'I wish it had rained.'

c. K'ídóshníih laanaa.

1S.stretch.arms.OPT wishful
'I wish I could stretch my arms.'

(YM 1987: d507)

Regardless of whether *laanaa* is embedded or not, each of the sentences shown above expresses a desire. None of the sentences above can be used felicitously in a context where the subject of *nisin* 'thinks' that some proposition is true.

As is suggested by the translations of the sentences in (50) and (51), the presence of ***nisin*** is key to determining *whose* desires are being expressed. I will make the following generalization, which runs parallel to observations made for sentences with ***sha'shin***.

(52) **Main clauses and *nisin*-sentences with *laanaa*:**

a. ϕ ***laanaa***: if the desires of the speaker are met, ϕ is true.

b. [ϕ ***laanaa***] ***nisin***: if the desires of the subject of ***nisin*** are met ϕ is true.

I designed the following context to test whether a main clause with ***laanaa*** can ever express what is thought by an individual other than the speaker. The context was constructed to make Kii's desires particularly salient. Even in this context, however, the main clause with ***laanaa*** in (53b) could only express the speaker's desires:

(53) a. *Context:* Kii is a farmer concerned about his crops. He hopes that the temperature goes down, that the wind becomes less strong, and:

b. #Nahodoołtįįł laanaa.

ArealS.rain.FUT wishful
(*Intended:* 'Kii hopes it will rain.')

Comment: "You're the one who is wanting it to rain."

The consultant's comment and judgment about (53b) indicates that even in a context where Kii's desires are particularly salient, a main clause with ***laanaa*** cannot express the desires of anyone except the speaker.

I designed the following context to test whether a sentence in which ***laanaa*** is embedded by ***nisin*** can express the desires of the subject of ***nisin***. I constructed the context in (54) to make salient what is thought by *my mother* and what is desired (or, at least, perceived to be desired) by the speaker: the desires of *my mother* are not under discussion. I asked consultants about the sentence in (54b).

(54) a. *Context:* I'm a farmer in California. My crops are drying up. My mother thinks I want it to rain. (She's actually wrong: if my crops die, I will get insurance money). I say to you, My mother thinks I want it to rain.

b. #Shimá [nahodooɬtįįɬ laanaa] nízin.

1poss.mother ArealS.rain.FUT wishful 3S.ATT.IMPF
(*Intended:* 'My mother thinks I want it to rain.')

Comment: "You're saying that the mother wants it to rain."

As the consultant's comment and judgment for (54b) demonstrates, ***laanaa*** cannot 'pick up' the speaker's desires. The sentence as given can only express the desires of *my mother*, the subject of ***nisin***. Consultants reported that a meaning consistent with the context in (54a) could only be expressed by a sentence like (55b). Here, an additional ***nisin*** has been inserted to the right of ***laanaa***. This new, closer ***nisin*** bears a first-person subject, which refers to the speaker.

(55) a. *Context:* Same as (54a).

b. Shimá [[nahodooɬtįįɬ laanaa] nisin] nízin.

1poss.mother ArealS.rain.FUT wishful 1S.ATT.IMPF 3S.ATT.IMPF
'My mother thinks I want it to rain.'

Summarizing, it seems that ***laanaa*** is quite like ***sha'shin*** in two respects. First, it is correlated with a particular kind of desire: just as sentences with ***sha'shin*** could only express an attitude of 'thinking,' sentences with ***laanaa*** can only express desires. Second, the 'perspective' of both ***sha'shin*** and ***laanaa*** depends on the presence of ***nisin***. When embedded by ***nisin***, sentences with ***sha'shin*** and ***laanaa*** express what is thought and what is desired, respectively, by the subject of (the closest) ***nisin***. When ***sha'shin*** and ***laanaa*** instead occur in main clauses, the sentence expresses what is thought and what is desired, respectively, by the speaker.

3.4.1.2 Negative desires with *lágo*

The second particle I will investigate is *lágo*. Sentences with *lágo* express a desire that the state of affairs described by the embedded clause *not* be true. Like *laanaa* and *sha'shin*, we find *lágo* both in *nisin*-sentences ((56)) and in main clauses ((57)). The verb embedded in the clause with *lágo* is necessarily marked with Optative Mode morphology.[14,15]

(56) Kii [nahółtąą' lágo] nízin.

Kii ArealS.rain.OPT hope.not 3S.ATT
'Kii hopes it won't rain.'

(57) Chidí bikee' 'ił 'adaalkaałí ła' baa 'oojíił lágo.

car 3poss.tire nail INDEF.DET 3O.3S.pierce.OPT hope.not
'I hope no nail pierces any of our tires.'

(YM 1987: d474)

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[14]Main clauses with *lágo* are also translated by Young and Morgan (1987) as prohibitives, e.g. (i):

(i) 'Ádóógish lágo.
2S.cut.self.OPT hope.not
'Don't cut yourself!'

(YM 1987: d32)

[15] Navajo seems to have a second particle pronounced *lágo* which does not convey negative desire. Instead, this second *lágo* occurs in sentences expressing discovery, as in (i):

(i) Tł'óo'di doo deesk'aaz da lágo biniinaa shi'éétsoh 'ádaa ńdiistooz.
outside NEG 3S.cold.IMPF NEG DISCOVERY so 1poss.coat 3O.1S.take.back.off.PERF
'I found out that it wasn't cold outside so I took my coat back off.'

(YM 1987: d617)

This *lágo* conveying discovery seems to be transparently decomposable into the subordinator *=go* (section 2.2.3) and the particle *lá*, which Young and Morgan (1987: d513) describe as conveying "emphasis and discovery," as in (ii), as a mirative particle might:

(ii) Tł'óo'di deesk'aaz lá.
outside 3S.cold.IMPF DISCOVERY
'I see that it's cold out.'

(YM 1987: d513)

I see no clear way to relate meanings of negative desire and mirativity. I will assume Navajo has two unrelated morphemes both pronounced *lágo*.

I will make the following generalization:

(58) **Main clauses and *nisin*-sentences with *lágo*:**

a. ϕ *lágo*: if the desires of the speaker are met, ϕ is false.

b. [ϕ *lágo*] *nisin*: if the desires of the subject of *nisin* are met, ϕ is false.

This generalization is essentially identical to the ones already made for *sha'shin* and *laanaa*. The only difference is the kind of attitude expressed by sentences that contain *lágo*. While the sentences in (56) and (57) both express desires, they express desires that the state of affairs described by the embedded clause *not* hold. Note that there is no negation (*doo...da*, section 2.2.2) in either (56) or (57). Instead, the presence of *lágo* seems to introduce the 'negativity' of the desire. To reflect this inherent negativity, I gloss *lágo* as 'hope.not' in the sentences given above.[16]

As the generalization in (58) states, the identity of the individual whose desires are expressed by a sentence with *lágo* depends on whether *lágo* occurs in a main clause or is embedded by *nisin*. When *lágo* occurs in a main clause, the sentence expresses the desires of the speaker. This point is demonstrated using a context modeled on the one used to investigate main clauses with *laanaa*. Even though Kii's desires are salient in the context, the main clause in (59b) can only express the speaker's desires and not those of Kii.

(59) a. *Context:* Kii is playing baseball tomorrow. He hopes that the temperature decreases, that the wind does not blow hard, and:

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[16] We can come close to the meanings attributed to *nisin*-sentences if we add negation to a sentence with our 'positive desire' particle, *laanaa*:

(i) Kii [doo nahodoołt́íł da laanaa] nízin.
Kii NEG ArealS.rain.FUT NEG wishful 3S.ATT.IMPF
'Kii wishes that it wouldn't rain.'
'Kii hopes it doesn't rain.'

b. #Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
(*Intended:* 'Kii hopes it doesn't rain.')

Comment: "You mean that you don't want it to rain."

I close the discussion of ***lágo*** by commenting on the temporal orientation of the desires expressed by such sentences. As was noted above, the particle ***lágo*** can only occur with verbs in the Optative Mode. It appears that the combination of Optative-marked verbs and the particle ***lágo*** can only readily express negative desires about events in the present ((60)) or about events in the future ((61)).

(60) a. *Context:* You look outside and see that it is raining. You are not happy about this because it means you can't go for a walk. You say:

b. Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
'I wish it weren't raining!'

(61) a. *Context:* You are playing baseball later and don't want it to rain. You look outside and see dark clouds gathering on the horizon. You say:

b. Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
'I hope it doesn't rain!'

I found that sentences with Optative-marked verbs and ***lágo*** were not accepted in contexts that concern negative desires about past events:

(62) a. *Context:* You just got home from vacation. You see that it has rained a lot while you were gone, which means that your garden was flooded and destroyed. You say: I wish it hadn't rained!

b. #Nahółtą́ą́' lágo.

ArealS.rain.OPT hope.not
(*Intended:* I wish it hadn't rained!')

Comment: "You're saying, 'I hope it doesn't keep on raining.'"

3.4.2 Desires without particles

This section considers ***nisin***-sentences that express desires but which do not contain particles like ***laanaa*** or ***lágo***. We will consider three kinds of such 'particleless' ***nisin***-sentences, exemplified below.[17]

(63) a. Kii [nahodoołtį́į́ł] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii wants it to rain.'

b. Sandy [Hoozdodi nighan doo yę́ę] nízin.

Sandy California.LOC 2S.live FUT YEE 3S.ATT.IMPF
'Sandy wishes you lived in CA (now).'

'Sandy wishes for you to live in CA.'

c. Mary [Alice Hoozdogóó donéé́ł ńt'éé'] nízin.

Mary Alice California.to 3S.move.FUT NTEE 3S.ATT.IMPF
'Mary wishes Alice had moved to California.'

A note before beginning. In our discussion of expressions of desire that contained particles, I contrasted ***nisin***-sentences with sentences without ***nisin***. In this section,

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[17]Young and Morgan give one sentence in which the particle ***laanaa*** occurs with a desire of the shape in (63b):

(i) [T'áadoo yéigo chidí bił ndaajeeh dooleeł=ę́ę laanaa] nisin.
not very car 3O.with 4S.move.IMPF FUT=YEE wishful 1S.ATT.IMPF
'I wish they wouldn't drive so fast!'

(YM 1987: d655)

Although this sentence was given in Young and Morgan (1987), consultants that I asked about sentences of this shape did not find them particularly well-formed. I leave to future work further investigation of such constructions and will not consider them below.

I focus purely on *nisin*-sentences. While *nisin* can be removed from the sentences in (63), the meaning expressed is no longer one of strictly desire but, rather, of a broader notion of goals and priorities. Given this complication, I wait to explore the truth conditions of *nisin*-less counterparts to (63) in Chapter 5 (section **??**).

3.4.2.1 Desires of the shape [ϕ-FUT] *nisin*

I first examine sentences like (64):

(64) Kii [nahodooltʃíɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii wants it to rain.'

The key morphological and semantic characteristics of sentences like (64) are summarized below:

(65) **Characterization of sentences of the shape [ϕ-FUT] *nisin*:**

a. Expresses a desire for ϕ that is held by the subject of *nisin*.

b. ϕ is desired to hold after the time of the desire.

c. Ambiguous with thoughts about the future.

We already briefly discussed characteristic (65c) in section 3.3.2 and will discuss it at much greater length in section 3.5. I set aside this characteristic for now to focus instead on the importance of future morphology to particleless desires.

A desire interpretation arises for particleless *nisin*-sentences only if the embedded clause contains a verb marked for Future Mode ((64)) or, if Future Mode is not available for the verb in question (section 2.2.1), then the postverbal future particle *dooleeł*:

(66) Sally [biyáázh nineez dooleeł] nízin.

Sally 3poss.child 3S.tall FUT 3S.ATT.IMPF
'Sally wants her son to be tall' (i.e., to grow up tall).

If the embedded clause does not contain a future-marked verb, a desire meaning cannot arise. This is demonstrated by the infelicity of the *nisin*-sentence in (67b) in the context given in (67a). The embedded clause in (67b) contains only a verb that is marked for Imperfective Mode; in the absence of future marking, no desire interpretation is possible. (The same point holds for verbs in Modes other than Future, including Perfective.)

(67) a. *Context:* Kii is a farmer. It has been very dry recently and rain is badly needed. Kii has not been outside yet today and doesn't know what the weather is like, but his desire is for it to be raining right now.

b. #Kii [nahałtin] nízin.

Kii ArealS.rain.IMPF 3S.ATT.IMPF
(*Intended:* 'Kii wants it to be raining.')
Can only mean: 'Kii thinks it is raining.'

This sets particleless *nisin*-sentences apart from those that contain *laanaa*. As we saw earlier, sentences with *laanaa* can express desires about the present. I repeat the relevant example in (68):

(68) [Níneez laanaa] nisin.

2S.tall wishful 1S.ATT.IMPF
'I wish you were tall.'

The future morphology crucial for licensing a desire interpretation still seems to make its familiar temporal contribution. As the characterization in (65) noted, sentences of this shape can only express desires about the future, relative to the time of the desire. This point is illustrated by the infelicity of (69b) in the context in (69a), which concerns Sally's desires for her son's appearance at the present time. As the consultant's comment suggests, however, the sentence in (69b) can only express Sally's desires for her son in the future.

(69) a. *Context:* You are talking to a woman (Sally) who gave her infant son up for adoption 20 years ago. It was a closed adoption and Sally has not seen her son since the adoption, so she has no idea what her son looks like. You and Sally are talking about what Sally wants for her son to be like at the present time. You report to me Sally's feelings.

b. #Sally [biyáázh k'ad ninéez doolcełʔ] nízin.

Sally 3poss.child now 3S.tall FUT 3S.ATT
(*Intended:* 'Sally wants her son to be tall now.')

Comment:"It's about the future. She wants him to grow up tall."

A meaning consistent with the context in (69a) could be expressed by a sentence with ***laanaa*** ((70)) or by a variety of particleless ***nisin***-sentence that we return to in the next section.

(70) a. *Context:* Same as (69a).

b. Sally [biyáázh ka'd ninéez laanaa] nízin.

Sally 3poss.child now 3S.tall wishful 3S.ATT.IMPF
'Sally wants/wishes her son were tall now.'

Note that the futurity of the desired state of affairs is determined relative to the time of the desire. To illustrate, consider sentences like (71b) in the context in (71a).

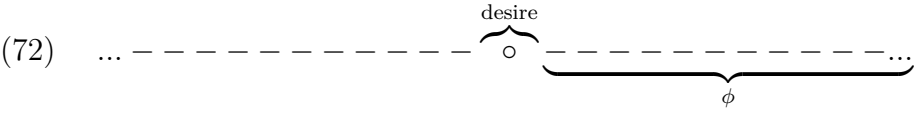
(71) a. *Context:* Yesterday, Kii wanted it to rain. Now, he has changed his mind and no longer wants it to rain.

b. Yiskąągo Kii [nahodoołtįįłʔ] nízin ńt'éé'.

yesterday Kii ArealS.rain.FUT 3S.ATT.IMPF NTEE
'Kii wanted it to rain yesterday.'

In (71b), ***nisin*** is followed by the past marker ***ńt'éé'***. As the context in (71a) makes clear, Kii's experienced a desire in the past (yesterday). His desire at that past time was for it to rain in the future (e.g., for it to rain today).

The temporality of desires expressed by sentences of the shape [ϕ-FUT] ***nisin*** is depicted in the simple diagram in (72). The desired state of affairs ϕ can hold at any point after the time of the desire, but cannot overlap with the time of the desire. The time of the desire may be the speech time or some other contextually-determined time, as in (71).

(72) 

3.4.2.2 Desires of the shape [ϕ-FUT **yę́ę**] ***nisin***

I now turn to sentences of the shape in (73), where the embedded clause contains both a future-marked verb and the morpheme ***yę́ę***, which we will see is sometimes pronounced =***ę́ę*** and adjoined to the preceding verb.

(73) Sally [biyáázh nineez dooleeł yę́ę] nízin.

Sally 3poss.child 3S.tall FUT YEE 3S.ATT
(i) 'Sally wishes for her son to be tall (now).'

(ii) 'Sally wishes for her son to be tall (in the future).'

The key morphological and semantic characteristics of ***nisin***-sentences of this shape are summarized below:

(74) **Characterization of sentences of the shape [ϕ-FUT *yę́ę*] *nisin*:**

a. Expresses a desire for ϕ that is held by the subject of ***nisin***.

b. ϕ is desired to hold either at the time of the desire, or after the time of the desire.

c. Unambiguously express desires.

I refer to the sentences of the shape in (73) as 'particleless' ***nisin***-sentences because the embedded clause does not contain a particle like ***laanaa*** or ***sha'shin***. We first saw the morpheme ***yę́ę*** when we discussed markers of past temporal meaning in Navajo

(section 2.2.4). I followed Smith et al. (2007) in thinking of *yǫ́ǫ* as being somehow associated with past temporal meaning in Navajo. As we observed there, *yǫ́ǫ* occurs on relative clauses in which the event or state described by the embedding verb occurred prior to the speech time (Platero 1974).

(75) **hooghan ’íishłaa=yǫ́ǫ**

hogan 3O.1S.build.PERF=YEE
‘the hogan that I built.’

When *yǫ́ǫ* occurs in *nisin*-sentences, it no longer seems to function as a relative clause marker. Nor does it obviously retain a semantics relating to past temporality. As (74) states, desires expressed via *nisin*-sentences that embed *yǫ́ǫ* as well as a future-marked verb express either desires about the present (i.e., the desired state of affairs overlaps with the time of the desire), or desires about the future (i.e the desired state of affairs holds after the time of the desire).[18]

Since sentences of the shape [ϕ-FUT **yǫ́ǫ**] *nisin* can express desires about the future, we can use them felicitously in contexts that were also compatible with sentences of the shape [ϕ-FUT] *nisin*. Both (76b) (with *yǫ́ǫ*) and (76c) (without *yǫ́ǫ*) were judged to be acceptable in the following context:

(76) a. *Context:* Kii is a farmer. It has been very dry recently and rain is badly needed. Kii’s desire is for it to rain. He looks at the sky and sees it is clear, however, so he doesn’t think it will rain.

[18]There is crosslinguistic precedent for using past morphology in desires, even when the desire is about the future or present. For example, Iatridou (2000) demonstrates that Modern Greek expresses wishes — informally, desires that are not realized and not expected to be — using the verb translated as *want* in concert with past morphology in the embedded clause. I set aside for future discussion the formal analysis of past morphology in Navajo wishes and its possible relation with Iatridou’s observations from Greek.

b. Kii [yiskąągo nahodoołtʃíɬ=ɣęę] nízin.

Kii tomorrow ArealS.rain.FUT=YEE 3S.ATT.IMPF
'Kii wants it to rain tomorrow.'

c. Kii [yiskąągo nahodoołtʃíɬ] nízin.

Kii tomorrow ArealS.rain.FUT 3S.ATT.IMPF
'Kii wants it to rain tomorrow.'

However, sentences like (76b) can also be used to express desires about the present, which we saw earlier was not possible for sentences like (76c). We saw the context in (77a) in our earlier discussion of sentences like (76b); we saw that such *nisin*-sentences are infelicitous in contexts like this one. However, the addition of *yęę* to the embedded clause results in a *nisin*-sentence ((77b)) that was accepted in the context as given.

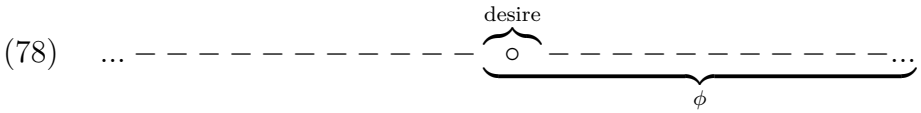
(77) a. *Context:* You are talking to a woman (Sally) who gave her infant son up for adoption 20 years ago. It was a closed adoption and Sally has not seen her son since the adoption, so she has no idea what her son looks like. You and Sally are talking about what Sally wants for her son to be like at the present time. You report to me Sally's feelings.

b. Sally [biyáázh k'ad nineez dooleeł yęę] nízin.

Sally 3poss.child now 3S.tall FUT YEE 3S.ATT
'Sally wishes for her son to be tall (now).'

Comment: "You're talking about 'now,' so you have to use *yęę* here."

The temporality of desires expressed by sentences of the shape [ϕ-FUT yęę] *nisin* is depicted in (78). ϕ can hold at any point at, or after, the time of the desire.

(78) 

As before, the time of the desire may either be concurrent with the speech time or may be some other contextually-provided point in time, e.g. *yesterday* as in (79):

(79) a. *Context:* Yesterday, as Kii was walking to school, the sun was very hot. He wished then that it was raining.

b. Yiskáągo Kii [nahodoołtįįł yęę] nízin ńt'éé'.

yesterday Kii ArealS.rain.FUT YEE 3S.ATT.IMPF NTEE
'Yesterday, Kii wished that it was raining.'

The only kind of desire meaning that is unavailable to sentences of the shape [ϕ-FUT yęę] ***nisin*** is a desire for the past to have transpired differently. The following context-sentence pair illustrates. The context in (80a) concerns the speaker's desire for her grandfather to have moved to California at some point in the past (prior to his death). In this context, the sentence in (80b) was judged to be unacceptable: consultants reported that this sentence made it sound like he was still alive such that he could move to California at some point in the future.

(80) a. *Context:* Last year, my grandfather had a chance to move to California, but he didn't. It was his dream to move there. He died earlier this year. I tell you,

b. #[Shicheii Hoozdogóó donéélł yęę] nisin.

1poss.grandfather California.to 3S.move.FUT YEE 1S.ATT.IMPF
(*Intended:* 'I wish my grandfather had moved to California.')

'I wish my grandfather would move to California.'

Comment: "Sounds like he's still alive."

In the next section, we will consider the kind of ***nisin***-sentence that expresses the desire invoked in (80a).

3.4.2.3 Desires of the shape [ϕ-FUT ***ńt'éé'***] ***nisin***

Finally, I turn to sentences of the shape in (81), where the embedded clause contains both a future-marked verb and the morpheme ***ńt'éé'***.

(81) Mary [Alice Hoozdogóó donéélł ńt'éé'] nízin.

Mary Alice California.to 3S.move.FUT NTEE 3S.ATT.IMPF
'Mary wishes Alice had moved to California.'

The key morphological and semantic characteristics of *nisin*-sentences of this shape are summarized below:

(82) **Characterization of sentences of the shape [ϕ-FUT ńt'éé'] *nisin*:**

a. Expresses a desire for ϕ that is held by the subject of *nisin*.

b. In order for ϕ to hold, past (relative to time of the desire) would have had to transpire differently.

c. Unambiguously express desires.

Like the sentences examined in the two previous sections, future morphology is obligatory in sentences like (82) in order for a desire interpretation to arise. In (83), I have replaced the future-marked verb with one marked instead for Imperfective Mode. As is shown by consultants' comments, the resulting sentence can only express Mary's thoughts, not her desires.

(83) Mary [Alice Hoozdogóó dinéé́h ńt'éé'] nízin.

Mary Alice California.to 3S.move.IMPF NTEE 3S.ATT.IMPF
(*Cannot mean:* 'Mary wishes Alice had moved to California.')

Can only mean: 'Mary thinks that Alice was moving to California.'

In addition to Future Mode, the past particle *ńt'éé'* is key. The particle *ńt'éé'* was discussed earlier in section 2.2.4. In main clauses, this particle occurs postverbally to indicate that the action described took place in the past, relative to the time of speech. (84) illustrates:

(84) Dóola shił naalgeed ńt'éé'.

bull 1O.with about.3S.buckride.IMPF NTEE
'I used to buckride a bull.'

(Smith et al. 2007: (8d))

Some of the 'pastness' of *ńt'éé'* is retained in sentences of the shape in [ϕ-FUT ńt'éé'] *nisin*. In the previous section, we saw that desires that contained the particle *yę́ę* could not be used in contexts like (85a), where the speaker's desire is for her grandfather to have moved to California at some point in the past (prior to his death). By contrast, the sentence with *ńt'éé'* in (85b) was judged to be acceptable in the context.

(85) a. *Context:* Last year, my grandfather had a chance to move to California, but he didn't. It was his dream to move there. He died earlier this year. I tell you,

b. [Shicheii Hoozdogóó donéélł ńt'éé'] nisin.

1poss.grandfather California.to 3S.move.FUT NTEE 1S.ATT.IMPF
'I wish my grandfather had moved to California.'

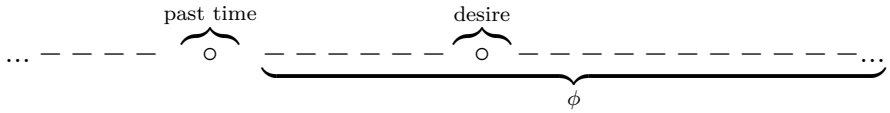
Comment: "You're saying you want him to have moved over there."

The context in (85a) was designed such that the desired event — the moving of the, now deceased, grandfather to California — could only have occurred prior to the present time of the desire. However, this is not the only situation in which sentences of the shape [ϕ-FUT ńt'éé'] *nisin* are felicitous. In the following context, the speaker desires Jane to take the train tomorrow. But even though the desired event would transpire after the time of the desire, *ńt'éé'* is still used ((86b)):

(86) a. *Context:* Our friend Jane left this morning on a train. Because of bad weather, the train got stuck in snow. The weather is supposed to be good tomorrow, though. You tell me,

b. [Jane yiskąągo 'índa kǫ' na'ałbąąsii biih' jidoolwoł ńt'éé']
Jane tomorrow then train 3O.on 4S.move.rapidly.FUT NTEE
nisin.
1S.ATT.IMPF
'I wish that Jane had taken the train tomorrow.'

I illustrate the temporality of desires expressed by sentences of the shape [ϕ-FUT ńt'éé'] *nisin* is depicted in (87). Two times are relevant: the time of the desire and some time in the past, from which point on, things transpired in a particular way. ϕ came to hold during the interval shown.[19]

(87) 

This description may be an oversimplification, but will be sufficient for the present. Future work should consider questions including the following. First, in the contexts we have seen so far, the desired state of affairs would only hold if events transpired *differently* from the way they actually transpired. That is, the wishes shown above are all counterfactual. Is this a necessary condition for the felicitous use of sentences of the shape [ϕ-FUT ńt'éé'] *nisin*? Second, and relatedly, can the analysis of these

[19] As we saw in other sections, the time of the desire can either correspond to the speech time or correspond to some other contextually salient time. In the following context, the desire in question held at some past time — when you, the speaker, were between 10 and 20 years old. The desire you held during that span of time was for things to have transpired differently: to have moved to Albuquerque when you were 10.

(i) a. *Context:* When you were 10, your parents had the chance to move with you to Albuquerque, but they chose to stay in Tsaile. For 10 years after that, you wished that you had moved to Albuquerque. Now, however, you are glad that your family stayed in Tsaile. You're telling me about the wishes you had when you were a teenager. You tell me, I wished we had moved to Albuquerque. Now, I am glad we did not move.
b. [Bee'eldíildahinilgóó dii'nééł ńt'éé'] nisin ńt'éé'.
ABQ.to 1plS.move.FUT NTEE 1S.ATT.IMPF NTEE...
'I wanted us to move to Albuquerque, (but now I'm glad we didn't go).'

desires be meaningfully related to previous work on subjunctive (or counterfactual) conditional constructions like those in (88)?

(88) a. If Roman had come to the party tomorrow, it would have been a grand success.

b. If Roman had left before noon, he would have arrived in time.

(von Fintel 2012: (34c), (36b))

The literature on these (and related) constructions includes Iatridou (2000), Ogihara (2000), Ippolito (2002, 2013), and Arregui (2005, 2009).

3.4.3 A note on 'wishing' vs. 'wanting' in Navajo

The reader will most likely have noticed that consultants used different English verbs in translations for *nisin*-sentences. Particleless *nisin*-sentences of the shape in (89a) were consistently translated with English verb *want* while sentences of the shape in (89b-e) were consistently translated into English with *wish*. While translations cannot be taken as direct evidence about meaning (Matthewson 2004), they can provide the researcher with partial clues: what, if anything, does variation in translation for sentences in (89) suggest?

(89) a. Kii [nahodoołtį́į́ł] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii **wants** it to rain.'

b. [Níneez laanaa] nisin.

2S.tall wishful 1S.ATT.IMPF
'I **wish** you were tall.'

c. Alice [nahółtą́ą́' lágo] nízin.

Alice ArealS.rain.OPT hope.not 3S.ATT.IMPF
'Alice **hopes** it won't rain,' 'Alice **wishes** it wouldn't rain.'

d. Sandy [Hoozdodi nighan doo yęę] nízin.

Sandy California.LOC 2S.live FUT YEE 3S.ATT.IMPF
'Sandy **wishes** you lived in CA (now),'

'Sandy **wishes** for you to live in CA.'

e. Mary [Alice Hoozdogóó donéél ńt'éé'] nízin.

Mary Alice California.to 3S.move.FUT NTEE 3S.ATT.IMPF
'Mary **wishes** Alice had moved to California.'

Previous authors have observed that English *wish*-sentences and *want*-sentences differ in their intuitive meanings but it has proved complex to pin down these differences. An early observation by Heim (1992) is that *wish* is felicitous where the situation desired by the attitude holder is incompatible with the attitude holder's thoughts. By contrast, Heim initially explores the possibility that *want* can only be used felicitously if the desired state of affairs is compatible with the attitude holder's thoughts. However, as was originally observed by Heim (1992) and subsequently discussed by other authors (Villalta 2008, Rubinstein 2012, Anand and Hacquard 2013), this is not the correct characterization of sentences with *want*, which can, in fact, express desires known to be unrealistic. Heim illustrates with the following example:

(90) I want this weekend to last forever. (But I know, of course, that it will be over in a few hours.)

(Heim 1992: (42))

Navajo sentences in (89) also defy characterization in these terms. I found that a sentence of the shape in (89a) could be used felicitously in the following context, where it is established that the desired state of affairs is not a realistic possibility. That is, Navajo sentences translated with *want* can be used felicitously to express unrealistic hopes.

(91) a. *Context:* Ron is required to teach two days a week every semester. His wife knows this. Ron his asking his wife for her preferences about when he should teach next semester. She says to him,[20]

b. [Doo ndíílnish da] nisin.

NEG 2S.work.FUT NEG 1S.ATT.IMPF
'I don't want you to work.'

However, there was a tendency for consultants to comment about 'unlikeliness' for desires expressed with *laanaa* ((92a)) or with a combination of future-marked verbs with past marker *yę́ę* ((92b)), both of which were also translated with *wish*. No such comments were offered for sentences of the shape in (92c), which were translated with *want*.

(92) a. Sally [biyáázh nineez dooleeł yę́ę] nízin.

Sally 3poss.child now 3S.tall FUT YEE 3S.ATT.IMPF
'Sally wishes her son would grow up to be tall.'

Comment: "Sally doesn't think it's going to happen. Maybe the parents were short."

b. Sally [biyáázh nineez dooleeł laanaa] nízin.

Sally 3poss.child now 3S.tall FUT wishful 3S.ATT.IMPF
'Sally wishes her son would grow up tall.'

Comment: "She's just wishing here. She isn't sure it's going to happen."

c. Sally [biyáázh nineez dooleeł] nízin.

Sally 3poss.child now 3S.tall FUT 3S.ATT.IMPF
'Sally wants her son to grow up tall.'

There is another truth-conditional property that can be more reliably correlated with the choice of translation, however. We saw earlier that sentences of the shape in

[20]Context from Scheffler (2008).

(89a)/(93)— i.e. sentences translated with *want* — cannot be used to express, e.g., Kii's desire that it currently be raining. Kii's desire in (93) can only be for it to rain in the future.

(93) Kii [nahodoołtį́į́ł] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii **wants** it to rain.'

By contrast, we have seen that the sentences in (89b) through (89e) were all felicitous in contexts in which the desired state of affairs overlaps with, or even precedes (in the case of (89e)), the time of the desire.

It is not immediately clear to me what, if anything, we learn from the correlation between the temporal orientation of the desire and the manner of translation into English. Sentences with the English verb *want* can be used to express desires about the present (i.e. the desired state of affairs overlaps with the time of the desire), as in (94):

(94) a. *Context:* My younger brother sometimes skips school. He said he was going to school several hours ago, but I don't know if he really went or not. I say:

b. I want my younger brother to be at school right now.

I leave for future exploration the precise contrasts between the desires exemplified above.

3.5 Ambiguous *nisin*-sentences

This section examines in greater detail the truth conditions of *nisin*-sentences like (95). This sentence contains a future-marked verb in the embedded clause and no additional morphology (i.e. particles, additional temporal markers).

(95) Kii [nahodooɬtʃíɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii thinks it will rain.'

'Kii wants it to rain.'

At various points in previous discussion, we have seen that sentences like (95) are felicitous both in contexts targeting thoughts about the future ((96)) and in contexts targeting desires about the future ((97)):

(96) a. *Context:* Kii looks outside and sees dark clouds in the distance. The air smells like rain is on the way.

b. Kii [nahodooɬtʃíɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii thinks it will rain.'

(97) a. *Context:* Kii is a farmer. It has been very dry recently and rain is badly needed. Kii's desire is for it to rain.

b. Kii [nahodooɬtʃíɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
'Kii wants it to rain.'

This section defends the claim that *nisin*-sentences exhibit ambiguity. That is, I claim that a phonological string of the shape in (95) can map onto two distinct sets of truth conditions: one consistent with an attitude of thinking and one consistent with an attitude of desire.

An alternative hypothesis would be one of vagueness. Under this alternative hypothesis, a string like (95) has a constant set of truth conditions that are defined to be weak enough to simultaneously encompass both attitudes of thinking and attitudes of desire. Under this hypothesis, we might explain away the multiple English translations for such Navajo sentences as the result of a mismatch between the kinds

of meanings expressible by attitude reports in each language: since English does not have such underspecified attitude reports, consultants would be forced to pick whatever attitude (thinking or desiring) was most salient in the discourse to form their English translation.

In this section, I apply two classic tests from Zwicky and Sadock (1975) developed to diagnose ambiguity in English. After introducing the tests using English data, I demonstrate that Navajo sentences like (95) pattern like ambiguous expressions.

3.5.1 Test of Contradiction

The first test due to Zwicky and Sadock (1975) is the **Test of Contradiction**. I illustrate with an example from Kennedy (2011), who demonstrates that the English utterance *Sterling's cousin was funny* passes the Test of Contradiction because it can be both asserted and denied for a particular state of affairs, as in (98):

(98) Sterling's cousin used to make people laugh with everything she did, though she was never in any way strange or unusual. *Sterling's cousin was funny without being funny.*

(adapt. Kennedy 2011: (4))

The italicized sentence above does not express a contradiction because *Sterling's cousin was funny* can express either that Sterling's cousin is amusing and causes laughter, or that she is strange and unusual. Sterling's cousin can be *funny* in one sense without also being *funny* in the other sense.

Parallel results for certain ***nisin***-sentences are seen in context-sentence pairs like (99). The context in (99a) establishes that the attitude holder (Kii) believes that it will rain but does not want it to rain. In this context, the conjoined sentences in (99b) are felicitous:

(99) a. *Context:* Kii is supposed to help his father put up a fence this afternoon. If it rains, Kii will not have to work. So, Kii wants it to rain. However, Kii looks outside and sees that the sky is clear so he believes it is not going to rain.

b. [Kii [nahodooɬtʃíɬ] nízin] ’ákondi [[doo nahodooɬtʃíɬ da]
Kii ArealS.rain.FUT 3S.ATT.IMPF but NEG ArealS.rain.FUT NEG
nízin].
3S.ATT.IMPF
‘Kii wants it to rain but he thinks it won’t.’

The structure of (99b) might initially suggest a contradiction since it has the shape [ϕ *nízin* but $\neg\phi$ *nízin*]. However, (99b) was volunteered by consultants and judged felicitous and noncontradictory in contexts like (99): the first conjunct expresses Kii’s desire while the second conjunct expresses Kii’s (conflicting) thought.

Strings like *Kii nahodooɬtʃíɬ nízin* are completely string ambiguous. When the context in (99a) was presented to the first consultant, she volunteered the sentence in (99b). Another consultant heard the sentence in (99b) but not the context in (99a). She gave the following comment, which indicates that the order of attitudes expressed is reversible.

(100) “That’s funny - I thought you were saying ‘Kii thinks it’s going to rain but he doesn’t want it to.’”

When given contexts like(99a), consultants also offered sentences like (101), in which embedded clauses contain morphology that forces a particular interpretation for the *nisin*-sentence, such as *sha’shin* in expressions of thinking, and *yę́ę* or *laanaa* in expressions of desire.

(101) a. [Kii [nahodooltʃíɬ laanaa nízin]] ’ákondi [[doo nahodooltʃíɬ
Kii ArealS.rain.FUT wishful 3S.ATT.IMPF but NEG ArealS.rain.FUT
da sha’shin] nízin].
NEG probably 3S.ATT.IMPF
‘Kii wishes it would rain but thinks it probably won’t happen.’

b. [Kii [nahodooltʃíɬ yęę nízin]] ’ákondi [[doo nahodooltʃíɬ
Kii ArealS.rain.FUT YEE 3S.ATT.IMPF but NEG ArealS.rain.FUT
da sha’shin] nízin].
NEG probably 3S.ATT.IMPF
‘Kii wishes it would rain but thinks it probably won’t happen.’

3.5.2 Test for Identity of Sense

A second test given by Zwicky and Sadock (1975) is the **Test for Identity of Sense**. Among the structures that they consider as part of this test are conjunction structures as in (102).

(102) Morton and Oliver tossed down their lunches.

(Zwicky and Sadock 1975: (61))

Building on early observations by Chomsky (1957), Zwicky and Sadock observe that in order for conjunction to be licensed in a sentence like (102), Morton and Oliver must have participated in the same sort of action. As background, Zwicky and Sadock observe that (at least in their English), a phonological string like (103) is associated with the two distinct meanings shown below:

(103) Oliver tossed down his lunch.

(i) that Oliver ate very quickly (i.e. *Oliver bolted down his lunch*)

(ii) that he threw his lunch to the ground.

Conjunction is only felicitous in (102) if Morton and Oliver both ate rapidly or both threw their food to the ground. A mixed interpretation in which Morton ate quickly but Oliver threw his food down is not available for (102).

The results of targeted elicitation demonstrate that the same restriction is found for certain Navajo *nisin*-sentences. As we have seen, a sentence like (104) can, on its own, be felicitous either in a context which concerns thoughts or a context which concerns desires.

(104) Kii [Obama hodínóołnéél] nízin.

Kii Obama 3S.win.FUT 3S.ATT.IMPF
(i). 'Kii thinks Obama will win.'

(ii) 'Kii wants Obama to win.'

In the following context, one man (Ron) thinks Obama will win but does not want him to. The other man (Kii) wants Obama to win but does not think he will. In this context, the mental attitude attributed to *Ron dóó Kii* cannot be described with a single *nisin*-sentence.

(105) a. *Context:* It is 2012 before the presidential election. Given the evidence he's seen, Ron thinks that Obama will win. However, Ron doesn't want Obama to win. Ron's friend Kii really wants Obama to win, but he firmly believes that Obama will not win.

b. #Ron dóó Kii [Obama hodínóołnéél] nízin.

Ron and Kii Obama 3S.win.FUT 3S.ATT
(*Intended:* 'Ron and Kii have some feeling about Obama winning')

Comment: "They want for him to win. One doesn't think and the other one want. I don't think you can have 'think' and 'want' in the same sentence. One's going to win out over the other."

Consultant comments indicated that (105b) is only felicitous if Ron and Kii experience the same sort of mental attitude toward Obama winning: either they both believe he will win, or they both want him to win. As in the English sentence in (102), a mixed interpretation is not possible. We can compare the infelicitous context-sentence pair in (105) with the felicitous pair in (106). Here, both of the conjoined subjects share the same sort of feeling towards Obama winning. The target sentence in (106b) is felicitous in such a context.

(106) a. *Context:* It is 2012 before the presidential election. Given the evidence they have seen, Ron and Kii both think that Obama will win.

b. Ron dóó Kii [Obama hodínóoł**n**éé**ł**] nízin.

Ron and Kii Obama 3S.win.FUT 3S.ATT
'Ron and Kii think Obama's going to win.'

A second felicitous context-sentence pair can be constructed where both of the subjects share a desire.

3.5.3 Constraints on ambiguity

While *nisin*-sentences of the shape [ϕ $_{FUT}$ *nisin*] are ambiguous, their range of ambiguity is not unbounded: such sentences cannot report attitudes of 'wanting' it to be the case that the proposition is false. That is, the sentence in (107b) is infelicitous in the context shown, where the attitude holder's desire is for it not to rain. This type of attitude can be conveyed if the particle *lágo* is included in the embedded clause ((107c)) or if negation is overtly indicated ((107d)).

(107) a. *Context:* Kii has a baseball game today. He really wants to play. If it rains, the game will be canceled. You tell me how Kii feels, saying:

b. #Kii [nahodoołtį́į**ł**] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
(*Intended:* 'Kii wants it not to rain.')

c. Kii [nahółtąą' lágo] nízin.

Kii ArealS.rain.OPT hope.not 3S.ATT.IMPF
'Kii hopes it does not rain.'

d. Kii [doo nahodoołtįįł da] nízin.

Kii NEG ArealS.rain.FUT NEG 3S.ATT.IMPF
(*Intended:* 'Kii wants it not to rain.')

An adequate analysis of ***nisin***-sentences will explain why particleless ***nisin***-sentences containing future-marked embedded verbs can express either thinking or desire but not other conceivable mental attitudes.

3.6 Chapter summary

Thus far, we have seen that attitude reports containing ***nisin*** can express a variety of attitudes of thinking and desire. We have seen, furthermore, that the attitude expressed by ***nisin***-sentences is correlated with the morphosyntactic shape of the embedded clause. The following table summarizes the key findings to this point. When the embedded clause is marked with 'any,' this indicates that the embedded verb can be in Imperfective, Perfective, or Future Inflectional Form. If an embedded verb can also be marked for Optative Inflectional Form, I indicate that separately.

Table 3.4. Summary of morphological forms and meanings of ***nisin***-sentences

Thinking	a. [ϕ $_{IMPF,PERF}$] ***nisin***	Thinking
	b. [ϕ $_{any}$ ***sha'shin***] ***nisin***	Thought based on indirect evidence
Desire	c. [ϕ $_{any,OPT}$ ***laanaa***] ***nisin***	Desire
	d. [ϕ $_{OPT}$ ***lágo***] ***nisin***	Negative desire about present or future
	e. [ϕ $_{FUT}$ ***yęę́ę***] ***nisin***	Desire about present or future
	f. [ϕ $_{FUT}$ ***ńt'éé'***] ***nisin***	Desire about past
Ambiguous	g. [ϕ $_{FUT}$] ***nisin***	Thought or desire about future

In the next chapter, I focus on the following aspect of *nisin*-sentences: despite seeming to contain the same verb, some *nisin*-sentences express beliefs while others express desires. I present new data from Navajo to demonstrate that this apparent difference in meaning should be attributed to material in the embedded clause rather than to *nisin* itself. I further argue that this material is also found in main clauses. I consider the semantic relationship between this material as it occurs in main clauses and in *nisin*-sentences.

3.7 Appendix: Verbs related to the *nisin* of interest

The discussion above focused on the morphology, syntax, and semantics of sentences in which the verb *nisin* embeds a clause. However, these data may only be a subset of a broader 'family' of verbs related to *nisin*. Members of this family bear certain morphological or semantic components in common with clause-embedding *nisin* but differ in other respects, to be clarified below.

I include the following data in the interest of presenting fuller documentation of *nisin*. These data will not be incorporated into the discussion in Chapter 4.

3.7.1 *'Ákwíinisin*: 'Feeling' that way

The first member of the '*nisin*-family' I would like to highlight is shown in (108). The translations shown are taken from Young and Morgan's (1987: 60) entry for the verb.

(108) **'ákwíinisin.**

thus.1S.ATT.IMPF
'I look at it that way, I think about it in that way.'

The verb in (108) differs minimally from our familiar clause-embedding *nisin* in the presence of the adverbial prefix *'ákwii* 'thus.'

The verb in (108) seems to be permitted both to describe attitudes of belief and attitudes of desire. Consultants were able to use the verb in (108) in context-conversation pairs like (109) and (110). The context-conversation pair in (109) was designed to determine whether *'ákwíinisin* can be used in a context where the speaker holds the same belief as one previously mentioned. The felicity of (109c) in the context shown demonstrates that *'ákwíinisin* can express a meaning of this kind.

(109) a. *Context:* Kii and Sandy are having a conversation about the weather. Kii says he thinks it will probably rain. Sandy says she thinks so, too.

b. *Kii:* Nahodoołtįįł sha'shin nisin.

ArealS.rain.FUT probably 1S.ATT.IMPF
'I think it will probably rain.'

c. *Sandy:* 'Aoo', shí do' 'ákwíinisin.

yes 1pro also thus.1S.ATT.IMPF
'Yes, I think so, too.'

The context-conversation pair in (110), by contrast, was designed to determine whether *'ákwíinisin* can be used in a context where the speaker holds the same desire as one previously mentioned. The felicity of (110c) in the context shown demonstrates that *'ákwíinisin* can also express a meaning of this kind.

(110) a. *Context:* Kii and Sandy are having another conversation about the weather. Kii says he wishes it would rain. Sandy says she wants it to, too.

b. *Kii:* Nahodoołtįįł laanaa nisin.

ArealS.rain.FUT wishful 1S.ATT.IMPF
'I wish it would rain.'

c. *Sandy:* 'Aoo' shí do' 'ákwíinisin.

yes 1pro also thus.1S.ATT.IMPF
'Yes, I also want that.'

3.7.2 *Yinízin*: Wanting objects

Above, I observed that a property of *nisin* as a clause-embedding verb is that it lacks object marking corresponding to the embedded clause:

(111) *Alice [nahodoołtįįł] yinízin.

Alice ArealS.rain.FUT 3O.3S.ATT.IMPF
(*Intended:* 'Alice thinks it will rain,' 'Alice wants it to rain.'

But it is not the case that we never find the object prefix *yi* in use with *nisin*. The following example shows that sentences that express desire for an entity contain the verb *yinízin*.

(112) Mary [bilasáana ła'] yinízin.

Mary apple INDEF.DET 3O.3S.ATT.IMPF
'Mary wants an apple.'

Deletion of the object prefix from the verb in (112) results in ungrammaticality.[21]

(113) *Mary [bilasáana ła'] nízin.

Mary apple INDEF.DET 3S.ATT.IMPF
(*Intended:* 'Mary wants an apple.')

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[21]I have been careful to use third-person subject forms of *nisin* here. The morphology of third-person object marking in Navajo creates some complication here. The third-person object marker is only overtly realized (as *yi*) when the subject is also first-person. As a result, the forms of *nisin* with first- and second-person subjects look the same regardless of whether they take an embedded clause ((ia)) or a nominal expression ((ib)) as the object of the attitude. (i) illustrates for the first-person subject form of *nisin*.

(i) a. [Bilasáana ła'] nisin.
apple INDEF.DET 3O.1S.ATT.IMPF
'I want an apple.'
b. [Nahodoołtįįł] nisin.
ArealS.rain.FUT 1S.ATT.IMPF
'I think it will rain,' 'I want it to rain.'

I will, however, assume that the verb *nisin* in (ia) — but not (ib) — actually bears a covert object marker. I make this claim given the overt presence of the object marker in sentences like (112).

The use of a nominal object also limits the kinds of attitudes that can be expressed (Willie 1996). Sentences that contain the verb *yinízin* cannot express belief, but only desire. This point is demonstrated by the following context-sentence pair and the comments shown. One consultant suggested the sentence in (114c) as a grammatical alternative; the verb *yinízin* was replaced with the verb *yoodlą́* 's/he believes it.'

(114) a. *Context:* There's a story going around that Ted is from Canada. A lot of people are convinced this story is true, including Alice. I tell you,

b. #Alice hane' yinízin.

Alice story 3O.3S.ATT.IMPF
(*Intended:* 'Alice believes the story.'

Comment: "It sounds like you're saying she wants the story. Maybe like she wants to hear it."

c. Alice hane' yoodlą́.

Alice story 3O.3S.believe.IMPF
'Alice believes the story.'

3.7.3 'Idiomatic' verb words formed with *nisin*

In section 2.2.1, I discussed how certain particles or postpositional phrases seem to be particularly tightly associated with certain verbs. The verb *nisin* occurs with a number of particles, nouns, and postpositional phrases to express a wide array of meanings. I give a small sample of these meanings below; many more can be found in Young and Morgan (1987: d655).

(115) a. Baa 'į̨h nisin.

3O.about value 1S.ATT.IMPF
'I am fond of it'

b. Dloh nisin.

laughter 1S.ATT.IMPF
'I feel like laughing.'

c. **Dichin nisin.**

hunger 1S.ATT.IMPF
'I feel hungry'

CHAPTER 4

BUILDING ATTITUDES IN NAVAJO

4.1 Introduction

In the previous chapter, I showed that *nisin*-sentences can be used to convey a number of distinct attitudes, which I characterized as attitudes of 'thinking,' 'wanting,' and 'wishing'. The choice between these distinct attitudes is in part — and sometimes entirely — determined by the makeup of the embedded clause. In this chapter, I will argue that we should take seriously what the surface tells us: a single embedding verb, *nisin*, occurs in different attitude reports. This verb does not determine the attitude: rather, the attitude is determined by the embedded clause. The role of *nisin* is limited to introducing the holder of the attitude and the time at which it is held.

Before making this argument, however, I first try to reduce *nisin*-sentences to a more familiar state of affairs in which, despite appearances, *nisin* still determines what attitude is reported. Section 4.2 considers two accounts of this shape. I demonstrate that such an account of *nisin*-sentences not only stands at odds with independent observations about Navajo and Athabaskan grammar but also fails to capture the full range of interpretations attested for *nisin*-sentences.

In the second part of the chapter, I seek to identify the components of meaning that are contributed by clauses embedded by *nisin*. To do so, I explore the semantics of these clauses' unembedded counterparts. I argue that the meanings of these clauses when they stand alone can be systematically related to the meanings I attribute to *nisin*-sentences. Thus we see that unlike English, which has specialized

constructions to report attitudes of, e.g., 'wanting' vs. 'thinking,' Navajo uses a semantically bleached verb (*nisin*) whose function is only to introduce the individual and time relative to which the embedded clause is evaluated.

My investigation of the expression of attitudes in Navajo is guided by the questions and answers in addressed the research program begun by Kratzer (2006, 2013a) and subsequently developed by Moulton (2009, 2015). Kratzer and Moulton explore a rich range of evidence from English and German that demonstrate that even there, more familiar verb-driven analyses of attitude reports may not be correct. On the basis of the evidence from English and German, Kratzer develops an alternative picture of attitude reports in which key aspects of the semantics of attitude reports are contributed by material contained in clauses embedded by attitude verbs. The attitude verb works in concert with the embedded material to determine the attitude reported.

In the third part of this chapter, I first compare the extremely light meaning which I associate with *nisin* to so-called 'parenthetical' uses of attitude verbs in English discussed by Urmson (1952), Rooryck (2001), Simons (2007), Lewis (2013), and other authors. In these constructions, embedded clauses are claimed to communicate the 'main point' of the utterance while the attitude verb serves a largely evidential function. I then turn to Kratzer and Moulton's proposals. I show that the Navajo facts fit naturally into the empirical landscape which they have explored. Navajo acts as limiting case within this landscape, in which the role of the attitude verb is limited to introducing the attitude holder. In this chapter, I do not provide a compositional treatment for *nisin*-sentences; however, the compositional proposals which are worked out by Kratzer and Moulton provide a model for the development of such a treatment.

4.2 Hypothesis: *nisin* determines the attitude

In both Navajo and in English, attitude reports seem to involve a verb (bolded) which embeds a clause (bracketed) and which takes as subject the attitude holder (italicized):

(1) a. *Sandy* **wants/wishes** [for it to rain].

b. *Sandy* [nahodooɬtįįɬ (laanaa)] **nízin**.

Sandy ArealS.rain.FUT wishful 3S.ATT.IMPF
'Sandy wants/wishes for it to rain.'

As we saw in Chapter 3, however, English and Navajo diverge in other ways. In particular, whereas Navajo uses (what appears to be) the same verb, ***nisin***, in a variety of attitude reports, English attitude reports contain distinct attitude verbs. The kind of attitude reported in English is correlated with the choice of attitude verb.

Given this correlation between the choice of verb and the attitude reported, a reasonable hypothesis for English is to assign to the attitude verb denotations which determine what kind of attitude is being reported. This move has been pursued for a wide variety of verbs. A small sample of the semantic literature which assumes entries of this shape includes Cresswell and von Stechow (1982), Heim (1992), Moltmann (1997), Schlenker (1999), von Stechow (2002), van Geenhoven and McNally (2005), Hacquard (2006), Villalta (2008), Condoravdi and Lauer (2010), Stephenson (2010), Rubinstein (2012), Anand and Hacquard (2013), Charlow and Sharvit (2014), Grano (2015), and Pearson (to appear).

Despite apparent differences between Navajo and English attitude reports, we might initially pursue a strongly Comparative Hypothesis of the sort discussed in Chapter 1. Starting from an assumption of crosslinguistic similarity, we could hypothesize that just as has been claimed for English, it is the embedding verb in Navajo which determines what attitude is reported. I will consider the two hypotheses of this shape shown below. For each, I consider what an account consistent with the hypoth-

esis might look like. I then consider challenges to the plausibility of each account in light of independent facts from Navajo and other Athabaskan languages.

(2) **Homophony Hypothesis:** The Navajo lexicon contains multiple attitude verbs ***nisin***, each with a distinct semantics. The verb determines what attitude is reported.

(3) **Underspecification Hypothesis:** The Navajo lexicon contains a single attitude verb ***nisin***. Context fixes the interpretation of ***nisin*** to determine the attitude reported.

Before we explore these hypotheses, however, a brief note on terminology is in order. When I consider these two hypotheses, I will ask whether we can define ***nisin*** such that it establishes that the attitude reported is one of desire vs. one of 'thinking.' As in Chapter 3, I use the term 'attitude of thinking' to describe the attitude reported by ***nisin***-sentences like (4b).

(4) a. *Context:* Kii is inside in a windowless room so he does not know what the weather is like. He hears a pattering sound on the roof.

b. Kii [nahałtin (sha'shin)] nízin.

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it is (probably) raining.'

In the context of the above hypotheses, I will ask whether we can treat the instance of ***nisin*** in (4b) as functioning like English *think* under accounts where the verb determines the attitude reported.

However, it is crucial to note that invoking English *think* in this way focuses on just one of the range of meanings expressible by sentences which contain *think*. English sentences with *think* do not always seem to deal with the beliefs and doxastic

states which I invoke above.[1] For example, (5) can be used to report the speaker's predilection to have the soup; it does not necessarily report the speaker's belief that she will have the soup.[2]

(5) I think I'll have the soup.

Crucially, however, I will set aside discussion of *think* in sentences like (5) until section 4.4.1.[3] Until then, whenever I ask whether ***nisin*** contributes a meaning similar to English *think*, I only have in mind the use of *think* where it occurs in sentences which concern beliefs and what is true.

4.2.1 The Homophony Hypothesis

I first consider the following hypothesis for ***nisin***-sentences:

(6) **Homophony Hypothesis:** The Navajo lexicon contains multiple attitude verbs ***nisin***, each with a distinct semantics. The verb determines what attitude is reported.

I will specifically consider the adoption of two verbs, ***'think'-nisin*** and ***'want'-nisin***. Each verb can be defined such that it lexically determines what attitude is reported by the sentence as a whole: ***'want'-nisin*** establishes the attitude reported as one relating to desire, while ***'think'-nisin*** establishes the attitude reported as one relating to beliefs and thoughts about what is true. Adopting both of these verbs would allow us to

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[1] In the semantic and philosophical literature, the English attitude verb *believe* (and its crosslinguistic counterparts) is treated as the prototypical example of a doxastic attitude verb. However, there are also authors who explicitly group *think* in the set of doxastic attitude verbs together with *believe*. A sampling of these authors includes Brasoveanu and Farkas (2007), Anand and Hacquard (2009, 2013), Rawlins (2014); and Fischer, Engelhardt, and Herbelot (2015).

[2] I thank Angelika Kratzer and Peggy Speas for drawing my attention to these cases.

[3] Ultimately, we will see that when this alternative use of *think* is taken into consideration, ***nisin*** begins to look very much like *think*.

explain how particleless *nisin*-sentences such as those in (7) can report the attested range of attitudes.

(7) a. Kii [nahodoołtį́ɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
(i) 'Kii thinks it will rain.' *'think'-nisin*

(ii) 'Kii wants it to rain.' *'want'-nisin*

b. Kii [nahałtin] nízin.

Kii ArealS.rain.IMPF 3S.ATT.IMPF
'Kii thinks it is raining.' *'think'-nisin*

The adoption of multiple verbs *'think'-nisin* and *'want'-nisin* brings two potential positive outcomes. First, an account of this shape would capture the restricted range of meanings which are attested for *nisin*-sentences. As we saw in Chapter 3, there are many attitudes which appear not to be reported by *nisin*-sentences, e.g. 'knowing,' 'ordering,' etc. An analysis of Navajo that assumes two verbs models this restricted range of meaning via brute force. The Navajo lexicon contains *'think'-nisin* and *'want'-nisin*; it does not contain, e.g., *'order'-nisin* or *'know'-nisin*.

In addition, positing two verbs would give us a way to account for another of the patterns observed in Chapter 3: particleless *nisin*-sentences only report desires when the embedded verb is marked for Future Mode, whereas a particleless *nisin*-sentence can be used in contexts which concern the thoughts of the attitude holder regardless of the temporal morphology borne by the embedded verb (e.g. Future Mode in (8a) or Perfective Mode in (8b)).

(8) a. Kii [nahodoołtį́ɬ] nízin.

Kii ArealS.rain.FUT 3S.ATT.IMPF
(i)'Kii wants it to rain.'

(ii)'Kii thinks it will rain.'

b. Kii [nahóółtą́] nízin.

Kii ArealS.rain.PERF 3S.ATT.IMPF
'Kii thinks it rained.'

In an account consistent with the homophony hypothesis, we could define the lexical entry of *'think'-nisin* such that it is not selective: it is licit with embedded clauses regardless of the temporal morphology they contain. By contrast, we could define *'want'-nisin* such that it obligatorily embeds clauses that contain future temporal morphology. If we define the entry of *'want'-nisin* in this way, we correctly predict that desire interpretations will only arise for particleless *nisin*-sentences with the morphosyntactic shape in (8a). If the embedded clause contained any other temporal morphology, *'want'-nisin* would not be licensed. There is crosslinguistic precedent for certain embedding expressions to require their embedded clauses to have a future temporal orientation (Enç 1996, Abusch 2004, Stowell 2006, Kratzer 2011, Laca 2012a,b, Matthewson 2014, Wurmbrand 2014).

So far, I have only entertained two homophonous verbs, *'think'-nisin* and *'want'-nisin*. In Chapter 3, we saw that the presence of additional particles (*sha'shin*, *laanaa*, *lágo*) bears on the meaning of the attitude report. For instance, we saw that the presence of *sha'shin* seems to commit the attitude of 'thinking' to be held in light of indirect evidence available in the context. The addition of *lágo* indicates that the desire expressed is for a particular proposition *not* to hold. The addition of *laanaa* allows the desired state of affairs to be one which holds at times other than in the future.

Under the homophony hypothesis, we might hypothesize that the Navajo lexicon contains two 'basic' attitude verbs, *'think'-nisin* and *'want'-nisin*, which can be modified in particular ways by embedded particles. Precedent for modification of embedding expressions by adverbial material comes from recent work by Anand and Brasoveanu (2010) and Huitink (2012) on sentences like (9):

(9) John must obligatorily be home by 12.

(Anand and Brasoveanu 2010: (17a))

Anand and Brasoveanu (2010) and Huitink (2012) each argue that adverbial expressions like English *obligatorily* work to restrict the range of modal interpretations available to *must*. Under these accounts, *obligatorily* as it occurs in (9) is not a modal quantifier of the familiar sort: rather, it modifies modal quantifiers.[4]

In the terminology first discussed in Chapter 1, the homophony hypothesis is a strongly 'comparative' hypothesis. In an account consistent with this hypothesis, Navajo ***nisin***-sentences receive a compositional account that runs fully parallel to those posited for English and related languages by Cresswell and von Stechow (1982), Heim (1992), and many other authors discussed in section 4.2. For a researcher convinced of the adequacy of modal entries for attitude verbs in other languages, the homophony hypothesis might initially seem appealing as it implies crosslinguistic uniformity in the compositional semantics of attitude reports.

However, there is a crucial difference between English attitude reports and Navajo ***nisin***-sentences: whereas English has multiple attitude verbs with distinct morphophono-

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[4]It remains to be seen whether the account given by Anand and Brasoveanu (2010) and Huitink (2012) can actually be imported into an account of ***nisin***-sentences. Anand and Brasoveanu (2010) (following Zeijlstra (2007) and Huitink (2012) in observing that in English, an adverbial expression must occur in the same clause as the modal that it modifies ((i)). As Anand and Brasoveanu observe, the required clausemate status is expected given the status of *obligatory* as a modal modifier in their account.

(i) a. [John must obligatorily be home by 12].
b. #[John must be home [by the time the clock obligatorily strikes 12]].

(Anand and Brasoveanu 2010: (17))

In comparison with the obligatory clausemate status in English, particles like ***sha'shin*** and ***laanaa*** are not clausemates with ***nisin***. As Willie (1996) reports and my own work has confirmed, ***sha'shin*** and ***laanaa*** are strictly clause-final particles. As such, ***nisin***-sentences with particles must have the bracketing in (iia), not (iib):

(ii) a. [[...ϕ ***sha'shin*** / ***laanaa***] ***nisin***]
b. *[[...ϕ] ***sha'shin*** / ***laanaa nisin***]

logical forms, the homophony hypothesis for *nisin* involves — of course — homophony. The following subsections argue that assumption of such homophony is deeply implausible and unnapealing given grammatical observations about Navajo and Athabaskan languages more generally.

4.2.1.1 The implausibility of verbal homophony in Navajo

I first examine challenges that the homophony hypothesis faces from Navajo grammar. As we first saw in Chapter 2, the morphophonological shape of verbs changes depending on the mode (temporal or aspectual category). A common locus for cross-mode morphophonological variation within the verb is the verb stem, the rightmost syllable in a verb word. In the following verb words based on the verb theme glossed as 'swim,' the verb stem (bolded) surfaces as *-kǫ́ǫ́h* and *-kǫ́ǫ́'* depending on whether the verb occurs in Imperfective Mode or Perfective Mode (Young and Morgan 1987: d288).

(10) a. ch'í'níshkǫ́ǫ́h — Imperfective Mode
out.horizontally.1S.swim.IMPF
'I am swimming out horizontally'

b. ch'í'níɬkǫ́ǫ́' — Perfective Mode
out.horizontally.1S.swim.PERF
'I swam out horizontally'

All verbs that occur in multiple modes exhibit some degree of morphophonological differences in their verb stem depending on the mode. Very rarely, accidental homophony arises when we compare two verbs in a particular mode. One case of accidental homophony that I found in a survey of the Young and Morgan (1987) dictionary is shown in (11) for two verbs in Imperfective Mode.

(11) Imperfective Mode

a. *yishnéél* 'It is happening to me'

b. *yishnéél* 'I am migrating'

Although the two verbs in (11) are homophonous in this one particular mode, they diverge in form when they occur in Perfective Mode ((12)).[5]

(12) Perfective Mode

a. *yisdzaa* 'It happened to me'

b. *yíná* 'I migrated'

While accidental homophony may (very rarely) arise in Navajo, we do not find homophony persisting across modes. As such, if we posit two verbs *'think'-nisin* and *'want'-nisin*, we would have to say that these verbs — and only these verbs — exhibit homophony which persists regardless of the mode we look at. I illustrate below with Imperfective Mode and Perfective Mode. For all entries, the verb could be used in *nisin*-sentences which report any of the attitudes discussed previously.

These would be the only verb themes in the language to exhibit perfect cross-mode homophony. We should only accept such an exceptional claim if we find that we have no choice but to adopt the homophony hypothesis. However, we will see in section

[5]Such cases are extremely rare. I surveyed both Young and Morgan (1980) and Young and Morgan (1987) and found only three pairs of verbs which, like *yishnéél* and *yishnéél* exhibit homophony when we look at one particular form for each verb. (i) gives one of these examples. Two other such pairs are: *yíníshdon* 'I shoot at it (repeated shots)' and *yíníshdon* 'I hold it tight (as a rope)' and (ii) *yiszéé'* 'I went like a streak' and *yiszéé'* 'it is quiet, calm, still.' Like the others, these pairs of verbs diverge when we look at them in other modes. It remains the case that even in these rare examples, homophony does not persist across modes.

(i) Homophony between two verbs in Perfective Mode only:

Imperfective Mode	Perfective Mode
hánísháál 'I am going after it' (YM 1987: d414)	*haséyá* 'I went after it' (YM 1980: 123)
haasháál 'I am climbing up' (YM 1987: d431)	*haséyá* 'I climbed up' (YM 1980: 123)

Table 4.1. Imperfective Mode

Person	Subject + Theme	Verb	Translations
1S	*sh* + ∅*zin*	*nisin*	'I think, want, wish, hope'
2S	*ni* + ∅*zin*	*nínízin*	'you think, want, wish, hope'
3S	∅ + ∅*zin*	*nízin*	'he/she thinks, wants, wishes, hopes'
1pl	*iid* + ∅*zin*	*niidzin*	'we think, want, wish, hope'
4S	*ji* + ∅*zin*	*jinízin*	'it is thought, wanted, wished, hoped'

Table 4.2. Perfective Mode

Person	Subject + Theme	Verb	Translations
1S	*sh* + ∅*zin*	*niizɨ́ɨ́'*	'I thought, wanted, wished, hoped'
2S	*ni* + ∅*zin*	*ninizɨ́ɨ́'*	'you thought, wanted, wished, hoped'
3S	∅ + ∅*zin*	*niizɨ́ɨ́'*	'he/she thought, wanted, wished, hoped'
1pl	*iid* + ∅*zin*	*niidzɨ́ɨ́'*	'we thought, wanted, wished, hoped'
4S	*ji* + ∅*zin*	*jiniizɨ́ɨ́'*	'it was thought, wanted, wished, hoped'

4.2.3 that not only is this not the only choice available to us, but there is evidence that this hypothesis is not a viable option.

4.2.1.2 The implausibility of verbal homophony across Athabaskan languages

A second problem for the homophony hypothesis is posed by the existence of counterparts to Navajo *nisin*-sentences in many Athabaskan languages, including Slavey (Rice 1989), Tłı̨chǫ (Saxon 2014), Witsuwit'en (Hargus 2007), Ahtna (Kari 1990), and Koyukon (Jetté and Jones 2000). In each language, the same basic pattern obtains: a morphologically consistent verb is found in a range of attitude reports identical to what we found in Navajo.

(13) a. [Hı̨dowedzı̨nę k'e deshı̨ta duhshá] yerehwę.
tomorrow on bush 1S.go.OPT 1S.ATT
'I'm thinking of going to the bush tomorrow.'

(Rice 1989: 1295)

b. [Deshįta duhshá] yerehwę.

bush 1S.go.OPT 1S.ATT
'I want to go to the bush.'

(Rice 1989: 1280)

Rice reports that verbs with the theme *∅wę* are variably translated into English with *want*, *think*, *wish*, and *hope*. Choice of the translation is determined in large part by morphology in the embedded clause, especially the choice of verbal morphology (Rice 1989: 1293).

An advocate for the homophony hypothesis might claim that Athabaskan languages have in common a set of homophonous verbs. For example, where Navajo has *'think'-nisin* and *'want'-nisin*, Slavey might have *'think'-yerehwę* and *'want'-yerehwę*. However, consideration of parsimony might rule against such an account: intuitively, it seems more plausible that two languages would preserve a single strategy for the construction of attitudes, in which a single verb with a constant interpretation happens to occur in different attitude reports. Slavey is spoken in the Northwest Territories in Canada, far from where Navajo is spoken in the southwest of the United States. While Slavey and Navajo have in common the complex verbal morphology that characterizes the Athabaskan language family as a whole (Rice 2000), it would be surprising if both Slavey and Navajo — and other Athabaskan languages — had retained homophony in an abstract sense while having not retained the same — or even similar — phonological forms for the homophonous expressions (*nisin* vs. *yerehwę*).

4.2.1.3 Summary

This subsection first considered the shape of an account for *nisin*-sentences consistent with the homophony hypothesis, under which the Navajo lexico contains multiple attitude verbs pronounced *nisin* which determine the attitude reported by the

sentence as a whole. I then considered arguments from Navajo and Athabaskan grammars which suggest that this hypothesis is implausible.

4.2.2 The Underspecification Hypothesis

In this section, I explore the following alternative hypothesis for *nisin*-sentences:

(14) **Underspecification Hypothesis:** The Navajo lexicon contains a single attitude verb *nisin* which determines the attitude reported by the sentence as a whole. The interpretation of *nisin* is fixed in the course of the derivation.

The underspecification hypothesis has in common with the homophony hypothesis the following characteristic: the verb *nisin* still determines the attitude. This hypothesis differs, however, from the homophony hypothesis in that the Navajo lexicon would only contain a single verb *nisin*. During the course of the derivation — in ways to be clarified below — it is determined what kind of attitude is expressed by *nisin*. As such, an account consistent with the underspecification hypothesis would not bring with it the problematic assumption of homophony.

In the discussion below, I first consider in more detail how a single lexical entry for *nisin* could give rise to the variety of attitudes reported by *nisin*-sentences. I then consider potential considerations from Navajo grammar which could caution against the adoption of an account consistent with the underspecification hypothesis.

4.2.2.1 An account consistent with the Underspecification Hypothesis

The notion of 'underspecification' which I have in mind for *nisin* under the hypothesis in (14) would be inspired by the theory of modal auxiliaries developed by Kratzer (1981, 1991, 2012). Kratzer considers sentences like (15) which have long been observed to permit multiple readings, including the epistemic (evidence-oriented) and deontic (rule-oriented) ones given below.

(15) Alice must be in her room.

a. *Epistemic reading:* In all possible worlds consistent with my (the speaker's) evidence about how things really are, Alice is in her room.

b. *Deontic reading:* In all possible worlds consistent with the rules, Alice is in her room.

Instead of appealing to homophonous entries for each modal auxiliary, Kratzer proposes that the English lexicon contains a single entry for *must* that is underdetermined with respect to what kinds of worlds are quantified over. In the simplified entry in (16), the modal accessibility relation Acc is fixed by the context of utterance (c) in the world of evaluation (w).[6,7]

(16) $[\![must]\!]^c = \lambda p.\lambda w.\forall w' : w' \in \mathrm{Acc}_{w,c}.\ p(w')$

The context parameter can be filled in the discourse context as in (15), or it can be overtly specified by adverbial clauses like in (17):

(17) a. *Epistemic reading:* Given what I know, Alice must be in her room.

b. *Deontic reading:* Given the rules, Alice must be in her room.

As under the homophony hypothesis, the underspecification hypothesis takes the verb ***nisin*** to be an element which can determine on its own the kind of attitude reported by the sentence as a whole. The key difference between the homophony hypothesis and the underspecification hypothesis lies in how the attitude is determined. Under the homophony hypothesis, the lexicon contained multiple entries pronounced

[6]I omit from this entry Kratzer's ordering source, a function that applies to the set of modally-accessible possible worlds, ranks them, and makes available only the best worlds ('most rule-obeying,' 'most desirable,' 'most stereotypical') available to the modal domain of quantification.

[7]Alternatively, Hacquard (2006, 2010) proposes that the syntactic position of modal auxiliaries determines their modal meaning. I do not take up here a hypothesis in which the interpretation of ***nisin*** is similarly restricted by its syntactic position: I have no evidence that ***nisin*** occurs at different heights when it occurs in sentences which report thoughts vs. desires.

nisin, each of which invoked a different attitude. Under the underspecification hypothesis, the lexicon only contains one entry for *nisin*. On analogy with the familiar account of English modal auxiliaries discussed above, we might imagine that *nisin* is defined such that the attitude it expresses is filled in by the context. If beliefs are particularly salient in the context, a *nisin*-sentence would report an attitude of 'thinking.' If desires are particularly salient in the context, a *nisin*-sentence would instead report an attitude of desire. What is crucial is that upon being used in an utterance, the meaning of *nisin* is fixed.

When *nisin* occurs without additional particles, the *nisin*-sentence reports attitudes which we previously described as attitudes of 'thinking' or 'wanting.' Much as for the homophony hypothesis, we could imagine particles *sha'shin* and *laanaa* working to further restrict the meaning of *nisin* once its basic meaning is fixed by context. We could also imagine these particles working more directly to determine the attitude reported by *nisin*: for example, the presence of *sha'shin* might modify *nisin* in such a way so as to guarantee that *nisin* encodes an attitude related to 'thinking,' whereas modification by *laanaa* guarantees that *nisin* instead encodes a particular attitude of desire.

A question to be addressed with respect to the underspecification hypothesis concerns the link between future morphology and the expression of desire by particleless *nisin*-sentences: now that we no longer have two distinct lexical items to work with, an account in terms of selection becomes less straightforward. However, the literature already contains precedent for discussion of this general question. We might say that 'selection' of future-marked verbs by *nisin* under its desire interpretation arises from a mismatch (either semantic or pragmatic) which arises between certain kinds of accessibility relations and embedded clauses with a non-future temporal orientation. An account along these lines is developed by Kratzer (2011) for English modal auxiliaries. With respect to question (17b), we might say now that the particles *sha'shin*,

laanaa, and *lágo* work in concert with the effects of context to fix the domain of quantification. Once again, theoretical precedent for modification by particles of modal quantifiers comes from Anand and Brasoveanu (2010) and Huitink (2012).

The underspecification hypothesis faces another question which did not arise for the homophony hypothesis at all: given a single underspecified lexical item ***nisin***, how do we explain why only certain attitudes are attested? That is, if context is the determining factor in the interpretation of ***nisin***, why could a ***nisin***-sentence not report an attitude of, e.g., 'doubting' in a context where this kind of meaning was particularly salient?

While I do not offer an answer to this question here, I observe that such restriction would certainly not be without precedent. For instance, Kratzer (1981) discusses apparent restrictions on the kinds of modal meanings which are permitted by German modals *darf* and *kann*. For instance, while *darf* ((18b)) is felicitous in a context like (18a) which expresses what is possible in light of desires — a **bouletic** modal meaning — *kann* is infelicitous in such a context ((18c)).

(18) a. *Context:* Tomorrow is the coronation of the King.

b. Morgen darf es nicht regnen.
tomorrow may it not rain

c. #Morgen kann es nicht regen.
tomorrow can it not rain

(Kratzer 1981: 61)

If we must accept certain semantic idiosyncracies for modals in other languages that are otherwise amenable to an underspecified lexical entry, perhaps we could accept similar idiosyncracies for ***nisin***.

4.2.2.2 Language-internal arguments against the hypothesis

If we wish to model *nisin* as a modal expression with an underspecified domain of quantification, we should ask whether an underspecified modal is a plausible addition to the Navajo lexicon. I will argue that it is not.

This claim takes as its starting point Rullmann et al.'s (2008) proposal about crosslinguistic variation in the shape of modal systems. Building on their work on the modal system of St'át'imcets (Northern Interior Salish), Rullmann et al. (2008) propose that crosslinguistic differences in the makeup of modal systems can be modeled in terms of parametric differences. One parametric difference which they discuss is whether a language's modals are fixed with respect to the kinds of evidence or facts and circumstances (e.g. rules) that they take into account. As discussed above, languages like English and German permit (at least some) of their modals to exhibit flexibility with respect to their interpretation.[8] By contrast, many languages of the Americas — St'át'imcets included — have modal systems in which modal meaning is never flexible. In these languages, one lexical item could be used to express only epistemic (knowledge-oriented) modality while another lexical item would express only deontic (rule-oriented) modality. Other languages whose modal systems exhibit this pattern include Nez Perce (Sahaptian) (Deal 2011), Gitksan (Tsimshianic) (Peterson 2010, Matthewson 2013), and Blackfoot (Algonquian) (Reis Silva 2009).

Navajo seems to belong to the set of languages in which modal expressions have fixed meanings.[9] The following examples demonstrate for two modal expressions

[8] I say "at least some" since modal adverbs in English (e.g. *possibly*, *probably*) seem to only permit epistemic interpretations.

[9] In a typological survey of modal meaning, van der Auwera and Ammann (2008) cite Navajo among the set of languages of the Americas with modal expressions (either possibility or necessity modals, but not both) that are ambiguous between epistemic and non-epistemic interpretations. Van der Auwera and Ammann seem to be referring to Young and Morgan's (1987: g161) discussion of future-marked verbs. As I discuss at length later in this chapter, sentences with future-marked verbs appear to express either priority modality (i.e. what *needs* to happen in light of goals in the context) or predictions about the future. However, it is unclear whether we want to attribute such flexibility of meaning to future morphology itself. Furthermore, even if we give future morphology a flexible

— the particle *sha'shin* and the verb *bee haz'ą́* — that each modal expression is only felicitous in a restricted set of contexts. *Sha'shin* is only felicitous in epistemic-oriented contexts while *bee haz'ą́* is only felicitious in deontic contexts.

I begin with *sha'shin*. The epistemic context in (19) concerns evidence and what is known in the context, not what is permitted or required.

(19) a. *Epistemic context:* You are playing a game with three cups and a pebble under one of them. Mary asks you to figure out which cup is hiding the pebble. You have already turned over Cup 1 and Cup 2: the pebble wasn't under either one of them. You say to Mary,

b. Díí tsé biyaa si'ą́ sha'shin.

this.one rock 3O.under 3S.sit.IMPF probably
'The rock must be under this one.'

Unlike the flexible English *must*, Navajo *sha'shin* is infelicitous in contexts targeting a deontic interpretation:

(20) a. *Deontic context:* We are talking about what is expected of Mary. Given the rules of the house, she must go to school.

b. #Mary 'ółta'góó doogáát sha'shin.

Mary school.to 3S.go.FUT probably
(*Intended:* 'Mary is required to go to school.')
Can only mean: 'Mary is probably at / must be at school.'

Likewise, Navajo has special modal expressions like *bee haz'ą́*. Willie (1996) identifies the verb *bee haz'ą́* as a modal expression that expresses what is possible in light

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modal meaning, *nisin* would still be unique among modal expressions. No other free morphemes — particles or verbal expressions — exhibit flexibility of modal meaning.

of laws or rules. The examples below demonstrate that ***bee haz'ą́*** permits a deontic interpretation ((21)) but not an epistemic one ((22)).

(21) a. *Deontic context:* I just turned 16. I am telling you I am allowed to drive now.

b. K'ad 'adeesbąs=ígíí bee haz'ą́.

now 1S.drive.FUT=COMP 3O.with.ArealS.exist.IMPF
'I am allowed to drive.'

(22) a. *Epistemic context:* Alice works at the local school. Sometimes she goes in on Saturdays. Someone asks you if Alice is going to school tomorrow. You think it's possible she will.

b. #Mary 'ólta'góó doogáát=hígíí bee haz'ą́.

Mary school.to 3S.go.FUT=COMP 3O.with ArealS.exist.IMPF
(*Intended:* 'Mary might go to school.')

Can only mean: 'Mary is allowed to go to school.'

These restrictions can be explained if the lexical entries of ***sha'shin*** and ***bee haz'ą́*** are specified for particular modal accessibility relations. That is, the lexical entry of ***sha'shin*** would specify that the domain of modal quantification is the set of worlds compatible with evidence and knowledge available in the context. By contrast, the lexical entry of ***bee haz'ą́*** would specify that the modal's domain of quantification is the set of worlds compatible with rules in the context.

Comparable inflexibility can be observed for other modal expressions in Navajo: none of these expressions seems to exhibit the kind of flexibility in modal meaning found in English. Navajo patterns like a language which Rullmann et al. (2008) would claim is parametrically specified for fixed modal meaning. If we take Navajo's membership in this set of languages seriously, then it is unexpected that there should be one verb in the language — ***nisin*** — which exceptionally exhibits flexibility with

respect to its modal meaning. While exceptionality cannot rule out the underspecification hypothesis, it should at least give us pause.

4.2.2.3 Summary

This subsection has considered the underspecification hypothesis for *nisin*, in which the Navajo lexicon contains a single verb *nisin* whose meaning is determined in the course of the derivation. I argued that like the homophony hypothesis, the underspecification hypothesis faces challenges from Navajo grammar more generally.

Arguments such as those presented so far can, however, only render the hypotheses implausible: they cannot rule them out entirely. It could be the case that we simply must accept that *nisin*-sentences motivate an exceptional analysis. However, the next section considers additional data which cannot be accounted for under either hypothesis considered above.

4.2.3 Evidence that *nisin* does not determine the attitude

Under both the homophony hypothesis and the underspecification hypothesis, *nisin* is the primary determinant of the attitude reported by the sentence as a whole. Furthermore, any given instance of *nisin* expresses one kind of attitude, regardless of whether this attitude is lexically- or contextually-determined.

So far, this has not been a problem because we have focused our attention on *nisin*-sentences in which a single instance of *nisin* embeds a single clause: it is no surprise that these sentences should report only one kind of attitude. However, we also find sentences like (23) in which a single overt instance of *nisin* embeds two conjoined clauses, each of which is shown bracketed below.

(23) Alice [Bill Kinłánígóó ‘íiná] dóó [bich’į deesháát] nízin.
Alice Bill Flagstaff.to 3S.move.PERF and 3O.to 1S.go.FUT 3S.ATT.IMPF

The sentence in (23) can be used felicitously in two kinds of contexts. In the first context, Alice thinks two things: (i) that Bill moved Flagstaff and (ii) that she is going to go visit him. The translation offered by consultants in (24b) reflects this intended interpretation.

(24) a. *Context:* Alice thinks Bill moved to Flagstaff. She also thinks that her work is going to make her go see him in the near future, even though she has no desire to do so.

b. Alice [Bill Kinłánígóó ‘íiná] dóó [bich’į deesháát] nízin.

Alice Bill Flagstaff.to 3S.move.PERF and 3O.to 1S.go.FUT 3S.ATT.IMPF
‘Alice thinks that Bill moved to Flagstaff and that she’ll go visit him.’

It is not surprising that this interpretation should be available in principle for (24b): the structure would either contain *‘think’-nisin* or context would resolve the interpretation of ***nisin*** such that the attitude concerns Alice’s thoughts.

What is surprising is the ability of the string in (23) to be uttered felicity in the context in (25a). Here, Alice thinks that Bill moved to Flagstaff, but she has a desire to go visit him. Once again, the translation offered by consultants in (25b) reflects this intended interpretation:

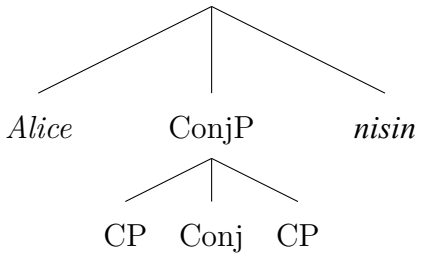
(25) a. *Context:* Alice thinks Bill moved to Flagstaff. She wants to go visit him some time, but she does not have any definite plans to do so and knows it is very likely it will not happen. I’m telling you about Alice.

b. Alice [Bill Kinłánígóó ‘íiná] dóó [bich’į deesháát] nízin.

Alice Bill Flagstaff.to 3S.move.PERF and 3O.to 1S.go.FUT 3S.ATT.IMPF
‘Alice thinks Bill moved to Flagstaff and she wants to go see him.’

The felicity of (25b) in the context in (25a) is surprising under any hypothesis in which ***nisin*** determines the attitude. If (25b) only contains one instance of ***nisin*** ((26)), we expect ***nisin*** to either concern what Alice thinks or what Alice wants.[10]

(26) **Single, shared instance of *nisin*:**



A proponent of the hypotheses considered so far could have several potential responses. One such response would be to claim that we have been wrong to think that ***nisin*** can express 'thinking' to the exclusion of 'wanting,' or vice versa. That is, perhaps ***nisin*** can be defined in such a way that it is sufficiently vague to cover simultaneously both kinds of attitudes. The translation of (25b) with two English attitude verbs would, then, not reflect the expression of two distinct attitudes in Navajo but instead would be the result of a mismatch between the English and Navajo lexicons: English does not have good counterpart to ***nisin*** so-defined.

However, we already saw evidence in Chapter 3 that points away from such a meaning for ***nisin***. In the following context, one man (Ron) thinks Obama will win but does not want him to. The other man (Kii) wants Obama to win but does not think he will:

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[10]While simplified for ease of exposition, the syntactic structures considered in this section correspond to two syntactic analyses offered for superficially similar structures in English that involve both unpronounced material and conjoined clauses, namely Gapping (*Sybil ate chicken and Buttercup, <ate> fish*) and Right Node Raising (*Sybil likes, <canned food> and Buttercup dislikes, canned food*) in which certain material (a verb or a nominal expression) appears to go unpronounced when it corresponds to material pronounced in a conjoined clause. For analyses for constructions that inform the syntactic structures considered below, see Ross (1967, 1970), Kayne (1994), Johnson (1996), and Sabbagh (2003), and many others.

(27) a. *Context:* It is 2012 before the presidential election. Given the evidence he's seen, Ron thinks that Obama will win. However, Ron doesn't want Obama to win. Ron's friend Kii really wants Obama to win, but he firmly believes that Obama will not win.

b. #Ron dóó Kii [Obama hodínóołnéél] nízin.

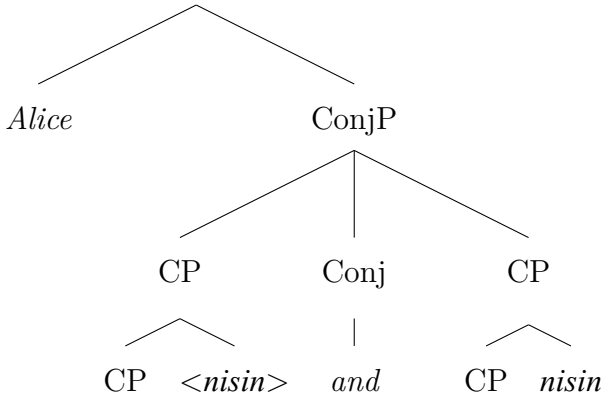
Ron and Kii Obama 3S.win.FUT 3S.ATT.IMPF
(*Intended:* 'Ron and Kii have some feeling about Obama winning')

Comment: "They want for him to win. One doesn't think and the other one want. I don't think you can have 'think' and 'want' in the same sentence. One's going to win out over the other."

In this context, the mental attitude attributed to ***Ron dóó Kii*** cannot be described with a single ***nisin***-sentence. This result is unexpected if ***nisin*** expresses some attitude which subsumes both 'thinking' and 'wanting.'

There is a key difference between (25b) and (27b), however: the number of embedded clauses. In (27b), a single instance of ***nisin*** seems to embed a single embedded clause which has a more complex subject. It is no surprise that such a sentence can only report one attitude at a time. We might, however, revisit our syntactic assumptions about (25b). Perhaps, the true structure is one in which there are two conjoined ***nisin***-sentences. One instance of ***nisin*** is elided to produce the surface string in (25b) from the structure in (28):

(28) **Two instances of *nisin*, one elided:**



In the structure in (28), there are two instances of ***nisin***, one in each clause. If each instance of ***nisin*** could contribute a distinct attitude, we could account for the attested interpretation of (25b). However, I will claim that if (28) contains two semantically distinct instances of ***nisin***, it will not be possible for ellipsis to apply as it must to obtain the surface string in (25b).

I begin with the failure of ellipsis given the homophony hypothesis. Under this account, we would say that each of the clauses conjoined in (28) contains a distinct embedding verb, ***'think'-nisin*** in the first clause and ***'want'-nisin*** in the second. To produce (25b), ***'think'-nisin*** would have to elide under identity with ***'want'-nisin***. This is clearly a non-starter. Ellipsis is standardly taken to abide by a general principle of recoverability of deletion (Chomsky 1965). This principle is frequently modeled in terms of a requirement that semantic identity hold between the antecedent and the target of deletion (Keenan 1971, Sag and Hankamer 1984, Dalrymple et al. 1991, Fiengo and May 1994, Ginzburg and Sag 2000, Merchant 2001, and van Craenenbroeck 2010, among others).[11] There is no sense in which ***'think'-nisin*** is semantically identical to ***'want'-nisin***: they are completely distinct lexical entries that happen to

[11] Authors diverge in whether syntactic identity — identity of phrase markers or identity of derivation — is also relevant. See Merchant (2013) for a general overview of the literature and issues at hand. This is not important to the discussion of ***nisin*** since the two instances of ***nisin*** are both verbs and thus will always be syntactically identical.

be homophonous. To predict that *'want'-nisin* should license ellipsis of *'think'-nisin* (or vice versa) is akin to predicting the grammaticality of (29).[12]

(29) *Alice $ran_{directed}$ the meeting and Mary <$ran_{r}aced$> the Boston Marathon.

We might initially be more hopeful about the chances of the underspecification hypothesis, but such hopes would be misplaced. As discussed earlier, the underspecification hypothesis claims that the Navajo lexicon contains a single verb, ***nisin***. The interpretation of ***nisin*** is fixed when it occurs in a sentence used in a particular context: ***nisin*** expresses whatever attitude is salient in the context. Thus, while both instances of ***nisin*** in the tree in (28) might correspond to the same basic entry in the Navajo lexicon, each instance of the verb would have its meaning fixed differently: the first instance would be fixed such that it expresses desire and the second such that it expresses thinking.

In our sketch of the underspecification hypothesis, we thought of ***nisin*** as an underspecified modal expression similar to a modal auxiliary (Kratzer 1981, 1991). If this analogy is correct, we might expect ***nisin*** and modal auxiliaries to behave similarly with respect to their elliptical possibilities. This expectation is not borne out. I illustrate below with the English Gapping sentence in (30). I follow Ross (1967), Sag (1976), Hartmann (1998), Coppock (2001), Lin (2001), Toosarvandani (2015) in analyzing English Gapping as involving ellipsis (cf. Johnson 1996, 2009).[13]

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[12]I thank Peggy Speas (p.c.) for this example.

[13]Although I illustrate in the main text with Gapping, the same point can also be made by the following Right Node Raising structure:

(i) Jim believes <that Sandy can take the train> and Alice supposes that Sandy can take the train.

This sentence is grammatical but is infelicitous in a context like (ii), where the overt and unpronounced instances of *can* must each support a distinct (ability vs. permission) modal meaning:

(ii) a. *Mixed context:* Jim believes that little Sandy has been sick and weak for a long time, but that she is finally physically able to take the train. Alice is unaware Sandy ever had a physical affliction: she is only concerned with what Sandy is allowed to do.

(30) Mary can carry these boxes and Bill, <can> climb this ladder.

The sentence in (30) is grammatical but is only licit in contexts in which each instance of *can* describes the same kind of possibilities. For example, the context in (31a) concerns possibilities relating to abilities while the context in (32a) concerns possibilities relating to goals (i.e. the goal of earning money).

(31) a. *Ability context:* We are moving boxes up to the attic. Our friends Bill and Mary are helping us. Bill is very strong and is physically able to carry the boxes (Mary is too weak to do so). Mary can fit into the narrow space with the ladder and steady it as Bill climbs. I describe the situation to you, saying:

b. Bill can carry the boxes and Mary <can> steady the ladder.

(32) a. *Goal-oriented context:* We are moving boxes up to the attic. Our kids, Bill and Mary, are helping us. Both Bill and Mary are helping out in order to earn their allowance for the week. One of the ways that Bill can earn his allowance is by carrying these boxes. One of the ways that Mary can earn her allowance is by steadying the ladder. I describe the situation to you, saying:

b. Our kids can earn their allowance in different ways: Bill can carry the boxes and Mary <can> steady the ladder.

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b. #Jim believes and Alice supposes that Sandy can take the train.

As with the Gapping examples, an obvious answer for what goes 'wrong' in (i)/(iib) is that the overtly pronounced clause *that Sandy can take the train* has a distinct semantics from the elided instance due to differences in the interpretation of the modal auxiliary. Given the semantic disparity that would exist between the overt and elided clauses, ellipsis is not licensed for (i)/(iib) under the desired interpretation.

However, (30) becomes infelicitous in the following 'mixed' context. Here, the context is such that each instance of *can* concerns a different kind of possibility. In the first clause, *can* concerns Bill's physical abilities. In the second clause, *can* concerns possible ways of Mary meeting her goal of earning money. In this context, the gapping construction (repeated in (33b)) is unacceptable.[14]

(33) a. *Mixed context:* We are moving boxes up to the attic. Our friend Bill is physically able to carry these boxes. Our kid Mary is helping out, too: one of the ways she can earn her allowance is by steadying the ladder. I describe the situation to you, saying:

b. #Bill can carry these boxes and Mary <can> climb this ladder.

If we assume an ellipsis structure for English sentences like (33b) on par with the ellipsis structure we are entertaining for Navajo, we must explain why ellipsis of mismatched modal expressions is blocked in English ((34a)) but permitted in Navajo.[15]

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[14]While mismatches in modals' quantificational domains may prevent ellipsis in English, domain mismatches may not block ellipsis for all types of quantificational expressions. Examples of sloppy identity like (i) demonstrate that other kinds of English quantifiers allow ellipsis despite mismatching quantificational domains (the sets of students under consideration).

(i) a. *Context:* Alice and Bill teach in schools in different countries.
b. Alice failed every student, Bill did <fail every student> too.

I thank Alejandro Pérez-Carballo (p.c.) for drawing my attention to such examples. I leave to future consideration how to capture this apparent difference between modal quantifiers and quantificational determiners.

[15]I have chosen ability and goal-related (teleological) modal meanings very intentionally to rule out an alternative explanation for the failure of ellipsis in (33b). An alternative to Kratzer's (1981, 1991) context-sensitive account of modal meanings is Hacquard's (2006, 2010) structural account. In Hacquard's account, modal auxiliaries permit different interpretations as a function of the structural position they occupy: composition at different heights in the syntax makes available different interpretations.

One might ask, then, whether the infelicity of the English sentence in (33b) is due to the modals occuring at different heights in the syntax: perhaps the mismatching syntax of the ellipsis sites is to blame rather than a mismatch in the modals' semantics. In Navajo sentences like (25b), ellipsis might be permitted because the two instances of *nisin* occur at the same point in the syntax.

However, we cannot explain the differences between English and Navajo in these terms. Hacquard argues that both of the modal meanings used in (33b) — ability and goal-oriented — are associated with the same position in the syntax. Thus, ellipsis in (33b) cannot be said to fail because the two

4.2.4 Summary

In the previous sections, I considered two hypotheses concerning the source of belief- and desire-related meanings in Navajo *nisin*-sentences. In both of these hypotheses, the verb *nisin* was taken to be the primary determinant of the attitude reported by the *nisin*-sentence as a whole. These hypotheses have the basic shape of widely-adopted accounts of attitude reports in other languages. The attitude verb is instrumental in determining the attitude. However, I argued that neither hypothesis is satisfactory for Navajo. Not only do both hypotheses face challenges from Navajo grammar, but neither hypothesis allows us to account for examples of sentences which contain one *nisin* but which seem to express two attitudes. In the discussion going forward, I will set aside any hypothesis in which *nisin* is primarily responsible for determining the attitude.

4.3 The embedded clause as the determinant of the attitude

Given that we have already seen that sentences like (34) throw up a challenge for any account in which *nisin* determines the attitude, what alternative do we have?

(34) Alice [Bill Kinłánígóó ‘íiná] dóó [bich’į deesháát] nízin.

Alice Bill Flagstaff.to 3S.move.PERF and 3O.to 1S.go.FUT 3S.ATT.IMPF
‘Alice thinks Bill moved to Flagstaff and she wants to go see him.’

I argue that it is not *nisin* which determines the attitude, but instead the clause — or clauses — which it embeds. Under a shared structure analysis of (34), a single instance of *nisin* embeds two clauses conjoined by *dóó*: each of these clauses has the ability to determine a different attitude (i.e. attitudes of ‘thinking’ vs. ‘wanting’).

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instances of *can* occur at different positions in the syntax. In order to say that Navajo allows ellipsis where English does not, we would once again have to propose that the two languages have different notions of semantic identity.

Under an account which involves ellipsis of one instance of *nisin* in (34), two *nisin*-sentences are conjoined: each contains an embedded clause which has the ability to determine a different attitude.

Because the embedded clauses in (34) determine the attitude, we can imagine for *nisin* a constant semantics. Under the shared structure analysis, this constant *nisin* could be shared by the attitude-determining embedded clauses. Under an elliptical account, the two instances of *nisin* would be semantically identical so we would expect ellipsis to proceed without incident.

This proposal for (34) leads to the following question: if it is the bracketed clauses, and not *nisin*, which determine what attitude is reported by a *nisin*-sentence, do we ever find the bracketed clauses on their own — as main clauses, without *nisin* — expressing comparable meanings? If so, what are the semantics of these clauses? Does their interpretation differ from that of *nisin*-sentences? (I.e., what does *nisin* contribute if it does not determine the attitude?)

I explore this question by comparing the meanings of *nisin*-sentences with main clauses with which they are morphosyntactically identical except for the latter sentences' lack of *nisin*. I will demonstrate that these sentences are associated with meanings which are, to varying degrees, related to the attitudes that I have argued are reported by *nisin*-sentences. The clearest comparison will come from comparing *nisin*-sentences with particles with their main clause counterparts. We already began this comparison in Chapter 3. After considering these simpler cases, we will turn to particleless *nisin*-sentences and their main clause counterparts.

4.3.1 *Laanaa* in main clauses and in *nisin*-sentences

The pair of sentences in (35) demonstrates the semantic parallels which can hold between certain main clauses and *nisin*-sentences.

(35) a. Nahałtin laanaa.

ArealS.rain.IMPF wishful
'I wish it were raining.'

b. Kii [nahałtin laanaa] nízin.

Kii ArealS.rain.IMPF wishful 3S.ATT.IMPF
'Kii wishes it were raining.'

Both of the sentences in (35) report attitudes of desire for the state of affairs described in the embedded clause to hold. Since main clauses with *laanaa* report desires, it seems reasonble to claim that in *nisin*-sentences with *laanaa*, it is *laanaa* — not *nisin* —- which determines that the attitude is one of desire. The particle *laanaa* would perform the same semantic function regardless of the construction in which it occurs.

There are, however, difference in the interpretations permitted for (35a) vs. (35b) which turn on the presence vs. absence of *nisin*. *Nisin* is obligatorily present if the attitude holder is not the speaker or if the time of the desire is not the utterance time.[16]

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[16]Throughout this discussion, I tacitly assume that the sentences I refer to as 'main clauses' are truly main clauses: they do not contain an unpronounced instance of *nisin*. The discussion that I present here concerning differences in the interpretation of purported 'main clauses' and their *nisin*-sentence counterparts can also be thought of as evidence against the presence of an unpronounced *nisin*. If *nisin* were covertly present in the 'main clause' examples, we would have to explain why this unpronounced *nisin* is so much more restrictive in the meanings that it allows: why does it not permit the same range of subjects and temporal perspectives as overt *nisin* does?

This kind of evidence is a simpler form of the evidence by Grosz (2011b) in his exploration of German optative constructions. Following Scholz (1991) and Rifkin (2000) (and contra Evans 2007), Grosz argues that German optative constructions like (i) do not involve main clause deletion of a desire verb.

(i) <Ich wünschte> Dass ich deine Statur hätte!
I wish that I your build had
'[I wish] I had your build.'

(Grosz 2011b: (215b))

I begin with restrictions on the identity of the individual whose desires we are concerned with. Whereas *nisin*-sentences with *laanaa* report the desires of the subject of *nisin* (whoever it may be), main clauses with *laanaa* can only report the desires of the speaker. This is illustrated by (36). In the context in (36a), Kii's desires are extremely salient. Even in such a context, however, the main clause with *laanaa* in (36b) is judged to be infelicitous: according to consultants, this sentence only reports the speaker's desires, which the context establishes are not consistent with (36b). In this context, the *nisin*-sentence in (36c) must be used instead: only then can the sentence report desires belonging to Kii.

(36) a. *Context:* I don't want it to be raining, but Kii does (he is a farmer and his crops are going dry). We are discussing what Kii wants to be going on. Kii wants the temperature to cool, he wants the wind to blow less, and:

b. #Nahodoołtįįł laanaa.

3S.rain.FUT wishful
(*Intended:* 'Kii wishes it would rain.')

Can only mean: 'I wish it would rain.'

c. Kii [nahałtin laanaa] nízin.

Kii ArealS.rain.IMPF wishful 3S.ATT.IMPF
'Kii wishes it were raining.'

I also explored the converse side of this point: when *nisin* embeds *laanaa*, the sentence can only express the desires of the subject of *nisin*. To determine this, I constructed the context in (37a) to make salient the beliefs of *my mother* but the desires (or, at least, the perceived desires) of the speaker. As shown by the infelicity of (37b), however, the resulting sentence cannot have this meaning: the desires reported are those of the mother.

(37) a. *Context:* I'm a farmer in California. My crops are drying up. My mother thinks I want it to rain. (She's actually wrong: if my crops die, I will get insurance money). I say to you, My mother thinks I want it to rain.

b. #Shimá [nahodooɬtįįɬ laanaa] nízin.

1poss.mother ArealS.rain.FUT wishful 3S.ATT.IMPF
(*Intended:* 'My mother thinks I want it to rain.')

Comment: "You're saying that the mother wants it to rain."

Consultants reported that a meaning consistent with the context in (37a) could only be expressed by a sentence like (38). Here, an additional ***nisin*** has been inserted to the immediate right of ***laanaa***. This new ***nisin*** bears a first-person subject: as a result, the embedded ***nisin***-sentence reports the desires of the speaker.[17]

(38) Shimá [shí 'ei nahodooɬtįįɬ laanaa nisin] nízin.

1poss.mother 1pro TOP ArealS.rain.FUT wishful 1S.ATT.IMPF 3S.ATT.IMPF
'My mother thinks I want it to rain.'

The presence of ***nisin*** is also required in order for a sentence to report desires held at times other than the time of utterance. The context in (39a) concerns the speaker's desires in the past. The context establishes that the speaker no longer holds these desires. In this context, the main clause in (39b) was judged infelicitous: consultants reported that it could only report desires held by the speaker at the time of utterance (i.e. now). By contrast, the ***nisin***s-sentence in (39c) was judged felicitous in the context. Here, the verb ***nisin*** is marked for perfective aspect which, as discussed by Smith et al. (2007), by default gives rise to a past tense interpretation.

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[17]Consultants seemed to add the overt first-person pronoun here to rule out the 'shifted' interpretation of the first-person subject of ***nisin***, wherein it would be coreferent with the subject in the main clause, as discussed in section 3.2.2.

(39) a. *Context:* It is Thursday. On Monday, I wanted it to rain next Saturday. Now, however, I have plans to go hiking next Saturday and no longer want it to rain. I am telling you how I used to feel:

b. #Nahodoołtįįł laanaa.

3S.rain.FUT wishful
Can only mean: 'I wish that it would rain.'

c. [Nahodoołtįįł laanaa] niizįį'.

3S.rain.FUT wishful 1S.ATT.PERF
'I wished that it would rain.'

4.3.2 *Sha'shin* in main clauses and in *nisin*-sentences

We can also construct pairs of main clauses and *nisin*-sentences which contain the particle *sha'shin*:

(40) a. Nahałtin sha'shin.

ArealS.rain.IMPF probably
'It's probably raining,' 'It must be raining.'

b. Kii [nahałtin sha'shin] nízin.

Kii ArealS.rain.IMPF probably 3S.ATT.IMPF
'Kii thinks it is probably raining,' 'Kii thinks it must be raining.'

As we first saw in Chapter 3, both (40a) and (40b) are used felicitously in contexts in which there is indirect evidence (sounds, smells, visual evidence) that it is currently raining. In other words, both sentences in (40) express that some proposition (*that it is raining*) must be true given indirect evidence available in the context. We saw in Chapter 3 that *sha'shin* is infelicitous if there is direct evidence for the truth of the proposition available, e.g. the speaker ((40a)) or Kii ((40b)) has seen it raining. It seems reasonable to propose that in *nisin*-sentences with *sha'shin*, it is *sha'shin* — not *nisin* — which determines that the meaning expressed involves beliefs and knowledge about what is the case (here, necessarily formed on the basis of indirect evidence).

The presence vs. absence of ***nisin*** plays a key role in sentences with ***sha'shin***, just as it did with *laanaa*. When present, ***nisin*** supplies us with the individual whose evidence supports the truth of the proposition in question. In (40a), it is the speaker whose evidence leads to the conclusion that *that it is raining* is true. In (39b), by contrast, it is Kii whose evidence is relevant: in light of what Kii knows, it must be raining. In ***nisin***-sentences, what the speaker does, or does not, know is irrelevant.

The following example illustrates. In the context in (41a), it is established that while the speaker has direct evidence for the truth of *that Mary is at home*, Kii does not. The ***nisin***-sentence in (41b) is licit in this context: ***sha'shin*** is felicitous because Kii, the subject of ***nisin***, only has indirect evidence for the truth of *that Mary is at home*. By contrast, even if Kii's perspective is made very salient, the main clause with ***sha'shin*** in (41c) is judged infelicitous in the context as given. Consultant comments indicated that this sentence could only express what must be true in light of the speaker's indirect evidence: since the speaker is established as having access to direct evidence, the resulting sentence is infelicitous.

(41) a. *Context:* I know that Mary is at home. Kii, however, only has certain evidence that she's at home: he saw her car in front of the house and a light on inside. I report Kii's thinking to you, saying:

b. Kii [Mary hooghandi sidá sha'shin] nízin.

Kii Mary home.LOC 3S.sit.IMPF probably 3S.ATT
'Kii thinks Mary must be at home,' 'Kii thinks Mary is probably at home.'

c. Mary hooghandi sidá sha'shin.

Mary home.LOC 3S.sit.IMPF probably
'Mary must be at home,' 'Mary is probably at home.'

Just as we saw for sentences with ***laanaa***, the presence of ***nisin*** also permits a wider range of temporal perspectives for sentences with ***sha'shin***. In the context in (42a), we learn that the speaker had access to certain indirect evidence yesterday which led

him to conclude the truth of *that it was raining*. Since then, this evidence and this conclusion has been debunked, but we can still describe the speaker's prior state of knowledge with the ***nisin***-sentence in (42b), where the verb is marked for perfective aspect. By contrast, the main clause sentence with ***sha'shin*** in (42c) is infelicitous in the same context: this sentence is only felicitous if the speaker's state of knowledge is currently one in which she only has indirect evidence for the truth of *that it is raining*.

(42) a. *Context:* I was inside in a windowless room yesterday. I heard a pattering sound on the roof and concluded then it must be raining. Since then, I have learned that it wasn't raining: the sound I heard was hammering by construction workers. I tell you this, saying:

b. [Nahałtin sha'shin] niizíį'.

ArealS.rain.IMPF probably 3S.ATT.PERF
'I thought it must be raining.

c. #Nahałtin sha'shin.

ArealS.rain.IMPF probably
Can only mean: 'It must be raining,' 'it's probably raining.'

There is one notable difference between the sentences we saw with ***laanaa*** vs. sentences with ***sha'shin***. This differences concerns consultants' manner of translation: while translations are not direct clues about meaning (Matthewson 2004), they can provide us with useful clues. Both main clauses and ***nisin***-sentences with ***laanaa*** were translated into English using *wish*. By contrast, only ***nisin***-sentences with ***sha'shin*** were translated into English with *think*: main clauses with ***sha'shin*** were simply translated as [must/probably ϕ].

What accounts for the absence of *think* in main clauses? I propose that in the English translations of ***nisin***-sentences, *think* is present to indicate whose perspective we are interested in: that is, it does exactly what I have argued ***nisin*** to do. This

evidential use of *think* has been the subject of long interest in both the philosophical and linguistic literature, with recent work by Simons (2007) and Lewis (2013). I will return to this use of *think* in section 4.4.1 where I will compare it to ***nisin***. In main clauses with ***sha'shin***, by contrast, *think* need not appear in the English translation because *must* or *probably* in a main clause permits the interpretation I have attributed to ***sha'shin*** in main clauses: they indicate the necessity or likelihood of the truth of the proposition given indirect evidence available to the speaker. Including *I think* in the English translation would be superfluous.[18]

4.3.3 Particleless ***nisin***-sentences and particleless main clauses

So far, I have argued that the semantics of the clause embedded by ***nisin*** determines the attitude reported by the ***nisin***-sentence as a whole. Sentences with ***laanaa*** report desires because they contain ***laanaa***; sentences with ***sha'shin*** report claims about what must be true given the (indirect) evidence because they contain ***sha'shin***. The verb ***nisin*** only functions to specify further the individual's whose desires or evidence is relevant, or to indicate at what time these desires were held or the evidence available. If ***nisin*** is not present, sentences with ***sha'shin*** and ***laanaa*** are evaluated from the perspective of the speaker and at the time of the utterance.

Can we make the same claim for ***nisin***-sentences which do not contain particles? That is, do the embedded clauses in (43b) and (44b) determine what attitude is reported by the sentence as a whole?

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[18]The speaker-oriented interpretation is not the only interpretation available to unembedded epistemic modals in English. As von Fintel and Gillies (2011) discuss, while the "speaker-centric" interpretation is generally available for epistemic modals, other authors have observed that other readings are possible and must be accounted for (Hacking 1967, DeRose 1991). I will leave for future investigation closer sutdy of whether unembedded instances of ***sha'shin*** in Navajo permit a similar broader range of interpretations relative to different groups' or individuals' knowledge, beyond that of the speaker alone. For now, I observe that the default interpretation of unembedded ***sha'shin*** picks up the speaker's perspective.

(43) a. Kii ’atoo’ yił ’ayą́.

Kii stew 3O.with.3S.eat.IMPF
‘Kii is eating stew.’

b. Mary [Kii ’atoo’ yił ’ayą́] nízin.

Mary Kii stew 3O.with.3S.eat.IMPF 3S.ATT.IMPF
‘Mary thinks that Kii is eating stew.’

(44) a. Kii ’atoo’ yił ’adooyíįł.

Kii stew 3O.with.3S.eat.FUT
(i) ‘Kii will eat stew.’

(ii) ‘Kii should eat stew.’

b. Mary [Kii ’atoo’ yił ’adooyíįł] nízin.

Mary Kii stew 3O.3S.stew.FUT 3S.ATT.IMPF
(i) ‘Mary thinks Kii will eat stew.’

(ii) ‘Mary wants Kii to eat stew.’

Just as I already did for sentences with particles, I will argue that we can systematically relate the meanings of the main clauses in (43a) and (44a) with their ***nisin***-sentence counterparts. To develop this argument, I first explore in more depth the semantics of the main clauses in (43a) and (44a). I then consider how the meanings of these sentences can be systematically related to what I have characterized previously as attitudes of ‘thinking’ and ‘wanting’ reported by ***nisin***-sentences.

4.3.3.1 Main clause assertions and their ***nisin***-sentence counterparts

I first consider the truth conditions of the particleless sentences in (45).

(45) a. Kii ’atoo’ yił ’ayą́.

Kii stew 3O.with.3S.eat.IMPF
‘Kii is eating stew.’

b. Mary [Kii 'atoo' yił 'ayą́] nízin.

Mary Kii stew 3O.with.3S.eat.IMPF 3S.ATT.IMPF
'Mary thinks that Kii is eating stew.'

We first explored particleless sentences like those in (45) in section 3.3.1, where we compared them to sentences with ***sha'shin***. I repeat the key findings from this comparison below:

(46) **Comparison of sentences with, and without, *sha'shin*:**

a. Contexts in which the attitude holder uses indirect or inferential evidence to conclude that ϕ is true: sentences with and without ***sha'shin*** are felicitous.

b. Contexts in which the attitude holder has direct evidence for the truth of ϕ: only sentences without ***sha'shin*** are felicitous.

Examples like (47) and (48) were key to establishing (46b). In the context in (47a), it is established that the speaker has direct evidence that *that it is raining* is true: the particleless assertion in (47b) is felicitous while the addition of ***sha'shin*** in (47c) results in infelicity. The same is true of (48a), where it is established that the subject of ***nisin***, Kii, has direct evidence that *that Mary is home* is true: the particleless ***nisin***-sentence in (48b) is felicitous while the sentence with ***sha'shin*** is not.[19] (I return to the ?-diacritic of the English translation of (47b) at the end of this subsection. Note that the Navajo sentence in (46b) does not have this diacritic.)

[19]One conclusion that we can draw is the following: since the (b)- and (c)-sentences above are felicitous in different contexts, we can conclude that the particleless (b)-sentences do not, in fact, contain a covert version of ***sha'shin***.

(47) a. *Context:* You see Mary walk past her window. You say,

b. **Mary hooghandi sidá.**

Mary home.LOC 3S.sit.IMPF
'Mary is at home.'

c. #**Mary hooghandi sidá sha'shin.**

Mary home.LOC 3S.sit.IMPF probably
#'Mary must be at home,' 'Mary is probably at home.'

Comment: "You saw her? That doesn't sound right."

(48) a. *Context:* We are all talking about where Mary is. I do not know. Kii says he saw Mary at her home just a moment ago. I report Kii's thinking to you, saying:

b. **Kii [Mary hooghandi sidá] nízin.**

Kii Mary home.LOC 3S.sit.IMPF 3S.ATT.IMPF
? 'Kii thinks Mary is at home.'

Comment: "You're reporting that's what he's thinking, it's okay."

c. #**Kii [Mary hooghandi sidá sha'shin] nízin.**

Kii Mary home.LOC 3S.sit.IMPF probably 3S.ATT.IMPF

Comment: "If he actually saw her, then I'd say [(48b)]."

The only difference between the particleless main clause assertion in (47b) and the ***nisin***-sentence in (48b) is the presence of ***nisin***. In our study of ***nisin***-sentences with particles, we saw that ***nisin*** determined a time and individual relative to which the desire is expressed or the epistemic claim is made. If ***nisin*** was absent, the individual and time defaulted to the speaker (or, perhaps, a group including the speaker) and the time of utterance. The same holds for (47b) and (48b). (47b) expresses an assertion on the part of the speaker: if made sincerely, the speaker is indicating her commitment to the truth of *that Mary is at home*, such that this proposition is true given what the speaker believes the world to be like. In (48b), by contrast, it is Kii

who is committed to the truth of *that Mary is at home*: the sentence concerns what Kii thinks the world to be like, not the thoughts of the speaker.

Relating assertions with attitudes of 'thinking' I propose that what I previously characterized as attitudes of 'thinking' in Navajo are, in fact, the result of embedding a main clause assertion under ***nisin***. That is, Navajo attitudes of 'thinking' are assertions attributed to particular individuals. There is significant precedent in the semantic and philosophical literature for a link between assertions and attitudes of belief, which I will treat as related to attitudes of 'thinking.' Both assertions and these types of attitudes involve a proposition which is necessarily true in light of certain beliefs or knowledge. Authors differ in whose beliefs or knowledge they hold to be key in assertions. Kissine (2009) discusses this point in relation to Stalnaker's (1978, 2002) model of assertions, observing that assertions are made relative to the collective state of knowledge modeled as the Stalnakerian conversational background. More recently, Alonso-Ovalle and Menéndez-Benito's (2010) proposed that assertions are made relative to the speaker's state of belief. Although I characterized the Navajo assertion in (47b) as made relative to the speaker's beliefs, we could certainly also entertain the view that it is made relative to certain shared knowledge and beliefs.

The source of the beliefs or knowledge is much more clear-cut for English sentences with *think* and Navajo ***nisin***-sentences. As discussed above for ***nisin***-sentences like (48b), the belief and knowledge involved clearly belong to the subject of ***nisin***. Similarly, in an English sentence like *John thinks it is raining*, the beliefs and knowledge involved are tied to John, the subject of *think*.[20]

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[20] As Speas (2004), Hacquard (2006), and Stephenson (2007) discuss in detail, epistemic modals which are embedded beneath attitude verbs are also obligatorily interpreted relative to the perspective of the subject of the attitude verb. (i) could be uttered even if, for instance, the speaker is completely certain that Sandy is stupid.

(i) Dave thinks Sandy might be stupid.

(adapt. Hacquard 2006: (206b))

We should be careful, however, to note a difference between ***nisin***-sentences and their translations into English sentences with *think*.[21] In particular, the use of English *think* seems to add an evidential signal of weakness or uncertainty which is not carried by ***nisin***. Examples like (48) showed us that Navajo speakers can use ***nisin***-sentences in contexts where the subject of ***nisin*** has direct evidence for, and total confidence in, the truth of the embedded proposition. By contrast, the '?' diacritic on the English translation in (48b) indicates that English *think* seems to indicate some degree of uncertainty on the part of the attitude holder.[22]

A number of authors discuss the apparent 'weakness' of English sentences with *think* and other epistemic and doxastic verbs (*guess*, *know*, *believe*), noting that swapping out one verb for another seems to create a cline of certainty or commitment (Urmson 1952, Hooper 1975, Givón 1982, Thompson and Mulac 1991, Rooryck 2001, Simons 2007, Lewis 2013, Denis 2015). Lewis (2013) argue that the weakness asso-

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[21]I thank Angelika Kratzer and Barbara Partee for raising this point.

[22]In the Navajo sentence (48b), ***nisin*** is marked for a third-person subject. If we change the subject to first-person ((i)), preliminary consultant comments suggests that the sentence exhibits the same weakness as we identified for English sentences with *think*. In the context shown, consultant preferred (ib) without ***nisin***, i.e. as the main clause assertion in (ic).

(i) a. *Context:* You just drove past Mary's house and saw her by the window. We are talking about where Mary is. You say to me:
b. ??[Mary hooghandi sidá] nisin.
Mary home.LOC 3S.sit.IMPF 1S.ATT.IMPF
?¿I think Mary is at home.'
c. Mary hooghandi sidá.
Mary home.LOC 3S.sit.IMPF
'Mary is at home.'

Under the account we have developed so far, this result is unexpected: (ib) and (ic) are both assertions made from the perspective of the speaker so they should be equivalent.

In order to obtain a weaker meaning for (ib) we might first reconsider whose perspective is relevant for (ic). Main clause assertions plausibly make claims which bear on the mental states of more individuals than the speaker alone: in uttering (ic), the speaker indicates that she (believes that she) is not alone in thinking *that Mary is at home*. If ***nisin*** is present as in (ib), by contrast, the speaker has chosen to explicitly indicate that the assertion *that Mary is at home* is made from her perspective. Weakness of (ib) might arise via a pragmatic story similar to the ones discussed by Simons (2007) and Lewis (2013) for parenthetical attitude verbs in English.

ciated with English sentences like (48b) is the result of pragmatic reasoning: if the speaker had been certain that it was raining, she would have simply asserted that this was the case. This apparent weakness associated with *think* seems to be absent from Navajo ***nisin***-sentences in the general case, however. The function of ***nisin*** seems to be purely to identify the source of a particular commitment or assertion.[23]

4.3.3.2 Ambiguity between priorities and assertions about the future

In this section, I explore the interpretations available to main clauses like (49), which contains a future-marked verb but no additional particles:

(49) **Kii 'atoo' yił 'adooyíɬ.**

Kii stew 3O.with.3S.eat.FUT
(i) 'Kii will eat stew.'

(ii) 'Kii should eat stew.'

I argue that the two meanings attributed to the main clause in (49) are the source of the 'thinking' and 'wanting' attitudes identified for ***nisin***-sentences like (50):

(50) **Mary [Kii 'atoo' yił 'adooyíɬ] nízin.**

Mary Kii stew 3O.3S.stew.FUT 3S.ATT.IMPF
(i) 'Mary thinks Kii will eat stew.'

(ii) 'Mary wants Kii to eat stew.'

Before returning to explore the semantic relation between (49) and (50), I will explore in more depth the truth conditions of the main clause in (50).

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[23]I note that a similarly pure meaning is available for English *think* when it is used to report an individual's internal dialogue.

(i) John looked outside and saw the rain pouring down. He thought: "It's raining. I'll never get to the park now."

I do not know why using *think* with a direct discourse (quotative) environment like (i) should make a difference in the degree of certainty linked to *think*.

Sentences of the shape in (49) can be used felicitously in two kinds of contexts. First, contexts which involve predictions about the future. This context is exemplified in (51). The reading in (51b) is familiar from our earlier discussion of assertions. In the context in (51a), the speaker has certain knowledge and beliefs about how events will proceed: in light of this knowledge, the speaker of (50b) can assert *that Bill will take I40*.

(51) a. *Context:* My friend Bill has told me that he's going to go to Phoenix via I40. I tell you about this, saying:

b. (Bill Hoozdogóó déyáa=go,) I40 'átiingóó bił 'adoolwoł.

Bill Phoenix.to 3S.go.IMPF=GO I40 road.to 3O.with.3S.drive.FUT
'(To get to Phoenix,) Bill will take I40.'

The second kind of context in which (49) is licensed is shown in (52). The context in (52a) expresses that in light of certain goals and desires which Bill may have, it should be the case *that Bill will take I40*. I follow Portner's (2007, 2009) terminology in using the term 'priority' modality to refer to expressions of necessity or possibility in light of various goals, desires, and rules which hold in the context.

(52) a. *Context:* My friend Bill is trying to decide where to go this summer on a trip. She lives in Albuquerque. One place he was considering is Phoenix. I think the best route from Albuquerque to Phoenix is I40: it's the fastest, the safest, and the most attractive. There are alternative routes that he could take, though, and I know that Bill has an irrational dislike of I40 so he will not take it. I tell you about the situation, saying:

b. (Bill Hoozdogóó déyáa=go,) I40 'átiingóó bił 'adoolwoł.

Bill Phoenix.to 3S.go.IMPF=GO I40 road.to 3O.with.3S.drive.FUT
'(To get to Phoenix,) Bill should take I40.'

Particleless main clauses permit a priority interpretation only if the verb is future-marked. As we have already seen, clauses with any temporal form of the verb can be used to convey assertions. In section 4.3.3.1, for instance, we saw assertions expressed by main clauses with verbs marked for imperfective aspect. If the the verb in (52b) is changed from future-marked *bił 'adoolwoł* to imperfective-marked *bił 'oolwoł* ((53b)), the sentence is not licit in contexts which deal with priorities:

(53) a. *Context:* Bill is on his way to Albuquerque. I'm not sure what route he is taking, but I say that the best route is I40: it's the fastest, the safest, and the most attractive. Bill should be taking I40.

b. #(Bill Hoozdogóó déyáa=go,) I40 'átiingóó bił 'oolwoł.

Bill Phoenix.to 3S.go.IMPF=GO I40 road.to 3O.with.3S.drive.IMPF
(*Intended:* '(To get to Phoenix,) Bill should be taking I40.')
Can only mean: '(To get to Phoenix,) Bill is taking I40.'

Particleless main clauses with future-marked verbs ([ϕ-fut]) seem to be the general linguistic strategy for expressing a general notion of priority-oriented modality in Navajo (Young and Morgan 1987: g161).[24,25] Although more specific modal expres-

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[24]Although I have not explored their semantics in detail yet, constructions involving particles seem to permit a similar range of priority-oriented meanings. Willie (1996) discusses the construction in (i), the verb is marked for Optative Mode and the fourth person subject. The verb is followed by the particle *le'* — a particle which otherwise seems similar to *laaanaa* — the locative particle, the copula *'át'é*, and the subordinator *=go*.

(i) Nijólnish le' gi='át'é=go t'óó naashbé.
4S.work.OPT wishful LOC=3S.be.IMPF=GO just 1S.swim.IMPF
'I should be working but I am just swimming.'
(Willie 1996: (31))

This is clearly a complex construction and it is not at all clear how the individual morphemes contribute to its apparent meaning. Since consultants that I worked with never volunteered this construction, I will not discuss it further here.

[25]I vary in my manner of English translation for priority-related interpretations of these sentences: in some cases I have translated them into English with *should* and in other cases, I translate them with *need*. This is intended to reflect the observation that future-marked verbs in Navajo seem to express both strong (i.e. what *has to* happen) and weak (i.e. what *should* happen) forms of necessity priority modality. For detailed discussion of weak vs. strong necessity, see von Fintel and Iatridou

sions exist, e.g. the deontic/rule-oriented expression ***bee haz'ą́***, these expressions are not licit in the full range of contexts which license sentences of the shape [ϕ-fut]. I found that consultants did not accept sentences with ***bee haz'ą́*** in contexts which did not invoke actual rules or laws.

(54) a. *Context:* Same as in (52)

b. #(Bill Hoozdogóó déyáa=go,) I40 'átiingóó

Bill Phoenix.to 3S.go.IMPF=GO I40 road.to

bił 'adoolwoł=ígíí bee haz'ą́.

3O.with.3S.drive.FUT=IGII 3O.with.ArealS.exist.IMPF

(*Intended:* '(To get to Phoenix,) Bill should take I40.')

Comment: "You're saying there is a law that he has to go that way."

While I have asserted that sentences of the shape [ϕ-fut] allow two 'readings,' we should establish that such strings are actually truth-conditionally ambiguous and not, for instance, sufficiently vague such that its (single set of) truth conditions are consistent with both the contexts given above. To demonstrate the ambiguity of (49), we can apply Zwicky and Sadock's (1975) 'Test of Contradiction,' just as we did in section 3.5.1 to argue for the ambiguity of the ***nisin***-sentence counterparts to (49). I repeat the key example below:

(2008), Rubinstein (2012), and Silk (2014). When I asked consultants about context-sentence pairs like (i) (from von Fintel and Iatridou 2008), consultants volunteered the Navajo sentence shown where differences in the strength of the two modal statements is indicated by the presence of an intensifying adverb ***t'áá 'iiyisí*** 'really.'

(i) a. *Context:* You operate a restaurant. You're telling me about hygiene there. You say, Everybody should wash their hands, but cooks have to wash their hands.

b. T'áá 'ánółtso nihila' tánidaohgis, ndi ch'iyáán 'íił'íní t'áá 'iiyisí bila' táádadoogis.

everybody 2plposs.hand 3O.2plS.wash.FUT but cook really 3poss.hand 3O.3S.wash.FUT

Lit: 'Everybody will wash their hands, but cooks really will wash their hands.'

Future work should consider how this apparent variability in strength should be encoded.

(55) a. *Context:* Kii is supposed to help his father put up a fence this afternoon. If it rains, Kii will not have to work. So, Kii wants it to rain. However, Kii looks outside and sees that the sky is clear so he believes it is not going to rain.

b. [Kii [nahodoołtʃíł] nízin] ’ákondi [[doo nahodoołtʃíł da]
Kii ArealS.rain.FUT 3S.ATT.IMPF but NEG ArealS.rain.FUT NEG
nízin].
3S.ATT.IMPF
‘Kii wants it to rain but he thinks it won’t.’

The non-contradictory nature of the conjoined sentence in (55b) demonstrated to us that Navajo *nisin*-sentences of the shape [ϕ-fut *nisin*] are systematically ambiguous between the two meanings which I characterized ealier as attitudes of ‘thinking’ and ‘wanting.’

A similar ambiguity can be demonstrated for main clauses of the shape in (49). The context-sentence pairs in (56) and (57) apply the Test of Contradiction to such sentences. The contexts below both express that some state of affairs *should* take place but also make clear that according to the speaker, the state of affairs is unlikely to actually happen. That is, the speaker is asserting ‘*should* ϕ-fut but *not* ϕ-fut.’ Consultants volunteered the sentences shown in (56b) and (57b). Both the first and second conjuncts in (56b) and (57b) contain future-marked verbs and no additional morphology. Whereas the ‘literal’ English translations are contradictory, the Navajo sentences are not. This supports a view in which Navajo sentences [ϕ-fut] permit two distinct readings.

(56) a. *Context:* You and I are town inspectors. We visit towns and tell them what they need to fix according to the safety standards and regulations, and what will be possible given their budgets. You say the roads in this town need to be fixed in order to meet safety standards, but you have

seen that the town is very low on money and will not be able to afford it. You're telling me about the situation. You say, 'There need to be new roads, but I don't think it's going to happen.'

b. 'Atiin t'áá yá'adát'éé́h=ígíí 'ádadoolníił, 'ákondi doo 'ádadoolníił da.

road 3plS.good=IGII 3S.be.FUT but NEG 3S.do.FUT NEG
Consultant translation: 'There need to be new roads, but it's not going to happen.'

Lit. translation: #'There will be new roads, but there won't be.'

(57) a. *Context:* My grandfather is in poor health but still lives alone in his own house. A health care worker has come in to assess the situation. The health care worker thinks my grandfather needs to sell the house so he can move and live in a safer environment. However, he has told her he absolutely won't do it. She tells me, 'Your grandfather needs to sell his house, but he's not going to do it.'

b. Nicheii bighan baa nahidoonih, ndi doo 'adoolníił da.

2poss.grandfather 3poss.house 3O.3S.sell.FUT but NEG 3S.do.FUT NEG
Consultant translation: 'Your grandfather should sell his house, but he's not going to do it.'

Lit. translation: #'Your grandfather will sell his house, but he won't.'

The alternation between expressions of assertions and expressions of priorities is closely linked to the choice of temporal morphology. We have already seen that future marking is not sufficient to guarantee a priority interpretation: the second clauses in (56) and (57) make assertions (predictions) about the future and accordingly contain future-marked verbs. However, we have also seen that future marking is necessary for a priority interpretation to arise: this was demonstrated by the failure of a priority interpretation to arise for sentences like (53) with imperfective-marked verbs.

We will have to wait to determine the source of this link between priority modality and future morphology.[26] What is key, however, is that this pattern is already familiar to us from our discussion of particleless *nisin*-sentences: while a future-marked verb is not sufficient to guarantee that a *nisin*-sentence will report an attitude of 'wanting,' it is a necessary condition. In the absence of a future-marked verb, a *nisin*-sentence can only report what I have referred to as an attitude of 'thinking.'[27] I will argue that this parallel importance for temporal morphology indicates a deeper link between main clause expressions of priority and *nisin*-sentences which report attitudes of 'wanting': the latter is only disguished from the former by the presence of *nisin*.

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[26]I offer two directions to investigate. First, we could claim that clauses (main and embedded) which express priority-related meanings contain a covert priority modal operator which selects for future-marked verbs. We first considered the link between future marking and particular embedded expressions in section 4.2.1. As discussed there, there is crosslinguistic precedent for certain modal expressions to require their embedded clauses to have a future temporal orientation (Stowell 1982, 2006; Enç 1996; Condoravdi 2002; Abusch 2004; Laca 2008, 2012a,b; Kratzer 2011; Matthewson 2013, 2014; Wurmbrand 2014). Matthewson (2014) demonstrates that modals in Gitksan (Tsimshianic) which express permission ((i)) are only felicitous if the embedded clause is future-oriented. In Gitksan, future orientation is only licensed by the future marker *dim*, which is obligatory in (i).

(i) anook̲-xw(=hl) #(dim) ha'w-s Savanna.
DEONTIC.POSS-MED=CN FUT go.home-PN Savanna
'It was allowed that Savanna went home.'

(Matthewson 2013: (73))

We could claim that whatever operator is responsible for priority modality in Navajo is, it is like the Gitksan modal in (i) and selects for future-marked verbs.

Alternatively, we could claim that only clauses with future-marked verbs can express priority modality because this meaning is carred by future morphology itself. There is a long tradition in the literature for treating future as a type of modal which quantifies over some set of possible worlds. A subset of the work which advances or supports this theory is Jespersen (1924), Thomason (1970), Lyons (1977), Smith (1978), Palmer (1979), Enç (1996), Stowell (2000), Copley (2002), Condoravdi (2003), Kaufmann (2005), Jaszczolt (2006), Tonhauser (2006), Giannakidou (2012), and Klecha (2013). The only recent account which explicitly argues against a modal account of the future is Kissine (2008). The idea would be that future morphology in Navajo is a modal which permits both predictive ('normal future') and priority-oriented meanings.

[27]The importance of future morphology rules against a view in which particleless main clause and *nisin*-sentences contain a covert version of the desire-related particle *laanaa*. As seen most recently in section 4.3.1, future-marked verbs are not required with *laanaa*, either in main clauses or in *nisin*-sentences.

Relating expressions of priority with attitudes of 'wanting' In the previous subsection, I argued that what I previously characterized as attitudes of 'thinking' in Navajo arise when main clauses which express assertions are embedded by ***nisin***. I argue now that we can make a parallel move and say that what I previously called attitudes of 'wanting' arise when main clauses which express priorities are embedded by ***nisin*** and, as such, the priorities expressed are tied to a particular individual.

It is certainly not implausible to associate 'wanting' with particular personal priorities. As previously discussed, Portner (2009) uses the term 'priority' modality to subsume categories of modality which relate to what is necessary or possible in light of desires, goals, and rules. As Portner (2009) illustrates with sentences like (58) that the line between desires and goals is frequently indistinct. Portner illustrates with sentences like (58). Is it Mary's goal or her desire to eat salted caramels? That is, when we utter (58), are we making a claim about what Mary should do in order to satisfy her desires, or what she should do in order to satisfy her goals? It is hard to tell.

(58) (Given her love of salted caramel,) Mary should try this candy.

Given the arbitrariness of the boundaries between goals and desires, Portner writes that "we should not think of the categories [of priority modality] as mutually exclusive or as exhausting the range of meanings" (2009: 185). Indeed, in their discussion of the annotation of modality in texts, Rubinstein et al. (2013) use the term *bouletic/teleological* to refer to "tokens that are arguably both bouletic and teleological." Rubinstein (2012: 134) proposes that desires can be viewed as a "special type of goal (one that can be associated with a desiring agent)."

If desires (and desire-like goals) can be loosely characterized as priorities linked to particular agents, it is not surprising that the ***nisin***-sentences of interest are translated into English as 'want.' ***Nisin*** serves to introduce a particular individual's perspective.

The embedded cause expresses priorities which are tied to that individual's perspective: they are the priorities which are held by the attitude holder and not necessarily held, for instance, by society at large. That is, the influence of ***nisin*** (in some way) restricts the kinds of priorities taken into consideration.

Before accepting this picture, however, we should rule out an alternative to it. Perhaps desires more specifically — and not a broader notion of priorities — are what link main clauses to their ***nisin***-sentence counterparts. That is, perhaps priority meanings are only licensed for main clauses where the priorities concerned could be construed as desires held by the speaker.

However, while it may be the case that all desires count as priorities, it is not the case that all priorities count as desires. In order to decide between the two pictures presented above, we should determine whether conjunctions of the shape in (59) are permitted with the interpretation shown.

(59) [ϕ-fut], but [$\neg\phi$-fut nisin]
'Should ϕ, but I don't want to ϕ.'

If the first clause in (59) necessarily invokes desires, consultants should judge (59) to be contradictory: the first clause would express the ϕ should happen given the desires held, but the second clause immediately denies that the speaker has this desire.

The contexts that we considered in (56) and (57) do not tell us what we need to know: while desires were not explicitly invoked in the setup for each context, it is not strange to imagine that town inspectors might want, on some level, to have roads be up to code, or that a health care worker might want her clients to be as safe as possible. I looked at contexts designed to elicit structures with the shape and meaning shown in (59). I designed the contexts to make salient priorities which were in explicit conflict with the desires of the speaker. One such context-sentence pair is

given in (60), which demonstrates that the interpretation attributed to (59) is indeed attested.

(60) a. *Context:* What society tells us is that one should eat cabbage to improve one's health. However, you hate cabbage and don't want to eat it.

b. Ch'il łigaaí deeshɬíɬ ndi doo deeshɬíɬ da nisin.

cabbage 3O.1S.eat.FUT but NEG 3O.1S.eat.FUT NEG 1S.ATT.IMPF
'I should eat cabbage, but I don't want to eat it.'

In the noncontradictory reading of (60b), whatever priorities are referenced in the first clause are separable from the speaker's desires. The first clause expresses that in light of priorities held in society, the speaker should eat cabbage. The second clause, by contrast, indicates that in light of the priorities which are associated with a particular agent (the speaker), the speaker should not eat cabbage.

We will return to examples like (60) in sec. 4.4.1 when we consider the relationship between ***nisin***-sentences and parenthetical uses of *think* in English. We will see that the (un) availability of constructions of the shape in (59) distinguishes ***nisin***-sentences from English sentences with parenthetical *think*.

4.4 Placing ***nisin***-sentences in a broader theoretical context

In the previous sections, I argued that Navajo ***nisin***-sentences do not lend themselves to accounts of attitude reports in which the attitude is determined by the choice of attitude verb.[28] The picture of ***nisin***-sentences which emerged had two key ingredients. First, the attitude verb ***nisin*** is a light expression which does not determine the attitude reported. Instead, ***nisin*** functions only to determine the point

[28]Authors who develop, or assume, a verb-driven view of attitude reports include Cresswell and von Stechow (1982), Heim (1992), Moltmann (1997), Schlenker (1999), von Stechow (2002), van Geenhoven and McNally (2005), Hacquard (2006, 2010), Villalta (2008), Condoravdi and Lauer (2010), Stephenson (2010), Rubinstein (2012), Anand and Hacquard (2013), Charlow and Sharvit (2014), Grano (2015), and Pearson (to appear).

of view and temporal perspective against which the embedded clause is evaluated. Second, the meaning of the embedded clause determines the attitude reported by the *nisin*-sentence as a whole. For example, attitudes similar to 'thinking' or 'wanting' are reported when *nisin* embeds clauses which, when used as main clauses, express assertions, epistemic claims, and priority modality.

The first ingredient finds precedent in two places: (i) proposals about special 'parenthetical' uses of attitude verbs by Urmson (1952), Rooryck (2001), Simons (2007), and Lewis (2013), and (ii) a novel theoretical account of attitude reports pioneered by Kratzer (2006, 2013a) and subsequently developed by Moulton (2009, 2015). The second ingredient is also rooted in the aforementioned alternative analysis of attitude reports by Kratzer and Moulton. Kratzer and Moulton present a range of empirical arguments from English and German to argue that clauses embedded by attitude verbs contain modal material which is crucial to the interpretation of attitude reports. Kratzer and Moulton develop a fully compositional account which captures the new relationship between the attitude verb and embedded modal operators. Even though I do not develop a compositional analysis of the Navajo facts, Kratzer and Moulton's proposals provide models which could form the basis for such an analysis, in which embedded material — e.g. expressions of priority and epistemic modality — drives the interpretation of *nisin*-sentences.

4.4.1 Attitude verbs with an evidential-like function

I first relate the lightness of *nisin* to discussion of special 'parenthetical' uses of English attitude verbs by authors including Urmson (1952), Rooryck (2001), Simons (2007), and Lewis (2013).[29] As Simons (2007) discusses, different utterances of sen-

[29]I thank Angelika Kratzer (p.c.) for making clear to me the link between parenthetical uses of attitude verbs and my claims about Navajo *nisin*-sentences.

tences like (61) can differ in their 'main point.' (The sentence in (61) is adapted slightly from an example given by Simons (2007).)

(61) Henry { thinks, believes, says, hears, ...} that Louise will see Bill tomorrow night.

Authors have long observed that in certain utterances of (61), the attitude verb in (61) can be interpreted 'parenthetically,' such that the 'main point' of the utterance is carried not by the main clause but instead by the embedded clause (Urmson 1952, Bresnan 1968, Ross 1973, Hooper 1975, Reinhart 1983, Rooryck 2001, Simons 2007, Lewis 2013, Denis 2015). Evidence for the 'main point' status of the embedded clause in (61) comes from several sources. First, sentences like (61) are felicitous as answers to questions which relate to the content of the embedded clause. This is illustrated in (62).

(62) a. A: Who will Louise see tomorrow night?

b. B: Henry thinks/believes that she will see Bill tomorrow night.

c. B: Henry said that she will see Bill tomorrow night.

d. B: Henry heard that she will see Bill tomorrow night.

(adapt. Simons 2007: (2))

The felicity of (62b)-(62d) as responses to (62a) is unexpected if we believe the main point of an utterance can only be carried by the main clause. Simons (2007) cites work by Abbott (2000) as exemplifying this point of view.) It would not be appropriate to respond to a question about Louise's plans with a claim about Henry's state of mind. Rather, the answer to the question in (62a) is provided by the embedded clauses in (62b)-(62d), *that Louise will see Bill*. The embedding verbs *think*, *believe*, *say*, and *hear* function parenthetically in (62b)-(62d): they provide more information

about the claim made by the embedded clause — namely that it is associated with Henry — but this information is not the main point.

Lewis (2013) considers another kind of evidence for the main point status of certain embedded clauses. Lewis cites data like (63):

(63) a. A: Where is John? It's time to start the meeting.

b. B: Mary thinks he's working from home.

c. C, v.1: No, he's actually in the conference room.

d. C, v.2: #No, she thinks he's too busy to attend today.

(Lewis 2013: (152) - (153))

Lewis observes that the embedded clause in (63b) must have 'main point' status since a third party C could respond to B with (63c), which provides an alternative location for John. By contrast, C cannot respond as in (63d) with information about Mary's beliefs. If the main clause in (63b) had main point status, we would expect (63d) to be felicitous and (63c) to be infelicitous.

A different utterance of the sentence in (61) could instead carry its main point in the main clause. I refer to this interpretation as involving a 'non-parenthetical' use of the attitude verb. Simons illustrates this use with question-answer pairs like (64). Given the felicity of B's response, the main clause in (64b) must carry the main point of the utterance: this is because A's question concerned Henry's mental state. B's response describes Henry's mental state.

(64) a. A: What is bothering Henry?

b. B: He thinks that Louise will see Bill tomorrow night.

(Simons 2007: (3))

Simons cites Urmson (1952) as the originator of discussion about parenthetical uses of certain embedding verbs. Urmson writes that parenthetical verbs "prime the hearer to see the emotional significance, the logical relevance, and the reliability of

our statements" (Urmson 1952: 484). As Rooryck (2001) notes, Urmson attributes to parenthetical verbs many of the attributes we currently attributed to expressions which function as 'evidentials,' carrying information about the "source and reliability of the embedded claim" (Simons 2007: 1034). Among the evidential-like meanings which Rooryck cites for parenthetical verbs are those in (65).

(65) a. I feel that Jules is back. *Nonvisual sensorial*

b. I see that Jules is back. *Sensory inferential*

c. Sarah said that Jules is back. *Quotative*

d. I believe/think/guess/suppose/gather that Jules is back. *Speculative*

(adapt. Rooryck 2001: 158)

4.4.1.1 Similarities between parenthetical *think* and ***nisin***

In section 4.2, I considered — and discarded — hypotheses in ***nisin*** made the same semantic contribution as English attitude verbs *want* and *think*, under a view of these verbs in which they determine the attitude reported by the sentence as a whole. However, when I argued that ***nisin*** makes a contribution distinct from English *think*, I was focused on a very particular use of *think*, one which reported beliefs. Now that we have expanded our view of *think* to take into account its use as a semantically parenthetical expression, we find that ***nisin***-sentences are quite similar to English sentences with parenthetical *think*.

The basic parallels between these constructions and ***nisin***-sentences should already be clear. In both, the main point of the utterance is carried by the embedded clause. In English, this is illustrated by demonstrating the felicity of attitude reports as answers to questions about the content of the embedded clause (e.g. (62)). In Navajo, I made this point by demonstrating that the attitude reported by a ***nisin***-sentence as a whole is determined by the meaning of the embedded clause. The function of ***nisin*** is to make clear whose assertions or whose priorities the embedded clause concerns. In

this way, ***nisin*** has a function like the evidential meanings attributed to parenthetical verbs in (65).

Once we turn our attention to parenthetical uses of attitude verbs in English, we can identify some more specific interpretative similarities between English and Navajo ***nisin***-sentences. In the example in (62), B's responses expressed a prediction (attributed in part to Henry) about what Louise will do tomorrow night. We can also find sentences with parenthetical *think* which permit a desire-like interpretation.[30] In the dialogue in (66), B's response contains *think* used parenthetically: A's question is answered by the embedded clause. Crucially, B's response is not making a prediction about the future. Rather, as shown by the paraphrase, she is expressing a desire or disposition for getting spinach soup.[31,32]

(66) a. A: What will you get from the buffet?

b. B: I think that I will get spinach soup.

≈ I am disposed to get (i.e. have a preference for) spinach soup.

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[30]I thank Peggy Speas and Angelika Kratzer for bringing these examples to my attention.

[31]It seems that future morphology is needed in the embedded clause in order for asentence like (66b) to obtain its 'desire'-like meaning. We might ask why future morphology is necessary. One hypothesis is that the 'desire' paraphrase in (66) seems tied to the 'dispositional' use of English future, as discussed by Copley (2002) and many others. According to Copley, this meaning for *will* can take into account desires held in the context.

Copley illustrates this kind of use for *will* in main clauses with examples like (i):

(i) a. *Context:* Seen on a billboard:
b. We will change your oil in Madera.

(Copley 2002: (132)

(ib) can express an 'offer' in addition to a prediction. In the context of a billboard, the 'offer' meaning is far more accessible. Copley proposes that the 'offer' interpretation arises when *will* quantifies over future worlds compatible with the desires of the addressee. The influence of desires can be represented in a conditional paraphrase like: *If you want us to change your oil in Madera, we will change your oil in Madera* (Copley 2002: 137a).

[32]In order for English sentences with *think* to allow a desire-like interpretation, the embedded clause must be animate and capable of expressing volition, viz. the absence of such a meaning for a sentence like *I think it will rain.*

Sentences with English parenthetical *think* and Navajo ***nisin*** exhibit another parallel as well: we can construct English sentences with parenthetical *think* which allow meanings like those that we identified for Navajo sentences with one ***nisin*** but which expressed two attitudes. (67) repeats the key example from Navajo. (68) gives a near equivalent from English.[33]

(67) a. *Context:* Alice thinks Bill moved to Flagstaff. She wants to go visit him some time, but she does not have any definite plans to do so and knows it is very likely it will not happen. I'm telling you about Alice.

b. Alice [Bill Kinłánígóó ‘íiná] dóó [bich'į deesháát] nízin.

Alice Bill Flagstaff.to 3S.move.PERF and 3O.to 1S.go.FUT 3S.ATT.IMPF
‘Alice thinks Bill moved to Flagstaff and she wants to go see him.’

(68) I think that Bill moved to Flagstaff and that I'll go see him.

In my judgment, the English sentence in (68) can be uttered by Alice in a context like (67a). Crucially, the second embedded clause, *that I'll go see him*, can describe a state of affairs which the speaker desires. The speaker is expressing a desire to go see Bill: she is not expressing that she believes that she will (or wants to) go see him. That is, whatever the function of *think* is in (68), it does not necessarily introduce an attitude which relates to beliefs.

Given the discussion from Urmson, Rooryck, Simons, Lewis, and others about the contribution of parenthetical attitude verbs, it is not surprising that a sentence with a single instance of parenthetical *think* can occur in a sentence which allows the ‘mixed’ meaning described. *I think* in (68) indicates that the speaker is the ‘source’ of the embedded claims (to use terminology from Rooryck): the speaker is making

[33]The English example in (68) and the discussion below are thanks to Angelika Kratzer (p.c.).

an assertion that Bill moved to Flagstaff and is expressing a preference or desire to see him.

If ***nisin*** in (67b) makes contribution similar to the one claimed for English parenthetical *think*, then it is likewise unsurprising that the Navajo sentence in (67b) allows the attested meaning: like parenthetical *think*, ***nisin*** indicates that the speaker is the 'source' of the embedded claims, one of which is an assertion and one of which is an expression of priorities.

4.4.1.2 Differences between parenthetical *think* and ***nisin***

Despite a number of similarities between ***nisin*** and parenthetical uses of English attitude verbs (especially *think*), we cannot say that both verbs make completely identical contributions. I discuss below two apparent differences between ***nisin*** and parenthetical *think*.

Differences in embedded priority modals English parenthetical *think* and Navajo ***nisin*** diverge with respect to the meanings permitted when they combine with embedded clauses describing priorities. This difference becomes apparent when we try to 'construct' attitudes similar to 'wanting' English using the strategy that I explored for Navajo in section 4.3.3.2. Under one reading, (69a) was translated into English with the priority modal *should*. When ***nisin*** was added ((69b)), the sentence was instead translated with *want*.

(69) a. Kii 'atoo' yił 'adooyɪ́ɪ́ł.

Kii stew 3O.3S.stew.FUT
'Kii should eat stew.'

b. Mary [Kii 'atoo' yił 'adooyɪ́ɪ́ł] nízin.

Mary Kii stew 3O.3S.stew.FUT 3S.ATT.IMPF
'Mary wants Kii to eat stew.'

If we claim that Navajo ***nisin*** performs the same function as English parenthetical *think*, then we might predict (69b) to be true in the same kinds of situations as the English sentence with parenthetical *think* in (70b). As before, I present the target sentence in a short dialogue to ensure we are targeting the parenthetical use of *think*. In (70b), parenthetical (i.e. evidential-like) *think* embeds a clause which contains a priority modal, *should*.

(70) a. A: What should Kii have for dinner?

b. B: Mary thinks that Kii should eat stew.

The English sentence in (70b) and the Navajo sentence in (69b) differ in the entailment relations which hold between each sentence and the language's respective expression of priority modality in main clauses. In section 4.3.3.2, we saw that Navajo sentences like (71b) were judged to be non-contradictory in contexts like (71a).

However, (69) comes apart from (70) when we consider the entailment relations which hold between each sentence and the language's respective strategy for expressing priority modality in main clauses. We saw in section 4.3.3.2 that sentences like (71) were judged to be non-contradictory.

(71) a. *Context:* What society tells us is that one should eat cabbage to improve one's health. However, you hate cabbage and don't want to eat it.

b. Ch'il łigaaí deeshɪ́ɪ́ł ndi doo deeshɪ́ɪ́ł da nisin.

cabbage 3O.1S.eat.FUT but NEG 3O.1S.eat.FUT NEG 1S.ATT.IMPF
'I should eat cabbage, but I don't want to eat it.'

Given that (71b) does not express a contradiction, it seems that whatever priorities are relevant to the first clause, they are distinct from the priorities relevant to the second clause. The first clause expresses that in light of priorities held in society, the speaker should eat cabbage. The second clause, by contrast, indicates that in light of

the priorities which are associated with a particular agent (the speaker), the speaker should not eat cabbage.

By contrast, I find the English sentences in (72) to be contradictory. This is true regardless of where *think* is pronounced in the sentence. I show *I think* in three positions to confirm we are dealing with parenthtical *think*: placement of *I think* makes no difference to the contradictory nature of (71).

(72) a. #I should eat cabbage but I think I shouldn't eat cabbage.

b. #I should eat cabbage but I shouldn't, I think, eat cabbage.

c. #I should eat cabbage but I shouldn't eat cabbage, I think.

Given that all of the sentences in (72) are contradictory, whatever priorities are relevant to the first clause must also be relevant in the second clause. Either the first clause cannot set aside the speaker's personal priorities, or the second clause cannot set aside society's priorities. Whatever the case, there is a real difference between English sentences like *I think I should* ϕ on one hand and, on the other hand, English sentences *I want to* ϕ and Navajo ***nisin***-sentences expressing personal priorities.

I leave for future work the question of whether this difference arises because of a difference in the semantic contribution of ***nisin*** vs. parenthetical *think*, a difference in English and Navajo priority modality, or a combination of the two factors.

Nisin only has an 'evidential-like' function There is also a more fundamental difference between ***nisin*** and English attitude verbs used parenthetically: there is no sense in which ***nisin*** as discussed above is being used 'parenthetically.' Rather, its evidential-like function seems to be its one and only contribution. ***Nisin*** always determines (only) the individual and time relative to which the embedded clause is evaluated, while the embedded clause always determines the attitude expressed.

By contrast, Simons (2007) and Lewis (2013) propose that the evidential-like function of English attitude verbs only arises secondarily in special contexts as the

result of special pragmatic circumstances.[34] Furthermore, for these authors there is nothing semantically distinct about 'parenthetical' and 'non-parenthetical' attitude verbs. While these authors do not make explicit claims about the lexical entries of attitude verbs, there is nothing in their discussion to suggest that they would assign attitude verbs denotations other than entries which are solely responsible for determining the attitude reported.[35]

4.4.2 Locating key aspects of attitude meanings in embedded clauses

As we discussed above, *nisin* always has a light meaning: it never functions to determine the attitude expressed by a *nisin*-sentence. This was the first ingredient of our picture of *nisin*-sentences. The second ingredient was closely related: since *nisin* does not determine the attitude expressed, this meaning must be contributed by the clause embedded by *nisin*. Both of these ingredients are precedented in proposals first made by Kratzer (2006, 2013a) for English and German and subsequently developed by Moulton (2009, 2015) for other constructions in English.[36]

Kratzer and Moulton's proposals present an alternative to a compositional account of attitude reports in which the attitude verb is defined such that it alone determines

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[34]It is not the case that all authors claim the evidential-like meaning is secondary. As Simons (2007: 1041, fn. 9) points out, Urmson (1952) suggests that for some attitude verbs, the parenthetical and evidential use may be primary; the use of these verbs as "psychological descriptions" is secondary. Even so, however, Navajo *nisin* would still behave differently from English attitude verbs: *nisin* does not seem to have a non-evidential meaning available even as a secondary interpretation.

[35]Rooryck, Simons, and Lewis differ in their conception of how evidential meanings arise for English attitude verbs used parenthetically. Simons (2007) argues that attitude verbs come by their bleached parenthetical meaning due to a process of pragmatic reasoning (Simons 2007: 1040). Lewis (2013) continues Simons' pragmatic account, proposing that the embedded clause achieves its 'main point' function to resolve a mismatch between the Question Under Discussion and the utterance. Rooryck (2001: 131) discusses the 'de-intensification' of parenthetical verbs by which movement of a verb to a higher syntactic projection ($\text{Mood}_{evidential}\text{P}$) somehow results in the bleaching of the attitude verb such that it functions as an evidential head.

[36]While the discussion below focuses on Kratzer and Moulton, other authors have also explored accounts which build on Kratzer (2006, 2013a). In particular, see Anand and Hacquard (2009) and White (2014) for discussion of additional data from English, and Deal (2014) for discussion of the application of such an account to data from Nez Perce (Sahaptian).

the attitude reported. Authors who develop, or assume, an account of this general shape include Cresswell and von Stechow (1982), Heim (1992), Moltmann (1997), Schlenker (1999), von Stechow (2002), van Geenhoven and McNally (2005), Hacquard (2006, 2010), Villalta (2008), Condoravdi and Lauer (2010), Stephenson (2010), Rubinstein (2012), Anand and Hacquard (2013), Charlow and Sharvit (2014), Grano (2015), and Pearson (to appear). These authors assign attitude reports modal truth conditions. Attitude verbs are treated as modal quantifiers which compose first with the proposition (set of possible worlds) determined by the embedded clause. Attitude verbs determine the attitude reported by determining what kinds of possible worlds are quantified over. For instance, the verb *believe* is standardly assumed to quantify over doxastic alternatives. If *Alice believes that Mary is at home* is true, then in all of Mary's doxastic alternatives, the proposition *that Mary is at home* is true.

Kratzer (2006, 2013a) and, subsequently, Moulton (2009, 2015) maintain a modal semantics for attitude reports in their entirety but argue that the modal meaning is not contributed by attitude verbs. They present a fully compositional account in which modal meaning associated with a particular attitude report comes instead from functional material in the periphery of the embedded clause. Example (73) gives a schematic version of the logical forms they explore.

(73) [attitude.verb [modal ...ϕ...]]

In the following subsection, I summarize a subset of Kratzer and Moulton's empirical arguments from English and German in favor of this alternative view. At the end of the subsection, I return to the connections between Kratzer and Moulton's proposals and our picture of Navajo ***nisin***-sentences. I argue that the division of semantic labor between ***nisin*** and embedded material represents is distinct from what is found in English and German but is very much a predicted state of affairs given

Kratzer's framework. Navajo represents a 'limiting case' in which all meaning specific to a particular attitude is located in the embedded clause.

4.4.2.1 Empirical arguments in favor of embedded modals

In this subsection, I briefly summarize some of the empirical arguments which Kratzer and Moulton present in support of locating modal operators in clauses embedded by attitude verbs. The arguments to be discussed are given in (74):

(74) a. Expressions for which a modal semantics is motivated only when they compose with subordinate clauses.

b. Overtly pronounced modals and related expressions in clauses embedded by attitude verbs.

c. Attitude reports whose interpretation depends on the shape of the embedded clause.

I will present these arguments in broad and informal strokes. See Kratzer (2006, 2013a) and Moulton (2009, 2015) for additional discussion of each of these arguments and for details of the syntax and compositional semantics of constructions discussed.

Introduction of modal meaning by subordinate clauses I first consider arguments from expressions (nominal and verbal) which do not seem to be inherently modal expressions but which seem to become modal expressions when they compose with a subordinate clause. I highlight two arguments of this shape. I first summarize Kratzer's (2013a) discussion of 'manner of speaking' verbs. I then present discussion of nominal expressions like *story* and *idea* from Kratzer (2006, 2013a) and Moulton (2009, 2015).

First, manner of speaking verbs. Kratzer (2013a) observes that large set of verbs identified by Levin (1993) can occur both in sentences like (75a) and in sentences like

(75b). The examples in (75) give only a small set of the many verbs for which this alternation is attested.

(75) a. I { sighed / growled / chirped / squeaked / brayed / barked / groaned }.

b. I { sighed / growled / chirped / squeaked / brayed / barked / groaned } that Ortcutt was a traitor.

(Kratzer 2013a)

When we focus only on the sentences in (75a), it seems that verbs like *sigh*, *growl*, and so on function as intransitive expressions whcih describe an instance of noisemaking by the speaker. By contrast, the sentences in (75b) report communicative attitudes: the speaker communicates the information carried by the embedded clause, *that Ortcutt was a traitor*. The speaker communicates this information via sighing, growling, etc.

In the strategy pursued by Kratzer (2013a) all of the verbs in (75) have the semantics in (76). That is, in all of its uses, a verb like *sigh* describes events of 'sighing.'[37]

(76) $[\![sigh]\!] = \lambda$s.sighing(s)

(Kratzer 2013a: 52)

Note that while I only define *sigh* here, Kratzer (2006, 2013a) and Moulton (2009) consider similarly 'light' entries for many other verbs, including *believe* (denotes situations of belief), *claim* (denotes situations of 'claiming), *see* (denotes situations of 'seeing'), and *hear* (denotes situations of 'hearing.' Moulton (2009) discusses *see* and *hear*; I return to them below.

[37]The subject is added later in the derivation via composition with a head which introduces an external argument (Kratzer 1996). I suppress for brevity world arguments in denotations given throughout the following discussion.

Taken alone, however, the entry for *sigh* as given in (76) is not suitable for a sentence like (75b). Kratzer proposes that (75b) can compose with a proposition and report communicative attitudes of speech because of material which is contained in the clause subordinate to *sigh*. (75b) has the schematic logical form in (77).

(77) Ralph sighed [SAY [that Ortcutt was a spy]$_{\phi}$].

The clause subordinate to *sigh* contains a covert modal operator, SAY, which quantifies over worlds consistent with the content of events of speech (i.e. worlds consistent with what was said in these events).[38] In all of these worlds, the proposition determined by *that Ortcutt was a traitor* — a set of possible worlds — is true. When the subordinate clause (bracketed in (77)) composes with the verb *sigh*, more information is added about the events of speech in question: they are also 'sighings.' For details of the compositional semantics, see Kratzer (2013a). For our purposes, the key observation is that verbs like *sigh* only report communicative attitudes of speech when they compose with a subordinate *that*-clause. This is because the modal meaning which characterizes communicative attitude reports comes from the subordinate clause, not *sigh*.

I now turn to a second example of expressions which make a similar point. As Kratzer (2006, 2013a) and Moulton (2009, 2015) discuss, certain nouns can compose with *that*-clauses which seem to describe the propositional content which they convey.[39] In (78), the *that*-clause indicates that whatever content is associated with *the story* and *the rumor*, it is consistent with the truth of *that Ortcutt was a spy*.

(78) Alice heard the story / the rumor [that Ortcutt was a spy].

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[38]That is, the modal domain of quantification is projected from an event, not a possible world. For discussion of the projection of modal domains from 'anchors' — a set which includes individuals, events, and situations — see Hacquard (2006) and Kratzer (2006, 2013a, 2013b).

[39]For arguments that *that*-clauses are modifiers, rather than arguments of, nouns, see Stowell (1981), Kratzer (2006), and Moulton (2009, 2015).

The sentence in (78) can be paraphrased informally as follows: if (78) is true, then *that Ortcutt was a spy* is true in all worlds consistent with what Alice heard (the story or rumor). However, it seems unlikely that the modal meaning associated with communicative attitude reports should be attributed to the entries of nouns like *story* and *rumor* in the general sense. Intuitively, these expressions describe entities. It is only when they compose with *that*-clauses that it seems necessary to introduce modality to their meanings.

Kratzer and Moulton argue that the *that*-clause in (78) contains a modal which quantifies over a particular set of accessible worlds, namely the worlds consistent with the content of the story or rumor. In all of these worlds, the proposition *that Ortcutt is a spy* is true. A schematic logical form is given in (79):

(79) Alice heard the story / the rumor [SAY that Ortcutt was a spy]$_{\phi}$].

To summarize, then, modal meaning is needed to model the meanings of manner of speaking verbs and nouns which are modified by *that*-clauses. In both cases, however, it is not plausible to locate this modal meaning in the entries of the verbs and nouns themselves. The alternative which Kratzer and Moulton explore is that this key aspect of meaning comes from the embedded clause.

Overt modal material in the embedded clause Thus far, we have only seen examples with Kratzer and Moulton consider from English. In both of the examples explored, the embedded modal was unpronounced. However, it is not always the case that the posited modals are covert. Kratzer (2013a) discusses a number of languages which contain certain overt material in embedded clauses. Kratzer proposes that this material may be overt realizations of the operators that she proposes contribute attitude-related modal meaning.

In some cases, this material has not been previously analyzed as modal but can be linked to, e.g., reportative expressions. Kratzer (2013a) points to a number of lan-

guages in which subordinate clauses in reportative constructions contain complementizers which are derived from verbs of speech. Kratzer cites examples from Dravidian and Indo-Aryan languages discussed by Bayer (1999) and suggests that these complementizers may carry the modal meaning characteristic of communicative attitude reports. Kratzer (2013a) also cites German reportative subjunctive morphology as potentially serving in this capacity. In a sentence like (80), modal meaning relating to speech would be carried by the embedded material which triggers the realization of the reportative subjunctive form of the copula, *sei*.

(80) Das Gerücht sagt, dass er ein Spion sei.

the rumor says COMP he a spy is
'The legend says that he is a spy.

(Kratzer 2013a: 45)

In the examples given above, the embedded material of interest is not material for which a modal semantics is independently motivated. However, as Kratzer (2013a) observes, we can also find examples in German and English in which attitude verbs embed clauses which contain clearly modal expressions. The following examples from English and German contain priority ((81)) and reportative ((82)) modal expressions, respectively.

(81) He advised that we should set up an emergency fund.

(Kratzer 2013a: 21)

(82) Ralph behauptet [Ortcutt soll ein Spion sein].

Ralph 3S.claims Ortcutt REPORT a spy 3S.be
'Ralph claims that Ortcutt is a spy.'

(Kratzer 2013a: 57)

Both of the sentences above have in common that the embedded modal seems to (in Kratzer's words) 'match' the embedding verb in some way. In (81), both *advise*

and *should* involve priorities: if you give someone advice, you are telling them what they should do, or what ought to happen. In (82), both *behauptet* and *soll* involve reported speech. However, as Kratzer discusses, only one priority or reportative modal meaning seems to be interpreted in each sentence.[40] Kratzer proposes that such sentences present evidence that attitude verbs embed functional material (e.g. *should*, *soll*) which express modal meanings previously associated with attitude verbs themselves. That is, (81) has the meaning it does because the embedded clause contains a priority modal; (82) has the meaning it does because the embedded clause contains a reportative modal. Once again, meaning which is key to different kinds of attitude reports is parceled out to the embedded clause.

Link between differences in meaning and embedded clause structure Thus far, we have seen different pieces of empirical evidence in favor of placing modal operators in clauses embedded by attitude verbs. The final kind of data to be discussed comes from Moulton (2009) and demonstrates that by invoking a range of interchangeable embedded modal operators, we can explain differences in the meanings of minimally different sentences.

Moulton considers data including the paradigm in (83). While the sentences in (83a)-(83b) contain the same verbs (*see*, *hear*, *feel*), they have different truth conditions (Kiparsky and Kiparsky 1970, Barwise 1981, among others).[41]

(83) **Perception verb paradigm (partial)**

a. Mary { saw / heard / felt } [it to be raining].

b. Mary { saw / heard / felt } [that it was raining]. (Moulton 2009)

[40]For other discussion of apparently 'harmonic' or uninterpreted modal expressions, see authors including Halliday (1970), Lyons (1977), Coates (1983), Palmer (1986), Portner (1997, 2009), Geurts and Huitink (2006), and Zeijlstra (2007)).

[41]Moulton also considers factive uses of perception verbs (e.g. *Mary saw that* ϕ). For discussion of factivity within such an approach, see Moulton (2009) and Kratzer (2013a).

The sentence in (83a) reports an epistemic commitment on the part of *Mary*. That is, Mary believes that what she saw (heard, felt, etc.) was a situation of it raining. This is demonstrated by the following infelicitous example:

(84) Mary saw / heard / felt it to be raining, # but she believed it wasn't.

While (83a) expresses epistemic commitment, it differs from (83b) in that only the latter is factive. This contrast is demonstrated by (85). It is not felicitous to deny the truth of the embedded clause in (83b)/(85b). No infelicity arises with such a denial for (83a)/(85a).

(85) a. Mary { saw / heard / felt } [it to be raining], but it actually wasn't.

b. Mary { saw / heard / felt } [that it was raining], # but it actually wasn't.

Under a view of attitude reports in which the meaning of the report as a whole is driven by the attitude verb's semantics, we must posit multiple entries for each perception verb. One version of *see*, *hear*, and *feel* would encode epistemic commitment but not factivity. A second homophonous version of each verb would encode factivity. As Moulton (2009) points out, this move is inelegant.

Moulton's (2009) alternative account locates modal operators associated with epistemic commitment and with factivity in the clauses embedded by perception verbs.[42]

(86) a. Mary { saw / heard / felt } [EPI [it to be raining]].

b. Mary { saw / heard / felt } [FACT that it was raining]].

By invoking different functional material, Moulton is better-positioned to explain why the morphosyntactic shape of the embedded clause is correlated with differences in the meaning of the sentence as a whole. The embedded modal determines whether

[42]See Kratzer (2013a) for independent discussion of sentences whose differences in meaning are best attributed to alternation in embedded functional material.

or not the attitude report as a whole is factive or only expresses epistemic commitment. The embedded modal also determines the shape of the embedded clause (e.g. its finiteness). Both the meaning of the sentence and its morphosyntactic form depend on the choice of modal operator. In Moulton's analysis, replacing one operator with another leads to the observed semantic and morphosyntactic differences.

4.4.2.2 *Nisin*-sentences in the context of Kratzer and Moulton

The empirical evidence which I summarized above supports Kratzer and Moulton's alternative conceptualization of attitude reports. In their accounts, key aspects of an attitude report's meaning — their modality — come not from the attitude verb but from the embedded clause. Similarly, I have claimed that the meaning of the embedded clause determines the attitude reported by a *nisin*-sentence.

We can also see more specific similarities between Navajo and the accounts given by Kratzer and Moulton. In each of their accounts, the modal meaning of an embedded clause is determined by what modal operator the embedded clausal periphery contains. (87) repeats the simple schematic of this logical form. Proposed occupants of the 'modal' position include overt elements (including English and German priority and reportative expressions) and covert elements (including SAY, EPI, and FACT).

(87) [attitude.verb [modal ...ϕ...]]

In our earlier discussion of Navajo, I claimed only that the meaning of the embedded clause determined the meaning of the *nisin*-sentence as a whole. I did not attribute the key meaning to some particular piece of embedded material. Taking proposals by Kratzer and Moulton as our starting point, we can begin to see what shape a compositional picture might take: it is not that the meaning of the embedded clause *in its entirety* determines what attitude is reported, but rather that the attitude is determined by particular functional material within the embedded clause.

We have already seen two obvious candidates for such material in Navajo. As we first discussed in Chapter 3 (section 3.2.2), Navajo particles *sha'shin* and *laanaa* can only be prounced at the edge of the embedded clause. This suggests that these particles occur in the periphery of the embedded clause, just like the modal operators which Kratzer and Moulton propose and explore for German and English.

The following questions must be addressed when we develop a compositional account of *nisin*-sentences:

(88) a. How does *nisin* "connect up" semantically with the embedded clause?

b. What is the set of element(s) found in the embedded clause which are responsible for determining the attitude? What are their denotations?

With respect to the first question, I again look to the answers given for English and German by Kratzer (2006, 2013a) and Moulton (2009, 2015). While each author's account differs in certain details of its implementation, each author defines attitude verbs and embedded modals in such a way that the attitude report as a whole receives a modal semantics which reflects both the semantic characteristics of the attitude verb and the embedded modal.[43]

The second question will be interesting to investigate for Navajo. I already suggested that *sha'shin* and *laanaa* are good candidates for the peripheral modal expressions which Kratzer and Moulton posit for German and English. What should be done with particleless *nisin*-sentences? An obvious hypothesis is to claim that particleless clauses embedded by *nisin* contain covert modal operators. Under an account of this shape, we will minimally need a priority modal and another modal operator associated with assertions. Conveniently, covert modal expressions of both kinds have

[43]One difference is the kind of semantic relationship which holds between the embedding verb and embedded clause. Moulton (2015) proposes that embedding verbs semantically select for embedded clauses. By contrast, Kratzer (2006, 2013a) and Moulton (2009) develop analyses in which the embedding verb does not select for an embedded clause. Instead, it is modified (optionally) by the embedded clause.

been independently entertained by previous authors. Bhatt (1999) proposes a covert priority modal occurs in certain English infinitival relative clauses.[44] Alonso-Ovalle and Menéndez-Benito (2010) build on previous proposals and posit a covert modal which occurs in main clause assertions in a variety of languages (see also Hacquard (2010)).

Navajo ***nisin***-sentences present a 'limiting case' in the theoretical landscape which is predicted by Kratzer and Moulton's proposals. I have argued that all attitudes of 'thinking' and 'wanting' which we have discussed contain the same verb, ***nisin***. Because there is only one verb, any differences in the attitude reported by a ***nisin***-sentence must be due to the choice of embedded material. Subtle distinctions in different attitudes of 'wanting,' for instance, would follow from how we define ***laanaa*** as opposed to the priority modal. In short, then, any responsibility for determining what attitude is reported has been completely removed from the attitude verb.

The division of labor is different in Navajo than it is in German. In contrast with Navajo, English and German have a variety of attitude verbs which occur in attitude reports which are, in some cases, quite subtly different: compare, for instance, the set of *think* vs. *suppose* vs. *conclude* vs. *surmise*, or *claim* vs. *say* vs. *propose*.[45] For Kratzer and Moulton, each attitude verb in this set denotes different kinds of situations or events, e.g. an event of 'claiming' vs. an event of 'proposing.' The set is united by the choice of embedded modal, e.g. a reportative modal such as SAY

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[44]Bhatt considers sentences including (ib) and argues that the infinitival relative clause here admits the reading targeted by the context and informally paraphrased with *should* because it contains an unpronounced priority modal.

(i) a. *Context:* The goal is to solve the problem but without violating any social norms.
b. Magnus knows how [MODAL_{pri} to solve the problem].
≈ Magnus knows how he *should* solve the problem.

[45]Authors including Urmson (1952), Hooper (1975), Givón (1982), Thompson and Mulac (1991), and Denis (2015)) discuss subtle differences in various attitude verbs which relate to 'thinking.'

(Kratzer 2013a). In this picture, differences between different attitude reports within the family would fall out from differences in the kinds of situations denoted.

Since Kratzer and Moulton's accounts invoke two basic pieces — the attitude verb and an embedded modal — we expect the existence of a system like Navajo *nisin*-sentences. English, German, and Navajo all use these same two basic pieces when building attitude reports. However, the languages differ in the semantic importance assigned to each piece. Navajo has one verb, *nisin*, which is maximally light. English and German, by contrast, have many attitude verbs which are semantically 'heavier' than *nisin*: they help to determine the attitude reported. The relative weight in Navajo vs. English and German reverses when we turn to the embedded modal: Navajo has a richer set of embedded modals than is needed in English and German. The typological differences between the three languages fall out, then, by adjusting the relative semantic importance of the attitude verb and the embedded modal.

4.4.3 Summary

I have discussed two lines of theoretical work which can inform further exploration and formalization of *nisin*-sentences. The picture which I presented of *nisin*-sentences had two key ingredients. The first ingredient was the lightness of the attitude verb, *nisin*. I related this ingredient to an alternative view of attitude reports developed by Kratzer (2006, 2013a) and Moulton (2009, 2015) and by a separate set of proposals about 'parenthetical' attitude verbs by Urmson (1952), Rooryck (2001), Simons (2007), and Lewis (2013). The second ingredient was the use of the embedded clause to determine what attitude was reported. Precedent for greater semantic importance for the embeddd clause comes from Kratzer (2006, 2013a) and Moulton's (2009, 2015) alternative conceptualization of attitude reports in English and German. Kratzer and Moulton's proposals provide a basis for future formalization of Navajo *nisin*-sentences.

4.5 Chapter summary

In this chapter, I considered in greater detail a subset of the rich range of data introduced in Chapter 3. The focus was on the following puzzle: if, as I argue, there is a single *nisin* with a constant semantics, what determines the attitude which is expressed by a *nisin*-sentence? My investigation of the expression of attitudes in Navajo was guided by the questions and answers addressed the research program begun by Kratzer (2006, 2013a) and subsequently developed by Moulton (2009, 2015). I proposed that the clauses embedded by *nisin* can be systematically related to their main clause counterparts. These clauses express meanings including desire, conclusions drawn from indirect evidence, assertions, and priorities. Navajo uses the semantically bleached verb *nisin* to introduce the individual and time relative to which the embedded clause is evaluated. When viewed from the perspective of Kratzer and Moulton's compositional account of attitude reports, Navajo *nisin*-sentences represent a 'limiting case,' demonstrating how much meaning can be removed from the attitude verb and attributed instead to embedded material.

PART III: ADJECTIVAL AND COMPARATIVE MEANING IN NAVAJO

CHAPTER 5

ADJECTIVAL AND COMPARATIVE MEANING IN NAVAJO

5.1 Introduction

This chapter focuses on another topic where investigation of Navajo data can enrich both our empirical and theoretical perspectives: what are the syntactic and semantic characteristics of adjectival expressions and degree constructions which contain them? The data and discussion in this chapter build directly on work previously published as Bogal-Allbritten (2013) and Bogal-Allbritten (2014).

In the first part of the chapter, I present an empirically rich picture of the morphological, syntactic, and semantic characteristics of the structures of interest. I then develop an account of the syntax and semantics of adjectival verbs in Navajo. I argue that while all adjectival verbs in Navajo denote expressions of the same semantic type — relations between degrees and individuals — they differ in the syntactic structure they project. The size of the syntactic structure is correlated with the choice of adjectival morphology. Adjectival verbs which bear so-called 'Comparative Aspect' morphology project an extended functional structure (degree phrase, DegP) which surrounds the lexical adjectival phrase (AP) projection. This structure includes syntactic positions for a DP (the subject) and a degree expression (e.g. comparative phrases, measure phrases, intensifiers, etc.). By contrast, adjectival verbs marked for so-called 'Absolute Aspect' and 'Perfect Aspect' only project an AP structure. This syntactic structure only has space for one argument, the subject DP. I propose that by positing morphologically-determined syntactic heterogeneity among the set

of Navajo adjectival verbs, we can explain various differences in degree constructions which contain adjectival verbs of different morphological shapes.[1]

5.2 The morphology of adjectival verbs in Navajo

This section introduces the basic morphological characteristics of adjectival expressions in Navajo. The discussion in this section builds on the descriptive picture of Navajo verbs presented in Chapter 2 (section 2.2). Whereas the earlier discussion focused on the morphology associated with eventive verbs, this section focuses on the morphology found on verbs which denote adjectival properties.

Predicative adjectival meanings in Navajo are uniformally expressed by means of verbs.[2] As was first discussed in Chapter 2, Navajo verbs that describe events can

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[1]One topic which will not be taken up in this chapter is the possibility of analyzing some, or all, Navajo adjectival verbs without recourse to degrees. A degree-free view of adjectival meaning was first addressed by Klein (1980) for English adjectives. Much more recently, authors including van Rooij (2011) and Burnett (2014) have developed new degree-free analyses which avoid certain problems which Klein's original analysis was said to face (von Stechow 1984, Klein 1991). Authors including Kennedy (2007), Beck et al. (2009), and Bochnak (2013, 2015) have also investigated degree-free accounts of adjectival meaning. Unlike Klein, van Rooij, and Burnett, however, these authors propose that only certain languages lack degrees; they propose to model certain crosslinguistic differences by appealing to parametric variation with respect to degree arguments. I leave further for future work consideration of the Navajo data discussed here in light of the evidence and analyses presented by authors cited above.

[2]Attributive adjectival meaning is expressed in one of two ways. First, via adjectival verbs in a relative clause or nominalization structure ((i)). Second, via a very limited number of adjectival stems that can be suffixed to nouns ((ii)). As shown in (ii), suffixation can produce lexicalized compounds (e.g. *chidítsoh* 'truck') in some cases. For a full list of expressions of this kind, see Young and Morgan 1987: d436).

(i) a. Hastiin nineez=ígíí
man 3S.tall.AA=IGII
'The tall man, the man who is tall.'
b. Łóó' 'adaałts'íísí léi'
fish 3plS.small.AA INDEF.DET
'some little fish' (YM 1987: d275)

(ii) a. Chidítsoh
chidí =tsoh
car big
'truck'
b. Bī̧htsoh
bī̧h=tsoh

occur in a range of morphological forms. Following Young and Morgan (1987), these forms are referred to as 'Modes.' Changing a verb's mode can lead to changes in the morphophonological shape of its stem and can trigger the presence of certain prefixes. Verbs in different Modes can describe events with different aspectual and temporal properties, as is informally suggested by the paraphrases given in (1).

(1) **Examples of Modes found with eventive verbs:**

a. ch'í'níshkǫǫh
   out.1S.swim.IMPF
   'I am swimming out horizontally' *Imperfective Mode*

b. ch'í'níłkǫǫ'
   out.1S.swim.PERF
   'I swam out horizontally' *Perfective Mode*

c. ch'í'deeshkǫǫł
   out.1S.swim.FUT
   'I will swim out horizontally' *Future Mode*

In Chapter 2, I followed Young and Morgan in observing that the same range of Modes are not available to verbs describing stative properties, including adjectival verbs. However, Navajo adjectival verbs can nevertheless be divided into three classes based on shared morphological characteristics. In the following subsections, I summarize Young and Morgan's (1987) discussion of three morphological classes of adjectival verbs, referred to as Comparative Aspect (CA), Absolute Aspect (AA), and Perfective Aspect (PA).[3]

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deer big
'big deer' (YM 1987: d62)

[3]I refer the interested reader to Bogal-Allbritten (2010) for more discussion of the distribution of CA, AA, and PA, and their distribution across the Athabaskan language family. Apparently exhaustive lists can be found in Young and Morgan (1987).

5.2.1 Perfective Aspect

First, adjectival verbs marked for **Perfective Aspect**. Perfective Aspect-marked (or, PA-marked) adjectival verbs denote a range of properties, including temperatures, textures, and other qualitative (as opposed to quantitative) properties. A selection of PA-marked adjectival verbs is given in (2). For a more complete list, see Young and Morgan (1987: d437).

Table 5.1. Selection of Perfective Aspect-marked adjectival verbs

Verb	Gloss	Translation
honeezk'az	ArealS.cold.PA	'it (area, space) is cold'
deesdoi	3S.hot.PA	'it (area) is hot'
sigan	3S.dried.PA	'it is dry'
neesk'á	3S.fat.PA	'she/he/it is fat'
náshzhoh	3S.moist.PA	'it is moist, wet'
yistin	3S.frozen.PA	'it is frozen'
sizílí	3S.warm.PA	'it is warm, tepid'
yistł'in	3S.speckled.PA	'it is speckled'

The set of PA-marked adjectival verbs cannot be defined in terms of any shared prefixes. The label of 'Perfective Aspect' is due to Young and Morgan (1980, 1987), who use this label given the morphophonological similarity of the stems of PA-marked adjectival verbs to the shape of semantically-related eventive verb stems in Perfective Mode. However, there is no sense in which PA-marked adjectives are synchronically marked for perfective aspect.

5.2.2 Absolute Aspect

Second, adjectival verbs marked for **Absolute Aspect**. Absolute Aspect-marked (or, AA-marked) adjectival verbs denote a range of properties, including dimensions, colors, and qualitative attributes. A selection of AA-marked adjectival verbs is given in (2). For a more complete list, see Young and Morgan (1987: d436-437).

Unlike the morphologically heterogeneous set of PA-marked adjectival verbs, AA-marked verbs have in common certain prefixes. First, the null classifier, ∅. Second,

Table 5.2. Selection of Absolute Aspect-marked adjectival verbs

Verb	Gloss	Translation
nineez	3S.tall.AA	'she/he/it is long/tall'
'áłts'óózí	3S.slender.AA	'she/he/it is slender, narrow'
nizhóní	3S.pretty.AA	'she/he/it is pretty'
niłhin	3S.greasy.AA	'she/he/it is greasy, oily'
niłchxon	3S.stinking.AA	'she/he/it is stinking'
łigai	3S.white.AA	'she/he/it is white-colored'

the thematic prefix *ni*. As can be seen from the entries in Table 5.2, the prefix *ni* is not overtly realized on all AA-marked verbs when marked for third-person subject. However, if the adjectival verbs are instead given first-person subjects ((2)), the *ni* is once again overtly realized:

(2) a. 'ánísts'óózí 'I am slender'

b. łinishgai 'I am white-colored'

As the entries in Table 5.2 demonstrate, AA-marked verbs may bear a range of other thematic prefixes at their left edge, e.g. the prefix *łi* that Young and Morgan (1987) report appears in verbs with means relating to coloration (*łigai* 'she/he/it is white-colored,' *łikizh* 'she/he/it is spotted').

5.2.3 Comparative Aspect

Finally, I turn to adjectival verbs that Young and Morgan (1987) describe as being marked for **Comparative Aspect**, abbreviated CA. Adjectival verbs that reliably allow CA morphology denote positive, measurable dimensions:

In addition, I found cited in Young and Morgan (1987) a small number of other adjectival verbs that permit CA morphology but which do not denote positive and measurable dimensions. I say that these verbs did not 'reliably' permit CA morphology either because they were not generally volunteered by consultants in elicited sentences, in sharp contrast with the verbs in Table 5.3. Instead, consultants instead used AA-

Table 5.3. Comparative Aspect-marked adjectival verbs (reliably used)

Verb	Gloss
’áníłnéézCA	3S.tall.CA
’áníłdáásCA	3S.heavy.CA
’áníłtsoCA	3S.large.CA
’áníłtéélCA	3S.wide.CA
’áníłtsáázCA	3S.wide,thick.CA
’ánílDíílCA	3S.big.CA
’ánílmáálCA	3S.big.around.CA

marked counterparts to the expressions in (2); I return to the overlapping distribution of CA and AA morphology below.

Table 5.4. Comparative Aspect-marked adjectival verbs (not reliably used)

Verb	Gloss
’ánóoshóníCA	3S.pretty.CA
’ábóodziilCA	3S.strong.CA
’ádóolwo’CA	3S.fast.CA

The label ‘Comparative Aspect’ is potentially misleading. A reader familiar with comparative constructions in other languages might imagine that the verbs in (2) occur in comparisons of superiority like, for instance, an adjective found in English comparisons of superiority, e.g. *taller* or *heavier*. This is not the case. As we will see in section 5.3, comparison of superiority in Navajo can only be expressed if adjectival verbs — including the CA-marked ones in (2)— occur with a special comparative postpositional phrase.

Indeed, on their own, CA-marked adjectival verbs cannot be used to express any meaning: note that I gloss the examples in (2) but do not translate them. As we will see in section 5.3, CA-marked adjectival verbs cannot occur on their own without further modification. As such, there is no translation that can be given to CA-marked

verbs in isolation. This sets CA-marked adjectival verbs apart from AA- and PA-marked verbs that can occur without further modification.[4]

In our discussion of PA- and AA-marked adjectival verbs, we found no overlap: some kinds of properties (e.g. the property of being *white colored*) were expressed by AA-marked adjectival verbs while other kinds of properties (e.g. the property of being *hot*) were expressed by PA-marked adjectival verbs. By contrast, any property (e.g. *tallness*, *heaviness*, *bigness*) that can be expressed via a CA-marked adjectival verb also has a AA-marked counterpart.

Table 5.5. Selection of CA- and AA-marked adjectival verbs

Property	CA**-marked**	AA**-marked**
tallness	’áníłnéézˌ	nineez
heaviness	’áníłdáás	nidaaz
bigness	’áníłtso	nitsaa
wideness	’áníłtéél	niteel
thickness	’áníłtsáázˌ	nitsaaz
girth	’ánílmáál	nimaal
prettiness	’ánóoshóní	nizhóní
strength	’ábóodziil	bidziil
speed	’ádóolwo’	dilwo’

Only a subset of properties that can be expressed via AA-marked adjectival verbs have CA-marked counterparts, however. There is no CA-marked verb, for instance, which expresses the property of being *greasy*, for instance:

[4]In fact, Young and Morgan (1987) do provide ‘translations’ in their dictionary entries for CA-marked verbs, e.g.:

(i) ’ánísdáás
‘to be comparatively heavy’ (YM 1987: d144)

While this might be a useful informal paraphrase for CA-marked verbs, ‘to be comparatively heavy’ is not a valid translation for the verb in (i) since this verb cannot be used as a discrete grammatical and interpretable unit.

(3) a. *Attested:*

niɬhin

3S.greasy.AA

b. *Unattested:*

*'ániɬhin

3S.greasy.CA

Like AA-marked adjectival verbs, CA-marked verbs are associated with certain morphological characteristics. First, the classifier prefix *ɬ*.[5] Second, the thematic prefixes *'á* and *ní*. These prefixes have not obvious meaning in isolation. They are not linearly adjacent, as shown by the possibility of intervening prefixes, e.g. the 'distributive plural' prefix *da*:

(4) 'ádaniɬtso

'á = da = ní = ∅ = ɬ = tso

thematic = DISTR.PL = thematic = 3S = classifier = stem

In addition, if we compare pairs of verbs in Table 5.5, we see that there is a clear relationship between the stems found in CA-marked and AA-marked verbs, but there are differences (tone, consonant voicing, vowel choice).

Note that I do not provide translations for the CA-marked adjectival verbs in (3). As we will see in the next subsection, CA-marked adjectival verbs never occur outside of comparative constructions: thus, no translation can be offered for these morphemes in isolation. This sets CA-marked adjectival verbs apart from both PA-

[5]As with classifiers in other verbs, the *ɬ* prefix often goes unpronounced in particular morphophonological environments, e.g. when the first-person subject marker is present:

(i) a. 'ánísnéézz
1S.tall.CA

b. *'ánísɬnéézz

and AA-marked adjectival verbs, which can occur in comparative constructions but need not.

5.3 Navajo degree constructions of interest

This section presents in descriptive detail the Navajo degree constructions which will be used in later sections to support the proposals that I make about adjectival syntax in Navajo. This section discusses the morphology, syntax, and semantics of each degree construction of interest. Table 5.6 summarizes the degree constructions to be discussed below.

Table 5.6. Degree constructions to be discussed

Construction	**Translation**	**Characteristic morphology**
Positive	x is adj	none
Comparison of superiority	x is more adj than y	Postposition *y-lááh* 'beyond y'
Equative	x is as adj as y	Enclitic *y*=*gi* 'at y'
Comparison of inferiority	x is less adj than y	Postposition *y-'oh* 'short of y'
Measure phrase	x is MP adj	MP
Degree question	how adj is x?	*wh*-word *haa*
Intensifier	x is very adj	particle *'ayóo*

Whenever possible, I illustrate each construction in Table 5.6 with at least three examples, each containing an adjectival verb in a different morphological form (CA-marked, AA-marked, PA-marked). In the course of the discussion, we will make the two following observations:

(5) a. The morphosyntactic shape of a degree construction generally varies depending on the morphological form of the adjectival verb.

   (i) Degree constructions which contain CA-marked verbs have one morphosyntactic form.

   (ii) Degree constructions which instead contain AA- or PA-marked verbs generally have another, more complex morphosyntactic form.

b. Most degree constructions can contain adjectival verbs in any morphological form. However:

   (i) Some degree constructions can only contain CA-marked verbs.

   (ii) One degree construction (the positive construction) only allows AA- and PA-marked verbs.

This section only has descriptive goals, however. We will return in later sections to consider the theoretical import of the observations in (5).

5.3.1 Positive construction

I first consider the **positive construction**. The positive construction is illustrated for English in (6). As shown, the English positive construction contains an adjective used predicatively which does not bear any overt degree morphology. The sentences in (6) are true just in case the subject — *Sandy*, *Phoenix* — exceeds a salient contextual standard of comparison for the adjective in question.

(6) a. Sandy is tall.

b. Phoenix is hot.

The Navajo positive construction can contain either AA- or PA-marked adjectival verbs depending on what adjectival property is invoked. Like in English, the Navajo positive construction contains adjectival verbs which do not bear any overt degree morphology. The Navajo sentences in (7b) and (8b) have truth conditions identical to their English translations: each sentence is true just in case the subject exceeds a salient contextual standard of comparison for the adjectival property in question.

(7) a. *Context:* Sandy is a teenaged girl. She is 5'10", which is tall for a girl. You describe Sandy to me, saying:

b. **Sandy nineez.**

Sandy 3S.tall.AA
'Sandy is tall.'

(8) a. *Context:* Phoenix gets up to over 100 degrees in the summer. It is a very hot city. You describe Phoenix to me, saying:

b. **Hoozdo deesdoi.**

Phoenix 3S.hot.PA
'Phoenix is hot.'

As (7) and (8) show, the Navajo positive construction can contain both AA- and PA-marked adjectival verbs. By contrast, the positive construction cannot contain CA-marked verbs. In the context in (9a), the sentence in (9b) is judged unacceptable:

(9) a. *Context:* Sandy is a teenaged girl. She is 5'10", which is tall for a girl. You describe Sandy to me, saying:

b. *Sandy 'áníłnéézz.

Sandy 3S.tall.CA
(*Intended:* 'Sandy is tall.')

5.3.2 Comparison of superiority construction

I turn next to the **comparison of superiority construction**. Both of the English sentences in (10) exemplify this construction. Both sentences contain two special pieces of degree morphology, the comparative marker (either *-er* or *more*) and the standard marker (*than*).

(10) a. Sandy is taller than Alice.

b. This film is more interesting than that one.

I label this construction as 'comparison of superiority' instead of 'comparative' to distinguish it from the *less than* comparative construction, which I refer to as the 'comparison of inferiority' construction (section 5.3.4).

In the examples in (10), the standard of comparison seems to be an individual (*Alice*, *that one*). English also permits comparisons of superiority to be made with a degree as the standard of comparison ((11a)) or with an embedded clause as the standard of comparison ((11b)) (the 'comparative subdeletion,' or 'subcomparative,' construction).

(11) a. Sandy is taller than 6 feet.

b. This table is longer than that one is wide.

Navajo has constructions like (10) and like (11). I consider both in turn below. I discuss first Navajo's versions of sentences like (10) to introduce general morphosyntactic properties of comparison of superiority constructions.

5.3.2.1 Comparison with an individual

The following examples illustrate the comparison of superiority construction in Navajo. This construction in Navajo only contains one special morpheme, the postposition *-lááh*. The postposition marks the standard of comparison. Where the standard of comparison is realized as a full nominal expression (e.g. *shideezhí* in (12b)), *-lááh* bears object marking to match this expression (third person object marker *yi-*). The standard of comparison can also be realized as object marking on *-lááh*, as in (13b). The three examples below illustrate the comparison of superiority construction for CA-, AA-, and PA-marked verbs, respectively.

(12) a. *Context:* My mother is 5'10". My little sister is only 5'4".

b. Shimá shideezhí yilááh 'áníłnéézˊ.

1poss.mother 1poss.little.sister 3O.beyond 3S.tall.CA
'My mother is taller than my little sister.' CA-*marked*

(13) a. *Context:* I am describing my mother to you and tell you that she is very pretty — she is prettier than I am. I say:

b. Shimá shilááh ’át’éé=go nizhóní.

1poss.mother 1O.beyond 3S.be.IMPF=GO 3S.pretty.AA
‘My mother is prettier than I am.’ AA-*marked*

(14) a. *Context:* The temperature in Phoenix is 100 degrees Fahrenheit. It is only 70 degrees Fahrenheit in Flagstaff.

b. Hoozdodi Kinłánídi yilááh ’át’éé=go deesdoi.

Phoenix.LOC Flagstaff.LOC 3O.beyond 3S.be.IMPF=GO 3S.hot.PA
‘Phoenix is hotter than Flagstaff.’ PA-*marked*

The postpositional marker *-lááh* found in the comparison of superiority construction is also found in locative expressions in Navajo, usually in conjunction with an additional locative enclitic, e.g. *=di* ‘at’ as in (15).[6]

(15) K’os biláah=di chidí naat’a’í bik’idziigaii.

cloud 3O.beyond=LOC airplane 3S.come.into.view.PERF
‘An airplane came into view beyond the cloud.’

(YM 1987: d205)

It is crosslinguistically extremely common to see locative morphology used in various degree constructions. In Stassen’s (1985) typological survey of comparison of superiority constructions crosslinguistically, almost 50% of the languages discussed — a number which includes Navajo — express comparison using spatial or locative adpositions of various kinds.

Comparing (12), (13), and (14), we find that the morphosyntactic shape of the comparison of superiority construction changes depending on the morphological form

[6]The presence of *=di* on *-lááh* causes a change in the tone of the postposition’s vowels. Unmarked, *-lááh* features a long high tone (*áá*) while when marked with *=di*, the vowels instead show falling tone (*áa*).

of the adjectival verb. While *-lááh* is invariably present, CA-marked adjectival verbs are directly preceded by the comparative postposition ((12b) whereas additional material (*'át'éego*) intervenes between the postposition and AA- and PA-marked verbs ((13b), (14b)). As indicated in the glosses, *'at'éego* breaks down into two pieces: the copula marked for a third-person subject (*'át'é*) and the subordinator =*go* first discussed in Chapter 2 (section 2.2.3).[7] As previously discussed, =*go* is used elsewhere in Navajo as a clausal subordinator ((16)).

As (15a) demonstrates, CA-marked adjectival verbs are directly preceded by comparative postpositions. By contrast, when adjectival verbs are AA-marked ((15b)) or PA-marked ((15c)), the postposition is followed by a copula, *'át'é*, which is in turn followed by the subordinating marker =*go*. This additional morphology is never licit with CA-marked verbs:

(16) *Shimá shideezhí yiláah 'át'ée=go 'áníłnéézʼ.
1poss.mother 1poss.little.sister 3O.beyond 3S.be.IMPF=GO 3S.tall.CA
(*Intended:* 'My mother is taller than my little sister.')

This syntactic difference which tracks the morphological shape of adjectival verbs will be the focus of later discussion in section 5.5. I will argue that this difference helps to diagnose syntactic differences between AA-/PA-marked adjectival verbs on one hand and CA-marked adjectival verbs on the other.

5.3.2.2 Other standards of comparison

All of the examples seen thus far featured individuals as the standard of comparison. Navajo also permits comparison of superiority constructions of the shape in (17).

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[7]The basic form of the copula is *'át'é*. When *'át'é* is marked by =*go*, the vowel lengthens and acquires falling tone. This same pattern can be observed for other verbs marked by =*go* as well, e.g. (i).

(i) holǫ́ 'it exists' + =go → hólǫ́ǫgo

In (17), the standard of comparison is the clause *'eii naaltsoos 'áníłtéél* 'that book is wide.'

(17) a. *Context:* You have two books. One is 9" long. The other book is 6" wide. You are describing these books to me.

b. Díí naaltsoos 'eii naaltsoos 'áníłtéél=ígíí yilááh 'áníłnéézˊ.

this book that book 3S.wide.CA=IGII 3O.beyond 3S.long.CA
'This book is longer than that book is wide.'

Following standard terminology, I refer to constructions like (17) as **subcomparative** comparisons of superiority. The subject of the embedded clause can either be distinct from the main clause subject as in (17), or the two subjects can match:

(18) a. *Context:* You have a book whose cover is 9" long and 6" wide. You are describing the shape of the book to me.

b. Díí naaltsoos 'áníłtéél=ígíí yilááh 'áníłnéézˊ.

this book 3S.wide.CA=IGII 3O.beyond 3S.long.CA
'This book is longer than it is wide.'

In the Navajo subcomparative construction, the embedded clause which serves as the standard of comparison always bears the subordinator *=ígíí*. We first saw *=ígíí* in Chapter 2 (section 2.2.3), where we saw it occur on embedded clauses and relative clauses.

When we examined comparisons of superiority with individuals as the standard of comparison, the construction was exemplified with CA-, AA-, and PA-marked adjectival verbs. By contrast, the examples in (107b) contained only CA-marked adjectival verbs. This limited range of examples is not accidental: neither AA- nor PA-marked adjectival verbs can occur in the subcomparative construction.

(19) a. *Díí naaltsoos ’eii naaltsoos niteel=ígíí yilááh ’áníłnéézʔ.
this book that book 3S.wide.AA=IGII 3O.beyond 3S.long.CA
(*Intended:* ‘This book is longer than that book is wide.’)

b. *Díí naaltsoos ’eii naaltsoos ’áníłtéél=ígíí yilááh ’át’ée=go
this book that book 3S.wide.CA=IGII 3O.beyond 3S.be.IMPF=GO
nineez.
3S.long.AA
(*Intended:* ‘This book is longer than that book is wide.’)

c. *Díí naaltsoos ’eii naaltsoos niteel=ígíí yilááh ’át’ée=go
this book that book 3S.wide.AA=IGII 3O.beyond 3S.be.IMPF=GO
nineez.
3S.long.AA
(*Intended:* ‘This book is longer than that book is wide.’)

I return to consider an explanation for these facts in section 5.7.5.

5.3.3 Equative construction

I now turn to the **equative construction**. This construction is illustrated for English in (20). As with the English comparison of superiority construction, English equatives involve two morphemes: one instance of *as* which precedes the adjective and a second instance which precedes the standard of comparison.

(20) a. Sandy is as tall as Alice.
b. Sandy is as pretty as Alice.

In the following subsections, I first consider Navajo counterparts to sentences like (20), in which the standard of comparison is an individual. There, I introduce the key morphosyntactic features of the equative construction. I then consider Navajo equative constructions in which the standard of comparison is a degree (measure phrase) or an embedded clause.

5.3.3.1 Equatives with an individual standard of comparison

The Navajo equative construction is illustrated in the three examples below for CA-, AA-, and PA-marked adjectival verbs, respectively. The Navajo equative construction involves one special morpheme, the enclitic *=gi*, which marks the standard of comparison.

(21) a. *Context:* My mother and I are both 5'6" tall.

b. Shimá shí=gi 'áníłnéézˌ

1poss.mother 1pro=LOC 3S.tall.CA
'My mother is as tall as me.'

(22) a. *Context:* My mother and I are equally pretty.

b. Shimá shí=at 'át'ée=go nizhóni.

1poss.mother 1pro=LOC 3S.be.IMPF=GO 3S.pretty.AA
'My mother is as pretty as I am.'

(23) a. *Context:* Today, Gallup and Phoenix have both reached 100 degrees Fahrenheit.

b. Diijį Na'nízhoozhí Hoozdo=gi 'át'ée=go deesdoi.

today Gallup Phoenix=LOC 3S.be.IMPF=GO 3S.hot.PA
'Today, Gallup is as hot as Phoenix.'

The enclitic *=gi* functions a locative marker elsewhere in the language. In (24), *=gi* marks the place (*bich'oozhlaa'*) where a hole exists.

(24) Shi'éétsoh bich'oozhlaa'=gi bighánídláád.

1poss.coat 3poss.elbow=LOC 3S.be.torn.through.PERF
'There's a hole in my coat sleeve at the elbow.'

(YM 1987: d187)

Like the comparison of superiority construction, the morphosyntactic shape of equative constructions differs depending on the morphological form of the adjectival

verb. If the verb is CA-marked, the =*gi*-marked standard of comparison directly precedes the verb ((21)). If the verb is instead AA- or PA-marked, *'át'éego* intervenes between the verb and the =*gi*-marked standard of comparison ((22), (23)). As before, we can break *'át'éego* into the copula, *'át'é*, and the subordinator =*go*.

5.3.3.2 Other standards of comparison

All of the examples seen so far used individuals as the standard of comparison. Equative constructions can also feature an embedded clause ((25)) as the standard of comparison.[8]

(25) Díí naaltsoos 'eii naaltsoos 'áníłtéél=í=gi 'áníłnéézˌ

this book that book 3S.wide.CA=I(GII)=LOC 3S.long.CA
'This book is as long as that book is wide.'

As in the subcomparative construction, both adjectival verbs in a subequative construction must be CA-marked. None of the constructions in (26) is grammatical:

(26) a. *Díí naaltsoos 'eii naaltsoos niteel=í=gi 'áníłnéézˌ

this book that book 3S.wide.AA=I(GII)=LOC 3S.long.CA
(*Intended:* 'This book is as long as that book is wide.')

b. *Díí naaltsoos 'eii naaltsoos 'áníłtéél=í=gi 'át'ée=go

this book that book 3S.wide.CA=I(GII)=LOC 3S.be.IMPF=GO

nineez.

3S.long.AA
(*Intended:* 'This book is as long as that book is wide.')

[8]As (25) demonstrates, the shape of the subordinator in the embedded clause is different in the equative construction: instead of =*ígíí*, it is realized as =*í*. Young and Morgan (1987) identify =*í* as a variant of =*ígíí*. I do not seek to explain this here; one possibility to note is that using =*í* avoids =*ígíí* being directly followed by the phonologically similar =*gi*.

c. *Díí naaltsoos ’eii naaltsoos niteel=í=gi ’át’ée=go
this book that book 3S.wide.AA=I(GII)=LOC 3S.be.IMPF=GO
nineez.
3S.long.AA
(*Intended:* ‘This book is as long as that book is wide.’)

I will not address these data specifically, but I return to the parallel facts seen for comparisons of superiority in section 5.7.5.

5.3.4 Comparison of inferiority construction

I turn now to the **comparison of inferiority** construction. This realization of this construction in English is exemplified in (27). Like comparison of superiority constructions, English comparisons of inferiority contain two morphemes, the comparative marker *less* and the standard marker *than*.

(27) a. Sandy is less tall than Alice.
b. This film is less interesting than that one.

Navajo comparison of inferiority constructions only involve one morpheme, the postposition *-’oh*. As in the comparison of superiority construction, the standard of comparison determines the object marking found on the postposition. The three examples below illustrate comparison of inferiority constructions with CA-, AA-, and PA-marked adjectival verbs, respectively.

(28) a. *Context:* I am 5’4” tall. My father is 6’ tall.
b. Shizhé’é bi’oh ’ánístso.
1poss.father 3O.short.of 1S.large.CA
‘I am less tall than my father,’
‘I’m shorter than my father.’

(29) a. *Context:* I am comparing rugs. I am telling you this rug is not as pretty as that rug.

b. Díí diyogí 'eii diyogí yi'oh 'át'ée=go nizhóní.

this rug that rug 3O.short.of 3S.be.IMPF=GO 3S.pretty.AA
'This rug is less pretty than that one.'

(30) a. *Context:* The temperature in Flagstaff is 70 degrees Fahrenheit. In Phoenix, it is 100 degrees Fahrenheit.

b. Kinłánídi Hoozdodi yi'oh 'át'ée=go deesdoi.

Flagstaff.LOC Phoenix.LOC 3O.short.of 3S.be.IMPF=GO 3S.hot.PA
'Flagstaff is less hot than Phoenix.'

As in both the comparison of superiority and equative constructions, the morphosyntax of comparison of inferiority constructions varies depending on the morphological shape of the adjectival verb. If the adjectival verb is CA-marked, the standard of comparison directly precedes the verb ((28)). If the adjectival verb is instead AA- or PA-marked, *'át'éego* (the copula *'át'é* plus the subordinator *=go*) intervenes between the adjectival verb and the standard of comparison.

5.3.5 Measure phrase construction

I turn now to the **measure phrase** construction. As shown in (31), measure phrases can directly precede adjectival verbs:

(31) Hastą́ądi 'adées'eez 'ánísnéézˊ.

six feet 1S.tall.CA
'I am six feet tall.'

I found that measure phrases were only accepted with CA-marked adjectival verbs. Consultants did not accept the sentences in (32), regardless of whether or not *'át'éego* interceded between the measure phrase and the verb:

(32) a. *Hastą́ądi ’adées’eez nisneez.

six feet 1S.tall.AA
(*Intended:* ‘I am six feet tall.’)

b. *Hastą́ądi ’adées’eez ’át’éę=go nisneez.

six feet 3S.be.IMPF=GO 1S.tall.AA
(*Intended:* ‘I am six feet tall.’)

The ungrammaticality of the sentences in (32) is surprising. The adjectival verb ***nisneez*** describes a measure dimension (height): why can the precise degree of height not be named as it was in (31)? I return to consider a possible answer to this question much later when I consider the syntactic and semantic analysis of AA-/PA-marked adjectival verbs (section 5.7.5).

5.3.6 Degree questions

The next structure I consider is the **degree question**, expressed in English via *how*-questions:

(33) a. How tall is Sandy?

b. How hot is it outside?

Navajo expressions degree questions using the structures shown below for CA-, AA-, and PA-marked adjectival verbs. The *wh*-word ***haa*** is used in all degree questions.[9]

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[9]The *wh*-word used in degree questions, ***haa***, has a wide distribution in Navajo as a *wh*-word, as shown in (i):

(i) Ch’í’iilkeedígíísha’ haa yoolye?
movie WH 3S.be.called
‘What’s the name of the movie?’

(YM 1987: d287)

(34) a. Haaníłnéézʔ

WH.3S.tall.CA
'How tall is she/he/it?'

b. Hait'éé=go nizhóníʔ

WH.3S.be.IMPF=GO 3S.pretty.AA
'How pretty is she/he/it?'

c. Hait'éé=go deesdoiʔ

WH.3S.be.IMPF=GO 3S.hot.PA
'How hot is it?'

As with all other degree constructions which are licit with CA-, AA-, and PA-marked adjectival verbs, the morphosyntactic shape of degree questions differs depending on the morphological form of the adjectival verb. When the adjectival verb is CA-marked, the WH-word *haa* is prefixed to the left edge of the verb ((34a)). When the adjectival verb is instead AA- or PA-marked, the copula and the subordinator *=go* intervene between *haa* and the verb ((34b), (34c)).

In the examples in (34), *haa* was shown prefixed to the left edge of the adjectival verb ((34a)) or to the left edge of the copula ((34b), (34c)). Examples from Young and Morgan and judgments provided by consultants demonstrated that the *wh*-word can also be orthographically represented as separate from the adjectival verb ((35a)) or as separate from the copula ((35b), (35c)). Consultants volunteered the sentences in (34) and (35) interchangeably.

(35) a. Haa níneezʔ

WH 3S.tall.CA
'How tall is she/he/it?'

b. Haa yit'éé=go nizhóníʔ

WH 3S.be.IMPF=GO 3S.pretty.AA
'How pretty is she/he/it?'

c. Haa yit'ée=go deesdoi?

WH 3S.be.IMPF=GO 3S.hot.PA
'How hot is it?'

The examples above demonstrate that in degree questions, the shape of the CA-marked verbs (in (a)-sentences) and the copula (in (b)- and (c)-sentences) differs slightly in shape from what we have seen previously. In (34a)/(35a), the CA-marked verb lacks the initial *'á* prefix that we have otherwise observed on CA-marked verbs. In (34b)/(35b) and (34c)/(35c), the copula lacks the *'á* prefix and is instead pronounced *(y)it'é*. This seems like a pattern of note and raises a number of questions, including: (i) is the prefix *'á* on CA-marked verbs the same as the *'á* on the copula? (ii) does the presence vs. absence of *'á* indicate anything about the site of syntactic merger of the *wh*-word? I leave consideration of these questions for future work.

5.3.7 Intensifer construction

The final construction of interest is the use of **intensifiers**. Examples of intensifiers in English include *very* and *really*. Informally, intensifying adverbs seem to indicate that the subject exhibits the property in question to an extent that greatly exceeds the standard of comparison.

(36) a. Sandy is very tall.

b. This film is really interesting.

The Navajo intensifier which I will consider here is *'ayóo*. This particle can modify CA-, AA-, andPA-marked adjectival verbs. As with the English translations of the sentences in (37), the Navajo sentences shown were judged felicitous in contexts in which the subject of the adjectival verb exceeded the contextual standard for the property in question (height, beauty, heat) to a significant degree.

(37) a. Shimá 'ayóo 'áníłnéézˊ.

1poss.mother very 3S.tall.CA
'My mother is very tall.'

b. Shideezhí 'ayóo nizhóní.

1poss.little.sister very 3S.pretty.AA
'My little sister is very pretty.'

c. Hoozdodi 'ayóo deesdoi.

Phoenix.LOC very 3S.hot.PA
'Phoenix is very hot.'

A difference of note between the intensifer construction and all other degree constructions discussed above is that the intensifier construction does not change is syntactic shape depending on the morphological form of the adjectival verb. That is, the subordinated copula *'át'éego* does not intervene between *'ayóo* and AA- or PA-marked adjectival verbs. In fact, consultants did not find such intervention to be acceptable, as shown in (38):

(38) a. *Shideezhí 'ayóo 'át'éc=go nizhóní.

1poss.little.sister very 3S.be.IMPF=GO 3S.pretty.AA
(*Intended:* 'My little sister is very pretty.')

b. *Hoozdodi 'ayóo 'át'éc=go deesdoi.

Phoenix.LOC very 3S.be.IMPF=GO 3S.hot.PA
(*Intended:*'Phoenix is very hot.')

5.3.8 Summary

This section gave an overview of the morphological, syntactic, and semantic characteristics of the set of Navajo degree constructions which we will use in our investigation below.

5.4 The importance of the morphological shape of adjectival verbs

In the descriptive discussion in the previous section, we begin to notice instances where the morphological shape of adjectival verbs had an effect on their participation in degree constructions. In this section, I focus on further illustrating the following observations. Aspects of the (a)- and (c)-observations were already made in the course of the previous discussion; the (b)-observations are new.

(39) Adjectival verbs marked for Comparative Aspect (CA):

a. In main clauses, CA-marked adjectival verbs must be accompanied by an overt degree expression.

b. Degree expressions have a fixed position: they are always adjacent to CA-marked verbs.

c. Degree expressions occur in their 'bare' form when they modify CA-marked adjectival verbs.

(40) Adjectival verbs marked for Absolute Aspect (AA) or Perfective Aspect (PA):

a. AA-/PA-marked adjectival verbs can occur without overt degree expressions.

b. Degree expressions do not have a fixed position: they can be adjacent to AA-/PA-marked adjectival verbs but do not have to be.

c. Degree expressions (with one exception, intensifier *'ayóo*) never occur in the 'bare' form when they modify AA-/PA-marked adjectival verbs.

5.4.1 Required presence of a degree expression

In the course of discussing the positive construction, we already saw that whereas AA- and PA-marked adjectival verbs can be used without one of the degree expressions given in Table 5.7. I introduce the descriptive term 'degree expressions' as way to

collectively refer to the visible material which was key to the degree constructions seen in the previous sectin.

Table 5.7. Navajo degree expressions seen in section 5.3

Degree construction	**Degree expression**
Comparison of superiority	*y-lááh* 'beyond y'
Equative	*y=gi* 'at y'
Comparison of inferiority	*y-'oh* 'short of y'
Measure phrase	e.g. *hastáądi 'adées'eez* '6 feet'
Degree question	*haa wh*-word
Intensifier	*'ayóo* 'very'

The familiar sentences in (41) show AA-/PA-marked adjectival verbs without any member of Table 5.7.

(41) a. **Sandy nineez.**

Sandy 3S.tall.AA
'Sandy is tall.'

b. **Hoozdo deesdoi.**

Phoenix 3S.hot.PA
'Phoenix is hot.'

By contrast, we saw that CA-marked adjectival verbs could not be used in this way. Regardless of the context used, sentences of the shape in (42) were always rejected by consultants:

(42) *Sandy 'áníłnéézz.

Sandy 3S.tall.CA
(*Intended:* 'Sandy is tall.')

I characterize the difference between CA- and AA-/PA-marked adjectival verbs as follows:

(43) a. In main clauses, CA-marked adjectival verbs must be accompanied by an overt degree expression.

b. AA-/PA-marked adjectival verbs can occur without overt degree expressions.

Crucially, my observation about CA-marked adjectival verbs has two restrictions. First, I explicitly note that it seems that **overt** degree expressions are required, i.e. an expression from Table 5.7. I say 'overt' to set aside the question of whether the positive construction contains a covert degree expression. In literature on the positive construction crosslinguistically, it is quite standard to invoke a covert operator which makes a comparison between the subject and an appropriate contextual standard of comparison (Cresswell 1976, von Stechow 1984, Kennedy 1997, among many others). If we say that such a covert expression is used in the positive construction in (42), we must specify that this same expression cannot satisfy the requirements of CA-marked verbs — however we characterize these requirements. Otherwise, we would expect (43) to allow an interpretation like (42a).

The second restriction in my observation about CA-marked adjectival verbs is that an overt degree expression is required when these verbs are used in **main clauses**. This part of the description is present to capture the contrast between ungrammatical main clauses like (43) and the use of CA-marked adjectival verbs in subcomparative and subequative constructions (sections 5.3.2, 5.3.3). In the subcomparative construction in (44), the subordinate clause contains a CA-marked adjectival verb which is not preceded by an overt degree expression. This sentence is nevertheless grammatical.

(44) Díí naaltsoos 'eii naaltsoos 'áníłtéél=ígíí yilááh 'áníłnéézʔ.

this book that book 3S.wide.CA=IGII 3O.beyond 3S.long.CA

'This book is longer than that book is wide.'

In section 5.6.1, I will argue that the embedded clause is not actually devoid of a degree expression: rather the degree expression in question is covert. At that point, we will ask why the same covert degree expression cannot occur in (42): if it could, we would incorrectly expect (42) to be grammatical.

5.4.2 The fixed position of degree expressions

I now turn to the following contrast:

(45) a. Degree expressions have a fixed position: they are always adjacent to CA-marked verbs.

b. Degree expressions do not have a fixed position: they can be adjacent to AA-/PA-marked adjectival verbs but do not have to be.

When an adjectival verb is CA-marked, degree expressions are subject to stringent locality restrictions: they can only occur directly to the left of the adjectival verb. The following examples illustrate with the comparison of superiority construction ((46)) and the equative construction ((47)). The (a)-sentences show the grammatical configuration in which the degree expression (bracketed) precedes the verb; the (b)-sentences demonstrate the ungrammaticality that results when the degree expression occurs to the left of the subject.

(46) a. Shideezhí [bá'íníilta'í yilááh] 'áníłnéézʔ.

1poss.little.sister our.teacher 3O.beyond 3S.tall.CA
'My little sister is taller than our teacher.'

b. *[Bá'íníilta'í yilááh] shideezhí 'áníłnéézʔ.

3O.for.1plS.read.I(GII) 3O.beyond 1poss.little.sister 3S.tall.CA
(*Intended:* 'My little sister is taller than our teacher.')

(47) a. Shideezhí [shimá=gi] 'áníłnéézʔ.

1poss.little.sister 1poss.mother.LOC 3S.tall.CA
'My little sister is as tall as my mother.'

b. *[Shimá=gi] shideezhí ’áníłnéézˊ.

1poss.mother.LOC 1poss.little.sister 3S.tall.CA
(*Intended:* ‘My little sister is as tall as my mother.’

If we replace CA-marked adjectival verbs with ones which are AA- or PA-marked, linear separation of the degree expression from the adjectival verb is allowed. The following examples illustrate with the comparison of superiority construction.[10]

(48) a. K’ad [hosiyoolts’į́ɬígíí bilááh ’át’éego] chidí naata’a’í

now speed.of.sound 3O.beyond 3S.be.IMPF=GO airplane

dadilwo’.

3plS.fast.AA
‘There are now airplanes that are faster than the speed of sound.’

(adapt. YM 1987: d458)

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[10]Recall from section 5.3 that in all but one case, degree constructions containing AA- and PA-marked adjectival verbs are syntactically more complex than the same construction with a CA-marked verb: degree expressions are separated from AA- and PA-marked adjectival verbs by the copula *’át’é* and the subordinator *=go*. I return to this point below. For now, I give a note on the bracketing to be used in this section. In a sentence like (48a), I place brackets around *hosiyilts’į́ɬígíí bilááh ’át’ée=go* to indicate that this structure in its entirety — crucially, including *’át’é* and *=go* — counts as the degree expression. Examples in which degree expressions are left-dislocated provide support for this choice of bracketing. For instance, we might consider an alternative hypothesis in which *’át’é* and *=go* form a constituent with the adjectival verb, e.g. (i). Under this bracketing, the degree expression would only consist of *hosiyilts’į́ɬígíí bilááh*.

(i) Hypothetical alternative bracketing:
K’ad [hosiyilts’į́ɬígíí bilááh] ’át’éego chidí naat’a’í dadilwo’.

However, I found that it is not possible for *hosiyilts’į́ɬígíí bilááh* to be dislocated to the exclusion of *’át’é* and *=go*:

(ii) *K’ad hosiyilts’į́ɬígíí bilááh chidí naat’a’í ’át’éego dadilwo’.
now speed.of.sound 3O.beyond airplane 3S.be.IMPF=GO 3plS.fast.AA
(*Intended:* ‘Airplanes are now faster than the speed of sound.’)

I take the ungrammaticality of examples like (iii) (and other similar sentences) to support the idea that *’át’é* and *=go* are part of the degree expression constituent.

b. [Phoenix bilááh ’át’ée=go] kééhasht’íįgí deesdoi.

Phoenix 3O.beyond 3S.be.IMPF=GO 1S.live.IGII 3S.hot.PA
‘Where I live is hotter than Phoenix.’

In (48a), the subject of the verb, *chidí naata’a’í* ‘airplane,’ intercedes between the AA-marked adjectival verb *dadilwo’* ‘they are fast’ and the degree expression (bracketed). In (48b), the degree expression is separated from the PA-marked adjectival verb *deesdoi* by the subject *kééhasht’íįgí* ‘where I live.’

Parallel data can be constructed using the equative construction. In (49), the equative degree expression is separated from the AA-marked adjectival verb by the subject, *shideezhí* ‘my little sister.’ Consultants also accepted the sentence where the degree expression directly preceded the verb, *nizhóní* ‘s/he/it is pretty.’

(49) [Shí=gi ’át’ée=go] shideezhí nizhóní.

1pro=LOC 3S.be.IMPF=GO 1poss.little.sister 3S.pretty.AA
‘My little sister is as pretty as I am.’

Negation markers can also intervene between a degree expression and an AA-/PA-marked adjectival verb, but not between a degree expression and a CA--marked adjectival verb. Recall from Chapter 2 (section 3.2.2) that negation is expressed in Navajo by means of a frame construction, *doo...da*. When the adjectival verb is marked for AA as in (50), the first half of the negation frame, *doo* can occur to the left of the degree expression *’ayóo* ((50a)) or it can intercede between the degree expression and the adjectival verb ((50b)).[11]

[11] A topic left for future investigation is whether any interesting scope-related interpretative differences arise in (50a) vs. (50b). That is, is it the case that (50a) is only felicitous if *my mother* is extremely short (i.e. ‘very not-tall’)? And can (50b) be used if my mother is of unremarkable tallness (i.e. ‘not very-tall’)?

(50) a. Shimá doo 'ayóo nineez da.

1poss.mother NEG very 3S.tall.AA NEG
'My mother is not very tall.'

b. Shimá 'ayóo doo nineez da.

1poss.mother very NEG 3S.tall.AA NEG
'My mother is not very tall.' (*Lit:* '...very not tall')

By contrast, while *doo* could occur to the left of *'ayóo* ((51a)), it could not intercede between a CA-marked adjectival verb and *'ayóo* ((51b)).

(51) a. Shimá doo 'ayóo 'áníłnéézda.

1poss.mother NEG very 3S.tall.CA NEG
'My mother is not very tall.'

b. *Shimá 'ayóo doo 'áníłnéézda.

1poss.mother very NEG 3S.tall.CA NEG
(*Intended:* 'My mother is not very tall.')

5.4.3 Syntactic differences in degree expressions

The final observation which I will discuss is given in (52):

(52) a. Degree expressions occur in their 'bare' form when they modify CA-marked adjectival verbs.

b. Degree expressions (with one exception) never occur in the 'bare' form when they modify AA-/PA-marked adjectival verbs.

We have already seen this point partially illustrated by the data considered so far. In examples of degree constructions with CA-marked adjectival verbs, the verb is preceded by the degree expression on its own. In the case of the comparison of superiority construction ((53a)), this means that the verb is preceded by the comparative postpositional phrase, *shilááh* 'beyond me.' In the case of the equative construction ((53b)), this means that the verb is preceded by the equative phrase, *shí=gi* 'at me.'

(53) a. Shimá [shilááh] ’áníłnéézˊ.

1poss.mother 1O.beyond 3S.tall.CA
‘My mother is taller than me.

b. Shimá [shí=gi] ’áníłnéézˊ.

1poss.mother 1pro=LOC 3S.tall.CA
‘My mother is as tall as I am.’

I will refer to degree expressions like those in (53) as degree expressions in their ‘bare’ form.’ The bare form is to be contrasted with the morphosyntactically complex form of degree expressions found in degree constructions which contain AA- or PA-marked adjectival verbs. In (54a), the degree expression (bracketed) contains the copula *’át’é* and the subordinator *=go* in addition to *shilááh*. In (54b), the copula and subordinator accompany *shí=gi*.[12]

(54) a. Shimá [shilááh ’át’éę=go] nizhóní.

1poss.mother 1O.beyond 3S.be.IMPF=GO 3S.pretty.AA
‘My mother is prettier than I am.’

b. Shimá [shí=gi ’át’éę=go] nizhóní.

1poss.mother 1pro=LOC 3S.be.IMPF=GO 3S.pretty.AA
‘My mother is as pretty as I am.’

Precisely the same kind of structure is attested for PA-marked adjectival verbs. I illustrate in (55) with the comparison of superiority construction.

(55) Hoozdodi [Kinłánídi yilááh ’át’éę=go] deesdoi.

Phoenix Flagstaff 3O.beyond 3S.be.IMPF=GO 3S.hot.PA
‘Phoenix is hotter than Flagstaff.’

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[12]For evidence that the copula and subordinator form a constituent with *shilááh* as opposed to the verb, see footnote 10 in the previous subsection.

What we have not yet seen is the impossibility of the inverse state of affairs. I give these data below; while I illustrate with the comparison of superiority construction, the same observations can be replicated for all other degree constructions except *'ayóo* 'very.' (56a) shows that inclusion of a copula and subordinator in the degree expression in front of a CA-marked adjectival verb is ungrammatical. (56b) and (56c) show that the use of the bare comparison of superiority degree expression is ungrammatical with an AA- or PA-marked adjectival verb:

(56) a. *Shimá [shideezhí yilééh 'át'éé=go] 'áníłnéézʔ.

1poss.mother 1poss.little.sister 3O.beyond 3S.be.IMPF=GO 3S.tall.CA
(*Intended:* 'My mother is taller than my little sister.')

b. *Shimá [shilééh] nizhóní.

1poss.mother 1O.beyond 3S.pretty.AA
(*Intended:* 'My mother is prettier than I am.')

c. *Hoozdodi [Kinłánídi yilééh] deesdoi.

Phoenix Flagstaff 3O.beyond 3S.hot.PA
(*Intended:* 'Phoenix is hotter than Flagstaff.')

The only exceptional degree expression is *'ayóo*, which always occurs in its bare form regardless of the morphological shape of the adjectival verb which it modifies.

(57) a. Shideezhí 'ayóo 'áníłnéézʔ.

1poss.little.sister very 3S.tall.CA
'My little sister is very tall.'

b. Shideezhí 'ayóo nizhóní.

1poss.little.sister very 3S.pretty.AA
'My little sister is very pretty.'

c. Hoozdodi 'ayóo deesdoi.

Phoenix very 3S.hot.PA
'Phoenix is very hot.'

5.4.4 Summary

In this section, we observed a number of differences in degree constructions which were keyed to the morphological shape of the adjectival verb. I repeat these differences in (58).

(58) a. Adjectival verbs marked for Comparative Aspect (CA):
   (i) In main clauses, CA-marked adjectival verbs must be accompanied by an overt degree expression.
   (ii) Degree expressions must be adjacent to CA-marked verbs.
   (iii) Degree expressions occur in their 'bare' form when they modify CA-marked adjectival verbs.

b. Adjectival verbs marked for Absolute Aspect (AA) or Perfective Aspect (PA):
   (i) AA-/PA-marked adjectival verbs can occur without overt degree expressions.
   (ii) Degree expressions do not have to be adjacent to AA-/PA-marked adjectival verbs.
   (iii) Degree expressions (with one exception) never occur in the 'bare' form when they modify AA-/PA-marked adjectival verbs.

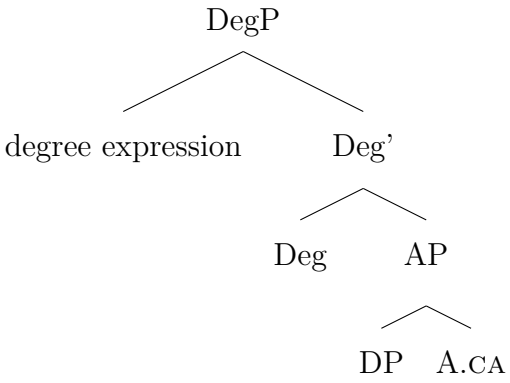
Thus far, these observations are only stipulated on the basis of the empirical evidence available to us. In the next section, I consider how we can better understand these differences if we posit distinct syntactic structures for CA-marked and AA-/PA-marked adjectival verbs. I argue that whereas CA-marked adjectival verbs select for a degree expression as an argument, AA-/PA-marked adjectival verbs do not.

5.5 The syntactic heterogeneity of Navajo adjectival verbs

In this section, I argue that adjectival verbs of different morphological shapes project distinct syntactic structures. I further argue that certain — if not all — all of the differences observed in the previous section are better understood in light of the posited differences in adjectival syntax.

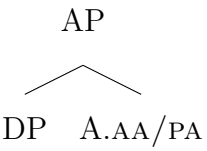
I propose that CA-marked adjectival verbs are associated with the syntactic structure in (59), originally proposed for English adjectival expressions in English by Kennedy (1997, 1999) who built on earlier proposals by Abney (1987). An extended functional projection (degree phrase, DegP) surrounds the lexical adjectival phrase (AP). Both the DegP and the AP select for an argument. A determiner phrase (DP) — realized as the sentential subject — must be merged into AP. A degree expression must be merged into the specifier of DegP. The set of degree expressions includes the structures discussed in the last section, e.g. comparative postpositional phrases, measure phrases, or intensifiers. A CA-marked adjectival verb is ill-formed unless it is contained within a structure like (59) in which both argument positions are filled.

(59)



By contrast, AA- and PA-marked adjectival verbs only project an AP. Once a DP has merged into the structure given in (60), an AA- or PA-marked verb is associated with a complete syntactic structure.

(60)



In this section, I elaborate on the structures shown above and consider theoretical precedent for the syntactic structures I have attributed to CA-marked adjectival verbs and AA-/PA-marked adjectival verbs. As part of the discussion, I relate the syntactic structures which I have proposed to the syntax of Navajo intransitive eventive verbs and their transitivized counterparts. The syntactic picture which I present for eventive verbs is largely due to proposals by Hale and Platero (1996) and Hale (2000, 2001). Transitivized eventive verbs and CA-marked adjectival verbs exhibit certain morphology in common which could suggest that they project comparable syntactic structures. I also relate the proposed syntactic structures to the larger literature on the syntax of adjectival expressions crosslinguistically. The key contribution of Navajo is that only certain adjectival verbs — those which are CA-marked — are syntactically transitive expressions with an extended functional projection. In previous work, adjectival expressions in other languages are argued to have the same syntax.

5.5.1 The extended verbal projection in Navajo

In order to see how the syntactic structures for CA-marked and AA-/PA-marked adjectival verbs relate to eventive verbal syntax, we must first become familiar with proposals on the latter topic. Hale and Platero (1996) and Hale (2000, 2001) discuss alternation in transitivity in Navajo verbs which appears to be correlated with the choice of classifier prefix. As discussed in Chapter 2, the rightmost prefix in a Navajo verb is referred to as the 'classifier.' Navajo has four classifier prefixes, each of which is in complementary distribution with the others: ∅, *ɬ*, *d*, or *l*. The choice of classifier for many Navajo verbs is frequently idiosyncratic. However, Hale (2000:86) observes that for many Navajo verbs, alternation between the ∅ and *ɬ* classifiers seems to indicate

an alternation in transitivity (see also Jelinek and Willie 1996). Hale (2000) gives the following examples from Young and Morgan (1980) to illustrate the alternation; I have supplemented Hale's glosses with full morphological breakdowns of verbs to illustrate the position of the classifier in each verb.[13]

(61) a. Tóshjeeh sits'il.

tóshjeeh si = ∅ = ∅ = ts'il

barrel Mode.PERF = 3S = ∅.classifier = stem.PERF

'The barrel shattered.'

b. Łeets'aa' sółts'il.

łeets'aa' ∅ = si = sh = **ł** = ts'il

dish 3O = Mode.PERF = 1S = ł.classifier = stem.PERF

'I shattered the dish.'

(Hale 2000: (46))

(62) a. Tin yíyɬíɬ'.

tin yi = ∅ = ∅ = yɬíɬ'

ice Mode.PERF = 3S = ∅.classifier = stem.PERF

'The ice melted.'

b. Yas yółhɬíɬ.

yas ∅ = yi = sh = **ł** = yɬíɬ'

snow 3O = Mode.PERF = 1S = ł.classifier = stem.PERF

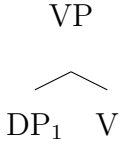
'I melted the snow.'

(Hale 2000: (47))

[13]In addition to these examples, Hale gives 18 other paired examples of verbs which show an alternation in transitivity based on the choice of classifier (Hale 2000: 87). Hale also cites examples of pairs verbs which do not exhibit this manner of deriving transitivity.

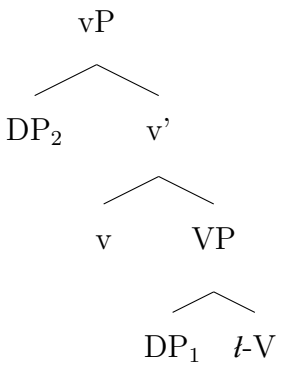
According to Hale and Platero (1996), all verbs for which transitivity can be indicated by *ɬ* share the property of having a DP argument (DP_1) which functions as the theme or patient. When only this DP argument is present, it is realized as the sentential syntactic subject. Hale (2000) gives the following simplified structure for such an intransitive verb like *sits'il* in (61a).[14]

(63)



The presence of the *ɬ* clasifier reflects the addition of a functional syntactic shell around the VP. Building on the structures in Hale and Platero (1996) and Hale (2000), I give the verb sɛ́ɬts'il in (61b) the structure in (64).[15,16]

(64)



[14]Following Hale and Platero (1996), Hale's structures (2000) contain a root element R which composes with a category-defining head, V. I simplify Hale's structures by removing R and using only V. Nothing hinges on this. In addition, Hale uses V (rather than V' or VP) at all projection levels. I depart from Hale here, as well.

[15]I will only use the label v to refer to morphemes which introduce an argument position in the syntax. This use of 'v' is a simplification: many authors use v to refer to a morpheme which is always present and heads the extended verbal projection even where no additional argument is present (e.g. in unaccusative or passive constructions). The benefit of doing so is that all verbs are associated with the same general sets of heads (i.e. lexical V, functional v); differences in their syntax or semantics follow from differences in the properties of the particular V or v used.If we wanted to say that all Navajo verbs include a vP projection, we could say that *ɬ* corresponds to a particular v — one which introduces an argument — such as the agentive or causative v heads. To simplify the proposal, however, I will only invoke v when an argument position has been added.

[16]Once the verb has been transitivized, the lower DP is interpreted as the sentential syntactic object while the higher DP is interpreted as the sentential syntactic subject.

The tree in (64) is very much in the spirit of Hale and Platero (1996), Hale (2000), and Hale (2001). A verb with the ɬ classifier has an extended functional projection around the lexical VP projection. I follow Chomsky (1995) in referring to the functional head in question as v ('little-v'), although we could also have joined Hale (2001) — who in turn follows proposals by Kratzer (1996) — in referring to it as a Voice head. The v head introduces an argument position of its own in its specifier position. This position is filled by DP_2 in the tree above. When the vP shell surrounds VP, the verb word bears the ɬ classifier.[17]

5.5.2 The extended adjectival projection crosslinguistically

Since Abney (1987), authors have considered syntactic parallels between adjectival expressions and verbs (see also Corver 1990, 1997; Grimshaw 1991; and Kennedy 1997, 1999). These authors propose that all adjectives are associated with an extended functional projection headed by Deg, a degree head. They explicitly link the role of the Deg head to functional heads within the verbal and nominal domains, namely v and the determiner head D.[18]

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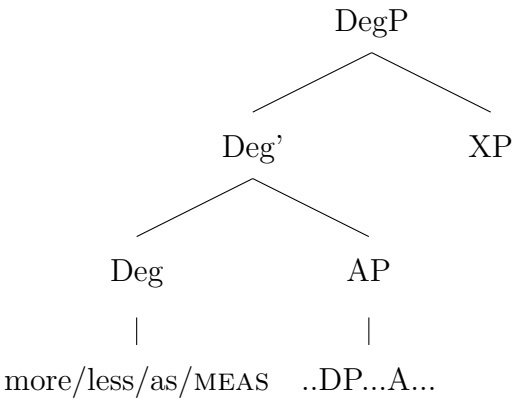
[17]This structure departs from Hale and Platero (1996) and Hale (2000) in three ways. First, they treat ɬ as a second lexical V head. Second, because they treat ɬ as a lexical head, they do not have the subject merge into the phrasal projection headed by ɬ: as Hale and Platero (1996: 10) write,"the subject...is an external argument, not present in the lexical structure" so it must merge into a higher projection. By contrast, I treat ɬ as a functional head; as such, having the subject merge into the phrasal structure projected by ɬ is not problematic: the position occupied by DP_2 is standardly associated with external arguments.

The third difference is that Hale and Platero treat the classifier ɬ as the morphological realization of the Voice (or v) head. By contrast, I will take ɬ to reflect the presence of a vP shell, but not to be the v head itself. Again, nothing hinges on this move.

[18]The alternative to the DegP hypothesis is Bresnan's (1973) proposal that the AP projection contains all material relating to degrees. See also Selkirk 1970, Jackendoff 1977, Hellan 1981, McCawley 1988, and Hazout 1995.. If we wished to rephrase my proposal in terms of an AP-only hypothesis, we might say that all A heads in Navajo (regardless of the choice of AA, PA, or CA morphology) have a complement position (occupied by the subject) but only CA-marked A heads project a specifier position (occupied by the degree expression). For simplicity, I set aside further consideration of how an AP-only account could apply to Navajo.

Under an account with invokes DegP, all adjectival projections include a degree head, Deg. Kennedy (1997, 1999) names the English degree morphemes *more/-er*, *less*, and AS among the set of overt Deg heads. Among the covert Deg heads is the head which occurs in measure phrase constructions (e.g. *Alice is 6' tall*), which I refer to as MEAS following Svenonius and Kennedy (2006). Each of these Deg heads projects a syntactic structure like in (65) (adapt. Kennedy 1997: 148).[19]

(65)



The specifier of DegP contains a phrasal projection, XP, which Kennedy identifies as the particular type of phrase which each Deg head selects for. For example, XP will be a *than*-phrase when Deg is *more/-er* or *less* but an *as*-phrase when Deg is *as*. When Deg is filled by MEAS, XP is a measure phrase.[20]

5.5.3 Syntactically heterogeneous adjectival verbs in Navajo

I now return to the syntax of adjectival verbs in Navajo. Taking the syntactic picture of eventive verbs as my starting point, I propose that we can analogize the syntactic structure projected by AA-/PA-marked adjectival verbs to the simple VP structure assigned to the intransitive verbs discussed above. These verbs project only

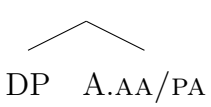
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[19]See Lechner (1999) for an alternative DegP structure.

[20]For Kennedy (1997, 1999), only one kind of English Deg head fails to project a specifier position: the covert POS head found in the positive construction.

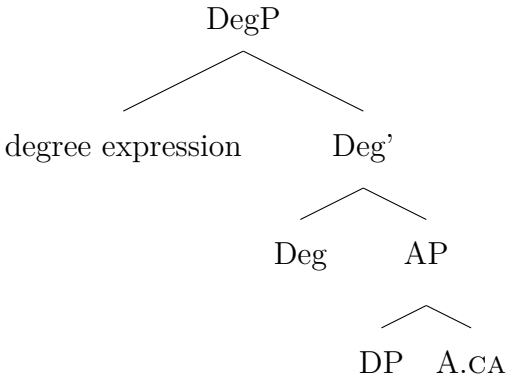
(i) $[_{DegP}\ [_{Deg'}$ Deg.POS $[_{AP}$ ..DP...A...]]]

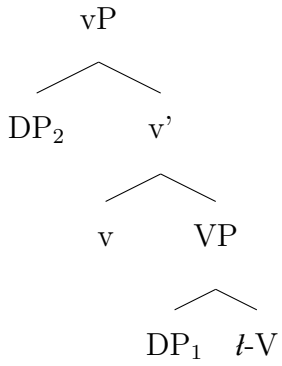
the lexical adjectival phrase (AP) shown in (66a). As was the case for eventive VP ((66b)), only one argument position is contained within AP.

(66) a. 

b. 

I further propose that only CA-marked adjectival verbs ((67a)) have an extended functional projection (DegP) of the kind adopted by Abney, Kennedy, and other authors cited above. This functional projection has the same shape as the vP shell which we argued above surrounds transitivized eventive verbs in Navajo ((67b)). Both the Deg and v heads project a specifier position. In the case of vP, the specifier position is filled by a second nominal expression. In the case of DegP, the specifier position is filled by a degree expression, which includes at least the overt expressions discussed above.

(67) a. 

b. 

Note that the Deg head invoked in (67a) is not like many of the Deg heads considered by Kennedy (1997, 1999) and other proponents of the DegP hypothesis for English. As noted above, English has many specialized Deg heads, including comparative morphemes like *more/-er* and *less*. By contrast, Navajo only has one Deg head: all meaning associated with various degree constructions comes from material within the degree expression, e.g. the postposition *-lááh* 'beyond' found in comparisons of

superiority. The English Deg head which is most closely related to the Navajo Deg head is the Deg head posited for the measure phrase construction, termed ABS by Kennedy (1997, 1999) and MEAS by Svenonius and Kennedy (2006). In their proposals, this English Deg head projects a specifier position but does not introduce meaning specific to, e.g., the comparison of superiority or equative constructions.

Navajo verbal morphology supports the parallelism between vP and DegP structures shown in (67a) and (67b). In our discussion of Navajo eventive verbs and the vP projection, we saw that the *ɬ* classifier prefix appeared when an argument-introducing v head was present. That is, for verbs which participated in the transitivity alternation discussion, *ɬ* was the morphological 'footprint' of a transitivized argument structure. The *ɬ* classifier is also a morphological hallmark of CA morphology. Recall the following morphological breakdown of CA-marked adjectival verbs, first seen in section 5.2.3.[21]

(68) **'áníɬnéézˊ**

'á = ní = ∅ = ɬ = néézˊ

thematic.CA = thematic.CA = 3S = *ɬ*.classsifier = stem.CA

We also saw earlier that all CA-marked verbs have an AA-marked counterpart. That is, we can find pairs which are related both in meaning and in the shape of their stem. The table in 5.8 gives a selection of such pairs. If the CA-marked verbs on the left are compared with their AA-marked counterparts on the right, we see that the AA-marked forms lack the *ɬ* classifier. Instead, Young and Morgan (1987) observe that these

[21] As Hale and Platero (1996) and Hale (2000) discuss for eventive verbs, the correlation between classifier choice and number of arguments is not perfect in the domain of adjectival verbs. There are AA-marked adjectival verbs which seem to bear a classifier other than ∅ and there are certainly PA-marked verbs which bear a different classifier. Since many adjectival verbs which are AA-marked — and all which are PA-marked — lack a CA-marked counterpart, it is, of course, not possible to say for many adjectival verbs whether marking the verb for CA would result in the presence of *ɬ*.

AA-marked adjectival verbs instead bear the ∅ classifier prefix. The morphological breakdown of one AA-marked verb is given in (69).

Table 5.8. Selection of CA- and AA-marked adjectival verbs

Property	**CA-marked**	**AA-marked**
tallness	’áníłnéézˊ	nineez
heaviness	’áníłdáás	nidaaz
bigness	’áníłtso	nitsaa
wideness	’áníłtéél	niteel
thickness	’áníłtsáázˊ	nitsaaz

(69) nineez

ni = ∅ = ∅ = neez

thematic.AA = 3S = ∅.classifier = stem.AA

I propose that the alternation between the ∅ and *ɬ* classifiers on AA- vs. CA-marked verbs is not accidental. Instead, this morphological alternation performs precisely the same function as it for eventive verbs which participated in transitivity alternation. When *ɬ* is present, it indicates that an argument-introducing functional head (v or Deg) is present. For both adjectival verbs and eventive verbs, the *ɬ* classifier is the morphological ‘footprint’ of the transitivized argument structure shown in (67).[22]

5.5.4 On arguments realized verb-externally

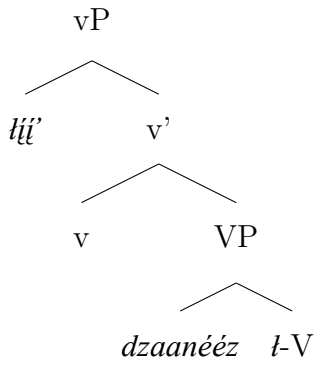
In the trees seen so far, I have placed a DP projection in each position which contains a nominal argument. I will represent a sentence like (70) with a syntactic structure like (71).

[22]If one wished to posit a DegP shell for all adjectival verbs in Navajo, one could say that CA- and AA-/PA-marked adjectival verbs are both associated with DegP shells but that the projections differ in whether or not DegP contains a specifier position to be filled by a degree expression. Although I will not give such representations here, I do not see that making this move would have any effect on the proposals made here.

(70) **Łį́į́' dzaanéézyiztał.**

horse mule 3O.3S.kick.PERF
'The horse kicked the mule.'

(71)



Under this view, the nominal expressions merge as part of the verb word but move upwards — out of the verb word — and adjoin higher in the syntactic structure (not shown). Various discourse factors may conspire to determine the final order of verb-external nominal expressiosn (section 2.2.2). When first merged, however, the verb-external nominal expressions *łį́į́'* and *dzaanéézz* are actually the arguments of the verb. This view agrees with work by Speas (1990), Hale and Platero (1996), and Hale (2000), who argue that verb-external nominal expressions — either covert or overt — have argument status. Object and subject marking on the verb word itself is inflection which reflects the features (number, person) of any verb-external nominal expressions.

This view is far from uncontroversial. Other authors argue that the argument positions of Navajo verbs are filled instead by pronominal morphology realized as prefixes on the verb (Willie 1989; Willie and Jelinek 2000; Hale 2003; Hale, Jelinek, and Willie 2003). This view of Navajo is part of the broader project of the 'Pronominal Argument Hypothesis,' pioneered by Jelinek (1984) and subsequently modified by authors including Baker (1991, 1995, 1996). Under this account, verb-external nominal expressions are always adjoined modifiers which can add information but are not needed to satisfy the verb's structural requirements.

The argument vs. adjunct status of verb-external nominal expressions in Navajo is somewhat peripheral. While I will continue to use trees like (71), it would not be difficult to redo the discussion using structures which are consistent with the Pronominal Argument Hypothesis. As long as something fills the nominal argument positions projected by verbs, the nature of this 'something' — full DPs vs. pronominal marking — is not especially crucial.

However, I would like to note that the present proposal for degree expressions does, in fact, speak indirectly to the status of verb-external material. While verb-external nominal expressions may or may not have argument status, degree expressions which merge into the specifier of DegP projected by CA-marked adjectival verbs are an example of verb-external expression which, under the present proposal, function as arguments to the verb. The presence of a degree expression does not correspond to anything which is recognized as pronominal marking on the verb, so we cannot say that this argument position is filled by morphology borne by the verb. Thus, regardless of what the eventual verdict is for nominal expressions, I argue that at least one kind of verb-external expression — degree expressions — is a syntactic argument of the (extended projection of) adjectival verbs.

5.6 Outcomes of the proposed syntactic heterogeneity

In this section, I discuss how the attribution of distinct syntactic structures to AA-/PA-marked and CA-marked adjectival verbs, we can begin to explain why certain differences in degree constructions are keyed to the morphological shape of an adjectival verb. The differences to be discussed are repeated below:

(72) Adjectival verbs marked for Comparative Aspect (CA):

a. In main clauses, CA-marked adjectival verbs must be accompanied by an overt degree expression.

b. Degree expressions have a fixed position: they are always adjacent to CA-marked verbs.

c. Degree expressions occur in their 'bare' form when they modify CA-marked adjectival verbs.

(73) Adjectival verbs marked for Absolute Aspect (AA) or Perfective Aspect (PA):

a. AA-/PA-marked adjectival verbs can occur without overt degree expressions.

b. Degree expressions do not have a fixed position: they can be adjacent to AA-/PA-marked adjectival verbs but do not have to be.

c. Degree expressions (with one exception, intensifier *'ayóo*) never occur in the 'bare' form when they modify AA-/PA-marked adjectival verbs.

5.6.1 Explaining the required presence of a degree expression

I start with the following contrast:

(74) a. In main clauses, CA-marked adjectival verbs must be accompanied by an overt degree expression.

b. AA-/PA-marked adjectival verbs can occur without overt degree expressions.

It is relatively straightforward to see how the account accounts for a simpler — although incomplete — version of this contrast, namely that CA-marked adjectival verbs must be accompanied by degree expressions while AA-/PA-marked adjectival verbs do not. Under the proposal above, adjectival verbs differ in the size of their syntactic projections and, by extension, the number of arguments they take. Whereas AA-/PA-marked verbs project an AP which only contains one argument position, CA-marked adjectival verbs project a DegP structure whose specifier position must be filled by a degree expression. In the absence of a degree expression, the syntactic

structure of a CA-marked adjectival is crucially incomplete and, as a result, ungrammatical.

This is not precisely the picture described in (74), however. As discussed earlier, we must explain why the CA-marked verb in the main clause in (75a) must be preceded by a degree expression but the embedded CA-marked verb in the subcomparative construction in (75b) (*'áníłtéél*) does not have to be.

(75) a. *Sandy 'áníłnéézz.

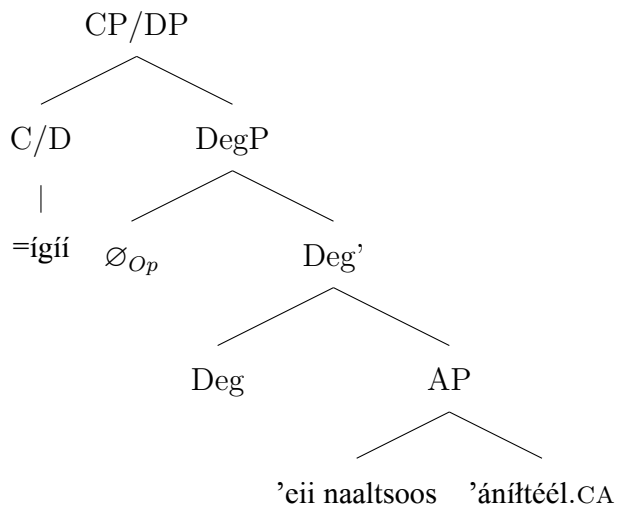
Sandy 3S.tall.CA
(*Intended:* 'Sandy is tall.')

b. Díí naaltsoos ['eii naaltsoos 'áníłtéél=ígíí] yilááh 'áníłnéézz.

this book that book 3S.wide.CA=IGII 3O.beyond 3S.long.CA
'This book is longer than that book is wide.'

One response to this observation is that we simply mistaken that the embedded clause in (75b) lacks a degree expression. We could say that the specifier position of the embedded DegP contains a covert degree expression. That is, the bracketed material in (75b) (the embedded clause plus the subordinator *=ígíí*) would have the following structure. As shown in the tree in (76), I do not commit to a particular syntactic category (DP vs. CP) for the clause marked by *=ígíí*. (For discussion of the range of uses of *=ígíí*, see section 2.2.3.)

(76)



The appeal to a covert degree expression is not as stipulative as it might first seem. Potential evidence from Navajo that this position is, in fact, covertly filled is that (76b) becomes ungrammatical when an overt degree expression is added to the embedded clause, viz. the addition of *'ayóo* in (77):

(77) *Díí naaltsoos 'eii naaltsoos 'áyóo 'áníłtéél=ígíí yiláah 'áníłnéézʼ.
this book that book very 3S.wide.CA=IGII 3O.beyond 3S.long.CA

There is also significant precedent in the theoretical literature for taking the sub-comparative (or, all clausal comparative constructions) constructions to contain a covert degree operator in the embedded clause, as shown for English in (78). Structures like (77) are explored by authors including Bresnan (1973), Chomsky (1977), von Stechow (1984), and Lechner (2004).

(78) This book is longer than [OP_1 that book is d_1-wide].

In some languages, this operator is overtly realized as in, e.g. Dutch:

(79) De tafel is [langer dan **hoe** breed het kantoor is].
the table is longer than WH wide the office is
'The table is longer than the office is wide.'

If we are correct to posit a covert degree expression in embedded clauses in Navajo subcomparatives, we must explain why this operator cannot be used in a main clause like (75a). I will return to these question later when I consider the syntax and semantics of subcomparative structures like (75b).

5.6.2 Explaining the fixed position of degree expressions

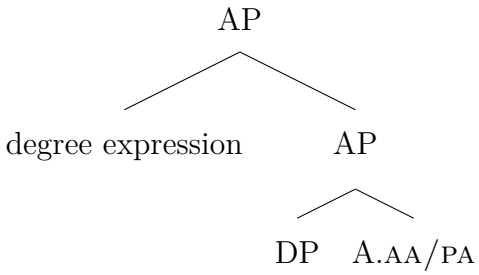
I now turn to the contrast repeated in (80):

(80) a. Degree expressions have a fixed position: they are always adjacent to CA-marked verbs.

b. Degree expressions do not have a fixed position: they can be adjacent to AA-/PA-marked adjectival verbs but do not have to be.

I will propose that this contrast can also be explained using the proposed syntactic heterogeneity. In contrast with CA-marked adjectival verbs, the syntactic structure projected by AA-/PA-marked adjectival verbs has no position for a degree expression to merge into. As a result, degree expressions which modify AA-/PA-marked adjectival verbs are adjoined at the AP level:

(81)



Given their status as adjoined modifiers, we expect degree expressions which modify AA-/PA-marked adjectival verbs to have characteristics in common with other plausibly adjoined modifiers in Navajo. This expectation is borne out: other kinds of adjoined modifiers allow for the same kinds of positional flexibility as we have observed for degree expressions which modify AA-/PA-marked adjectival verbs.

Recall first that degree expressions which modify AA-/PA-marked verbs can be separated from the verb by the subject, as in (82).

(82) a. K'ad [hosiyoolts'į́łígíí biláàh 'át'éé=go] chidí naata'a'í
now speed.of.sound 3O.beyond 3S.be.IMPF=GO airplane
dadilwo'.
3plS.fast.AA
'There are now airplanes that are faster than the speed of sound.'

Likewise, locative phrases which optionally modify eventive verbs can either directly precede the verb ((83a)) or they can be separated from the verb by the subject ((83b)). The examples in (83) are from discussion of this issue by Faltz (2000). As indicated by the use of parentheses, the locative phrase *Kinłánídi* 'in Flagstaff' does not have to be present at all.

(83) a. Biyáázh (Kinłánídi) naalnish.
3poss.son Flagstaff.LOC 3S.work.IMPF
'His/her son works in Flagstaff.'

b. (Kinłánídi) biyáázh naalnish.
Flagstaff.LOC 3poss.son 3S.work.IMPF
'His/her son works in Flagstaff.'

(Faltz 2000: 38-39)

We also saw that degree expressions could be separated from AA-/PA-marked adjectival verbs by the negation marker *doo*, e.g. (84):

(84) Shimá 'ayóo doo nineez da.
1poss.mother very NEG 3S.tall.AA NEG
'My mother is not very tall.' (*Lit:* '...very not tall')

Likewise, a search of Young and Morgan (1987) turns up a number of examples like (85) in which *doo* intervenes between an optional locative phrase and an eventive verb.

(85) (’Ałná ’áhát’į́į=gi) doo njigháa da.
back.and.forth ArealS.move.IMPF=LOC NEG 4S.go.IMPF NEG
‘One should stay out of the heavy traffic.’
Lit: ‘One should not stand where things (vehicles) go back and forth.’
(YM 1987: d223)

The pattern for eventive verbs seems to be that adjoined modifiers are flexible in their linear position. Under my account of the syntax of AA- and PA-marked adjectival verbs, we expect the same flexibility to be exhibited by the degree expressions which modify them since these expressions will also be adjoined.

By contrast, degree expressions are merged in an argument position in the syntactic structure associated with CA-marked adjectival verbs, namely the specifier of DegP. We may find, then, that in comparison with adjoined modifiers to AA- and PA-marked adjectival verbs, degree expressions with CA-marked adjectival verbs exhibit less positional flexibility. This is borne out. We find that degree expressions (e.g. the equative phrase in (86)) can only be adjacent to the CA-marked verb.

(86) a. Shideezhí [shimá=gi] ’áníłnéézh.
1poss.little.sister 1poss.mother.LOC 3S.tall.CA
‘My little sister is as tall as my mother.’

b. *[Shimá=gi] shideezhí ’áníłnéézh.
1poss.mother.LOC 1poss.little.sister 3S.tall.CA
(*Intended:* ‘My little sister is as tall as my mother.’

The data in (86) lead to another question, however. If the degree expression and subject were pronounced in the order in which they were merged into the struc-

ture of a CA-marked adjectival verb, we would expect the subject to occur closer to the verb word than the degree expression. As shown by (86b), this is not possible. One possibility is that subjects (and other nominal expressions) move leftward after merging with the verb. More must be said, however, about the motivation for this movement.[23]

5.6.3 Towards an explanation of syntactic differences in degree expressions

I turn now to the third contrast correlated with the morphological shape of the adjectival verb, repeated below:

(87) a. Degree expressions occur in their 'bare' form when they modify CA-marked adjectival verbs.

b. Degree expressions (with one exception) never occur in the 'bare' form when they modify AA-/PA-marked adjectival verbs.

Specifically, I will discuss how the proposal for adjectival syntax helps us to address the following questions. First, why can 'bare' degree expressions be used with CA-marked adjectival verbs ((88a)) but not — except *'ayóo* — with AA-/PA-marked adjectival verbs ((88b))?

(88) a. Shimá [shilááh] 'áníłnéézˌ

1poss.mother 1O.beyond 3S.tall.CA
'My mother is taller than me.

[23]One possibility is that, as Willie (1989), Willie and Jelinek 2000, and Hale (2003) argue, verb-external nominal expressions but instead are adjoined. The verb's nominal argument positions are filled by pronominal prefixes on the verb which are coindexed with the adjoined expressions. Thus, degree expressions would be the only verb-external expressions which are actually arguments: recall from section 5.5.4 that degree expressions do not correspond to any pronominal prefixes on the verb so it is not possible to analyze verb-external degree expressions as adjuncts like nominal expressions. If nominal expressions are claimed to adjoin high in the syntax, we might expect to find — as we do — that degree expressions occur closer to the verb.

b. *Shimá [shilááh] nizhóní.

1poss.mother 1O.beyond 3S.pretty.AA
(*Intended:* 'My mother is prettier than I am.')

Second, why can degree expressions which include a copula (*'át'é*) and subordinator (=*go*) be used with AA-/PA-marked adjectival verbs ((89a)) but not with CA-marked adjectival verbs ((89b))?

(89) a. Shimá [shilááh 'át'éę=go] nizhóní.

1poss.mother 1O.beyond 3S.be.IMPF=GO 3S.pretty.AA
'My mother is prettier than I am.'

b. *Shimá [shideezhí yilááh 'át'éę=go] 'áníłnéézˮ.

1poss.mother 1poss.little.sister 3O.beyond 3S.be.IMPF=GO 3S.tall.CA
(*Intended:* 'My mother is taller than my little sister.')

I begin by asking why the addition of a copula and subordinator allows a degree expression to modify an AA-/PA-marked adjectival verb. I propose that the presence of the copula and subordinator suggest that the degree expression is acting as a clause-level modifier. In section 2.2.3, we saw examples of *go*-marked clauses which are subordinate to other clauses. In the structures in (90), there are two clausal projections (CP): one is the main clause and one is marked by =*go*. The subordinate clause (bracketed) in (90a) adds temporal information while the subordinate clause (bracketed) in (90b) gives the antecedent to a conditional.

(90) a. [Shizhé'é níyáa=go] da'diidįįł.

1poss.father 3S.come.PERF=GO 1plS.eat.FUT
'When my father comes, we'll eat.'

(Schauber 1979: 224)

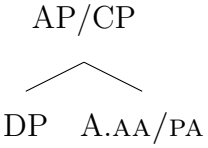
b. [Tł’ízí chǫǫh bich’į’ kójít’įį=go] hach’į’ báháchįįh.

billy.goat 3O.to 4S.do.this=GO 3S.get.mad.IMPF
‘If you do this to a billy goat, he gets mad.’

(YM 1987: d499)

I propose that *go*-marked clauses modify AA-/PA-marked adjectival verbs because the latter count as clause-level projections. To explain this idea, I return to an idea that we have already discussed several times: once a verb composes with all of its nominal arguments, it can function as a standalone clause. In the domain of adjectival verbs, this means that once an AA-/PA-marked adjectival verb has composed with a DP, the AP functions in effect as a CP:

(91)



At the point at which the degree expression adjoins to (91), it is adjoining to a clause-level projection. Examples like (90) seem to suggest that the modification of clause-level projections is accomplished — at least in the general case — by *go*-marked clauses. Thus, modification of the AP/CP in (91) requires structure to be added to the degree expression until it is the size of a *go*-marked clause.

We must still explain why the structure in (92) is ruled out:

(92) *Shimá [shideezhí yiláah ’át’ée=go] ’áníłnéézʔ.

1poss.mother 1poss.little.sister 3O.beyond 3S.be.IMPF=GO 3S.tall.CA
(*Intended:* ‘My mother is taller than my little sister.’)

We can approach the problem from a few directions. First, we can observe that at the point at which a degree expression modifies a CA-marked adjectival verb, the structure projected by the verb does not correspond to a clause: the structure is only complete — and clausal status reached — once the degree expression has merged into

the specifier of DegP. If the addition of the copula and subordinator is only needed for modification of full clausal structures, then there is no reason for the additional structure to be added to a degree expression which will modify a CA-marked adjectival verb. A second way that we might rule out (92) is to say that the specifier position of DegP can only be occupied by syntactic structures of a certain size. That is, while a postpositional phrase, measure phrase, or particle can be merged into this position in the verb's extended projection, a full subordinated clause cannot.

5.6.3.1 The exceptional case of *'ayóo*

When I discussed modification of AA-/PA-marked adjectival verbs, I noted that there was one type of 'bare' degree expression which could modify such verbs. This apparently exceptional degree expression is the intensifier particle *'ayóo*. As shown in (93), *'ayóo* has the same shape whether it modifies CA-marked adjectival verbs or ((93a)) and AA-/PA--marked adjectival verbs ((93b,c)). Sentences like (94) were never accepted by consultants.

(93) a. Shimá 'ayóo 'áníłnéézˌ.

1poss.mother very 3S.tall.CA
'My mother is very tall.'

b. Shideezhí 'ayóo nizhóní.

1poss.little.sister very 3S.pretty.AA
'My little sister is very pretty.'

c. Hoozdodi 'ayóo deesdoi.

Phoenix.LOC very 3S.hot.PA
'Phoenix is very hot.'

(94) *Shideezhí ['ayóo 'át'éego] nizhóní.

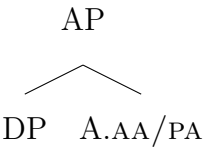
1poss.little.sister very 3S.be.IMPF=GO 3S.pretty.AA
(*Intended:* 'My little sister is very pretty.')

Given these data, I propose that the syntax of *'ayóo* itself is such it can either adjoin to the AP projected by AA- and PA-marked adjectival verbs, or it can be merged into the specifier of DegP as with CA-marked adjectival verbs. No additional syntactic structure (e.g. copula or subordinator) is necessary. We already saw evidence in the previous subsection which suggests that *'ayóo* occurs in different syntactic positions depending on the morphological shape of the adjectival verb: whereas it must be adjacent to CA-marked adjectival verbs, negation can intercede between *'ayóo* and AA-/PA-marked adjectival verbs. Syntactic representations to come below will reflect the apparent flexibility which *'ayóo* permits for its position of merger.

5.6.4 Summary

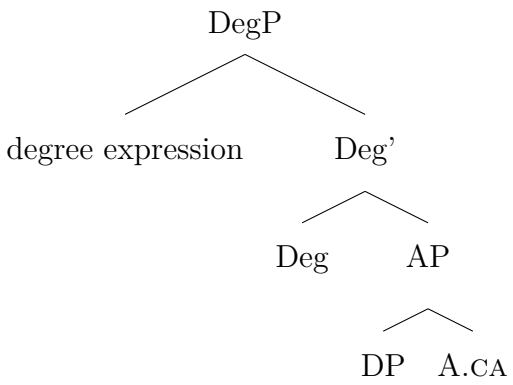
I have argued for syntactic heterogeneity in the set of Navajo adjectival verbs. The size of the structure projected depends on the morphological shape of the adjectival verb. Adjectival verbs which bear AA or PA morphology project only the structure shown in (95). This structure has a position for one argument, a DP, which is realized as the subject of the adjectival verb.

(95)



By contrast, CA-marked adjectival verbs project an extended functional projection, DegP, as shown in (96). The AP contained within DegP still has a position for one argument, a DP. A second argument — a degree expression — is merged into the specifier position of DegP.

(96)



I related the DegP structure projected by CA-marked adjectival verbs to the vP structure which is projected by transitivized eventive verbs in accounts by Hale and Platero (1996) and Hale (2000, 2001). The structure in (96) also has precedent in theoretical proposals for adjectival expressions by Abney (1997), Corver (1990, 1997), Grimshaw (1991), and Kennedy (1997, 1999). In contrast with previous proposals, however, I argue that the DegP functional projection is not available for all adjectival expressions in Navajo. The syntactic heterogeneity which I propose to exist among the set of adjectival verbs in Navajo helps us to explain differences in the syntax of degree constructions which are correlated with the verb's morphological shape.

5.7 The semantic composition of degree constructions

In this section, I present a compositional semantics for a selection of degree constructions containing CA- and AA-/PA-marked adjectival verbs. I first propose that while adjectival verbs are syntactically heterogeneous, they are semantically homogeneous: that is, all adjectival verbs in Navajo denote relations between individuals and degrees. I then consider how this view of adjectival meaning interacts with the syntactic picture I began to develop above. I argue that while degree expressions saturate or quantify over degree arguments of CA-marked adjectival verbs, the 'completeness' of the syntax of AA-/PA-marked adjectival verbs leads to a more complicated process of composition with degree expressions. To preview, I will say that the adjectival verb's

degree argument is existentially closed prior to composition with a degree expression. However, the process of existential closure introduces a domain variable which can be manipulated by degre expressions, following proposals by Schwarzschild (2010, 2014).

5.7.1 Background on adjectival meaning

I take as my starting point the points in (97) which come from the semantic literature on adjectival meaning crosslinguistically.

(97) a. Adjectival expressions can be analyzed as a relation between a degree and an individual. (I.e. degrees are part of the assumed semantic ontology).

b. The degree argument of an adjectival expression is either saturated or quantified over when used in a degree construction.

Both of these assumptions are standard through much of the literature on adjectival expressions and gradability (Cresswell 1976; von Stechow 1984; Heim 1985, 2001; Rullmann 1995; Kennedy 1997, 1999, 2007b; Hackl 2000; Kennedy and McNally 2005; Bhatt and Takahashi 2011; and many others).[24] Adjectival expressions have denotations like (98). The adjective first takes a degree d as argument and then an entity x. The entity x is argument to a measure phrase (e.g. *height*) which forms part of the adjective's meaning. The measure phrase is a function of type ⟨e,d⟩ which takes x as argument and returns x's degree of 'height.' The function in (98) will only return true if x's degree of 'height' exceeds the degree d. .

[24]Alternative views do exist, of course. Schwarzschild and Wilkinson (2002) argue that adjectives denote relations with intervals rather than single degrees as I assume. Another type of account which also accepts degrees as part of the semantic ontology is represeted by Bartsch and Vennemann (1972) and Kennedy (1997, 1999, 2007b), who propose that adjectival expressions denote measure functions (type ⟨e,d⟩) which take an individual as argument and return a degree along some scale.

There are also a number of accounts which do not appeal to degrees at all. Authors who develop this view include Kamp (1975), Klein (1980), van Rooij (2011), and Burnett (2014). Under such accounts, an adjectival expression denotes a set of individuals (type ⟨e,t⟩). Membership within the set is determined relative to a contextual standard of comparison. In the interest of space and focus, I do not consider here how the Navajo data could be imported into accounts of these shapes.

(98) $[\![\textit{tall}]\!] = \lambda \text{d}.\lambda \text{x}.\textsc{height}(\text{x}) \geq \text{d}$

In accounts of this shape, the degree argument d can be directly saturated by a degree-denoting expressing like a measure phrase. The outcome of composition of *tall*, an entity, and a measure phrase is shown in (99):

(99) $[\![\textit{Alice is 6' tall}]\!] = [\lambda \text{d}.\lambda \text{x}.\textsc{height}(\text{x}) \geq \text{d}](6')(\text{Alice})$

According to the truth conditions in (99), *Alice is 6' tall* is true just in case the degree to which Alice is tall is at least as great as the degree which is denoted by the measure phrase *6'*.

In addition, an adjective's degree argument can be quantified over by a comparative morpheme such as *more/-er*. For an overview of the syntax and semantics of comparative constructions with quantificational comparative morphemes, see Beck (2011). We will see examples of quantificational comparative expressions when we return to Navajo degree constructions below.

5.7.2 The semantic type of adjectival verbs in Navajo

With this background in place, we can return to Navajo. Regardless of whether they bear CA, AA, or PA morphology, I give all Navajo adjectival verbs the denotation in (100).[25] As before, I take degrees to be part of the semantic ontology. An adjectival verb denotes a function which takes as its first argument an entity x. The entity x is argument to the measure function A, which relates x to a degree along a scale

[25]The reader will note that the order of the individual and degree arguments is reversed relative to the more familar type ⟨d,et⟩entry seen for English adjectives in the previous subsection. Precedent in the literature for type ⟨e,dt⟩ adjectival expressions comes from von Stechow (2009) and Sassoon (2013). The denotation in (99) seems well-suited to Navajo adjectival verbs since it reflects the relative height of subject and degree expression positions in the syntax. In the case of AA-/PA-marked adjectival verbs, only the smaller syntactic structure (AP) is projected: the syntactic structure projected by the verb does not include a position for a degree expression. Given that degree arguments are only syntactically realized under special morphological circumstances, it seems reasonable to say that the individual argument is the more internal of an adjectival verb's two semantic arguments. This is an innocent move, however: we could go back to more familiar ⟨d,et⟩ entries.

appropriate to the adjectival expression. Application of the adjectival verb to an entity x returns a set of degrees. The degree returned by the measure function is greater than or equal to all degrees in the set.

(100) $[\![\text{A.CA/AA/PA}]\!] = \lambda x.\lambda d.\text{A}(x) \geq d$

I give in (101) the (identical) denotations of CA- and AA-marked adjectival verbs *'áníłnéézz* and *nineez*:

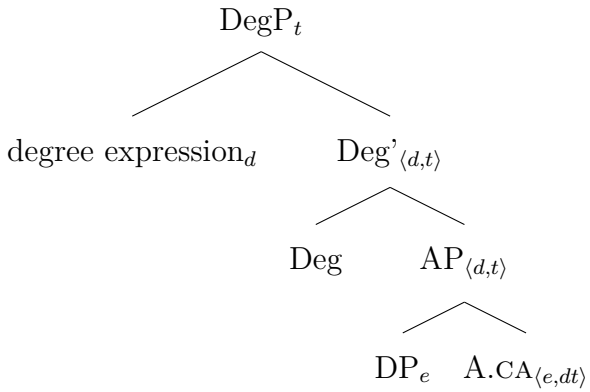
(101) a. $[\![\text{'áníłnéézz.}_{CA}]\!] = \lambda x.\lambda d.\text{HEIGHT}(x) \geq d$

b. $[\![\text{nineez.}_{AA}]\!] = \lambda x.\lambda d.\text{HEIGHT}(x) \geq d$

5.7.3 The semantic lightness of the Deg head

If all adjectival verbs are already type ⟨e,dt⟩ expressions regardless of their morphological form, this means that the Deg head present in the structure associated only with CA-marked adjectival verbs must not alter the type of the expression that it composes with. To see why, I repeat the DegP structure in (102) with semantic types added.

(102)



As will be discussed at more length below, the Deg' is a type ⟨d,t⟩ expression. Having the Deg' determine an expression of this type means that the specifier position can contain either a degree-denoting measure phrase or a quantificational degree expression (e.g. comparative postpositional phrase *y-lááh* 'beyond y'). However, the

AP projection is already of type ⟨d,t⟩. As such, the Deg head itself must either be 'invisible' to the semantics or it must denote an identity function on type ⟨d,t⟩ expressions as in (103a). In (103b), I show composition between Deg and an AP structure [$_{AP}$ **shimá 'áníłnéézˇ**] to illustrate the identity of Deg' and AP.

(103) a. $[\![\text{Deg}]\!] = \lambda \text{D}_{\langle d,t \rangle}.\lambda \text{d}_d.\text{D(d)}$

b. $[\![\text{Deg'}]\!] = [\![\text{Deg}]\!]([\![\text{AP}]\!])$

$=[\lambda \text{D}_{\langle d,t \rangle}.\lambda \text{d}_d.\text{D(d)}](\lambda \text{d.}\textsc{height}(\text{my mother}) \geq \text{d})$

$= \lambda \text{d}_d.[\lambda \text{d.}\textsc{height}(\text{my mother}) \geq \text{d}](\text{d})$

$= \lambda \text{d.}\textsc{height}(\text{my mother}) \geq \text{d}$

Regardless of whether we treat Deg as somehow semantically invisible or as an identity function, the same point is made: Deg is present to project syntactic structure but does not alter in any way the denotation of its complement. As a result, Deg makes no contribution specific to any degree construction in particular. That is, there is nothing in the denotation of Deg which is particular to, e.g., a comparison of superiority or an equative construction. All meaning which relates to particular degree constructions comes from the semantics of the degree expression. For instance, as we will see in later examples of composition of degree constructions, we will see that the postposition *-lá́áh* used in comparisons of superiority determines that the ordering relation involved is one of 'greater than.'

There is precedent in the semantic literature for lightening morphology which marks the adjectival expression itself. In their analysis of English comparative constructions, Alrenga, Kennedy, and Merchant (2012) depart from previous proposals by claiming that both English *more/-er* and English *than* contribute to the semantics of comparison of superiority. In earlier proposals, *more/-er* does all of the semantic work relating to the determination of the ordering relation. Much as I have done for the Navajo Deg head, Alrenga et al. claim that English *more* takes as argument a

function of a particular type and returns another function of the same semantic type. Under their approach, *than* determines a 'greater than' ordering between two sets of degrees.

There are differences between my account of Navajo and Alrenga et al.'s account of English, however. Whereas I have defined the Navajo Deg head as a pure identity function, Alrenga et al. assign more semantic content to *more/-er*. Like *than* under their account, *more/-er* introduces a 'greater than' ordering between the maximal degree in the denotation of the adjective and a second degree which can optionally be filled in by context in sentences such as *This rod is longer*.

In summary, we can think of English (under its standard, pre-Alrenga et al. view) and Navajo (under my view) as the two ends of a typological scale relating to degree constructions. On one end is the standard view of English in which *more/-er* does all work to determine the semantics of the degree construction and *than* serves a syntactic function. On the other end of the scale is my view of Navajo, in which all semantic work related to a particular degree construction is accomplished by the morpheme which marks the standard of comparison (e.g. *-lǫ́ǫ́h*) and the Deg head only serves a syntactic function. In the middle is Alrenga et al.'s view of English, in which both degree morpheme *more/-er* and the standard marker *than* do crucial semantic work.

5.7.4 Degree constructions with CA-marked adjectival verbs

This subsection gives three illustrations of composition between CA-marked adjectival verbs and degree expressions. I present the measure phrase construction, the comparison of superiority construction, and the intensifier construction.

5.7.4.1 Measure phrase construction

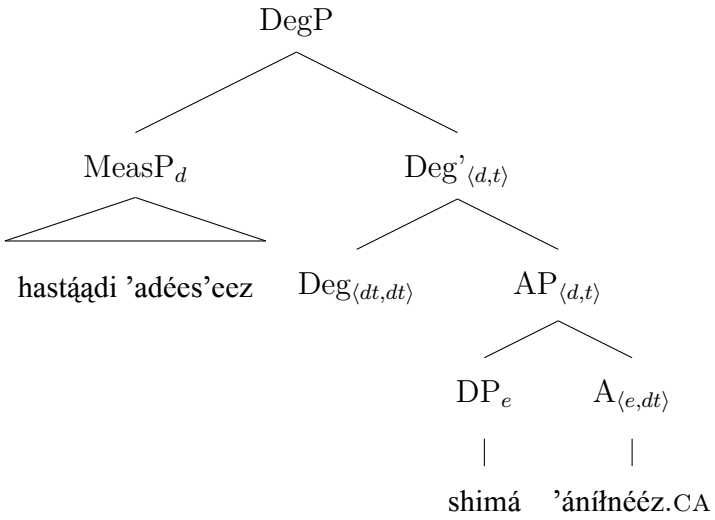
The simplest case to illustrate degree constructions with CA-marked adjectival verbs is the measure phrase construction, which I repeat in (104).

(104) **Shimá** **hastą́ądi 'adées'eez 'áníłnéézˊ.**

1poss.mother six feet 3S.tall.CA
'My mother is six feet tall.'

As before, the CA-marked adjectival verb *'áníłnéézˊ* has an extended DegP projection around the AP layer. Given a type ⟨e,dt⟩ denotation for an adjectival verb — and the assumption that measure phrases denote degrees — the subject and degree expression saturate the verb in the order in which they are merged into the syntactic structure.

(105)



(106) a. $[\![\text{A}]\!] = \lambda\text{x}.\lambda\text{d}.\textsc{height}(\text{x}) \geq \text{d}$

b. $[\![\text{AP}]\!] = [\![\text{Deg'}]\!] = \lambda\text{d}.\textsc{height}(\text{my mother}) \geq \text{d}$

c. $[\![\text{Deg'}]\!] = [\![\text{Deg}]\!]([\![\text{AP}]\!])$

$[\lambda\text{D}_{\langle d,t\rangle}.\lambda\text{d}_d.\text{D(d)}](\lambda\text{d}.\textsc{height}(\text{my mother}) \geq \text{d})$

$= \lambda\text{d}_d.[\lambda\text{d}.\textsc{height}(\text{my mother}) \geq \text{d}](\text{d})$

$= \lambda\text{d}.\textsc{height}(\text{my mother}) \geq \text{d}$

d. ⟦DegP⟧ = ⟦Deg'⟧(⟦MeasP⟧)

= [λd.HEIGHT(my mother) ≥ d](6-feet)

True just in case the degree which my mother is tall is at least as great as the degree which is denoted by the measure phrase *6'*.

5.7.4.2 Comparison of superiority construction

I now turn to the composition of the comparison of superiority construction. We can investigate the composition of this construction either through the lens of the seemingly simpler construction in (107a) or the more complex subcomparative construction in (107b). I first give the subcomparative construction.

(107) a. Shimá [shideezhí yiláàh] 'áníłnéézˊ.

1poss.mother 1poss.little.sister 3O.beyond 3S.tall.CA

'My mother is taller than my little sister.'

b. Díí naaltsoos ['eii naaltsoos 'áníłtéél=ígíí yiláàh] 'áníłnéézˊ.

this book that book 3S.wide.CA=IGII 3O.beyond 3S.long.CA

'This book is longer than that book is wide.'

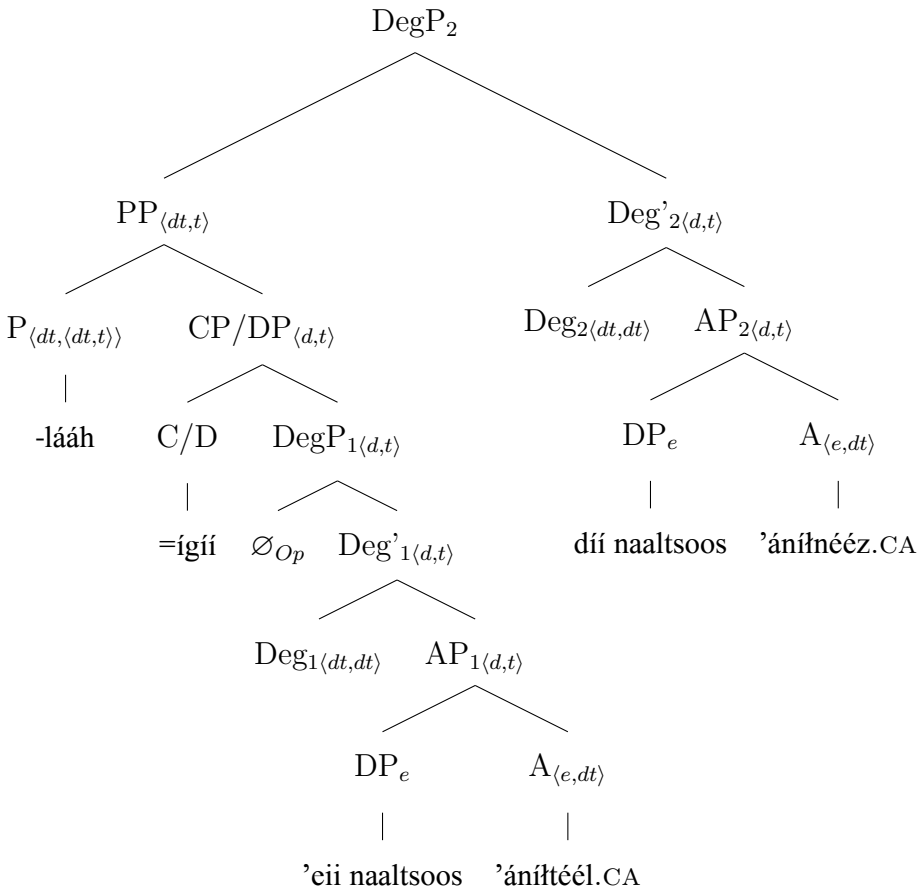
As we discussed in section 5.6.1, the embedded DegP in a subcomparative construction is marked by the clausal subordinator *=ígíí*. As shown in the tree in (108), I do not commit to a particular syntactic category (DP vs. CP) for the clause marked by *=ígíí*; the choice between the options shown is not important for us. Furthermore, I treat *=ígíí* as semantically vacuous such that the meaning of the DegP is passed on to the CP/DP.[26]

In addition, as first discussed in section 5.6.1, the Navajo subcomparative raises the question of what degree expression occurs with the embedded CA-marked adjectival verb: as (107b) shows, this position is not occupied by overt material. I proposed that

[26]I assume that once the postposition has composed with its complement — whether CP or DP — the attested object marker *yi-* appears.

this position is occupied by a covert degree expression, $\varnothing_{Op}$. Theoretical precedent for locating a covert degree expression in the embedded clause of a subcomparative comes from authors including Bresnan (1973), Chomsky (1977), von Stechow (1984), Kennedy and Merchant (2000), and Lechner (2004). We can think of $\varnothing_{Op}$ as a syntactic placeholder: it is semantically vacuous such that the DegP remains an expression of ⟨d,t⟩.[27]

(108)



I give the Navajo comparative postposition *-lááh* the denotation which authors including Seuren (1973) and Schwarzschild (2008) give for English *more/-er*.

(109) $[\![\textit{-lááh}]\!] = \lambda D_{dt} \lambda D'_{dt} \exists d.D'(d) \;\&\; \neg D(d)$

[27]Precedent for a semantically vacuous operator which maintains a property-type expression comes from Bhatt (1999: 31) who uses this strategy in his 'Direct Predication' model of reduced relatives.

The composition of the structure in (108) is shown in (110).

(110) a. $[\![\text{Deg'}_2]\!] = [\![\text{Deg}_2]\!]([\![\text{AP}_2]\!])$

$= [\lambda \text{D}_{\langle d,t\rangle}.\lambda \text{d}_d.\text{D(d)}](\lambda \text{d.}\textsc{length}(\text{this book}) \geq \text{d})$

$= \lambda \text{d.}\textsc{length}(\text{this book}) \geq \text{d}$

b. $[\![\text{Deg'}_1]\!] = [\![\text{Deg}_1]\!]([\![\text{AP}_1]\!])$

$= [\lambda \text{D}_{\langle d,t\rangle}.\lambda \text{d}_d.\text{D(d)}](\lambda \text{d.}\textsc{width}(\text{that book}) \geq \text{d})$

$= \lambda \text{d.}\textsc{width}(\text{that book}) \geq \text{d}$

c. $[\![\text{CP/DP}]\!] = [\![\text{DegP}_1]\!] = [\![\text{Deg'}_1]\!]$

$= \lambda \text{d.}\textsc{width}(\text{that book}) \geq \text{d}$

d. $[\![\text{PP}]\!] = [\![\textit{-lááh}]\!]([\![\text{CP/DP}]\!])$

$= [\lambda \text{D}_{dt} \lambda \text{D'}_{dt} \exists \text{d.D'(d)} \,\&\, \neg \text{D(d)}](\lambda \text{d.}\textsc{width}(\text{that book}) \geq \text{d})$

$= \lambda \text{D'}_{dt} \exists \text{d.D'(d)} \,\&\, \neg[\textsc{width}(\text{that book}) \geq \text{d}]$

e. $[\![\text{DegP}_2]\!] = [\![\text{PP}]\!]([\![\text{Deg}_2]\!])$

$= [\lambda \text{D'}_{dt} \exists \text{d.D'(d)} \,\&\, \neg[\textsc{width}(\text{that book}) \geq \text{d}]]$

$(\lambda \text{d.}\textsc{length}(\text{this book}) \geq \text{d})$

$= \exists \text{d.}\textsc{length}(\text{this book}) \geq \text{d} \,\&\, \neg[\textsc{width}(\text{that book}) \geq \text{d}]$

True just in case there exists a degree d which is:

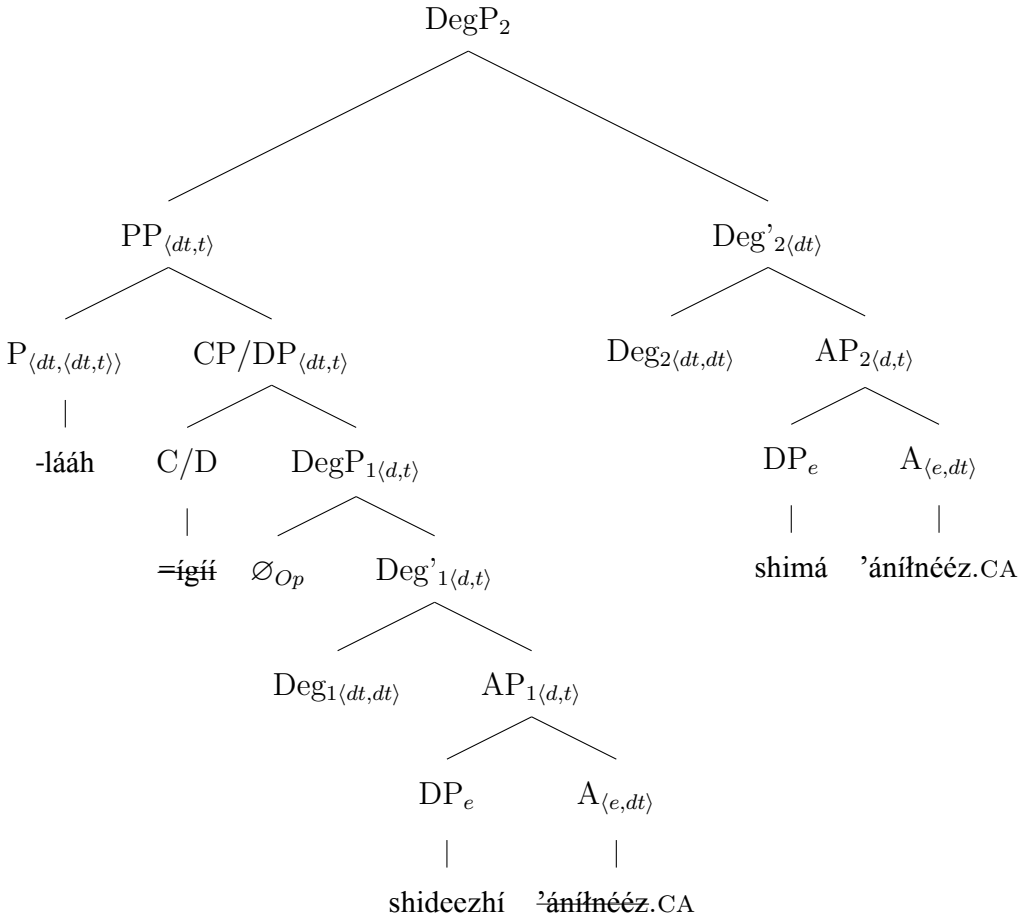
(i) In the set of degrees corresponding to this book's length, and

(ii) Not in the set of degrees corresponding to that book's width.

I now turn to the comparison of superiority construction in (107a). In contrast with the subcomparative construction, the degree expression in (107a) does not contain an overt instance of a CA-marked adjectival verb. However, I will take an adjectival verb to be covertly present: doing so will allow us to keep a constant semantic entry for the comparative postposition *-lááh* in both (107a) and (107b). In addi-

tion, there is a long tradition of positing unpronounced structure in comparisons of superiority. For discussion of crosslinguistic clausal comparative constructions — and alternatives to this view — see Bresnan (1973), Heim (1985), Kennedy (1997), Lechner (2003), and Bhatt and Takahashi (2011).

(111)



Composition of the structure in (111) proceeds in the same fashion as the sub-comparative did, yielding the truth conditions as shown.

(112) a. $[\![\text{Deg'}_2]\!] = [\![\text{Deg}_2]\!]([\![\text{AP}_2]\!])$

$= [\lambda \text{D}_{\langle d,t\rangle}.\lambda \text{d}_d.\text{D(d)}](\lambda \text{d.}\textsc{height}(\text{my mother}) \geq \text{d})$

$= \lambda \text{d.}\textsc{height}(\text{my mother}) \geq \text{d}$

b. $[\![\text{Deg'}_1]\!] = [\![\text{Deg}_1]\!]([\![\text{AP}_1]\!])$

$= [\lambda \text{D}_{\langle d,t\rangle}.\lambda \text{d}_d.\text{D(d)}](\lambda \text{d.HEIGHT(my sister)} \geq \text{d})$

$= \lambda \text{d.HEIGHT(my sister)} \geq \text{d}$

c. $[\![\text{CP/DP}]\!] = [\![\text{DegP}_1]\!] = [\![\text{Deg'}_1]\!]$

$= \lambda \text{d.HEIGHT(my sister)} \geq \text{d}$

d. $[\![\text{PP}]\!] = [\![\textit{-lááh}]\!]([\![\text{CP/DP}]\!])$

$= [\lambda \text{D}_{dt} \lambda \text{D'}_{dt} \exists \text{d.D'(d)} \ \& \ \neg \text{D(d)}](\lambda \text{d.HEIGHT(my sister)} \geq \text{d})$

$= \lambda \text{D'}_{dt} \exists \text{d.D'(d)} \ \& \ \neg[\text{HEIGHT(my sister)} \geq \text{d}]$

e. $[\![\text{DegP}_2]\!] = [\![\text{PP}]\!]([\![\text{Deg}_2]\!])$

$= [\lambda \text{D'}_{dt} \exists \text{d.D'(d)} \ \& \ \neg[\text{HEIGHT(my sister)} \geq \text{d}]]$

$(\lambda \text{d.HEIGHT(my mother)} \geq \text{d})$

$= \exists \text{d.HEIGHT(my mother)} \geq \text{d} \ \& \ \neg[\text{HEIGHT(my sister)} \geq \text{d}]$

True just in case there exists a degree d which is:

(i) In the set of degrees corresponding to my mother's height, and

(ii) Not in the set of degrees corresponding to my sister's height.

5.7.4.3 Intensifier construction

Finally, I turn to the composition of the intensifier *'ayóo* with CA-marked adjectival verbs:

(113) **Shimá 'ayóo 'áníłnéézˊ.**

1poss.mother very 3S.tall.CA

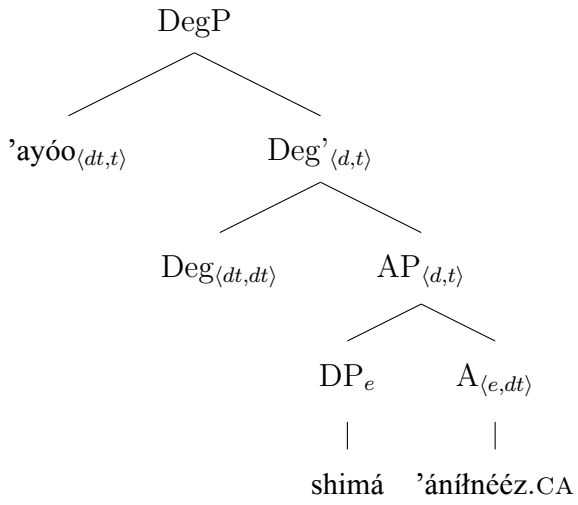
'My mother is very tall.'

I define *'ayóo* as the type $\langle dt, t\rangle$ function in (114). The relation >! compares two degrees — here, d and the contextual standard of comparison STND^c — and requires the first to significantly exceed the second.[28]

(114) $[\![\textit{'ayóo}]\!]^c = \lambda \text{D}_{dt}.\exists \text{d}.\text{D}(\text{d})\ \&\ \text{d} >!\ \text{STND}^c$

The particle *'ayóo* merges into the specifier position of DegP. Like other occupants of the specifier position, *'ayóo* takes as argument an adjectival verb that has already composed with an individual argument and quantifies over the adjectival verb's degree argument.

(115)



(116) a. $[\![\text{AP}]\!] = [\![\text{A}]\!]([\![\text{DP}]\!])$

$= \lambda \text{d}.\text{HEIGHT}(\text{my mother}) \geq \text{d}$

b. $[\![\text{Deg'}]\!] = [\![\text{Deg}]\!]([\![\text{AP}]\!])$

$= [\lambda \text{D}_{\langle d,t\rangle}.\lambda \text{d}_d.\text{D}(\text{d})](\lambda \text{d}.\text{HEIGHT}(\text{my mother}) \geq \text{d})$

$= \lambda \text{d}.\text{HEIGHT}(\text{my mother}) \geq \text{d}$

---

[28] This is a simple denotation for the intensifier *'ayóo*. The relation >! comes from Fara's (2000) discussion of the POS morpheme. For a model of a potentially more satisfactory semantics for intensifiers which involves recursive application of the STND function, see see Kennedy and McNally (2005: 369).

c. $[\![\text{DegP}]\!] = [\![\textit{'ayóo}]\!]([\![\text{Deg'}]\!])$

$= [\lambda D_{dt}.\exists d.D(d)\ \&\ d >!\ \text{STND}^c](\lambda d.\text{HEIGHT}(\text{my mother}) \geq d)$

$= \exists d.\text{HEIGHT}(\text{my mother}) \geq d\ \&\ d >!\ \text{STND}^c$

True just in case there exists a degree d which:

(i) Is in the set of degrees corresponding to my mother's height and

(ii) Significantly exceeds the contextual standard of comparison for height.

5.7.5 Degree constructions with AA-/PA-marked adjectival verbs

In this subsection, I take up the semantic analysis of degree constructions which contain AA-/PA-marked adjectival verbs. I begin by considering the semantics of AA- and PA-marked adjectival verbs when they occur in degree constructions. The account that I develop is based on Schwarzschild's (2010, 2014) proposals. I then illustrate the account with the derivation of a comparison superiority construction, the intensifier construction, and the positive construction.

5.7.5.1 Syntactic vs. semantic completeness

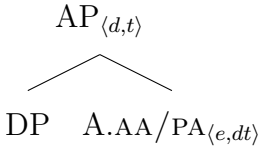
In the case of CA-marked adjectival verbs, all semantic arguments of the verb were arguments within the phrasal projections (AP, DegP) associated with the verb. This made the account of CA-marked adjectival verbs extremely similar to standard views of adjectival expressions in English. As Heim (2001) writes of adjectival expressions in English:

> "The whole [degree construction] is hierarchically structured and compositionally interpreted just like an ordinary transitive sentence. The adjective's degree argument appears to be syntactically projected, just like the individual argument, and interpreted in an analogous fashion."
>
> (Heim 2001: 214)

This is not the case for AA- and PA-marked adjectival verbs. I maintain a type ⟨e,dt⟩ denotation for such adjectival verbs ((117a)) but assign to them a syntactic structure which is complete after the merger of the subject ((117b)). Thus, at the AP level, an adjectival verb is syntactically complete but semantically incomplete: its degree argument has not yet been bound.

(117) a. $[\![\text{A.AA/PA}]\!] = \lambda x.\lambda d.\text{A}(x) \geq d$

b.



However, we also saw that unlike CA-marked adjectival verbs, AA-/PA-marked adjectival verbs are well-formed expressions in isolation:

(118) Shimá nizhóní.

1poss.mother 3S.pretty.AA
'My mother is pretty.'

The completeness of verbs in isolation is taken up by Faltz (2000), who argues that if we take seriously the ability of verbs in isolation to behave like complete clauses as in, e.g., (119), this implies that verbs like *sits'il* do not denote unsaturated predicates by the time we reach the maximal phrasal projection associated with the verb.

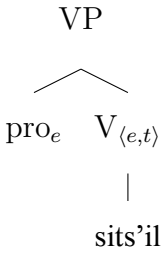
(119) Sits'il.

3S.shatter.PERF
'It shattered.'

In the case of *sits'il*, semantic completeness follows from syntactic completeness. As argued in section 5.5.1, the maximal phrasal projection associated with intransitive verbs like *sits'il* is VP. The VP structure only has room for one DP. After the DP has merged to yield the complete VP structure, semantic completeness also obtains:

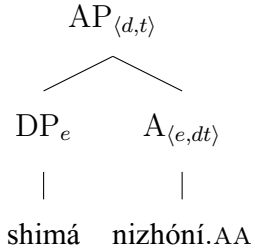
the single entity argument of the verb has been saturated. As Faltz says is necessary, semantic completeness coincides with syntactic completeness at the VP level.

(120)



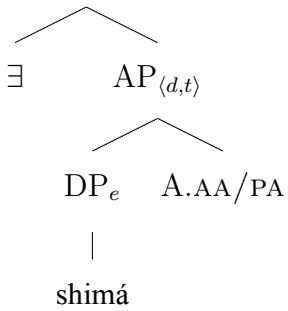
Faltz (2000) does not consider non-nominal arguments, but I propose to extend his idea to degree arguments. The maximal phrasal projection associated with an AA-/PA-marked adjectival verb is AP. The AP determines a function of type ⟨d,t⟩ but we have reached syntactic completeness.

(121)



I propose that in such cases where syntactic and semantic completeness do not automatically coincide, a type-shifting mechanism applies to 'wrap up' the verb's leftover semantic arguments. In the case of AA-/PA-marked adjectival verbs, this means that the degree argument must be 'wrapped up.' A good candidate for an appropriate type-shifting mechanism is Existential Closure (Kamp 1981, Heim 1982, Diesing 1992). I assume that the application of type-shifting mechanisms is not syntactically restricted and, as such, CLOSE can apply to AP. After application of Existential Closure, we obtain a linguistic object which is both syntactically and semantically complete:

(122)



⟦ (118) ⟧ = ∃d.BEAUTY(my mother) ≥ d

But this cannot be the whole story. Once Existential Closure has applied in (122), the AP determines a semantic object of type t. We incorrectly predict that AA-/PA-marked adjectival verbs cannot be modified by degree expressions: there are no variables in (122) which can still be manipulated by a degree expression. The puzzle, then, is how to balance the demands of completeness at the AP level with the empirical observation that even semantically 'complete' adjectival verbs can still somehow participate in degree constructions.

5.7.5.2 Degree constructions via domain restriction

The solution that I pursue builds directly on proposals which Schwarzschild (2010, 2014) makes for Navajo as well as Hebrew. Before turning to my variation, I introduce Schwarzschild's approach in broad strokes. For CA-marked adjecival verbs, Schwarzschild maintains an account of the shape explored above: degree expressions which occur with CA-marked adjectival verbs manipulate (saturate or quantify over) the verb's degree argument. (123) gives a paraphrase which represents this state of affairs.

(123) Comparison of superiority with CA-marked adjectival verb:

There exists a degree d to which x is A and y is not A to d.

Beginning with empirical observations reported by Bogal-Allbritten (2008), Schwarzschild argues that the modifiers of AA- and PA-marked adjectival verbs are adverbs. Schwarzschild further argues that adverbial modification of Navajo adjectival verbs

can be modeled in terms of domain restriction (von Fintel 1994). That is, adverbial degree expressions which compose with AA-/PA-marked adjectival verbs (e.g. *-lááh 'át'éego*) are of a different semantic type than degree expressions which compose with CA-marked adjectival verbs (e.g. *-lááh*). Schwarzschild proposes that degree expressions which occur with AA-/PA-marked adjectival verbs introduce and manipulate a set of degrees D. The paraphrase in (124) is simplified from Schwarzschild's original proposal but is intended to represent his idea in broad strokes.

(124) Comparison of superiority with AA-/PA-marked adjectival verb:

> There exists a domain of degrees D. For all degrees d in domain D, x is A to d. There exists a degree in D to which y is not A.

The net outcome of both kinds of degree expressions is the same: in both (123) and (124), there is a degree to which x is A but y is not. However in (123), we come by this meaning by quantifying over the degree d to which x is A. In (124), we come by this meaning by making a statement about a set of degrees D: this set is such that all are degrees to which x is A; y is A to a degree not included in this set. At no point does the degree expression directly interact with the degree to which x is A. For the details of Schwarzschild's proposal, see Schwarzschild (2010, 2011) and his application of the proposal for Hebrew data in Schwarzschild 2014.

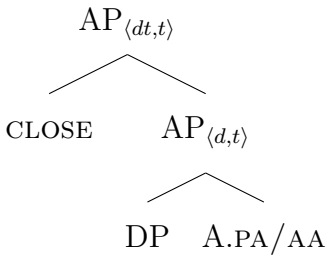
I remain faithful to the core of Schwarzschild's proposal: AA- and PA-marked adjectival verbs participate in degree constructions via domain restriction. However, I will integrate this key insight into the claims that I make about Navajo adjectival syntax and the interaction between syntactic and semantic completeness. I propose the following operation on AP structures which contain AA- and PA-marked adjectival verbs:

(125) $[\![\text{CLOSE}]\!] = \lambda A_{dt}.\lambda D_{dt}.\forall d.D(d) \rightarrow A(d)$

For all degrees d, if d is in the domain of D (the set of degrees that holds of the overt standard of comparison), then d is also in the set of degrees that holds of the adjective applied to the subject.

The operation CLOSE applies at the top of AP just like a simple Existential Closure operator:

(126)



Unlike $\exists$ alone, however, CLOSE accomplishes two things. First, it meets Faltz's requirement: at the point at which AP is syntactically complete, all of the verb's original semantic arguments have also been closed. Second, it introduces a new variable, a domain of degrees. The composition of CLOSE and the AP returns an expression of type ⟨dt,t⟩. (127) gives the denotation for the AP in (118).

(127) $[\![\text{ CLOSE AP }]\!] = \lambda D_{dt}.\forall d.D(d) \rightarrow \text{BEAUTY}(\text{my mother}) \geq d$

Domain of degrees D such that for all degrees d, if d is in D then my mother is pretty to d.

The domain of degrees D will be restricted and then existentially closed in the course of the derivation. I will illustrate several ways in which this can occur in subsections below.

One outcome of the modification I propose to Schwarzschild's account is that all degree expressions maintain a constant semantics. That is, there is no semantic

difference between *-lááh* vs. *-lááh 'át'éego*.[29] However, the manner of composition between adjectival verbs and degree expressions will differ depending on whether or not CLOSE has applied. A CA-marked adjectival verb is an expression of type ⟨d,t⟩ whereas at the point of composition with a degree expression, an AA-/PA-marked adjectival verb is an expression of type ⟨dt,t⟩.

One point which must be made about CLOSE is that whatever its role is in the syntax, it must be unable to satisfy the structural demands of CA-marked adjectival verbs. Several times now, we have seen that sentences like the following are not grammatical:

(128) *Sandy 'áníłnéézʔ.

Sandy 3S.tall.CA
(*Intended:* 'Sandy is tall.')

In order to rule out sentences like (128), we must say that the application of CLOSE does not satisfy the requirements of the specifier of DegP. If it did, we would incorrectly expect the grammaticality of (128).

In the following subsections, I illustrate how adjectival verbs to which CLOSE has applied participate in three degree constructions: the comparison of superiority construction, the intensifier construction, and the positive construction. I close by discussing in brief the incompatibility of measure phrases with adjectival verbs to which CLOSE has applied.

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[29] I find this move appealing since, as previously discussed, the only morphology which separates one form from the other is the addition of a copula and the subordinator *=go*. Both the copula and the subordinator are found in many places in Navajo grammar which have no relation to degree modification or domain restriction. However, as I have argued, their presence makes sense on syntactic grounds (section 5.6.3).

5.7.5.3 Comparison of superiority construction

I will first illustrate the composition of the comparison of superiority construction with AA-/PA-marked adjectival verbs as in (129):

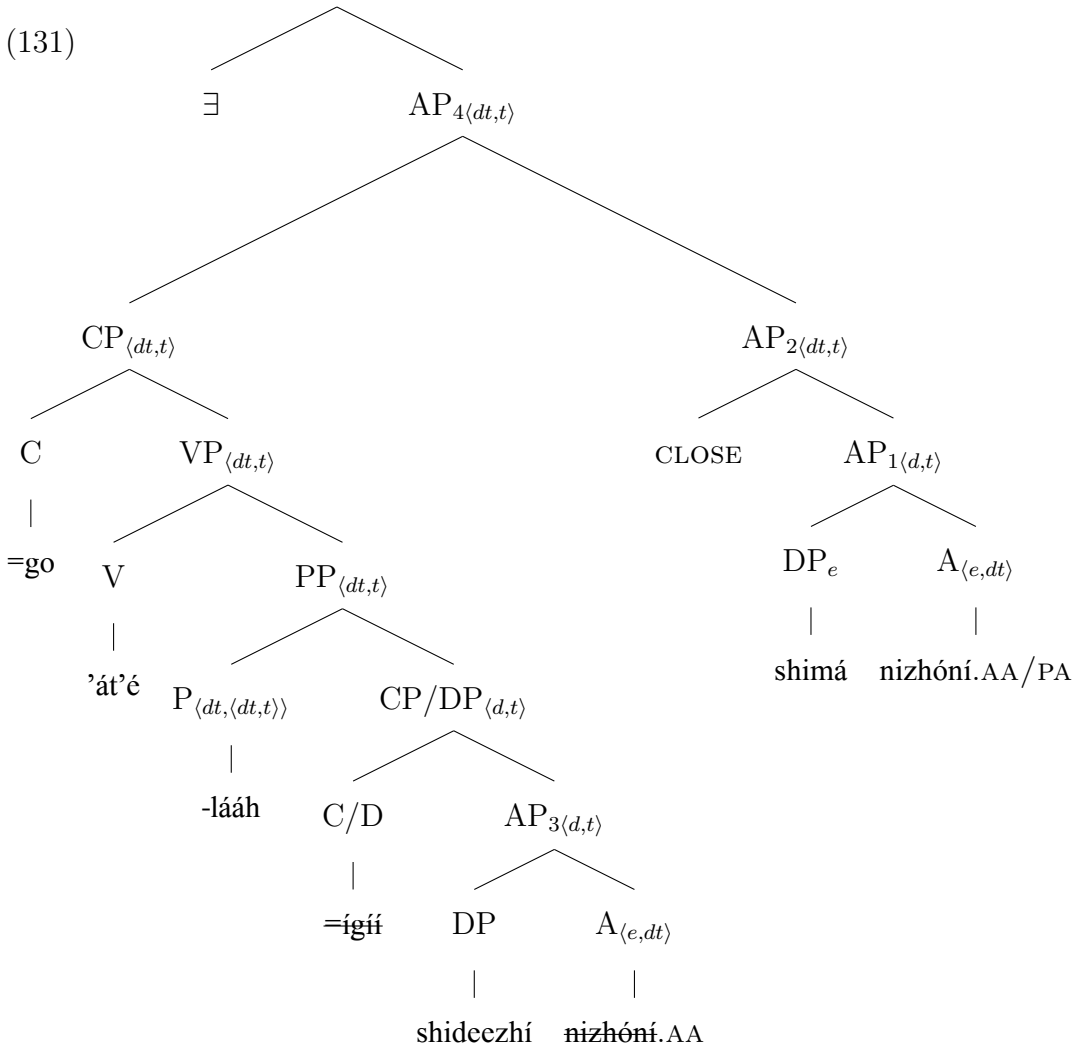
(129) Shimá [shideezhí yilááh ’át’éé=go] nizhóní.
1poss.mother 1poss.little.sister 3O.beyond 3S.be.IMPF=GO 3S.pretty.AA
‘My mother is prettier than my little sister.’

As we did for comparison of superiority constructions with CA-marked adjectival verbs, I assume that the degree expression in (129) contains an unpronounced adjectival verb identical to the verb found in the main clause. As before, this will allow us to maintain a single type for the comparative postposition ($\langle dt, \langle dt, t\rangle\rangle$). The denotation of the comparative postposition is repeated in (130). As discussed above, I take the copula and subordinator to play only a syntactic function, I treat them as semantically vacuous expressions.

(130) $[\![\textit{-lááh}]\!] = \lambda \mathrm{D}_{dt} \lambda \mathrm{D'}_{dt} \exists \mathrm{d}.\mathrm{D'}(\mathrm{d}) \;\&\; \neg \mathrm{D}(\mathrm{d})$

The tree in (131) corresponds to the sentence in (129). I have added clausal structure around the postpositional degree expression (viz. section 5.6.3). I strikeout material which is not overtly pronounced.

(131)



One point which has not yet been explained is why the embedded clause contains an AP but not CLOSE. I return to this point below. Before doing so, I give the compositional semantics for key points of the structure in (131). An important point is that the CP (degree expression) and AP_2 (main clause adjectival verb to which CLOSE has applied) are both type $\langle dt, t\rangle$ expressions. Thus, I assume they compose via Predicate Modification ((132c)). The mode of composition, therefore, distinguishes comparisons of superiority with CA-marked adjectival verbs — where the degree expression took the main clause adjectival verb as argument — and comparisons of superiority with AA-/PA-marked adjectival verbs.

(132) a. $[\![\text{AP}_1]\!] = \lambda\text{d.}\textsc{beauty}(\text{my mother}) \geq \text{d}$

b. $[\![\ \text{AP}_2\ ]\!] = [\![\textsc{close}]\!]([\![\text{AP}_1]\!]) =$

$\lambda\text{D}_{dt}.\forall\text{d.D(d)} \rightarrow \textsc{beauty}(\text{my mother}) \geq \text{d}$

c. $[\![\text{AP}_3]\!] = \lambda\text{d.}\textsc{beauty}(\text{my sister}) \geq \text{d}$

d. $[\![\text{CP/DP}]\!] = [\![\text{AP}_3]\!] = \lambda\text{d.}\textsc{beauty}(\text{my sister}) \geq \text{d}$

e. $[\![\text{PP}]\!] = [\![\text{P}]\!]([\![\text{CP/DP}]\!])$

$= [\lambda\text{D}_{dt}\lambda\text{D'}_{dt}\exists\text{d.D'(d)} \ \&\ \neg\text{D(d)}](\lambda\text{d.}\textsc{beauty}(\text{my sister}) \geq \text{d})$

$= \lambda\text{D'}_{dt}\exists\text{d.D'(d)} \ \&\ \neg[\textsc{beauty}(\text{my sister}) \geq \text{d}]$

f. $[\![\text{CP}]\!] = [\![\text{VP}]\!] = [\![\text{PP}]\!]$

$= \lambda\text{D'}_{dt}\exists\text{d.D'(d)} \ \&\ \neg[\textsc{beauty}(\text{my sister}) \geq \text{d}]$

g. $[\![\text{CP}]\!]$ and $[\![\text{AP}_2]\!]$ compose via Predicate Modification:

$= [\![\text{AP}_4]\!] = \lambda\text{D"}.\ [\![\text{CP}]\!](\text{D"}) \ \&\ [\![\text{AP}_2]\!](\text{D"}) =$

$\lambda\text{D"}.\ [\exists\text{d.D"(d)} \ \&\ \neg[\textsc{beauty}(\text{my sister}) \geq \text{d}]]$

$\&\ [\forall\text{d.D"(d)} \rightarrow \textsc{beauty}(\text{my mother}) \geq \text{d}]$

h. Existential Closure applies:

$\exists\text{D"}.\ [\exists\text{d.D"(d)} \ \&\ \neg[\textsc{beauty}(\text{my sister}) \geq \text{d}]] \ \&$

$[\forall\text{d.D"(d)} \rightarrow \textsc{beauty}(\text{my mother}) \geq \text{d}]$

There exists a set of degrees D" which has the following properties:

(i) There exists a degree in D" which is *not* a degree to which my sister is pretty.

(ii) All degrees in D" are such that they are degrees to which my mother is pretty.

Above, I noted that the embedded adjectival phrase has not had CLOSE applied to it. One part of this decision is to avoid a type mismatch. The comparative postposition ***-lááh*** is an expression of type $\langle dt, \langle dt, t\rangle\rangle$. However, an adjectival verb to which CLOSE has applied is an expression of type $\langle dt, t\rangle$ (viz (132a)). If CLOSE applies to the embedded adjectival verb, we will have to redefine ***-lááh***.

There may be a more useful outcome of having CLOSE fail to occur in the embedded clause. Following Faltz (2000), I proposed that when a verb is pronounced (phonologically realized), it must be both syntactically and semantically complete. In the case of AP_4 in (131), syntactic completeness has been achieved but in the absence of CLOSE, the verb is not yet semantically complete (its degree argument remains unbound). We have not made any claims about the necessity of semantic completeness for expressions which are not phonologically realized, however. In the structure in (131), we want the embedded adjectival verb to go unpronounced: perhaps the absence of CLOSE is compatible with an unpronounced instance of the adjectival verb.

It is possible that a positive prediction follows from this idea. In section 5.3.2, we saw that subcomparative constructions — i.e. comparatives in which the embedded adjectival verb is pronounced — require both adjectival verbs to be CA-marked. The grammaticality of (133a) was contrasted with the ungrammatical sentences in (133b-d).

(133) a. Díí naaltsoos [’eii naaltsoos ’áníłtéél=ígíí yilááh] ’áníłnéézz.

this book that book 3S.wide.CA=IGII 3O.beyond 3S.long.CA

‘This book is longer than that book is wide.’

b. *Díí naaltsoos [’eii naaltsoos niteel=ígíí yilááh] ’áníłnéézz.

this book that book 3S.wide.AA=IGII 3O.beyond 3S.long.CA

(*Intended:* ‘This book is longer than that book is wide.’)

c. *Díí naaltsoos [’eii naaltsoos ’áníłtéél=ígíí yilááh ’át’éc=go]

this book that book 3S.wide.CA=IGII 3O.beyond 3S.be.IMPF

nineez.

3S.long.AA

(*Intended:* ‘This book is longer than that book is wide.’)

d. *Díí naaltsoos [’eii naaltsoos niteel=ígíí yilááh ’át’éc=go]
this book that book 3S.wide.AA=IGII 3O.beyond 3S.be.IMPF
nineez.
3S.long.AA
(*Intended:* ‘This book is longer than that book is wide.’)

In both (133b) and (133d), the embedded clause contains an overt instance of an AA-marked adjectival verb. If the overt realization of verbs requires semantic completeness but CLOSE cannot be applied in the embedded clause, we predict the ungrammaticality of (133b) and (133d): both sentences contain an overt verb which is semantically incomplete.

We do not yet have an explanation for the ungrammaticality of (133c), however. Nothing prevents application of CLOSE to the main clause adjectival verb (viz. (131)), nor does anything go wrong with the use of a CA-marked adjectival verb in the embedded clause (viz. (111)). One possible explanation for the ungrammatical status of (133c) is that the use of an AA-marked adjectival verb in the main clause leads to unnecessary complications of the structure: not only is the degree expression syntactically more complex (containing the copula and subordinator), but the use of an AA-marked verb entails the presence of CLOSE. If a CA-marked adjectival verb had been used instead, the degree expression would be simpler in shape and CLOSE would not have to intercede between the verb and the degree expression.[30]

5.7.5.4 Intensifier construction

The intensifier *’ayóo* can modify AA-/PA-marked adjectival verbs ((134a,b)) as well as CA-marked adjectival verbs ((134c)).

[30]For discussion of various kinds of semantic and syntactic competition which could inform further investigation of this issue in Navajo, see Heim 1991, Sauerland 2003, Katzir 2007, and Bale and Khanjian 2014. For previous discussion of competition in Navajo, see Bogal-Allbritten (2014b).

(134) a. **Shimá** **'ayóo nizhóní.**

1poss.mother very 3S.pretty.AA
'My mother is very pretty.'

b. **Hoozdodi** **'ayóo deesdoi.**

Phoenix.LOC very 3S.hot.PA
'Phoenix is very hot.'

c. **Shimá** **'ayóo 'áníłnéézˊ.**

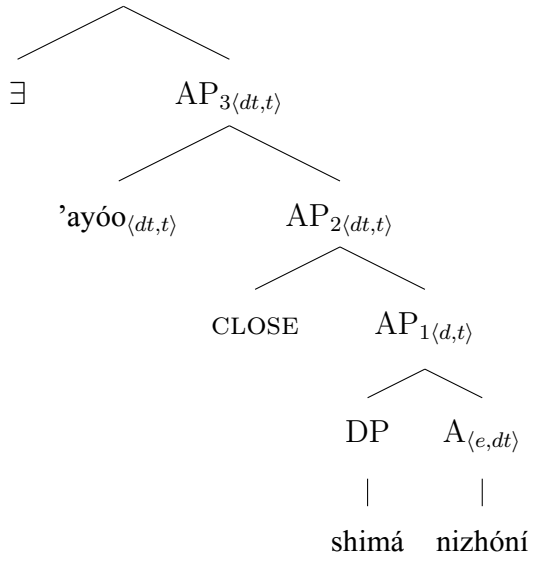
1poss.mother very 3S.tall.CA
'My mother is very tall.'

As in the comparison of superiority construction, I propose that the degree expression has the same semantics when it occurs with AA-/PA-marked adjectival verbs as it does with CA-marked adjectival verbs. I repeat my type $\langle dt, t\rangle$ denotation of *'ayóo* in (135):

(135) $[\![$*'ayóo*$]\!]^c = \lambda D_{dt}.\exists d.D(d)$ & d >! STND^c

The intensifier *'ayóo* adjoins after CLOSE has already applied to yield a type $\langle dt, t\rangle$ expression. (136) gives the tree for (134a).

(136)



Since *'ayóo* and the adjectival verb are both of type $\langle dt, t\rangle$, I have them compose via Predicate Modification. This is the same mode of composition employed in comparison of superiority constructions with AA-/PA-marked adjectival verbs. I give key points in their composition in (137):

(137) a. $[\![\text{AP}_1]\!] = \lambda\text{d.BEAUTY(my mother)} \geq \text{d}$

b. $[\![\text{AP}_2]\!] = [\![\text{CLOSE}]\!]([\![\text{AP}_1]\!]) =$

$\lambda\text{D}_{dt}.\forall\text{d.D(d)} \rightarrow \text{BEAUTY(my mother)} \geq \text{d}$

c. *'ayóo* and AP_2 compose via Predicate Modification:

$\lambda\text{D''}.[\![\text{'ayóo}]\!](\text{D''}) \;\&\; [\![\text{AP}_2]\!](\text{D''}) =$

$\lambda\text{D''}.[\exists\text{d.D''(d)} \;\&\; \text{d} >! \text{STND}^c]$

$\&\; [\forall\text{d.D''(d)} \rightarrow \text{BEAUTY(my mother)} \geq \text{d}]$

d. Existential Closure applies:

$\exists\text{D''}.[\exists\text{d.D''(d)} \;\&\; \text{d} >! \text{STND}^c]$

$\&\; [\forall\text{d.D''(d)} \rightarrow \text{BEAUTY(my mother)} \geq \text{d}]$

There exists a set of degrees D'' which has the following properties:

(i) There exists a degree in D'' which significantly exceeds the contextual standard of comparison.

(ii) All degrees in D'' are such that they are degrees to which my mother is pretty.

As before, composition of a degree expression with an AA-/PA-marked adjectival verb involves restriction of the domain of degrees introduced by CLOSE. This set of degrees includes (at least one) degree which significantly exceeds the standard of comparison. Because 'my mother' is pretty to all degrees within this set, she is pretty in excess of the standard of comparison.

5.7.5.5 The positive construction

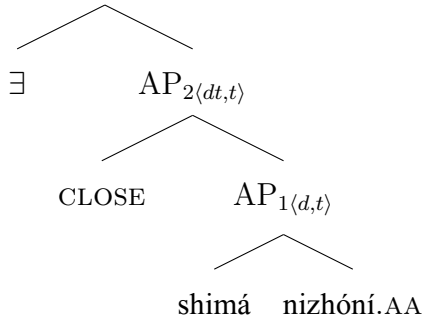
I now turn to the positive construction with AA- and PA-marked adjectival verbs:

(138) Shimá nizhóní.

1poss.mother 3S.pretty.AA
'My mother is pretty.'

Following the claims made so far, I give (138) the following structure:

(139)



The structure in (139) is associated with the truth conditions in (140):

(140) $[\![\exists \text{ CLOSE AP }]\!] = \exists D_{dt}.\forall d.D(d) \rightarrow \text{BEAUTY}(\text{my mother}) \geq d$

There exists a domain of degrees D such that for all degrees d, if d is in D then my mother is pretty to d.

The truth conditions will be verified regardless of what degree of beauty my mother has. If we take all individuals to have some degree of beauty — even a very low degree — we predict that a sentence like (138) will be always be trivially true. The sentence in (138) does not have a trivially true meaning, however: it means that my mother's degree of beauty exceeds a contextual standard of comparison for 'beauty.'[31]

To remedy this triviality, I propose that when the domain of degrees introduced by CLOSE is not further restricted by an overt degree expression, it is related to the contextual standard of comparison. The challenge, however, is that under familiar views of the positive construction, the contextual standard of comparison is taken

[31] A parallel issue is discussed by Rett (2008, 2015) for degree constructions in English.

to be a single degree. Given the use of CLOSE in the Navajo positive construction, however, we instead need a set of degrees.

The solution that I give for Navajo is based on von Stechow's (2009) theory of the positive construction. A key innovation employed by von Stechow's treatment is that the positive construction does not involve comparison with a single degree (i.e. the standard of comparison) but rather involves a larger interval, which we can define as a segment of a scale (i.e. an ordered set of degrees). Von Stechow refers to the interval in question as the 'neutral interval': this interval is the portion of the scale associated with some adjective A onto which are mapped individuals which neither count as A nor as not-A in some context.[32] The right edge of the neutral interval (i.e. the highest degree on the scale segment) is defined by von Stechow as being the the standard of comparison (i.e. the degree used in familiar accounts of the positive construction).[33]

We can use the neutral interval for the Navajo positive construction in the following way. In a positive construction example like (138), the set of degrees D introduced by application of CLOSE is restricted such that it is equated with von Stechow's neutral interval. This yields the truth conditions in (141).

(141) $\exists$D'. where D' is the contextually determined neutral interval of *pretty*,
$\forall$d.D'(d) $\rightarrow$ BEAUTY(my mother) $\geq$ d

There exists a degree interval D' which has the following properties:

(i) D' is equated with the contextually determined neutral interval for *pretty*.

(ii) For all degrees d in D', my mother is pretty to d.

---

[32]This interval can be thought of as a degree-based counterpart to Klein's (1980) 'extension gap.'

[33]I thank Irene Heim for drawing my attention to von Stechow's (2009) account.

The truth conditions in (141) are consistent with the contexts in which Navajo (and English) speakers accept the positive construction: *my mother is pretty* is true just in case her beauty exceeds the contextual standard or norm. According to the truth conditions above, *my mother* is pretty to all degrees with D'. Thus, she is pretty to the rightmost degree (the highest degree) in D'. D' is restricted by context to be von Stechow's neutral interval; the rightmost degree in the neutral interval, according to von Stechow, is the first degree which counts as 'positive prettiness' according to a contextual standard. Since my mother is pretty to all degrees up to, and including, this degree, it is the case that my mother's beauty exceeds the standard of beauty in the context.[34]

5.7.5.6 Challenge posed by the comparison of inferiority construction

I close by observing that more will need to be said about the comparison of inferiority construction with AA-/PA-marked adjectival verbs,e.g. (142).[35]

(142) Kinłánídi [Hoozdodi yi'oh 'át'ée=go] deesdoi.
Flagstaff.LOC Phoenix.LOC 3O.short.of 3S.be.IMPF=GO 3S.hot.PA
'Flagstaff is less hot than Phoenix.'

Let us define the postposition used in (142), *-'oh*, as the inverse of the postposition *-lááh* used in comparisons of superiority. I give *'oh* the denotation in (143).

(143) $[\![\text{-'}oh]\!] = \lambda D_{dt} \lambda D'_{dt} \exists d.D(d) \ \& \ \neg D'(d)$

---

[34]Precedent for a type-shifting approach to the positive construction is discussed by Grano (2012) for Mandarin Chinese. Grano argues against the applicability to Mandarin positive constructions of the more familiar view of the positive construction: that is, he argues against an account in which adjectival expressions bear a covert morpheme, POS, which quantifies over the adjectival expression's degree argument such that it exceeds the contextual standard of comparison (Cresswell 1976, von Stechow 1984, and many others). Instead, Grano argues that the positive construction in Mandarin involves a type-shifting operation, much like the application of CLOSE that I have invoked for Navajo.

[35]I thank Seth Cable (p.c.) for pointing this problem out to me.

Before returning to the problem with examples like (142), I demonstrate that the denotation in (143) is not problematic with CA-marked adjectival verbs. I strikethrough material which is not overtly pronounced:

(144) Dií naaltsoos [’eii naaltsoos ~~’áníłnéézl=ígíí~~ yi’oh] ’áníłnéézl.
this book that book 3S.long.CA=IGII 3O.less 3S.long.CA
‘This book is less long than that book.’

(145) ⟦ (144) ⟧ = ∃d.LENGTH(that book) ≥ d & ¬[LENGTH(this book) ≥ d]
≈ ‘This books is less long than that book’ if and only if there exists a degree d to which ‘that book’ is long but ‘this book’ is *not* long.

The problem comes when we add CLOSE to the adjectival verb in a sentence like (142). Label nodes come from the tree in (131).

(146) a. ⟦CLOSE deesdoi.PA⟧ = $\exists D_{dt}.\forall$d.D(d) → HOT(Flagstaff) ≥ d
b. ⟦PP⟧ = $\lambda D'_{dt}\exists$d.HOT(Phoenix) ≥ d & ¬D’(d)
c. Predicate Modification applies:
λD”. [∃d.HOT(Phoenix) ≥ d & ¬D”(d)]
& [∀d.D”(d) → HOT(Flagstaff) ≥ d]
d. Existential Closure:
∃D”. [∃d.HOT(Phoenix) ≥ d & ¬D”(d)]
& [∀d.D”(d) → HOT(Flagstaff) ≥ d]
≈ There exists an interval of degrees D” which has the following properties:
(i) There exists a degree to which Phoenix is hot which is *not* in D”.
(ii) All degrees in D” are such that they are degrees to which Flagstaff is hot.

The problem is that as defined, all degrees in D" are degrees to which Flagstaff is 'hot' but the reverse is not required: it is possible for Flagstaff's maximal degree of heat to be one which is greater than the maximal element of D". I illustrate the problem which arises using the scenario in (147) in which Flagstaff is one degree hotter than Phoenix.

(147) a. Flagstaff is 90° : degrees to which Flagstaff is hot = {...87, 88, 89, 90}

b. Phoenix is 89° : degrees to which Phoenix is hot = {...86, 87, 88, 89}

In the context in (147), a Navajo sentence like (142) would be judged false. However, the truth conditions in (146) would be verified. We can define an interval of degrees D" with the properties in (148). As shown, D" meets all of the demands of the truth conditions in (146). Nevertheless, Flagstaff is still hotter than Phoenix because nothing stops the maximal element in D" from being lower than the maximal degree to which Flagstaff is hot.

(148) D" = {..., 85, 86, 87, 88}

(i) There exists a degree to which Phoenix is hot which is *not* in D": 89

(ii) All degrees in D" are also degrees to which Flagstaff is hot:

{..., 85, 86, 87, 88} ⊂ {...87, 88, 89, 90}

This problem will need to be addressed in future work, either by rethinking the semantics of CLOSE or the semantics of the comparative postposition *'oh*.

5.8 Chapter summary

In this chapter, I first presented an empirically rich picture of the morphological, syntactic, and semantic characteristics of the structures of interest. I then developed an account of the syntax and semantics of adjectival verbs. I proposed that while all adjectival verbs in Navajo denote relations between degrees and individuals, they

syntactic stucture associated with the adjectival verb depends on the morphological shape of the adjectival verb. Whereas the structure associated with adjectival verbs marked for 'Comparative Aspect' contains two argument positions — one within AP, one within the surrounding DegP — adjectival verbs marked for 'Absolute' and 'Perfective' aspect project structures with space for only one argument. I argue that the syntactic heterogeneity of adjectival verbs has important consequences for the syntax and semantics of degree constructions which contain them.

APPENDIX

GLOSSING ABBREVIATIONS

YM 1987: dX - page X in the dictionary portion of Young and Morgan (1987)

YM 1987: gX - page X in the grammar portion of Young and Morgan (1987)

2S - second person subject

3O - third person object

3plO - third person plural object

ArealS - areal subject

1pro - verb-external first person pronoun

3poss - third person possessor

NEG - negation

LOC - locative enclitic

INDEF.DET - indefinite determiner

WH - *wh*-word

Q - question particle

ATT - attitude (gloss for verb ***nisin***)

IMPF - Imperfective Mode marking (sec. 2.2.1)

PERF - Perfective Mode marking (sec. 2.2.1)

FUT - Future Mode marking (sec. 2.2.1)

OPT - Optative Mode marking (sec. 2.2.1)

PROG - Progressive Mode marking (sec. 2.2.1)

AA - Absolute Aspect marking (sec. 5.2)

PA - Perfective Aspect marking (sec. 5.2)

CA - Comparative Aspect marking (sec. 5.2)

GO - subordinator =*go* (sec. 2.2.3)

IGII - subordinator =*ígíí* (sec. 2.2.3)

YEE - past enclitic (*y*)*ęę* (sec. 2.2.4)

DAA - past marker *dą́ą* (sec. 2.2.4)

NTEE - past marker *ńt'éé'* (sec. 2.2.4)

NMLZ - nominalizer (from Bochnak 2013)

COMP - complementizer

REPORT - reportative modal

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