Projectivity and the Tagalog Reportative Evidential

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Abstract

This thesis discusses the distribution and interpretation of the Tagalog reportative evidential \textit{daw}, at the root level, when \textit{daw} is embedded under an operator, and when an operator is embedded under \textit{daw}. The operators discussed include the antecedent of a conditional, the modal \textit{baka} ‘maybe’, the attitude predicate \textit{akala} ‘falsely believe’, questions, and negation. I present original fieldwork data that show that \textit{daw} can embed these operators, and take wide scope over them. \textit{Daw} can also be embedded under these operators, and three readings are possible: \textit{daw} can take wide scope over the operator, \textit{daw} can take narrow scope with respect to the operator, or \textit{daw} can be syntactically embedded, but its evidential content can project. This evidence of projection of an evidential content thus expands our knowledge of both the range of projective contents and also what properties evidentials can possess. I give an analysis \textit{daw} in a dynamic multistratal framework, building on the prior work of Martin and Pollard (2012) and Kierstead and Martin (2012).
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Chapter 1

Introduction

The sentences in (1) have two implications, that is, each has two propositions associated with it. The first is that Emily is a chef, and the second is that she is from Rhode Island. These two implications behave quite differently when we embed (1-a) under the modal *maybe* in (1-b). With (1-b), it is still implied—that is, it is conventionally conveyed by the sentence—that Emily is chef, but it is no longer implied that she is from Rhode Island.

(1)  a. Emily, a chef, is from Rhode Island.
    b. Maybe Emily, a chef, is from Rhode Island.

This behavior, where an element such as the phrase *a chef* in (1-a) is associated with the implication that Emily is a chef, and the phrase is still implied even in (1-b) where the phrase is embedded, is called projection. Projection can be defined in general as follows:

(2) **Definition of projection:**
    An implication projects if and only if it survives as an utterance implication when the expression that triggers the implication occurs under the syntactic scope of an entailment-cancelling operator. (Simons et al., 2010, 309)

That is, the implication that Emily is a chef is associated with the expression *a chef*. In (1-b) this is syntactically embedded under the modal *maybe*. However, the implication that
Emily is a chef survives, that is it is still an implication of (1-b).

One question that arises is what the range of projective contents is, and what items can be associated with projective contents. For example, the phrase a chef in (1) is called an appositive. Potts (2005) examines projective contents associated with appositives (among other contents), and shows there are important differences between appositive contents and other projective contents, like presuppositions. Tonhauser et al. (2013) discuss a wide range of projective contents, and propose a set of properties to divide the class into different subgroups. As more kinds of projective contents are discovered, the field gains a better sense of the range of projective contents, and what the important distinctions between items in the class are.

In this thesis I focus on the questions of whether any evidential content can project and whether any evidentials can be associated with projective content (evidentials and evidential content will be defined later in this chapter). I answer both of these questions in the affirmative. I present data on the Tagalog reportative evidential daw, showing it is associated with evidential content that projects. In addition to daw, I consider data on evidentials in four languages: the work of Faller (2002, 2011) on Cusco Quechua, the work of Matthewson et al. (2007) on St’át’imcets, the work of McCready and Ogata (2007) on Japanese, and the work of Murray (2010) on Cheyenne. These languages were chosen because they represent the variety of readings that are possible with evidentials, and also the range of different kinds of analyses of evidentials.

I show that while there is no conclusive evidence of the projection of evidential content in any of these languages, we do find evidence that the evidential content of daw can project. As such, the data on daw enhances our knowledge of the space of projective meaning. Furthermore, I show that the projection behavior is context dependent in a way not attested previously in the literature, showing the class of projective meanings may be more diverse than previously thought. Thus, the data on daw raises important questions about how to analyze the class of projective meanings, and whether the class
calls for a unified analysis, or whether there are divisions within the class that need to be further explored (see Tonhauser et al., 2013 for proposals of finer distinctions of this class). Thus, the data on *daw* has important consequences for the theory of taxonomy of meaning in general. Before considering *daw*, I start by reviewing data discussed in the previous literature on evidentials.

1.1 Previous data on evidentials

An *evidential* is a grammatical item whose primary meaning is to denote evidence source. For example, in Stát’imcets, “[a] sentence of the form [ku7 p] is felicitous whenever the speaker came to believe the content of p by means of a report from some other person,” (Matthewson et al., 2007, 204) as in (3) below:

(3) Context: Speaker is talking about a time during her childhood when a chicken attacked her. The speaker does not remember the occasion, but was told about it by her mother, who witnessed it.

\[
\text{w7-lhkan ku7 nqsank IMPF-1SG.SUBJ REPORT laugh}
\]

‘[reportedly] I was laughing.’ (Adapted from Matthewson et al., 2007, 204)

Thus, Stát’imcets *ku7* is a reportative evidential, since it specifies that the evidence a speaker has for a proposition is from a report. Use of *ku7* in (3) above implies that the speaker does not personally remember the laughing, but is basing this off of the report by her mother. I will call the proposition that there is a report the *reportative proposition* of the evidential. I call the proposition that there is evidence for the *prejacent proposition*. So in (3), the prejacent proposition is that the speaker was laughing, and the reportative proposition is that there is reportative evidence that the speaker was laughing.
McCready and Ogata (2007, 148) note that, “[e]videntials, in most languages . . . seem to have one characteristic in common: they must take widest scope . . .” (148) For instance, in Korean, the evidential -te must take wide scope over negation:

(4) Context: The speaker was in the desert area where it had not rained for the past ten years and was not expected to rain in the near future. Now, she says:

Pi-ka an-∅-te-la.
rain-NOM NEG-fall-PRES-DECL

‘[I saw that] it was not raining.’

NOT: ‘It is false that [I saw that] it was raining.’ (Lee, 2011, ex. 101a, p. 83)

The only interpretation available is where the speaker has direct evidence that it didn’t rain, and thus the negation must be in the scope of the evidential -te, and so the evidential has wide scope. We can schematically represent this wide scope with a logical form that indicates the relative scope of the two operators. I use RPT for the reportative operator, and ¬ for the negation operator. The interpretation can be represented: RPT(¬ p). However, in St’át’imcets sentences with the reportative ku7 can also have an interpretation where the reportative proposition is in the scope of a higher operator (Matthewson et al., 2007):

(5) tsut s-Lémya7 kw sqwémémn’ek ku7 s-Mary t’u7 plán-lhkan ti7 say NOM-L DET pregnant REPORT NOM-M but already-1SG.SUBJ DEM zwát-en, áts’x-en-lhkan s-Mary áta7 tewcwp-álhcw-a inátcwas know-DIR see-DIR-1SG.SUBJ NOM-M DEIC buy-place-EXIS yesterday ‘Lémya7 said that [she was told that] Mary is pregnant, but I already knew that; I had seen Mary at the store.’

(Lémya7 was told; Lémya7 did not witness it)

Consultant comment: “Lémya7 was saying that and she wasn’t there either.” (Adapted from Matthewson et al., 2007, 229)
The interpretation is that Lémya7 said it was reported that Mary is pregnant, and thus the reportative implication is interpreted in the scope of the attitude predicate, and so ku7 takes narrow scope under tsut ‘say.’ This narrow scope interpretation we can represent schematically as: say_L(RPT p), with RPT representing the reportative and say_L representing the attitude predicate. No evidence is given for projection.

Also, in Japanese “evidential content can embed even with hearsay [i.e., reportative] evidentials . . . .” (McCready and Ogata, 2007, 167). For example, the Japanese reportative evidential soo has an interpretation where the reportative implication contributes only to the antecedent of a conditional:

(6) Taro-ga kuru soo da-ttara osiete kudasai
    Taro-Nom come SOO Cop.Pres-COND teach please
    If you hear that Taro will come, please tell me. (McCready and Ogata, 2007)

At least based on the translation given, the reportative implication is interpreted in the scope of the antecedent of the conditional; that is, the conditional does not consider what to do if Taro actually comes, but only what to do if it is reported that Taro comes. This reading can be schematized as: if(RPT p), then q. If the reportative had wide scope, then the speaker would need to have heard a prior report of the entire conditional. This does not seem to be a possible interpretation given the translation. However, since the example is given without any context, the data is not conclusive that soo has narrow scope with respect to the conditional.

In some languages, sentences that contain an evidential and another operator only have one reading: the evidential must take scope over the operator. For example, in Cusco Quechua a reportative evidential must take wide scope with respect to operators such as negation. However, even in these languages, questions that contain evidentials often allow multiple readings. For example, Faller (2002) describes two different readings when the reportative evidential -si appears in a content question. These are given in (i) and (ii) as
the two possible meanings contributed by the evidential (in different contexts; either one or the other and not both are conveyed).

(7) \text{Pi-ta-s} \text{ Inés-qua watuku-sqa} \\
    \text{who-ACC-si Iné-TOP visit-PST2} \\
    \text{Who did Inés visit?}'

\text{ev=} (i) speaker indicates that somebody else is asking

(ii) speaker expects hearer to have reportative evidence for his or her answer (Faller, 2002, 230)

\text{Faller (2002)} characterizes reading (i) as the content of the evidential being anchored to the speaker, and reading (ii) as the content of the evidential being anchored to the listener. That is, in (i), the speaker conveys that she has previously heard the question asked, and thus it is the speaker who has the previous report. In (ii), the speaker directs the listener to answer using reportative evidence, and thus it is the addressee who must have access to a previous report.

\text{Murray (2010)} also finds evidence for the reading where the evidential content is anchored to the addressee, and thus the hearer should answer with reportative evidence. This is the only reading for polar questions with the reportative evidential.

(8) \text{Mó=ché-táheva-séstse Andy?} \\
    \text{y/n=3-win-RPT.3SG Andy} \\
    \text{‘Given what you heard, did Andy win?’} \hspace{1cm} \text{(Murray, 2010, 41)}

With constituent questions in Cheyenne, the reading where the evidential content is anchored to the addressee is possible, as well as a second interpretation where the reportative “contributes an attitude of wondering” in general, and does not pose a specific question for an addressee (Murray, 2010, 42). Murray does not give explicit contexts for the wondering reading, but describes such contexts in general as “one where there is no addressee, or the addressee is not expected to know the answer,” (Murray, 2010, 42).
Murray (2010) does not find any evidence for a reading where the evidential content is anchored to the speaker, where the speaker is asking a question previously asked of the addressee.

One thing that makes it a little difficult to compare the readings for questions in Cheyenne and Quechua is that Murray and Faller do not give contexts for their examples. Especially for the “wondering” reading in Cheyenne, having a context could give a clearer picture as to when that reading of (9) arises. Even for Faller’s (7), giving separate contexts for the two readings could clarify the differences between them. It would also give further support for the reading posited: the reader would be able to verify at least that the reading indicated is reasonable in the context given. For these reasons, I agree with Matthewson (2004, 377) in assuming that “translations are insufficient to determine whether the analysis is right,” and that as a field we should move toward using fieldwork data that has example sentences with judgments in contexts (Tonhauser and Matthewson, 2015).

In summary, we have seen examples of sentences with evidentials and operators with two different interpretations: one where they take wide scope with respect to the operator, and one where they take narrow scope with respect to the operator. For a given evidential and operator, however, no more than one interpretation has been attested in the literature reviewed here. McCready and Ogata (2007) claim that some evidentials give rise to a third reading involving projection: they claim, based on evidence from Faller (2002) this sort of reading is possible with evidentials in Cusco Quechua. In Cusco Quechua, the reportative -si is used “when the speaker obtained information from others,” (Faller, 2002, 22) and when -si is used “the speaker presents the embedded proposition for consideration on the
basis that somebody else (the original source) takes it to be a fact." (Faller, 2002, 23) In (10), even when it appears in the consequent of a conditional, use of -si seems to imply there was a report, suggesting projection:

(10) Sichus ni-wa-rqa-n Juan hamu-na-n-ta chay-qa, Juan-qa hamu-nqa-s
    if say-1o-Pst1-3 Juan come-Nm-3-Acc this-Top, Juan-Top come-3Fut-si
    (I heard that Juan will come and) if I was told that Juan will come, then Juan will come. (McCready and Ogata, 2007, 167 adapted from Faller, 2002, 118)

This reading could be represented schematically as: RPT p ∧ if p then q. Critically, this is distinct from either the wide scope reading discussed above (which would be RPT(if p then q)) or the narrow scope reading (which would be (if (RPT p) then q). However, for multiple reasons, it is not clear that (10) does imply there was a report: the crucial implication, that the speaker heard Juan will come, is given in parentheses. Furthermore aside from the translation itself, as the example is given without either context or discussion of consultants’ reactions to the example, there is no evidence that it is actually implied that the speaker heard a report. Again, we see that having the context for the example would help to clarify what the intended interpretation is, and also give further support that the translation is correct. I do not find solely the translation of a single example to be enough to show that the implication is projective. This is especially true when, in discussing the example herself, Faller (2002, 188) states, “[i]n as much as the statement in [(10)] makes any sense at all,” language that seems to indicate judgments on the example may not be robust. Thus I do not take Cusco Quechua to provide any clear evidence of implications associated with evidentials projecting.

Lee (2011) gives a possible example of projection with the Korean evidential -te in the antecedent of the conditional. The meaning of -te is too complex to discuss in detail here, but in essence, use of -te in an utterance “require[s] the speaker to base his/her statement on what he/she makes a sensory observation of” (Lee, 2011, 65) and “locates the evidence
acquisition time prior to the utterance time.” (Lee, 2011, 62). That is, when the time at which a speaker acquires evidence for an event follows the actual event, -te can be used in combination with the past tense -ass, as in (11). In (11), Chelswu does not experience the actual event of raining, just the end result, and so the event precedes the time of evidence acquisition and so -te appears with the past tense:

(11) Context: Chelswu saw it raining yesterday. Now, he says:

Ecey pam-ey pi-ka o-ass-te-la.
yesterday night-at rain-nom fall-past-te-decl
[I inferred that] it rained last night. (Lee, 2011, 58)

When in the antecedent of the conditional, -te is felicitous only with the past tense, and “[i]f and only if the truth value of the . . . antecedent clause is known to be false to the speaker” (Lee, 2011, 88):

(12) Context: A student was asking a teacher about his grade in the class. The teacher checked the grade and found the student did not submit two homework assignments. The teacher told the student:

Ne-ka swukcey-lul motwu ceychwulha-yess-te-la-myen, te cohun you-NOM homework-ACC all submit-PAST-TE-DECL-if more good
cemswu-lul pat-ul.swu.iss-ess-ta
grade-ACC receive-can-PAST-DECL
‘If you had submitted all of the homework assignments, you could have received a better grade.’ (Slightly modified from Lee, 2011, 88)

Use of -te is felicitous in the context above because the teacher checked the grade, and so knows the student did not submit all of the homework assignment. If instead the teacher had not checked the grade, and did not know whether or not the student had submitted all assignments, -te could not be used. Lee (2011) hypothesizes that “the occurrence of te
in a conditional antecedent and its evidential reading seem to suggest that the evidential meaning [that] some individual x has evidence about the truth value of the prejacent, is projective,” (Lee, 2011, 89). This is not quite in line with (12), which seems to require something stronger, that the speaker has evidence the antecedent is actually false, not just that the speaker knows the truth value. This is different than use of -te in (11), where the speaker needed to have evidence the prejacent was true, not false. It is not clear how this is a case of projection under the definition given by Simons et al. (2010), as the relevant implication of (12) is different than the implication associated with -te in all other instances. (12) is certainly an intriguing example, but for the reasons given, I do not find it to be conclusive evidence of projection.

To summarize, we have seen evidence from four different languages of both evidentials that can take wide scope with respect to an operator, and evidentials that can take narrow scope with respect to an operator. That is, if we have a reportative operator RPT, and other operator OP, across languages we find evidence for both of the relative scopes RPT(OP(p)) and OP(RPT(p)). We also saw suggestive but inconclusive evidence for a third reading where an implication of an evidential projects, i.e., RPT(p) ∨ OP(p). However, we have not seen any example where a single evidential can have more than one of these interpretations when appearing with a given operator, or conclusive evidence of projection.

In this thesis, I will discuss original fieldwork data where the Tagalog reportative evidential *daw* is embedded under an operator, and also where the reportative evidential embeds an operator. I show that when the reportative is embedded under an operator, the evidential can take wide scope (WS) with respect to the embedding operator (WS=DAW(OP(p))), the evidential can take narrow scope (NS) with respect to the embedding operator (NS=OP(DAW(p))), or the evidential can have its reportative implication project (P=DAW p ∧ OP(p)). This data will also be the first conclusive evidence for an implication of an evidential projecting in the literature. These three readings will be shown to exist for conditionals that include *daw*, and sentences that contain *daw* and either a modal
or propositional attitude predicate. I will show that the wide scope reading is possible both when *daw* syntactically embeds the conditional, modal or attitude predicate, and also when *daw* is syntactically embedded. For the narrow scope or projective readings, I show that *daw* is syntactically embedded in the antecedent of the conditional, under the modal, or under the attitude predicate.

The organization of this thesis is as follows: chapter 2 gives the relevant background on the syntax and semantics of Tagalog, including discussion of conditionals, questions, the modal *baka* ‘maybe’ and the attitude predicate *akala* ‘falsely believe’. Chapter 3 discusses data on *daw*, both from Schwager (2010) and my own original fieldwork. Chapter 4 discusses previous approaches to analyzing evidentials. Chapter 5 introduces my own analysis of *daw*, and chapter 6 concludes.
Chapter 2

Tagalog background: The syntax and semantics of simple declaratives and embedding environments

As discussed in chapter 1, the interpretation of daw in embedded sentences\(^1\) has empirical and theoretical import. However, it would be premature to discuss cases where daw was embedded without first discussing the syntax of basic Tagalog sentences, and also the syntax and semantics of the environments where daw will be embedded. Chapter 2 considers these cases without daw, and Chapter 3 then turns to the data with daw. Before discussing the data on daw, I first give background on my methods of data collection, and then consider the relevant background data.

2.1 Fieldwork methodology

All Tagalog data presented here, unless otherwise indicated, was collected from two Tagalog consultants. Data was collected weekly (for most months of the year) from 2011 to 2013, in one hour sessions. Data collection was done on the Ohio State University campus, either in the student union, a library common area, or an office in the linguistic department.

Both consultants were Ohio State University undergraduates, and neither had any prior linguistic training. Both consultants reported speaking Tagalog exclusively at home while

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\(^1\)I use the term *sentence* to refer to any constituent that is a full sentential clause, i.e., with syntactic category S.
growing up, but also English outside of the home. Both were completely fluent in English, which was used as the contact language. One consultant was raised in Manila, the Philippine capital. The other was raised in Canada; he reported that in general his family was from the northern area of the Philippines. Both were paid $15 per hour long consulting session. Tasks the consultants were asked to do were as follows:

• Translate an English sentence into Tagalog, sometimes being told to try to use a specific word in the translation if possible (such as daw)

• For a given Tagalog sentence, state what kinds of contexts they could imagine using the sentence in

• For a given context and Tagalog sentence, state whether or not the sentence sounded acceptable in that context

• Give direct implication judgments (Tonhauser et al., 2013): for a given a context and Tagalog sentence, consultants would answer questions about the speaker who said the sentence (e.g., “Can you tell if he heard a report or not?”; “Would the speaker want to go on the picnic [mentioned in the context]?”)

The first two tasks were used to construct the materials for the last two tasks, but are not presented as data here. All data presented in this document are from the last two tasks. Acceptability judgments seemed easier for consultants than direct implication judgments: consultants gave more definitive answers to acceptability judgments, would sometimes state that it was difficult to know exactly what another person would do in a given situation, and would occasionally state at the end of sessions a preference for the acceptability judgment task. Thus, while I have no theoretical issue with the fourth task, as a practical issue, whenever possible I tried to use acceptability judgments. Consultants were told to give judgments based on spoken Tagalog, and for everyday conversations. This focus was given
to avoid consultants giving answers based on prescriptive rules that may not match actual use of the language.

I note that consultants did not typically give just a binary acceptability judgment: for “yes” answers consultants would typically volunteer an explanation as to why the sentence was acceptable. For “no” answers, consultants would typically volunteer a modification to either the context or sentence to fix the unacceptability, or sometimes just give the modification. Whenever a modification was volunteered, I would re-ask about the sentence and context originally given, and then would be given a binary judgment.

The translations do figure into the data here however: the sentences for the data presented here almost always started from a translation from an English sentence into Tagalog. However, the acceptability judgments that I give are never from the same session as when the translation was done. That is, one session could include translation from English into Tagalog, and inquiring about a context where the sentence would be acceptable. In a subsequent session I would ask the consultant if the sentence sounded acceptable in the context.

All sentences, in English and Tagalog, were presented both orally and written. Simple contexts were typically only given orally; more complex contexts would be given orally, with an accompanying stick-figure cartoon. While in the initial stages of my research I used written contexts, I found that often consultants could miss key parts of the context: sometimes consultants would say a sentence was acceptable, and give an explanation of why, which contradicted parts of the written context. In practice I found that retention was better without presenting the context in written form.

2E.g., a context where Alice tells Bob something, and he then tells Claire may be presented with three stick figures with written names, and arrows indicating who talked to who.
2.2 Tagalog simple declaratives

Tagalog is a language spoken in the Philippines and is one of the two national languages (the other being English). It is spoken by over 21 million people in the Philippines and over 23 million in total (Lewis et al., 2015).

I follow Kroeger (1993) in analyzing it as a predicate-initial language, as he states “[i]n pragmatically unmarked clauses, the predicate always comes first...” (Kroeger, 1993, 110). Thus, in (1), tumahol ‘bark’ is the predicate, and it is predicated of its argument ang aso ‘dog’.

(1) Tumahol ang aso.
   bark.PERF.AV DIR dog
   ‘The dog barked.’

In (1), the predicate tumahol is marked for voice and aspect. Tumahol is marked with perfective (PERF) aspect, which denotes that the barking has been completed. Predicates in Tagalog are marked for one of three aspects: “perfective, imperfective, [or] contemplated. The perfective aspect characterizes an event as completed, the imperfective as not completed but begun, and the contemplated as not begun,” (Schachter and Otanes, 1972, 66). To characterize an event of a dog that is currently barking, imperfective aspect would be used:

(2) Tumatahol ang aso.
   bark.IMPERF.AV DIR dog
   ‘The dog is barking.’

The voice marking determines the thematic role of the argument marked with ang. In (1), since the predicate is marked with agent voice, and the argument ang aso ‘dog’ is marked with ang, the dog is the agent of the barking. Below in (3), the dog is the agent of the

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3I use the following glosses here: RPT=reportative evidential, DIR=direct case marker, IND=indirect case marker, AV=agent voice, PV=patient voice, PERF=perfective aspect, IMPERF=imperfective aspect, CONT=contemplative aspect, INF=infinitive, LK=linker particle, PL=plural marker, INCL=inclusive, HON=honorific
eating event, and the mango is the patient. If *mangga* ‘mango’ is marked with *ang*, since it is the patient, the predicate *kumain* ‘eat’ must be marked with patient voice, as in (3-a). If *aso* ‘dog’ is marked with *ang*, as it is the agent, *kumain* ‘eat’ must be marked with agent voice, as in (3-b). As seen in (3-c) and (3-d), the order of the arguments is flexible: even though in these examples *mangga* ‘mango’ linearly precedes *aso* ‘dog’, reversing the argument order of (3-a) and (3-b), this does not “change the meaning of the sentence in any obvious way” (Kroeger, 1993, 111).

(3) Context: I ask you what the dog ate. You reply:

a. *Kinain* ng aso ang mangga.
   *eat.PERF.PV IND dog DIR mango*
   ‘The dog ate the mango.’

b. *Kumain* ang aso ng mangga.
   *eat.PERF.AV DIR dog IND mango*
   ‘The dog ate the mango.’

c. *Kinain* ang mangga ng aso.
   *eat.PERF.PV DIR mango IND dog*
   ‘The dog ate the mango.’

d. *Kumain* ng mangga ang aso.
   *eat.PERF.AV IND mango DIR dog*
   ‘The dog ate the mango.’

I follow Kroeger (1993) in assuming *ang* and *ng* are case markers. I will call *ang* the direct (DIR) case, as it marks the argument corresponding to the voice marking on the predicate. I will call *ng* the indirect (IND) case, as it marks the argument not corresponding to the voice marking on the predicate.

While Kroeger (1993) and Schachter and Otanes (1972) assume that Tagalog has both nouns and noun phrases, it is not clear this is a meaningful distinction, as content words like *tumahol* ‘bark’ and *aso* ‘dog’ can act as either a predicate or an argument, depending on what position they appear in an utterance. Dionisio (2012) further shows that a variety
of items can appear both sentence initially and also following a case marker (her (20)-(24)).

The brackets are used to mark predicates (with *pred*) and case-marked-expressions (with *cme*).

(4) \([Aso]_{pred} [ang [aso]_{pred}]_{cme}\)
   \begin{align*}
   \text{dog} & \quad \text{DIR} & \text{dog} \\
   \text{\textquoteleft The dog is a dog.\textquoteright} & 
   \end{align*}

(5) \([Tumatahol]_{pred} [ang [tumatahol]_{pred}]_{cme}\)
   \begin{align*}
   \text{bark.AV.IMPERF} & \quad \text{DIR} & \text{bark.AV.IMPERF} \\
   \text{\textquoteleft The barker is barking.\textquoteright} & 
   \end{align*}

(6) \([Maganda]_{pred} [ang [maganda]_{pred}]_{cme}\)
   \begin{align*}
   \text{beautiful} & \quad \text{DIR} & \text{beautiful} \\
   \text{\textquoteleft The beauty is beautiful.\textquoteright} & 
   \end{align*}

(7) \([Para sa iyo]_{pred} [ang [para sa iyo]_{pred}]_{cme}\)
   \begin{align*}
   \text{for} & \quad \text{OBL} & \text{2SG.OBL} & \text{DIR} & \text{for} & \text{OBL} & \text{2SG.OBL} \\
   \text{\textquoteleft The (one) for you is for you.\textquoteright} & 
   \end{align*}

\cite{Dionisio2012} further argues that classification of words into lexical categories must be done on morphological, but not syntactic grounds, as the “morphological distinctions do not correspond to syntactic distinctions.” \cite{Dionisio2012, 25} As the English categories of noun and verb reflect both morphological and syntactic properties, it would be confusing to use this same terminology for Tagalog. Thus, I do not characterize *ng aso* ‘the dog’ as a noun phrase, as *aso* ‘dog’ is not meaningfully characterized as a noun. Instead, I will characterize these phrases based on their case marking: as *ng aso* contains the indirect case marker, it is an *indirect phrase* (IND). *Ang mataba*, which uses the direct case marker, is a *direct phrase* (DIR). While not seen in the examples above, a phrase with the oblique case marker is a *oblique phrase* (OBL). To have a convenient term for the phrase made up of a word preceded by a case marker, I will call it an argument phrase, since such phrases are generally arguments of the predicate.

While many Tagalog sentences are made just of a predicate followed by argument
phrases, Tagalog also has a system of clitics; clitics are particularly important for the
discussion here as *daw* is a clitic, and its status as a clitic places restrictions on its place-
ment in sentences. In general, Tagalog clitics appear in a cluster that must come directly
after the predicate and before any argument phrases. Examples of clitics are pronouns, *din*
‘also’, *na* ‘already’, the honorific *po*, and the Tagalog reportative evidential *daw*. Pronouns
do not appear with case markers; different forms of pronouns are used for different cases,
e.g., for first person *ako* is the direct form and *ko* the indirect form. Since the pronouns
are clitics they cannot be shifted in the sentence. I use # to indicate the judgment of the
consultants that the sentence was unacceptable in the context shown.

(8) Context: I tell you what I did yesterday:

Nagluto ako ng adobo.

*cook.PERF.AV 1SG.DIR IND adobo*

‘I cooked adobo.’

(9) Context: I tell you what I did yesterday:

#Nagluto ng adobo ako.

*cook.PERF.AV IND adobo 1SG.DIR*

Intended: ‘I cooked adobo.’

Placement of the clitics in the cluster is also restricted, and depends on the length and type
of a clitic. Largely, monosyllabic clitics come first, and multisyllabic clitics come second,
but there are differences between pronominal clitics and non-pronominal clitics, and also
two exceptional pronouns, so we need a little more terminology. Let us say that a *long
pronoun* is one that is either disyllabic or *siya* or *niya* (the two aforementioned exceptions,
which are monosyllables pronounced [ʃa] and [ña] respectively) and that a *short pronoun*
is monosyllabic, except for (the exceptions) *siya* and *niya* which are not short pronouns.
The long and short pronouns seen in this thesis are summarized in Table 2.1. Then the
restrictions on the placement of clitics in the cluster can be described as follows: short
Table 2.1: Long and short Tagalog pronominal clitics

<table>
<thead>
<tr>
<th>Long pronouns</th>
<th>Short pronouns</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citation form</td>
<td>Pronunciation</td>
</tr>
<tr>
<td>ko</td>
<td>[ko]</td>
</tr>
<tr>
<td>ka</td>
<td>[ka]</td>
</tr>
<tr>
<td>mo</td>
<td>[mo]</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

pronouns must precede non-pronominal clitics, which must precede long pronouns.

For my consultants, there is a preference for monosyllabic non-pronominal clitics to precede disyllabic non-pronominal clitics, but this is not required. Thus, the utterance (10) is acceptable with the clitics in the order they are in, but any other order would be unacceptable, as seen by the subsequent examples.

(10) Context: My roommate asks me if I’m going to meet with Brian tomorrow:

a. Nakita ko na siya kahapon.
   see.PERF.PV 1SG.IND already 3SG.DIR yesterday
   ‘I already saw him yesterday.’

b. #Nakita na ko siya kahapon.
   see.PERF.PV already 1SG.IND 3SG.DIR yesterday
   Intended: ‘I already saw him yesterday.’

c. #Nakita ko siya na kahapon.
   see.PERF.PV 1SG.IND 3SG.DIR already yesterday
   Intended: ‘I already saw him yesterday.’

d. #Nakita siya ko na kahapon.
   see.PERF.PV 1SG.IND 3SG.DIR already yesterday
   Intended: ‘I already saw him yesterday.’

From this sort of evidence, Kroeger (1993) proposes the following for clitic placement:

(11) Clitics occur immediately after the first daughter of the smallest maximal projection which contains them.  
     (Kroeger, 1993, p. 121, ex. 26)
For a sentence like (10-a), with a pronominal clitic, the pronoun will be contained in the same sentence as the predicate that it is an argument of. As a sentence is a maximal projection, and in (10-a) the predicate is the first daughter, the pronominal clitic will “occur immediately after” (Kroeger, 1993, 121) the predicate. I will say that the clitic cliticizes to this word, and that the word the clitic cliticizes to is the clitic host. In general, a pronominal clitic will cliticize (and so directly follow) the first element in the sentence that contains the predicate that it is an argument of. For predicate-initial sentences, a pronominal clitic will cliticize to the predicate.

A non-pronominal clitic like na ‘already’ in (10-a) is not an argument of the predicate, so we cannot use the same reasoning as for pronominal clitics. I assume that na ‘already’ is a sentence modifier syntactically, and so the structure of an example nakita ko na siya ‘I already saw him’ (like (10-a), but with kahapon ‘yesterday’ removed for simplicity) would be [na | nakita ko siya|s|s]. This means na ‘already’ is not contained in the sentence [nakita ko siya|s]. The smallest sentence that does contain na ‘already’ would be the syntactically complex [na | nakita ko siya|s]S. Na ‘already’ is a clitic, so in terms of placement in the string, na ‘already’ cannot be sentence initial. By sentence initial, I mean only that an item is the first word in some sentential string. The first non-clitic daughter is the predicate nakita ‘saw’. So na will cliticize to the clitic host nakita ‘saw’. A non-pronominal sentential modifier clitic will cliticize (and so directly follow) the first element of the sentence that the clitic syntactically modifies. For predicate-initial sentences, it will cliticize to the predicate of the sentence that the clitic modifies. In sum:

- Pronominal clitics cliticize to the first element of the sentence that contains the predicate they are an argument of. This is the predicate for predicate-initial sentences.

- Sentential modifier clitics cliticize to the first element of the sentence they syntactically modify. This is the predicate for predicate-initial sentences.
For an example that has a sentence which is embedded, this predicts that there should be only one possible placement for pronominal clitics, a prediction that is empirically borne out. In (12), there are two sentential clauses, indicated by the brackets. The pronoun ka ‘you’ can only cliticize to the predicate nanalo ‘won’, and not after sinabi ‘say’, as in (13), since ka ‘you’ is an argument of nanalo ‘won’ but not sinabi ‘say’.

(12) Context: You play a tennis match and lose. I don’t see the match but I talk to Sam, who tells me you won. I go to congratulate you for winning, and you ask me why I’m congratulating you. I tell you:

[Sinabi ni Sam na [nanalo ka.]|S|S
say.PERF IND Sam COMP win.PERF.AV 2SG.DIR

‘Sam said that you won.’

(13) Context: You play a tennis match and lose. I don’t see the match but I talk to Sam, who tells me you won. I go to congratulate you for winning, and you ask me why I’m congratulating you. I tell you:

#|Sinabi ka ni Sam na [nanalo.|S|S
say.PERF 2SG.DIR IND Sam COMP win.PERF.AV

Intended: ‘Sam said that you won.’

For sentential modifier clitic, if there is an embedded sentence, then the placement of the clitic depends on what sentence the clitic syntactically modifies. So, were na ‘already’ added to (12), there would be two possible places, but these places would correspond to different syntactic structures. If na ‘already’ were placed after sinabi ‘say’, the structure would be [na [sinabi ni Sam na [nanalo ka]|S|S|S. If na ‘already’ were placed after nanalo ‘win’, the structure would be [sinabi ni Sam na [na [nanalo ka]|S|S|S.

We have now seen the syntax and semantics of a basic Tagalog sentence. Recall however
that much of the theoretical interest with *daw* is due to its behavior with projection: there is conclusive evidence that the evidential content of *daw* can project, unlike the other evidentials previously discussed. Projection requires that *daw* be syntactically embedded though, so first I consider the various embedding contexts where *daw* can occur on their own: the modal *baka* ‘maybe’, the attitude predicate *akala* ‘falsely believe’, and conditionals (for cases where *daw* is syntactically embedded in the antecedent).

### 2.3 The modal *baka* ‘maybe’

The modal *baka* ‘maybe’ is a sentential modifier, and occurs sentence initially:

\[
(14) \quad [\text{Baka} \ [\text{kumain } \text{si Paul ng adobo}.]_S]_S \\
\text{maybe eat.PERF.AV DIR Paul IND adobo} \\
\text{‘Maybe Paul ate the adobo.’}
\]

I assume, as seen from the brackets given above, that the structure in (14) includes an embedded sentence, and thus *baka* ‘maybe’ syntactically embeds that sentence. As syntactic embedding is part of the definition of projection I am using, this assumption is critical. That is, it is key that (14) is not monoclausal, but that there exists a sentential clause boundary between *baka* ‘maybe’ and *kumain* ‘eat’ so that *baka* ‘maybe’ embeds a sentence.

The assumption that (14) is not monoclausal is based on a test of Kroeger (1993) that uses pronominal clitics to diagnose clausal boundaries, although he does not analyze *baka* ‘maybe’. Recall Kroeger’s proposal that clitics cliticize to the first constituent in the most deeply embedded sentence in which the clitic is contained. Depending on the syntax assumed for sentences with *baka* ‘maybe’, Kroeger’s proposal makes different predictions about the distribution of pronominal clitics. For example, if (14) was monoclausal, then the smallest sentential clause would be the entire sentence, and so a pronominal clitic would have to be placed directly after *baka* ‘maybe’. On the other hand, if the syntax I assume is correct, and there are two sentential clauses, then a pronominal clitic could only be placed
after *kumain* ‘ate’. The embedded sentence would be the most deeply embedded sentence containing the pronoun, making placement of the pronoun in the matrix sentence containing *baka* ‘maybe’ impossible. To illustrate the test in detail, I first review Kroeger’s application of it to sentences with *kaya* ‘able to’, which he argues are monoclausal, and then show how the different distribution of pronominal clitics in sentences with *baka* ‘maybe’ is an argument that (14) is biclausal.

Kroeger (1993) assumes that sentences with the modal *kaya* ‘able to’ are monoclausal, and thus there is no clausal boundary between *kaya* ‘able to’ and *bumili* ‘buy’ in (15).

(15) [Kaya-ng bumili si Manuel ng bago-ng kotse]S
    able-LK buy.AV.PERF DIR Manuel IND new-LK car
    ‘Manuel is able to buy a new car.’ (slightly modified from Kroeger, 1993, 182)

Kroeger (1993) gives data on the placement of pronominal clitics to argue for this analysis. These critically must cliticize to the modal, but not to the (non-modal) predicate:

(16) a. Kaya siya bumili ng bago-ng kotse
    able 3SG.DIR buy.AV.PERF IND new-LK car
    ‘He is able to buy a new car.’

b. #Kaya bumili siya ng bago-ng kotse
    able buy.AV.PERF 3SG.DIR IND new-LK car
    ‘He is able to buy a new car.’

As we have seen that clitics cliticize to the second element in the sentence they are contained in, Kroeger (1993) argues that this is evidence there that is no intervening boundary: if *bumili* ‘buy’ in (16-a) was sentence-initial, then the pronoun (which is its semantic argument) should cliticize to *bumili* ‘buy’. Only an analysis which posits no embedded sentential clause—and so only *kaya* ‘be able to’ is sentence-initial—predicts the correct position for the pronouns.

4Kroeger (1993) does assume a structure with an embedded ‘S’ constituent composed of all but the modal, but no embedded ‘IP’ constituents. As for Kroeger (1993), ‘IP’ is the category of a full sentential clause, and Kroeger uses ‘S’ for ‘small clause’, the lack of an embedded IP is what is important here.
The above argument is convincing for analyzing *kaya* ‘able to’ as not involving an embedded sentential clause. A corollary of the argument is that any modal that does not have any pronouns cliticize to it should be analyzed as taking a embedded sentential clause as its argument. This is the pattern we see with *baka* ‘maybe’. That is, for *kaya* ‘able to’, pronominal clitics must cliticize to it, indicating it does not embed a sentential clause. For *baka* ‘maybe’, pronominal clitics cannot cliticize to it, indicating there is a sentential clause boundary after *baka* ‘maybe’.

(17) a. [Baka [bibili ako ng bahay ni Linda]$_S$]$_S$
    maybe buy.AV.CONT 1SG.DIR IND house IND Linda
    ‘I might buy Linda’s house.’

b. #Baka ako bibili ng bahay ni Linda
   maybe 1SG.DIR buy.AV.CONT IND house IND Linda
   ‘I might buy Linda’s house.’

That is, we see the exact reverse of the pattern in (16): the pronoun must cliticize to the predicate *bibili* ‘buy’, and cannot cliticize to *baka* ‘maybe’. Assuming that *bibili* ‘buy’ is sentence-initial explains the position of *ako* ‘I’ in that it occurs as the second item of the sentence that contains it. The ungrammaticality of (17-b) can be explained because *ako* ‘I’ is a semantic argument of *bibili* ‘buy’, and *bibili* ‘buy’ is sentence-initial, but *ako* ‘I’ does not cliticize to the sentence-initial predicate that it is an argument of. If we instead assumed that (17-a) was monoclusal, with no embedded sentential clause, *ako* ‘I’ would not be in second position, and there would be no explanation as to why it is ungrammatical for it to appear in such a position, as in (17-b). Following the logic of Kroeger (1993) for the modal *baka* ‘maybe’ (which he did not analyze), I assume that *baka* ‘maybe’ takes an embedded sentential clause as its single argument.

It is clear that *baka* ‘maybe’ embeds a sentential clause, and so there is the possibility that *daw* can be embedded under *baka* ‘maybe’. This is critical for discussing projection, as projection requires that an item be syntactically embedded. What is also necessary for
projection is that *baka* ‘maybe’ is an entailment cancelling operator. The translation as an English modal suggests that *baka* ‘maybe’ is an entailment cancelling operator, but this should not be taken as evidence; data are needed to ensure that *baka* ‘maybe’ is really an entailment cancelling operator.\(^5\) Before looking at the data with *baka* ‘maybe’, I first consider English *might* to show what property is necessary. A sentence of the form *might* \(p\) does not imply \(p\). That is, consider use of *might* in (18):

(18) Context: Alex asks Cindy why she is taking an umbrella to the park. She replies:

It might rain later.

We cannot see just from this that (18) does not imply \(p\)=it will rain later. However, if it does not rain later, Cindy has not said anything false in (18), as long as Cindy knows there is a possibility that it could rain when she utters (18). That is, consider that I were to ask a native English speaker to imagine that (18) is uttered in the context given, and that it does not rain later. If I ask the speaker whether what Cindy said in (18) is false, the speaker would say it is not false (I follow Matthewson, 2004 in assuming that judgment of truth or falsity of an utterance in context is a linguistic datum).

For *baka* ‘maybe’, this means we consider an utterance with *baka* ‘maybe’, and then ask the consultant about the truth of that utterance if the prejacent is later false:

(19) Context: Alex asks Cindy why she is taking an umbrella to the park. She replies:

Baka uulan mamaya.
maybe rain.CONT later

‘It might rain later.’

Question to consultant: “Let’s say it doesn’t rain later. Is what Cindy said false?”

Consultant: “No.”

\(^5\)Alternatively, we could say that we need to justify the translation by a modal, and that the subsequent data justify this translation.
As the consultant indicates that (19) is true even when it does not rain, \( p = \) it rains later is not implied by (19). Another piece of evidence that (18) does not imply that it will rain is that \textit{baka} ‘maybe’ can be used to say that it may or may not rain:

\begin{equation}
\text{(20) } \text{Context: Alex asks Cindy if it will rain later. She says that she really doesn’t know:}
\end{equation}

\begin{verbatim}
Baka uulan mamaya. Baka hindi uulan mamaya.
maybe rain.CONT later maybe not rain.CONT later
\end{verbatim}

‘It might rain later. It might not rain later.’

If the first utterance in (20) implied that it will rain later, and the second implied that it will not rain later, then (20) would be contradictory; consultants judge it to be acceptable, providing more evidence that (18) does not imply that it will rain later. Thus, \textit{baka} ‘maybe’ is an entailment cancelling operator (and this also justifies the translation as a modal).

We have seen that \textit{baka} ‘maybe’ embeds a sentence, and is an entailment cancelling operator, and so sets up the right sort of environment for the possibility of projection. Having reviewed the relevant properties for \textit{baka} ‘maybe’, we now consider an attitude predicate, \textit{akala} ‘falsely believe’.

\subsection{The propositional-attitude predicate \textit{akala} ‘falsely believe’}

\textit{Akala} ‘falsely believe’ is a propositional attitude predicate that combines with an argument phrase and a sentential clause. As shown by Kierstead (2014), it carries two implications: that the matrix subject believes the proposition denoted by the sentential clause, and that the speaker believes the negation of the proposition denoted by the sentential clause:
(21) Context: John ran in a race this past weekend. The winner of the race got a gold medal for winning:

\[ \text{[Akala ni Sue na [nanalo si John]s]} \text{.} \]
\[ \text{falsely.believe IND Sue COMP win.PERF.AV DIR John} \]

‘Sue falsely believes that John won.’

When consultants are asked who Sue thinks got the gold medal, they reply that she thinks John got it, showing that (21) implies Sue believes John won. When consultants are asked if the speaker believes that John got the medal, they reply that the speaker believes John did not get the medal, showing (21) also implies that the speaker believes John did not win the race.

I argue that akala ‘falsely believes’ embeds a sentential clause using the same pronominal clitic test from Kroeger: a pronoun that is an argument of nanalo ‘won’ must cliticize to nanalo ‘won’. Thus, nanalo ‘won’ must be sentence-initial, so there must be a sentential clause preceding it.

(22) Context: John ran in a race this past weekend. The winner of the race got a gold medal for winning:

\[ \text{[Akala ni Sue na [nanalo siya]s]} \text{.} \]
\[ \text{falsely.believe IND Sue LK win.PERF.AV 3SG.DIR} \]

‘Sue falsely believes that he won.’

(23) Context: John ran in a race this past weekend. The winner of the race got a gold medal for winning:

\[ \#[\text{Akala siya ni Sue na nanalo si John}]s. \]
\[ \text{falsely.believe 3SG.DIR IND Sue LK win.PERF.AV} \]

Intended: ‘Sue falsely believes that he won.’
To show that *akala* ‘falsely believe’ is an entailment cancelling operator, it is sufficient to show that it can be used when the proposition denoted by the embedded sentence is false:

(24) Context: John ran in a race this past weekend, but didn’t win. Sue congratulates John. When I ask you why she congratulated him for losing, you tell me:

   Akala ni Sue na nanalo si John.
   falsely.believe IND Sue LK win.PERF.AV DIR John

   ‘Sue falsely believes that John won.’

As *akala* can be used when John did not win, (24) cannot imply that John won. Thus *akala* ‘falsely believe’ is an entailment cancelling operator, and so it is reasonable to consider projection when *daw* is embedded under *akala* ‘falsely believe’. Having considered the relevant properties for *akala* ‘falsely believe’, we now turn to conditionals.

### 2.5 Conditionals

In Tagalog, a conditional utterance can be formed in two ways. A conditional can start with *kung* ‘if’, followed by two sentential clauses (marked with [ ]): the antecedent, which appears first, and the consequent, which appears second. The other way to form a conditional is for the consequent sentence to be first, and then have the antecedent, with *kung* ‘if’ preceding the antecedent sentence. For consistency, all data uses the first form, where the antecedent comes first:
(25) Context: I am asked if I know what Mary ate at the potluck. I say I don’t know exactly, but:

\[ \text{Kung [kumain si Mary ng adobo], if kumain din siya ng adobo, eat.PERF.AV too 3SG.DIR IND kanin.] s} \]

‘If Mary ate chicken, she ate rice also.’

I assume that *kung* is a complementizer, as it must precede any embedded question, as in (27). So, it behaves parallel to the complementizer *na* ‘that’. A gloss of ‘if’ may not be suitable for all uses of *kung* then. However, since aside from (27), *kung* ‘if’ will appear exclusively in conditionals in this thesis, I use the gloss of ‘if’ throughout for consistency.

(26) Context: Eric and Sam were talking about a race that happened earlier. Eric later tells Mary about the conversation:

\[ \text{Sinabi ni Sam na nanalo si Kim. say.PERF IND Sam COMP win.PERF.AV DIR Kim} \]

‘Sam said that Kim won.’

(27) Context: Eric and Sam were talking about a race that happened earlier. Eric later tells Mary about the conversation:

\[ \text{Tinanong ni Sam kung sino nanalo. ask.PERF IND Sam if who win.PERF.AV} \]

‘Sam asked who won.’

In a conditional, all clitics must cliticize to either the first word of the antecedent or the consequent, and none may cliticize to *kung* ‘if’:
(28)  Context: I am asked if I know what Mary ate at the potluck. I say I don’t know exactly, but:

a. \[\text{Kung } \text{kumain siya ng adobo}, \text{S } \text{kumain din siya ng if eat.PERF.AV 3SG.DIR IND adobo, eat.PERF.AV too 3SG.DIR IND kanin.} \text{S} \text{S}
\]

\text{rice}

‘If she ate chicken, she ate rice also.’

b. \#\[\text{Kung siya } \text{kumain ng adobo}, \text{S } \text{kumain din siya ng if 3SG.DIR eat.PERF.AV IND adobo, eat.PERF.AV too 3SG.DIR IND kanin.} \text{S} \text{S}
\]

\text{rice}

Intended: ‘If she ate chicken, she ate rice also.’

c. \#\[\text{Kung din siya } \text{kumain siya ng adobo}, \text{S } \text{kumain ng if too 3SG.DIR eat.PERF.AV 3SG.DIR IND adobo, eat.PERF.AV IND kanin.} \text{S} \text{S}
\]

\text{rice}

Intended: ‘If she ate chicken, she ate rice also.’

Since \text{siya} ‘she’ cliticizes to the predicate of the antecedent, I assume that it is sentence-initial, and thus the antecedent is an embedded sentence. Similarly, since \text{din} ‘too’ and \text{siya} ‘she’ cliticize to the predicate of the consequent, I assume that it too is sentence-initial, and thus the consequent is also an embedded sentence.

In Chapter 3 I will consider data where \text{daw} is embedded in the antecedent sentence. As with \text{baka} ‘maybe’ and \text{akala} ‘falsely believe’, we must show that this environment is entailment cancelling, as otherwise it would be incorrect to talk about projection.\textsuperscript{6} For the sentence in (25), this means it must not be judged as false even if Mary did not eat chicken. We find this is the case:

\textsuperscript{6}Alternatively, it is necessary to justify the translation that this is a conditional, and it must be shown that the antecedent is entailment cancelling to do so.
(29) Context: You ask me if Mary ate rice at the potluck yesterday. I say I don’t know, but she always eats rice with adobo, so:

Kung kumain si Mary ng adobo, kumain din siya ng kanin.
If eat.PERF AV DIR Mary IND adobo, eat.PERF AV too 3SG DIR IND rice

‘If Mary ate chicken, she ate rice also.’
Question to consultant: “What if Mary didn’t actually eat chicken? Did I say something false?”
Consultant: “No.”

So, even if the proposition denoted by the antecedent is false, the conditional is not false. Thus, the antecedent is not implied by the conditional, so the antecedent of the conditional is an entailment cancelling environment (and so it is reasonable to call this construction a conditional). Thus, we can investigate projection when daw is embedded in the antecedent.

2.6 Negation

In Tagalog, hindi ‘not’ is used for negation, and it must occur sentence initially. I assume that sentences with hindi ‘not’ are monoclausal, and so there is no sentence boundary after hindi ‘not’. That is, in (30) below, hindi ‘not’ only syntactically modifies pumunta ‘go’ and forms the predicate hindi pumunta ‘not go’, which is predicated of Peter:

(30) Context: There was a party yesterday that Bill missed. Bill asks his friend who attended. His friend says:

[Hindi pumunta si Peter,]s
not go.PERF DIR Peter

‘Peter didn’t go.’
Evidence for the assumption that hindi ‘not’ syntactically modifies just the predicate and not the entire sentence comes from on clitic placement, and again is based on the reasoning of Kroeger (1993). Pronominal clitics must cliticize to hindi ‘not’, and cannot cliticize to the predicate. As ko ‘I’ cliticizes to hindi ‘not’ in (31), hindi ‘not’ must be sentence-initial, but alam ‘know’ cannot be sentence-initial, so there can be no sentence boundary immediately preceding alam ‘know’. If (31) were biclausal, with hindi ‘not’ embedding a sentence that started with alam ‘know’ (as represented in (32)), then ko ‘I’ would have to cliticize to alam ‘know’, as ko ‘I’ is an argument of alam ‘know’. Since ko ‘I’ cannot appear in this position, however, I assume that hindi ‘not’ does not syntactically embed a full sentential clause.

(31) Context: Sam asks Mary if it is going to rain later. Mary replies:

\[
\begin{align*}
\text{[Hindi ko} \quad \text{alam.]}_S \\
\text{not} & \quad 1SG.IND \text{ know} \\
\end{align*}
\]

‘I don’t know.’

(32) Context: Sam asks Mary if it is going to rain later. Mary replies:

\[
\begin{align*}
\#\text{[Hindi [alam ko.]_S]}_S \\
\text{not} & \quad \text{know} \quad 1SG.IND \\
\end{align*}
\]

Intended: ‘I don’t know.’

The last environment of interest is questions, which we now turn to.

## 2.7 Questions

There are two types of question in which daw can appear: polar questions and constituent questions, so I will review both. In Tagalog, a polar question can be formed as string identical to a declarative sentence, with the mood being signaled by rising intonation (Schachter and Otanes, 1972, 501).
(33) a. [Umulan kahapon]$_S$  
    rain.PERF yesterday  
    ‘It rained yesterday.’

b. [Umulan kahapon?]$_S$  
    rain.PERF yesterday  
    ‘Did it rain yesterday?’

Polar questions can also be formed using the second position clitic ba:

(34) [Umulan ba kahapon?]$_S$  
    rain.PERF BA yesterday  
    ‘Did it rain yesterday?’

Constituent questions are formed by using a special question word, e.g., sino, ‘who’, ano ‘what’, bakit, ‘why’, etc. These occur sentence initially, and are followed by a direct phrase (i.e., a phrase marked by ang).

(35) a. [[Ano] [ang kinain mo kahapon]$_{DIR?}$]$_S$  
    what DIR eat.PERF.PV 2SG.IND yesterday  
    ‘What did you eat yesterday?’

b. [[Sino] [ang kumain ng manok]$_{DIR?}$]$_S$  
    who ANG eat.PERF.AV IND chicken  
    ‘Who ate the chicken?’

I end this discussion of the basics of how questions are formed here, and leave the syntax and semantics of questions for future research. One reason for this is, as will be seen in Chapter 3, questions containing daw behave similarly to evidentials in questions in other languages (Faller, 2002; Murray, 2010), but not similar to other embedding operators. It is interesting why there would be such commonality among the readings for evidentials in questions cross-linguistically, but not commonality between questions and other Tagalog operators. As this question seems rather large, I leave it for future research, and will not give an analysis of questions containing daw. I thus do not go into more detail as to the semantics of questions, and in Chapter 3 the focus will be on exploring the readings we see
with *daw* in questions, and relating them to those for other languages.

### 2.8 Summary

As discussed in Chapter 1, the data with *daw* show that evidential content can project. However, to investigate projection with *daw*, first it needed to be shown that the relevant Tagalog constructions can syntactically embed *daw*, and are entailment cancelling environments. The current chapter considered the relevant embedding environments of the antecedent of a conditional, the modal *baka* ‘maybe’, the attitude predicate *akala* ‘falsely believe’, negation and questions. While negation was shown not to be able to embed *daw*, and the details of the syntax and semantics of questions was left for future research, the others had all the requisite properties, and so we can investigate whether projection is possible when *daw* is embedded under those operators. For negation, it will still be useful to see what readings can arise, although projection is not possible (since syntactic embedding is ruled out). Having seen all the relevant operators on their own, we now turn to the data with *daw*. 
Chapter 3

Sentences with the Tagalog reportative evidential *daw*

In this chapter I will present the original fieldwork on Tagalog *daw* both at the root level, and in embedded environments. I first start with the root level data, before turning to utterances containing *daw* with operators, where I consider cases both where the operator is syntactically embedded under *daw*, and where *daw* is syntactically embedded under the operator.

As I treat *daw* as a reportative evidential, it is important to show that *daw* requires there to be reportative evidence specifically. I will show that at the root level, *daw* does indeed require there to be a report, and also discuss more details about what qualifies as a report and also what sources are allowed for the report. I will show that the speaker is committed to the existence of a report, but not to the content of the report. While not all of this directly ties into projection of evidential content or readings of *daw* with operators, it is necessary to show that *daw* is an evidential and to show what kinds of contexts need to be constructed for the more complicated examples (e.g., that an example is not unacceptable due to incorrect report source).

For sentences that include *daw* and an operator, I will investigate what readings are possible with such operators, including readings where *daw* has wide scope over the operator, has narrow scope under the operator, or where the evidential content of *daw* projects.
3.1 *Daw* in simple declaratives

*Daw* is a second-position clitic, and so *daw* cliticizes to the predicate and appears before any argument phrases (Schwager, 2010). Thus, in the following example, *daw* is acceptable only in the position it appears in, and placement in any other position results in unacceptability. I generally use a postposed “it was reported” to translate this implication contributed by *daw*, following Murray (2010); use of other translations will be discussed when they appear.

(1) Kumain * daw si Paul ng adobo.
    eat.PERF.AV RPT DIR Paul IND adobo
    ‘Paul ate the adobo, it was reported.’

Syntactically I assume that *daw* is a sentential modifier, and so in (1) it embeds a sentence. This means (1) has structure: [daw [kumain si Paul ng adobo]S]S. As a sentential modifier clitic, *daw* cliticizes to *kumain* ‘eat’, the first word in the sentence that *daw* syntactically modifies.

Having discussed the distribution of *daw* in (1) and the syntax of the sentence, I now turn to data that show *daw* implies there is reportative evidence (justifying the translation I have given), and so is a reportative evidential.

3.1.1 Type of evidence

As a reportative evidential, *daw* implies the existence of a report, i.e., when added to a simple declarative with propositional content $\phi$, *daw* “expresses that $\phi$ has been asserted previously by some source $x$,” (Schwager, 2010). For example, in (2), John is relying on the report that he heard from Mary that she made the adobo, and he is relaying this to Sam.
(2) Context: Mary made adobo that she brought to a potluck. She told the host John that she made it. Another guest, Sam, asks John who made the adobo:

Linuto  **daw** ni Mary ang adobo.
cook.PV.PERF RPT  IND Mary DIR adobo

‘Mary cooked the adobo, it was reported.’

(2) shows that *daw* is compatible with reportative evidence, but not that this type of evidence is necessary. I show the latter with an example sentence in four minimally different contexts. We start with (3), which shows again that *daw* is acceptable when there is a report in context of the propositional content \( \phi \). In (3), the only evidence that Phil has that it rained is from the weather report.

(3) Context: Phil, who lives in Ohio, has been inside all of yesterday and today, in his windowless apartment, working. He watches the weather report on the news, which says it rained yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

Umulan  **daw** kahapon.
rain.PERF RPT  yesterday

‘It rained yesterday, it was reported.’

By placing the sentence in (3) in different contexts, I show *daw* requires reportative evidence: it cannot be used with visual evidence, other sorts of direct evidence like audial evidence, or inferential evidence. That is, it cannot be used if instead of hearing a report Phil either saw the rain as in (4), heard it as in (5), or infers that it rained from seeing someone with a wet umbrella as in (6):
Context: Phil, who lives in Ohio, has been inside all of yesterday and today. He has watched no news or talked to anyone, but he saw it rain outside his window yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

#Umulan  
\textbf{daw} kahapon.  
\textit{rain.PERF RPT yesterday}  

Intended: ‘It rained yesterday, I saw.’

Context: Phil, who lives in Ohio, has been inside his windowless apartment all of yesterday and today. He has watched no news or talked to anyone, but heard it raining on the roof yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

#Umulan  
\textbf{daw} kahapon.  
\textit{rain.PERF RPT yesterday}  

Intended: ‘It rained yesterday, I heard.’

Context: Phil, who lives in Ohio, has been inside his windowless apartment all of yesterday and today. He has watched no news or talked to anyone, but saw his roommate come in with a wet umbrella yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

#Umulan  
\textbf{daw} kahapon.  
\textit{rain.PERF RPT yesterday}  

Intended: ‘It rained yesterday, it seems.’

As \textit{daw} can be used with reportative evidence, but not other types, it is truly a reportative evidential. Having seen that \textit{daw} requires reportative evidence, we now turn to what the possibilities are for the source of the report.
3.1.2 Source of the report

Schwager (2010, 224) states the source of the report (her $x$) may be “one of the arguments of the predicate, ... any other salient individual, [or if] no particular individual is salient, ... general opinion.” In my own research, I have found the report need not be based on something explicitly said. For example, in (7) below, a dream may serve as the source of a report:

(7) Context: Mary is telling her friend about a crazy dream that she had:

Isda **daw** ako.
fish RPT 1SG.DIR
‘I was a fish, it was reported.’

Even though no one actually says Mary is a fish, **daw** can be used here since Mary was a fish in her dream. In this case, the translation of “it was reported” seems less natural perhaps than a translation such as “according to my dream.” I opt for the former translation over the latter however both to maintain consistency in a translation of **daw**, and also because a translation such as “according to my dream” may suggest that **daw** conveys information about the origin of the report, which is not generally the case. Consultants report that in this scenario, it is preferable to use **daw**, so that Mary makes clear she is not asserting she is a fish, but only that this is based on what happened in her dream. **Daw** can also be used if the speaker knows something has been reported, but doesn’t have any particular report in mind. One example of this is that **daw** can be used with superstitions:

(8) Context: One friend asks another what the superstition about black cats is. The other replies:

Badluck **daw** ang pusa ng itim.
bad.luck RPT DIR cat INSTR black

‘Black cats are bad luck, it is reported.’

39
In (8), consultants report that the speaker need not remember any particular instance of someone saying black cats are bad luck. As this is a superstition, and as such the speaker knows it has been reported, *daw* can be used. I use the translation here “it is reported” instead of “it was reported” as it seems to better convey the non-specificity of the source of the report.

*daw* can be used both with second-hand and third-hand reports. We have already seen an instance of a second-hand report in (2), which is reproduced below for convenience.

(9) Context: Mary made adobo that she brought to a potluck. She told the host John that she made it. Another guest, Sam, asks John who made the adobo:

```
Linuto daw ni Mary ang adobo.
cook.PV.PERF RPT IND Mary DIR adobo

‘Mary cooked the adobo, it was reported.’
```

*daw* is also used with third-hand reports, of which (10) is an example. In (10), John heard that Mary made the adobo not directly from her, but second-hand through Bill. Thus, when he is relaying this information to Sam, it is a third-hand report:

(10) Context: Mary made adobo that she brought to a potluck. She told her friend Bill that she made it, and he told the host John. Another guest, Sam, asks John who made the adobo:

```
Linuto daw ni Mary ang adobo
cook.PV.PERF RPT IND Mary DIR adobo

‘Mary cooked the adobo, it was reported.’
```

*daw* cannot be used to report something previously said by either the current speaker or addressee. In (11), Mary cannot use *daw* to remind her son of something she said previously:
(11) Context: Mary tells her son she made adobo for dinner. Her son forgets and later asks what’s for dinner. She says:

#Nagluto  daw ako ng adobo.
cook.AV.PERF RPT 1SG.DIR IND adobo

Intended: ‘I cooked adobo, it was reported.’

Similarly in (12), Mary’s son cannot use daw to remind his mother of something she said previously:

(12) Context: Mary tells her son she made adobo for dinner. Mary later forgets what she made for dinner and asks her son. He says:

#Nagluto  ka daw ng adobo.
cook.AV.PERF 2SG.DIR RPT IND adobo

Intended: ‘You cooked adobo, it was reported.’

Consultants find use of daw in both (11) and (12) unacceptable, showing that daw cannot be used when the report originates from either the speaker or listener. In summary, daw allows a variety of sources of the report: it can be second- or third-hand, or a more metaphorical report from a dream; what is not allowed is for the report to originate from the speaker or the addressee.

Having seen that daw requires a report, and also having considered what the possible sources of the report are, I now consider the propositions related to root level utterances with daw, the prejacent and reportative propositions, in more detail. I will explain why the speaker must be committed to the reportative proposition, but show that the speaker can, but need not be committed to the prejacent proposition. Such data is critical for assessing theories of daw, as it determines what the empirical reading is for root level utterances with daw. Furthermore I will show that the reportative proposition can be new information. This property is relevant as Schwager (2010) argues for a presuppositional analysis, which
I argue in Chapter 4 cannot capture the fact that the reportative proposition can be new information in a satisfying way.

### 3.1.3 Reportative proposition

The speaker must be committed to the reportative proposition: if a speaker uses *daw*, but then says they did not hear any report, this is judged to be unacceptable:

(13) Context: Tom asks Jane who won the last OSU game. Jane replies:

```plaintext
#Nanalo  daw si OSU kahapon. Hindi ko narinig kung win.PERF AV RPT DIR OSU kahapon not ISG IND hear.PERF if nanalo si OSU. win.PERF AV RPT OSU

‘OSU won yesterday, it was reported. I didn’t hear if they won.’
```

The reportative proposition can be new information though. We have already seen an example in (3), reproduced below. The reportative proposition that there is a report that it rained is not part of the prior context: Phil starts the conversation with (14), and thus it is not in Phil and Sam’s common ground that there was a weather report, as Phil has not mentioned the weather report before (14), and Sam would not have watched the Ohio news weather report from where he lives in California.

(14) Context: Phil, who lives in Ohio, has been inside all of yesterday and today, in his windowless apartment, working. He watches the weather report on the news, which says it rained yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

```plaintext
Umulan  daw kahapon. rain.PERF RPT yesterday

‘It rained yesterday, it was reported.’
```
I now turn to the properties of the prejacent proposition.

**3.1.4 Prejacent proposition**

With respect to the prejacent implication, the speaker need not be committed to it, and can “distance himself from [it], endorse it, or remain entirely neutral,” (Schwager, 2010). So, a speaker can use *daw* while also endorsing, refuting, or claiming ignorance about the prejacent implication. In (15-a), we see an example where a speaker, after using *daw* in an utterance, subsequently asserts the prejacent implication of the *daw*-utterance (that OSU won), showing a speaker can be committed to the truth of the prejacent implication. In (15-b), the speaker subsequently asserts the negation of the prejacent implication, showing that a speaker can use *daw* even when she is committed to the negation of the prejacent implication. Finally, in (15-c), the speaker explicitly states she does not know the truth or falsity of the prejacent implication, but still use of *daw* is acceptable, showing *daw* can be used without the speaker having a commitment to the prejacent implication one way or the other.

(15) Context: Jane just got off the phone with her friend Mary. They had talked about OSU football. Mary likes football a lot, but sometimes forgets who won what game. Jane tells her friend Tom about the conversation:

   a. Nanalo *daw* si OSU kahapon, at nanalo si OSU win.PERF.AV RPT DIR OSU kahapon and win.PERF.AV DIR OSU ‘OSU won yesterday, it was reported, and they did win.’

   b. Nanalo *daw* si OSU kahapon, pero hindi nanalo si OSU win.PERF.AV RPT DIR OSU kahapon but not win.PERF.AV DIR OSU ‘OSU won yesterday, it was reported, but they didn’t win.’

   c. Nanalo *daw* si OSU kahapon. Hindi ko alam sino win.PERF.AV RPT DIR OSU kahapon not 1SG.IND know.PERF who nanalo.
      win.PERF.AV ‘OSU won yesterday, it was reported. I don’t know who won.’
Use of *daw* is never strictly required, meaning that even if a speaker has reportative evidence, he can still utter a true acceptable statement that does not use *daw*. In (16), even though Phil only has reportative evidence, his statement is still acceptable, and true if the weather report is correct:

\[(16)\]

Context: Phil, who lives in Ohio, has been inside all of yesterday and today, in his windowless apartment, working. He watches the weather report on the news, which says it rained yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:

\[
\begin{align*}
\text{Umulan} & \quad \text{kahapon.} \\
\quad \text{rain.PERF yesterday} \\
\text{‘It rained yesterday.’}
\end{align*}
\]

However, (16) does not have the same truth conditions as (14): (16) is a simply assertion that it rained, and commits the speaker to this proposition, whereas it has been shown in (15) that utterances with *daw* do not necessarily commit the speaker to the prejacent implication. So, while a speaker may not be required to use *daw*, it does not commit them to the same proposition as that of a simple assertion that, e.g., it rained.

In summary, we have seen that simple declaratives containing *daw* commit the speaker to the reportative implication, that the speaker has reportative evidence for the prejacent implication, but the speaker need not be committed to the prejacent implication itself. The reportative evidence could be second-hand or third-hand, or not even from the report of a specific person, as in the case of dreams and superstitions. However, the origin of the report could not be the current speaker or listener.
3.2 **Daw with embedding operators**

As discussed in Chapter 1, complex utterances where *daw* is embedded under an operator have important consequences for both theories of evidentials and taxonomies of meaning. That is, unlike evidentials that have been previously investigated in embedded environments, *daw* provides evidence for a reading where the evidential content projects. This expands our knowledge both of what properties evidential contents can have, and also what kinds of contents can project. In this section I consider cases where *daw* is embedded under various operators, and also where *daw* embeds these operators. The operators include: the antecedent of a conditional, the modal *baka* ‘maybe’, and the propositional attitude predicate *akala* ‘falsely believe’. I also consider cases where *daw* embeds *hindi* ‘not’ (recall I argued *hindi* ‘not’ cannot syntactically embed *daw*), and *daw* in questions.

### 3.2.1 The modal *baka* ‘maybe’

*Daw* can cliticize to *baka* ‘maybe’, or to the embedded predicate. One possible reading when *daw* cliticizes to *baka* ‘maybe’ is that it has wide scope over *baka* ‘maybe’. In (17), use of *daw* implies the existence of a previous report that maybe Eric ate Bill’s chocolate bar, i.e., the report Bill hears from Sam. We can indicate the relative scopes of the operators in a logical form DAW(MAYBE(p)), where DAW indicates the scope of *daw* and MAYBE indicates the scope of *baka* ‘maybe’.
Context: Bill lives in a house with roommates Sam and Eric. One day he leaves for work, and comes home to find someone else in the house has eaten a chocolate bar he had been saving in the fridge. He goes to ask Sam if he knows what happened to it. Sam says:

Baka kumain si Eric ng tsokolate mo.
maybe eat.PERF.AV DIR Eric IND chocolate 2SG.IND

‘Maybe Eric ate your chocolate bar.’

Bill later tells his mother that his chocolate bar was stolen, and he’s not sure who ate it, but:

Baka daw kumain si Eric ng tsokolate ko.
maybe RPT eat.PERF.AV DIR Eric IND chocolate 1SG.IND

‘It was reported that maybe Eric ate my chocolate bar.’

Again, the “it was reported” is preposed in the translation to make clear that the “maybe” was part of the report. Since daw cliticizes to the first word of the sentence that it syntactically modifies, and here it cliticizes to baka ‘maybe’, daw must syntactically modify the syntactically complex sentence [baka [kumain si Eric ng tsokolate ko]s]s, giving a structure of [daw [baka [kumain si Eric ng tsokolate ko]s]s]s for (17) as a whole.

When daw cliticizes to the embedded predicate, another interpretation is possible, where daw takes narrow scope with respect to baka ‘maybe’. The reading is that there is a possibility of something being reported: (MAYBE(DAW(p))).

Context: Jane and Sally are watching the TV, and the news is about to come on. They are guessing what the weather report will say. Jane says:

Baka uulan daw bukas.
maybe rain.CONT RPT tomorrow

‘Maybe it will say it will rain tomorrow.’
As the context is such that there is no actual report, but just the possibility that there will be one, the narrow scope interpretation is the only one possible, as the wide scope interpretation would involve a false implication. In (18) above, *daw* must cliticize to the embedded predicate *uulan* ‘rain’; if *daw* cliticizes to *baka* ‘maybe’ in this context, it results in unacceptability.

Recall that I argued in Chapter 2 on the basis of the distribution of pronominal clitics that *baka* ‘maybe’ embeds a sentential clause. So, in (18) there is an embedded sentential clause that contains *uulan* ‘rain.’ Since *daw* cliticizes to *uulan* ‘rain’, it must syntactically modify the embedded sentence for which *uulan* ‘rain’ is the predicate. This gives a structure of \([\text{baka} [\text{daw} [\text{uulan} \text{bukas}]]]_S\) for (18).

A third reading is possible when *daw* cliticizes to the embedded predicate, where *daw* is syntactically embedded under *baka* ‘maybe’, but the reportative implication of *daw* projects. I.e., in (19), use of *daw* implies that the prejacent, that Eric ate the candy bar, was actually reported, even though *daw* is embedded under the modal *baka* ‘maybe’: \((\text{DAW}(p) \land \text{MAYBE}(p))\).
(19) Context: Bill lives in a house with roommates Sam and Eric. One day he leaves for work, and comes home to find someone else in the house has eaten a chocolate bar he had been saving in the fridge. He goes to ask Sam if he knows what happened to it. Sam says:

Kumain si Eric ng tsokolate mo.

EAT.PERF.AV DIR Eric IND chocolate 2SG.IND

‘Eric ate your chocolate bar.’

Bill thinks maybe Sam is telling the truth, but maybe Sam ate it, and so is lying about the chocolate. Bill later tells his mother that his chocolate bar was stolen, and he’s not sure who ate it, but:

Baka kumain daw si Eric ng tsokolate ko.

MAYBE EAT.PERF.AV RPT DIR Eric IND chocolate 1SG.IND

‘Maybe Eric ate my chocolate bar, as it was reported he did.’

Further evidence that *daw* in (19) implies it was reported that Eric ate the candy bar comes from consultants finding use of *daw* unacceptable in a minimally different context where Bill does not hear any report, presumably because use of *daw* in such a context would give rise to a false implication. Thus, it is the use of *daw* in particular that gives rise to the implication of a report, and so its reportative implication projects. *Daw* cannot cliticize to *baka* ‘maybe’ in the context in (19), showing the projective reading is not available when *baka* ‘maybe’ is the clitic host.

Evidence that *daw* is syntactically embedded under *baka* ‘maybe’ comes from the placement of *daw*: since *daw* cliticizes to *uulan* ‘rain’, *daw* must syntactically modify the sentence [uulan bukas]$_S$. *Daw* cannot syntactically modify the complex sentence [baka [uulan bukas]$_S$]$_S$ because the first word of the complex sentence is *baka* ‘maybe’, which *daw* does not cliticize to. Since *daw* syntactically modifies [uulan bukas]$_S$, the structure of (19) must be [baka [daw [uulan bukas]$_S$]$_S$]$_S$, so *daw* is syntactically embedded.
The last possibility for sentences that contain both *baka* ‘maybe’ and *daw* is where *daw* does not cliticize to *baka* ‘maybe’, and there is a wide scope reading (DAW(MAYBE(p)):

(20) Context: Bill lives in a house with roommates Sam and Eric. One day he leaves for work, and comes home to find someone else in the house has eaten a chocolate bar he had been saving in the fridge. He goes to ask Sam if he knows what happened to it. Sam says:

Baka kumain si Eric ng tsokolate mo.
maybe eat.PERF.AV DIR Eric IND chocolate 2SG.IND
‘Maybe Eric ate your chocolate bar.’

Bill later tells his mother that his chocolate bar was stolen, and he’s not sure who ate it, but:

Baka kumain **daw** si Eric ng tsokolate ko.
maybe eat.PERF.AV RPT DIR Eric IND chocolate 1SG.IND

‘It was reported that maybe Eric ate my chocolate bar.’

This is a wide scope reading for *daw*, because the original report was about what might have happened. So in the semantics, *daw* has wide scope over *baka* ‘maybe’. *Daw* does not cliticize to *baka* ‘maybe’ though, but instead to *kumain* ‘ate’, so *daw* must syntactically modify *[kumain si Eric ng tsokolate ko]_S*. Thus, (20) has syntactic structure *[baka [daw [kumain si Eric ng tsokolate ko]_S]]_S*, so *daw* is still syntactically embedded even though it has wide scope. I omit the subscript on the brackets for the sentence with *daw* because I assume this constituent has a more complicated type, which I will discuss in Chapter 5.

To summarize, we have seen that for sentences containing both *daw* and the modal *baka* ‘maybe’, depending on context and placement of *daw*, one of three readings are possible: if *daw* occurs directly after *baka* ‘maybe’, *daw* must take wide scope. If *daw* occurs after the embedded predicate, the wide scope (WS) reading is also possible, but a reading where
Table 3.1: Summary of readings of daw in the with baka

daw takes narrow scope (NS) with respect to baka ‘maybe’ is also possible. A third reading is also possible where the reportative implication of daw projects (P). These readings are summarized in Table 3.1.

### 3.2.2 Conditionals

In conditional utterances of the form shown in (25), daw can cliticize to the predicate of the antecedent; it can also cliticize to the predicate of the consequent, although I will not discuss the latter here. Furthermore, these are the only two positions for daw. Like pronominal clitics, if daw appears directly after kung ‘if’, this results in unacceptability:

(21) Context: I ask if you heard anything about what Mary ate at the potluck. You reply:

```
#Kung daw kumain si Mary ng adobo, kumain din siya ng if RPT eat.PERF.AV DIR Mary IND adobo, eat.PERF.AV too 3SG.DIR IND patatas.
potatoes
```

Intended: ‘It was reported that if Mary ate adobo, she ate potatoes too.’

Since kung ‘if’ is a complementizer, I argue that it is not a viable clitic host; clitics also can never cliticize to the complementizer na ‘that’. For the conditionals of the kind being discussed in this thesis, where the antecedent is first, the leftmost viable clitic host is then the first word of the antecedent sentence. So, if daw syntactically combines with the
entire conditional sentence, we would predict that *daw* cliticizes to the predicate of the antecedent. However, *daw* cliticizing to the predicate of the antecedent is also compatible with *daw* syntactically combining with just the antecedent sentence, as the predicate of the antecedent is the first viable host in the antecedent. So the position of *daw* in a conditional does not determine which sentence it syntactically combines with.

When *daw* cliticizes to the predicate of the antecedent, as in (22), one possible reading is where *daw* takes wide scope over the entire conditional sentence, and it is implied that there was a report of the entire conditional. Thus, use of *daw* implies that Bill is relaying the superstition about breaking a mirror that has been reported: (DAW(if p then q)).

(22) Context: John remembers there is some superstition about breaking a mirror, but doesn’t exactly remember what it is. He asks his friend Bill to remind him. Bill says:

*Kung makabasag ka daw ng salamin, magkakaroon ka ng if break.INF.AV 2SG.DIR RPT IND mirror exist.CONT 2SG.DIR IND pito-ng taon-ng bad luck. seven-LK years-LK bad luck*

‘It is reported that if you break a mirror, you will have seven years bad luck.’

The context is set up such that the only possible interpretation is where *daw* has semantic wide scope (DAW(if p then q)), and so (22) is evidence of an utterance where *daw* has semantic wide scope over the conditional. Additionally, it is my hypothesis that in (22), *daw* syntactically embeds the entire conditional, since this is compatible with *daw* cliticizing to the predicate of the antecedent, and suggested by the semantics. The translation of *daw* as ‘it is reported’ instead of ‘it was reported’ is intended to signal the non-specificity of the report.

While (22) has one possible reading where *daw* takes wide scope over the conditional, another reading is also possible where *daw* takes narrow scope with respect to the antecedent
of the conditional, and the reportative implication is interpreted in this embedded context. (23) is an example of an utterance that has this reading, where the antecedent concerns the possibility of a report: (if (DAW p) then q).

(23) Context: I visit my grandmother, who is very forgetful. Sometimes she even forgets what she had for dinner the day before. I ask her how her dinner was yesterday. She says she can’t quite remember what she had, and tells me to ask my grandfather. I ask her if my grandfather is actually reliable, or whether he might have forgotten too. She says I should trust what he says. For instance:

Kung kumain **daw** ako ng adobo, kumain ako ng adobo.
if eat.PERF.AV RPT 1SG.DIR IND adobo, eat.PERF.AV 1SG.DIR IND adobo
‘If it was reported that I ate adobo, then I ate adobo.’

Above, as the grandfather has not been asked yet, there is no actual report in the global context. Use of **daw** contributes that the antecedent of the conditional concerns reports that the grandmother ate adobo, not whether she actually did.

As in (22), in (23), the placement of **daw** does not give any indication as to whether **daw** syntactically embeds just the antecedent of the conditional, or the entire conditional. I assume that in (23) **daw** only embeds the antecedent based on the evidence that the prejacent of **daw** is just the antecedent.

In (23), **daw** is interpreted as contributing only to the content of the antecedent, and there is no contribution to the global context (i.e., there is no implication of an actual report). In contrast, when the reportative implication projects, the reportative implication is an implication of the entire utterance, and is proffered to the global context. Such a reading is one where the prejacent of **daw** is only the antecedent of the conditional, but use of **daw** implies there is an actual report of the antecedent: (DAW p ∧ if p then q).
(24) Context: John believes that with roulette, he can sense what number will come up next with complete certainty. His friends Jenny and Sally decide to use his ability to make money off the casinos. John will sit in a corner waiting for his premonitions. Jenny will sit at the table and play roulette. Sally will go back and forth between the two, both to report John’s premonitions, and just to chat so the casino doesn’t catch on. They won’t talk to anyone outside of their group to not get caught. Jenny is playing roulette, and Sally comes up next to Jenny, just as Jenny puts a bet that a red number will come up next. Sally says:

Kung pula daw ang susunod, matutuwa tayo.
if red RPT DIR next.one joyful 1PL.INCL.DIR
‘If the next one is red, as it was reported it would be, we’ll be happy.’

Consultant comment: Then [Sally] had to have talked to John [about the next being red].

As seen from the consultant comment (which was representative of both consultants), the utterance implies that John has a premonition the next number would be red, and Sally is reporting this. When daw is not used, the utterance does not imply that there was a report:

(25) Same context as (24):

Kung pula ang susunod, matutuwa tayo.
if red DIR next.one joyful 1PL.INCL.DIR
‘If the next one is red, we’ll be happy.’

Question to consultant: Has Sally talked to John? Consultant comment: No.

As consultants do not find (25) to imply that Sally talked to John, and the only difference between (24) and (25) is the inclusion of daw in the former, it must be the use of daw in (24) that implies Sally talked to John. That is, it is use of daw, and its associated reportative
implication, that gives rise to the implication of the utterance as a whole that there was a report of the antecedent. As *daw* is a trigger syntactically embedded under the scope of an entailment canceling operator, yet the associated reportative implication survives, this is a case of projection.

I assume in (24) that *daw* syntactically embeds just the antecedent of the conditional, and thus *daw* is syntactically embedded by the entire conditional. As with (23), the evidence for *daw* being embedded is that the prejacent of *daw* is just the antecedent of the conditional, and not the entire conditional (as the placement of *daw* is again inconclusive).

Thus, we have seen that for conditionals, syntactically *daw* could be embedded in the antecedent of the conditional, or modify the entire conditional sentence. When *daw* was embedded in the antecedent, depending on context, two readings are possible: one where *daw* has narrow scope with respect to the antecedent, being interpreted in the local context of the antecedent of the conditional, and one where the reportative implication of *daw* projects. When *daw* syntactically modifies the entire conditional, *daw* had semantic wide scope over the conditional sentence. These readings are summarized by Table 3.2, where pred. stands for predicate, DAW indicates the scope of *daw* relative to the conditional (indicated by if. . . then), WS refers to the reading where *daw* takes wide scope over the conditional, NS refers to the reading where *daw* takes narrow scope with respect to the antecedent of the conditional, and P refers to the reading where the reportative implication projects:

<table>
<thead>
<tr>
<th>Position of <em>daw</em></th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>After antecedent pred.</td>
<td>WS, NS, P</td>
</tr>
<tr>
<td></td>
<td>DAW(\text{if } p \text{ then } q), if(DAW(p)) \text{ then } q, DAW(p) \land \text{ if } p \text{ then } q</td>
</tr>
</tbody>
</table>

Table 3.2: Summary of readings of *daw* in the conditional
3.2.3 The propositional-attitude predicate *akala* ‘falsely believe’

For sentences with *daw* and *akala* ‘falsely believe’, *daw* can either cliticize to *akala* ‘falsely believe’ or to the embedded predicate. When *daw* cliticizes to *akala* ‘falsely believe’, a possible reading is one where *daw* takes semantic scope over *akala* ‘falsely believe’, and so, what is implied by the utterance is that there was a report of the subject having a false belief: DAW(AKALA_j(p)). In (26), John’s report that he falsely believed he saw a parrot allows the speaker of the subsequent utterance to truthfully use *daw*.

(26) Context: Your friend John goes bird watching, but you aren’t able to go. He is colorblind, and has trouble telling parrots and pigeons apart. While on his trip, John thinks he sees a parrot at first, but later realizes it was only a pigeon. You later call John and ask how his trip was. He says:

a. *Akala ko na nakita ko yung parrot.*
   
   falsely.believe.CONT 1SG.IND LK see.PERF.PV 1SG.IND that parrot
   
   ‘I falsely believed I saw a parrot.’

After you get off the phone, you tell your friend about the conversation:

b. *Akala *daw ni John na nakakita siya yung parrot.*
   
   falsely.believe.RPT IND John LK see.IMPERF.AV 3SG.DIR that parrot
   
   ‘It was reported that John falsely believed that he saw a parrot.’

I assume that *daw* syntactically embeds *akala* ‘falsely believe’ in (26-b), since it cliticizes to *akala* ‘falsely believe’. If *daw* syntactically modified the sentence embedded under *akala* ‘falsely believe’, *daw* would have to cliticize to *nakakita* ‘see’. This assumption gives a structure for (26) of [daw [akala ni John na [nakakita siya yung parrot]s]s]s.

In a different context however, *daw* can be in the semantic scope of *akala* ‘falsely believe’. For this reading, someone has a false belief that a certain report was made: (AKALA_j (DAW(p))). The speaker does not believe such a report was actually made, as *akala* ‘falsely believe’ implies the falsity of the proposition denoted by its complement.
Context: Susan went on a trip to Las Vegas. She believes the real Elvis is dead, but likes to see Elvis impersonators. When she returns, she gets together for dinner with her friends to talk about the trip. Tim (who also believes the real Elvis is dead) is running late. Susan says how much fun she had seeing an Elvis impersonator do a show. Tim then enters. He hears her say, “My favorite part of the trip was seeing Elvis.” After we leave Susan’s dinner (and Susan), he tells us Susan must be crazy and walks off. You ask me why Tim would say that. I realize, and say:

Akala ni Tim nakita daw ni Susan yung totoo-ng Elvis. falsely.believe.CONT IND Tim see.PERF.PV RPT IND Susan that real-LK Elvis
‘Tim falsely believes that it was reported that Susan saw the real Elvis.

Even though Susan is the origin of the report, as she is not involved as speaker or listener of the utterance (as it is made after the speaker and listener leave Susan), daw is acceptable. Neither Tim nor Susan believes the real Elvis is still alive. However, as Tim comes in during the middle of the conversation, he mistakenly takes Susan to have said that in Las Vegas, she saw the real Elvis. Then daw can be used with akala, giving the interpretation that it is not that Tim believes Susan saw Elvis, but only that he believes she said she did. This reading is only possible when daw cliticizes to the embedded predicate and not when daw cliticizes to akala ‘falsely believe’. If, in (27), daw had directly followed after akala (instead of in the position shown), the utterance would have been unacceptable.

In (27), I assume that daw is syntactically embedded under akala ‘falsely believe’ since daw cliticizes to nakita ‘saw’. In Chapter 2 I argued that akala ‘falsely believe’ embeds a sentence, so there must be a sentence that akala ‘falsely believe’ syntactically modifies (in addition to combining with the argument phrase [ni Tim]). Since daw cliticizes to nakita ‘saw’, it must syntactically modify the sentence [nakita ni Susan yung totoo-ng Elvis]₁. The structure for (27) must then be [akala ni Tim [daw [nakita ni Susan yung totoo-ng Elvis]₁]₂].
A third possible reading exists where the reportative implication projects. In this interpretation, the prejacent of *daw* is just the proposition embedded under *akala* ‘falsely believe’, and the utterance as a whole implies this proposition was reported. Thus, the reading is that someone holds a false belief, and this belief was also reported. In (28-b), John’s wife previously reported that he saw a parrot, and so the speaker’s subsequent utterance with *daw* implies that it was reported that John saw a parrot, and that John falsely believes he did: *(DAW(p) ∧ AKALA}_j(p))*.

(28) Context: You go bird watching with your friend John. You and him don’t talk at all on the trip to not disturb the birds. Later, you call his wife. She says John had a great time:

a. *Makakita* siya ng parrot!
   *see.CONT.AV 3SG.DIR IND parrot*
   ‘He saw a parrot!’

   You know you both only saw pigeons. Since John is colorblind, you think he got confused. Later you are talking with your mother. She asks how bird watching with John was. You say:

   b. *Akala* ni John na makita *daw* siya ng parrot.
   *falsely.believe.CONT IND John LK see.PERF.AV RPT 3SG.DIR IND parrot*
   ‘John falsely believes that he saw a parrot, as it was reported that he did.’

In a minimally different context where no prior report was mentioned, consultants find (28-b) unacceptable, showing use of *daw* does imply there was a report. As the only previous report is the proposition embedded under *akala* ‘falsely believe’, this must be the prejacent of *daw*.

In the context in (28-b), *daw* must cliticize to the embedded predicate (e.g., *makita* ‘see’). If instead, *daw* had cliticized to *akala* ‘falsely believe’ in (28-b), the utterance would have been unacceptable in the context given.
Similar to (27), I assume that *daw* is syntactically embedded in (28-b). *Daw* cliticizes to *makita* ‘see’ and not *akala* ‘falsely believe’, so *daw* must syntactically modify the sentence [makita siya ng parrot]$_S$, and not the matrix sentence. The structure of (28-b) then must be [akala ni John na [daw [makita siya ng parrot]$_S$]$_S$, and so *daw* is syntactically embedded under *akala* ‘falsely believe’.

There is one last possibility, where *daw* does not occur directly after *akala* ‘falsely believe’, yet takes semantic wide scope over *akala* ‘falsely believe’ (DAW(AKALA$_j$(p))): (29)

Context: Your friend John goes bird watching, but you aren’t able to go. He is colorblind, and has trouble telling parrots and pigeons apart. While on his trip, John thinks he sees a parrot at first, but later realizes it was only a pigeon. You later call John and ask how his trip was. He says:

a. Akala ko na nakita ko yung parrot.
   falsely.believe.CONT 1SG.IND LK see.PERF.PV 1SG.IND that parrot
   ‘I falsely believed I saw a parrot.’

   After you get off the phone, you tell your friend about the conversation:

b. Akala ni John na nakakita *daw* siya yung parrot.
   falsely.believe IND John LK see.IMPERF.AV RPT 3SG.DIR that parrot
   ‘It was reported that John falsely believed that he saw a parrot.’

Here *daw* semantically has wide scope over *akala* ‘falsely believe’, but *daw* is syntactically embedded under *akala* ‘falsely believe’. Since *daw* does not cliticize to *akala* ‘falsely believe’, it cannot syntactically modify the matrix sentence; since *daw* cliticizes to *nakakita* ‘see’, it syntactically modifies [nakakita siya yung parrot]$_S$, so (29) has structure [akala ni John na [daw [nakakita siya yung parrot]$_S$]$_S$]$_S$.

In summary, with *akala* ‘falsely believe’ we see the same pattern of readings as with *baka* ‘maybe’, and with the conditionals. I.e., if *daw* occurs directly after *akala* ‘falsely believe’, we find only a reading where *daw* takes wide scope (WS) over *akala*. If *daw* cliticizes to the embedded predicate, the wide scope (WS) reading is still available, as well as two others:
Table 3.3: Summary of readings of daw with akala

<table>
<thead>
<tr>
<th>Position of daw</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>After akala</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td>DAW(AKALA(p))</td>
</tr>
<tr>
<td>After embedded pred.</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td>NS</td>
</tr>
<tr>
<td></td>
<td>P</td>
</tr>
<tr>
<td></td>
<td>DAW(AKALA(p))</td>
</tr>
<tr>
<td></td>
<td>AKALA(DAW(p))</td>
</tr>
<tr>
<td></td>
<td>DAW(p) ∧ AKALA(p)</td>
</tr>
</tbody>
</table>

one reading where daw takes narrow scope (NS) with respect to akala ‘falsely believe’, and another, where the reportative implication of daw projects (P). These three readings are summarized in Table 3.3.

3.2.4 Negation

Recall that it was shown in Chapter 2 on the basis of evidence from the distribution of pronominal clitics that hindi ‘not’ does not syntactically embed a sentence, and so daw cannot be syntactically embedded under hindi ‘not’. This precludes the possibility of projection, by definition. However, we can still investigate what readings are possible. Sentences with daw and hindi ‘not’ only have one possible reading, where there was a previous report of some proposition that contains negation, e.g., that it won’t rain tomorrow: (RPT(¬p)). Thus, in (30), the only possible reading is where Jane has heard a report that it won’t rain.

(30) Context: Mary wants to go on a picnic tomorrow, so she asks her roommate Jane if she saw the weather report today. Jane saw the weather report that said it won’t rain tomorrow, so Jane tells Mary she did. Mary asks if the weather report said it would rain tomorrow. Jane says:

Hindi daw uulan bukas.
not RPT rain.CONT tomorrow
‘It won’t rain tomorrow, it was reported.’
The context in (30) is compatible with a wide scope reading, showing such a reading is possible. However, given the unacceptability of \textit{daw} in a different context, we can also show that a narrow scope reading is not possible. In (31) where Jane has not heard any weather report, (30) cannot be truthfully used by Jane to imply that she has not heard any such report:

(31) Context: Mary wants to go on a picnic tomorrow, but Jane is afraid it will rain. They watch the weather report, but it is only about today’s weather. Jane still doesn’t want to go because she fears rain, but Mary says she’s being overly pessimistic:

\textit{#Hindi daw uulan bukas.}  
\textit{not RPT rain.CONT tomorrow}  

Intended: ‘It wasn’t reported that it would rain tomorrow.’

Thus, utterances with both \textit{daw} and \textit{hindi} ‘not’ only allow one reading where \textit{daw} semantically scopes over \textit{hindi}. Since \textit{hindi} ‘not’ does not embed a sentence, and \textit{daw} cliticizes to \textit{hindi} ‘not’, I assume that \textit{daw} syntactically embeds \textit{hindi} ‘not’. That is, (30) contains a sentence \textit{[hindi uulan bukas]} which \textit{daw} syntactically modifies. This gives \textit{[daw [hindi uulan bukas]_S]} as the structure of (30).

In summary, \textit{hindi} ‘not’ behaves differently with respect to \textit{daw} than other operators, where three readings were allowed. This is summarized in Table 3.4, where DAW indicates the scope of \textit{daw} as wide relative to negation, \textit{¬}.

<table>
<thead>
<tr>
<th>Position of \textit{daw}</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>After \textit{hindi}</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td>DAW(¬p)</td>
</tr>
</tbody>
</table>
3.2.5 Questions

There are two readings of questions that contain *daw*, and both are parallel to the readings of evidentials in questions in Cusco Quechua (Faller, 2002), as discussed in Chapter 2. The first reading conveys that the question has previously been asked, which I call *speaker anchored*, following Faller’s terminology. For this reading, it is possible either for the addressee to be expected to answer the question, or that it is simply a statement that the question was asked, with no answer needed. The second reading conveys that the addressee should answer with reportative evidence, which I call *addressee anchored*, also following Faller. There is no evidence for a reading where the evidential conveys an attitude of wondering, as found in Cheyenne (Murray, 2010).

When *daw* appears in either of these types of questions, it generally cliticizes to the first word, either the predicate in a polar question, or the question word in a constituent question.¹

For example, in (32-b), *daw* appears after *ano* ‘what’ (the honorific *po* intervenes only because it is also a second position clitic). The reading of (32-b) is that a question was previously asked of the addressee (e.g., the grandmother here), and the speaker is repeating the question:

¹In my research thus far, constituent questions where *daw* appeared in the argument phrase have been unacceptable:

(i) #[[Ano] [ang kinain daw mo kahapon]DIR?]S what DIR eat.PERF.PV RPT 2SG.IND yesterday

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(32)  Context: Two grandsons are visiting their grandmother. One asks her:

a. Ano po ang kinain mo kahapon?
   what HON DIR eat.PERF.PV 2SG.IND yesterday
   What did you eat yesterday?

   She didn’t hear all of what he said, so she looks confused. The other grandson
   then asks:

b. Ano po daw ang kinain mo kahapon.
   what HON RPT DIR eat.PERF.PV 2SG.IND yesterday
   It was asked what you ate yesterday.

As the grandmother is asked what she ate by the first grandson, use of daw by the second is
acceptable when repeating the question. The question which contains daw must have been
explicitly asked in prior discourse. For example, in the context above, the first grandson
cannot use daw in (32-a), because at that point in the discourse, the question has not been
previously asked. While I will not give an analysis of daw in questions, as a first pass, I
propose daw takes semantic scope over the question operator. We can represent the relative
scopes of daw (DAW) and the question operator (?) with the logical form DAW(?p).

Another possible reading of daw in questions is where it requests the addressee to answer
based on reportative evidence. For example, in (33), by using daw, the speaker Sue requests
that Alan answer based on reportative evidence.

(33)  Context: Sue lives in a town where every day on the news, there is a weather
       report. Sue is talking to Alan. Alan says he didn’t leave his windowless apartment
       yesterday, but watched the news. Sue has been out of town, and wants to know
what the weather has been like there. She asks him:

Umulan  daw kahapon?
   rain.PERF RPT yesterday
   ‘According to reports, did it rain yesterday?’
Since Sue knows Alan does not have first hand, but only reportative evidence to answer the question of whether or not it rained, *daw* can be used. As a first pass, this reading has a logical form $\neg(p) \land \text{DAW}_{\text{add}}(p)$, as the utterance both asks a question, but also assumes that there has been a report of the prejacent proposition. I use the subscript $\text{add}$ in the logical form to indicate that the report is assumed to have been heard by the addressee. Note that this logical form is parallel to what was called the projective reading with *baka* ‘maybe’, the antecedent of a conditional, and *akala* ‘falsely believe’. As I have not shown that *daw* is syntactically embedded in (33), I do not commit myself to this being a case of projection, although the reading is consistent with projection.

In answering, to be truthful, Alan would be required to use *daw*: as Sue is requesting Alan answer with reportative evidence, if he were to answer without *daw*, consultants take such a response to imply that Alan is answering based upon non-reportative evidence. Thus, (assuming Alan is answering based on reportative evidence) (34-a) is an acceptable answer to (33), but (34-b) is not:

(34) Context: as answer to (33):
   a. Oo, umulan *daw* kahapon.
      yes rain.PERF RPT yesterday
      ‘Yes, it rained yesterday, it was reported.’
   b. #Oo, umulan kahapon.
      yes rain.PERF yesterday
      ‘Yes, it rained yesterday.’

For questions containing *daw* where the reading is that the addressee should answer with reportative evidence, it needs to be possible for the addressee to have access to reportative evidence that would answer the question. In (35), where the speaker knows Bob cannot have reportative evidence to answer the question, use of *daw* is unacceptable:
(35)  Context: You live in a town where every day on the news, there is a weather report. Bob is Amish, and so never ever watches the news, but is outside every single day, farming. You have been out of town. Today you get back, and ask Bob:

#Umulan  daw kahapon?
   rain.PERF RPT  yesterday
   ‘According to reports, did it rain yesterday?’

Even though Bob probably knows whether or not it rained, and there would be a report of this on the news, Bob would only have access to firsthand evidence, not reportative evidence, and so daw is unacceptable. Thus it is not enough for a speaker to know that there is some report in general; if the speaker knows the addressee would not have access to any report, use of daw is unacceptable. However, speakers need not know that the addressee has reportative evidence, or even that it is likely that they do. Thus daw can be used in (36) where it is possible Alan has reportative evidence, but more likely he would have direct evidence:

(36)  Context: You live in a town where every day on the news, there is a weather report. You are talking to Alan, who goes out for walks very frequently, and only watches the news occasionally, but does sometimes. You have been out of town, and want to know what the weather has been like there. You ask him:

   Umulan  daw kahapon?
      rain.PERF RPT  yesterday
   ‘According to reports, did it rain yesterday?’

Even though firsthand evidence is more likely, use of daw is still possible due to Alan being able to have seen the weather report. If Alan saw the weather report, he would answer (36) using daw, as in (34-a) above. However, if Alan did not see the news, but instead got rained on when he went on a walk yesterday, he would answer as:
(37) Context: As answer to (33), where Alan did not see the news but got rained on during a walk yesterday:

Oo, umulan kahapon.
yes rain.PERF yesterday
‘Yes, it rained yesterday.’

That is, even though the speaker requests the addressee answer with reportative evidence, it is also acceptable to answer based on other types of evidence source. Consultants report a preference that Alan continues (37) by specifying that his evidence is from being rained on, although this is not strictly required.

The data above is evidence that Tagalog questions containing *daw* can have one of two readings. No evidence has been found for a third reading parallel to the narrow scope readings discussed previously, which would have a logical form of *(DAW(p))*. This reading would be where one asked a question about whether there existed a certain report. One example where such a reading could occur is (38), but consultants find use of *daw* unacceptable in such a context.

(38) Context: Sue lives in a town where every day on the news, there is a weather report. Sue is talking to Alan. Sue and Alan took a walk together in the rain yesterday evening. Sue is doing a report on the accuracy of weather forecasts, but forgot to watch yesterday, but she knows Alan always watches the news. She tells Alan she didn’t get to watch the news, and asks him about the weather segment:

#Umulan daw kahapon?
rain.PERF RPT yesterday
Intended: ‘Did they report that it rained yesterday?’

In summary, when *daw* appears in questions, two readings are possible. As these are the same readings found by Faller (2002), I borrow her terminology, and refer to these as the
Table 3.5: Summary of readings of daw in questions

“speaker anchored” and “addressee anchored” readings. While I do not analyze the use of daw in questions, I note that the speaker anchored reading is parallel to the wide scope readings for other operators, and the addressee anchored reading is parallel to the projective readings. No evidence has been found for a reading parallel to narrow scope. The acceptable readings are summarized in Table 3.5.

3.3 Summary

The previous chapter discussed daw when at the root level, when it is embedded under an operator, or when it embeds an operator. At the root level I discussed properties about the type of report, the source of the report, and speaker commitment to the reportative and prejacent propositions. In particular:

- Daw requires reportative evidence specifically for its prejacent proposition. Thus, it can be called a reportative evidential.
- The report need not be a literal report: it can be a superstition or dream.
- The report can be second- or third-hand.
- The source of the report cannot be the speaker or addressee of the utterance with daw.
- The speaker is necessarily committed to the reportative proposition.
• The speaker can endorse, refute, or remain neutral with respect to the prejacent proposition.

For complex sentences that include *daw* and another operator, I have shown that *daw* may syntactically embed in the antecedent of a conditional, under the modal *baka* ‘maybe’, under the propositional attitude predicate *akala* ‘falsely believe’, but not under negation. While there was no evidence that these utterances with *daw* were ambiguous in any one given context, across all embedding environments and contexts there was evidence for three different readings: one where *daw* has wide scope over the operator (WS), one where *daw* had narrow scope with respect to the operator (NS) and one where the reportative implication of *daw* projects (P). Not all of these readings were available in all embedding environments. When embedded in the antecedent of the conditional or under *baka* ‘maybe’ or under *akala* ‘falsely believe’, all readings were possible. When *daw* syntactically embeds *baka* ‘maybe’ or *akala* ‘falsely believe’ however, only a WS reading was possible. With questions, it was shown there were two possible readings: where *daw* reported a question was asked previously, or where use of *daw* requests the addressee to answer with reportative evidence. Overall we see that for most operators (antecedent of a conditional, *baka* ‘maybe’, and *akala* ‘falsely believe’), when *daw* cliticizes to the embedded predicate, WS, NS, and P readings are possible, but when *daw* cliticizes to the operator, only the WS reading is possible. *Hindi* ‘not’ does not follow this pattern: *daw* can only cliticize to *hindi*, and only a WS reading is possible. These results are summarized in Table 3.6: WS, NS, and P refers to the readings that are possible for *daw* when it cliticizes to the word specified in the row (the clitic host for *daw*). For each possible reading, (WS, NS, P), a sample logical form is given below the label.
<table>
<thead>
<tr>
<th>Operator</th>
<th>clitic host</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conditional</td>
<td>predicate</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DAW(if p then q)</td>
</tr>
<tr>
<td>Baka</td>
<td>baka</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td>predicate</td>
<td>DAW(MAYBE p)</td>
</tr>
<tr>
<td>Akala</td>
<td>akala</td>
<td>WS</td>
</tr>
<tr>
<td></td>
<td>predicate</td>
<td>DAW(AKALA(p))</td>
</tr>
<tr>
<td>Negation</td>
<td>hindi</td>
<td>WS</td>
</tr>
<tr>
<td>Polar Questions</td>
<td>predicate</td>
<td>speaker anchored</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DAW(?(p))</td>
</tr>
<tr>
<td>Constituent Questions</td>
<td>question word</td>
<td>speaker anchored</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DAW(?(p))</td>
</tr>
</tbody>
</table>

Table 3.6: Summary of readings of *daw* in embedded environments
Chapter 4

Previous analyses of evidentials

Chapters 3 considered the readings for *daw* in a variety of embedded contexts. When *daw* was embedded in the antecedent of a conditional, under a modal, or under an attitude predicate, three readings were found, one of which included projection of the reportative proposition. In this chapter I compare the behavior of *daw* to other evidentials discussed in the literature, showing that overall *daw* allows for more readings (as was also discussed in Chapter 1). I also consider whether the other analyses can be used to capture the behavior of *daw*, or if the extra readings seen with *daw* are problematic for the analyses that were created for evidentials with fewer readings.

4.1 A speech act account

Faller (2002) looks at evidentials in Cusco Quechua. These evidentials cannot generally be embedded, and thus are unlike Tagalog *daw* which is able to embed quite readily. Faller gives the following example of the Quechua reportative with negation, where the only available reading is where the evidential has wide scope over negation (logical form RPT(¬(p))):
Faller (2002) analyzes Quechua evidentials as speech act modifiers. When a speaker utters, e.g., a declarative sentence, she makes the speech act of an assertion. Faller models this speech act using the operator assert, so the utterance of an assertion of \( p \) is modeled as assert\((p)\). When a speaker makes an assertion, if she is being cooperative, she also must believe the content of her assertion. Faller models this with sincerity conditions: in the case of assert\((p)\), the sincerity conditions are that the speaker must believe \( p \).

To model the meaning of a reportative in Faller’s system, we need to see how uttering a sentence without a reportative is different from uttering one with a reportative. Faller states that the speech act is different. Instead of being an assertion, “the current speaker’s speech act is one of presentation of another speaker’s assertion,” (Faller, 2002, 199). Thus, -si must modify the speech act. The reportative also must modify the sincerity condition: as the current speech act is a presentation of another speaker’s speech act, the current speaker need not believe \( p \), but only that someone else has asserted \( p \). This explains Faller’s meaning of -si: it is a function from speech acts to speech acts. It changes the speech act from an assertion of \( p \) to a presentation of \( p \), and changes the sincerity conditions from the speaker believing \( p \) to there being an individual who is not the speaker or hearer who asserted \( p \).
(2) Meaning of Quechua reportative evidential -si:

\[
\text{assert}(p) \rightarrow \text{present}(p)
\]

\[
\text{sinc} = \{\text{Bel}(s, p)\} \rightarrow \text{sinc} = \{\exists s_2[\text{assert}(s_2, p) \land s_2 \notin \{h, s\}]\} \quad \text{Faller (2002, ex. 167, p. 200)}
\]

Faller (2002) does not assume that operators such as conditionals, attitude predicates, or modals embed speech acts. Faller’s framework then does not allow readings where a reportative evidential takes narrow scope with respect to any (propositional) embedding operators. Since an evidential like a reportative is a speech act modifier, it cannot embed inside, e.g., the antecedent of a conditional, because the antecedent is not a speech act that it can operate on. This explains why, in Quechua, narrow scope or projective readings for a reportative with a conditional are not possible.\(^1\) However, daw cannot be given an analysis that prohibits it from embedding in the antecedent of a conditional, and thus having narrow scope and projective readings, as we have seen that such readings exist. So, the account in Faller (2002) is not able to account for the full range of meanings attested with daw.

In more recent work, Faller has expanded on her 2002 analysis. For example, Faller (2011) investigates how to capture the truth conditions of the sincerity conditions of evidentials using a Kratzerian modal analysis. However, underlying the discussion in Faller (2011) is the same hypothesis that Quechua evidentials are speech act modifiers: she reiterates that, at least in Quechua “evidentials are speech act operators” and that “[t]he purpose of the current paper is to explore how the truth-conditions of these evidential sincerity conditions can be captured within Kratzer’s (1981; 1987) framework of modality,” (Faller, 2011, 666). If the analysis given in Faller (2011) were applied to daw, it would not be able to explain the readings where daw has narrow scope because daw would still be a speech act modifier, and thus not be embeddable.

\(^1\)I don’t see how it explains the empirical fact that evidentials in Quechua are not acceptable as part of conditionals, i.e., why a wide scope reading is not possible. Perhaps there is some sort of syntactic or otherwise orthogonal explanation for this fact.
In summary, a speech-act analysis can capture readings where an evidential takes wide scope with respect to other operators, but not narrow scope. This is beneficial for Quechua, where only wide scope readings exist. It also means a speech-act analysis cannot work for *daw*, as there are both narrow scope and projective readings. However, as previously discussed, there are languages where evidentials take narrow scope with respect to other operators; I now turn to analysis of such evidentials to see if these can better capture the data for *daw*.

### 4.2 Non-projective modal analyses

Both St’át’ìmctets and Japanese are languages where an evidential can take narrow scope with respect to another operator. In this section I review previous work on St’át’ìmctets by Matthewson et al. (2007), then work on Japanese by McCready and Ogata (2007), and finally see if the analyses proposed can capture *daw*.

In St’át’ìmctets, there is a reading where the reportative *ku7* takes narrow scope under a verb of saying, where someone said they heard a certain report, as seen in (5) from Chapter 1, reproduced below as (3):
Mary said that [she was told that] Mary is pregnant, but I already knew that; I had seen Mary at the store.’

(Lémya7 was told; Lémya7 did not witness it)

Consultant comment: “Lémya7 was saying that and she wasn’t there either.” (Adapted from Matthewson et al., 2007, 229)

Matthewson et al. (2007) give the reportative ku7 a modal analysis. The reportative ku7 is interpreted relative to a modal base and choice function. The analysis of ku7 is that in order for a sentence with logical form ku7(p) to be true, p needs to hold for for a specific subset of worlds in the modal base. This subset is picked out by the choice function. The semantics for ku7, relative to modal base B, choice function f and proposition φ is then given as:

\[ [ku7(f)(B)(w)(\phi)] \text{ is only defined if for all worlds } w', w' \in B(w) \text{ iff the reported evidence in } w \text{ holds in } w', \text{ and } f \text{ is a choice function of type } \langle st, st \rangle \text{ such that } f(B(w)) \subseteq B(w). \text{ If defined, } [ku7(f)(B)(w)(\phi)] = 1 \text{ iff for } \forall w' \in f(B(w)) : [\phi(w')] = 1 \]

(Mathewson et al., 2007, p56 ex78)

This means that ku7(φ) is true iff φ is true for some specific subset of the set of worlds where everything is as was stated in the relevant report. While the authors do not give explicit derivations for e.g., ku7 taking narrow scope with respect to a verb of saying, modals are

---

2The choice function seems motivated mainly by the authors’ arguments that modals in general in St’át’imcets are not lexically specified for modal force. Different choice functions give different modal force, without needing to have specified lexically whether the modal uses a universal or existential quantifier.

3The definition is a little ambiguous in terms of what “the reported evidence in w” means. Hopefully this is meant to refer to evidence from a contextually relevant report, and not all reportative evidence in w. If w contains any contradictory reports, then the set of worlds that hold for all reports is empty, which would make B(w) empty. I thus assume that the authors mean to indicate there is some specific report on which B is based.
standardly allowed to take wide and narrow scope with respect to other operators. That is, if the proposition within the scope of a verb of saying is $[ku7(f)(B)(w)(\phi)]$, then the evidential will take narrow scope, which will give the attested narrow scope reading.

Japanese is another language where a reportative evidential can take narrow scope with respect to an embedding operator. McCready and Ogata (2007) give an example with the reportative evidential $\text{soo}$ in the antecedent of a conditional where it takes narrow scope (logical form $(\text{if (SOO(p)) then q})$). The authors describe this reading being used when “the speaker is making his going conditional on his [the addressee] hearing Taro will come.” (McCready and Ogata, 2007, 168)

(5) Taro-ga kuru soo da-ttara osiete kudasai
Taro-Nom come SOO Cop.Pres-COND teach please
‘If you hear that Taro will come, please tell me.’ (McCready and Ogata, 2007, p168 ex34a)

McCready and Ogata (2007) introduce a modal semantics for the Japanese evidentials, where a modal operator “$E^i_a \phi$” indicates that according to agent $a$, there is a piece of evidence which is indexed by $i$ and described by $\phi$. (McCready and Ogata, 2007, 187) The index $i$ describes the particular information source; additionally, there is a function $\text{Sort}(i)$ that says what type of evidence a given index is, e.g., visual, reportative, etc. So if we have an index $i_1$ which is the index for a particular newspaper report, then $\text{Sort}(i_1)$ returns that the type of evidence is reportative, which they also refer to as hearsay evidence. There are also more specific modal operators that require the evidence be of a certain type, e.g., $\Delta^i_a$ requires the evidence of the index be inferential, and $H^i_a$ requires the evidence of the index be hearsay. Thus, the authors use $H^i_a$ for the meaning of Japanese hearsay evidentials.

---

4The authors also attest to a “wide scope” reading for such an example, which they describe in general as being used where “the speaker has in fact heard that Taro will come. . . .” (McCready and Ogata, 2007, 167) I do not discuss this reading because I am truly not sure what it is. Their example only has a translation for the narrow scope reading. Also, a reading with logical form SOO$(\text{if p then q})$ does not require the speaker to have heard that Taro will come, so I don’t understand how the context they describe matches their description of “wide scope.”
Specifically, the interpretation of $H^i_a$ is that it “indicates that $a$ has experienced an event of acquiring hearsay knowledge $E^h_a \phi$ at some past time.” (McCready and Ogata, 2007, 186)

With regards to evidentials with embedding operators, the authors note that “[o]rdinary modals have no problem appearing in the scope of negation, or in conditional antecedents. . . . This means that if we treat the evidentials as modals, there should be no reason why they cannot appear in these environments either.” (McCready and Ogata, 2007, 197) That is, we can derive the narrow scope reading of (5) by letting the operator $H^i_a$ take narrow scope with respect to the antecedent of a conditional, as in (6). I follow McCready and Ogata (2007) in using $C(t)$ as the logical form for “Taro will come,” and $Imp(tell(y,i))$ as the logical form for “Please tell me.” The index $i$ is an argument of $tell$ because the speaker wants to be told the hearsay evidence indexed by the hearsay modal operator.

(6) \[ H^i_a[C(t)] \Rightarrow Imp(tell(y,i)) \]

(= If there is some hearsay evidence for Taro coming, please tell me.) (Modeled after McCready and Ogata, 2007, ex. 83b, p. 198)

If $daw$ were given a similar modal semantics, either following the analysis of Matthewson et al. (2007) or that of McCready and Ogata (2007), this would be able to explain the narrow scope readings seen: such a reading could be derived in the same way it was done with the St’át’imcets or Japanese evidentials for each analysis, respectively. However, the projective reading would not be captured without adding an account of projection to the analysis. That is, projection is not explained simply by analyzing $daw$ as having modal content. It would certainly be possible to say that $daw$ has modal content, and have the analysis further explain when this modal content projects, but an additional mechanism would have to be used to do this. This makes sense given the data that these analyses were designed to capture: neither the data of McCready and Ogata (2007) on Japanese nor Matthewson et al. (2007) on St’át’imcets have any evidence of a projective reading, so such a reading is not covered in those analyses as they stand. To see how the projective reading
of *daw* can be accounted for, next I consider analyses of evidentials that can account for projection.

### 4.3 Projective analyses

Two different types of analyses have been proposed for evidentials with projective content: in the first kind, the projective evidential content is treated as a presupposition, i.e., a constraint on prior context. In the second kind, the evidential content is treated as non-presuppositional projective content. Each will be considered in turn.

#### 4.3.1 Presuppositional analyses

In Schwager (2010), Magdalena Kaufmann (previously Magdalena Schwager) proposes an analysis of *daw* as a presupposition trigger. It gives rise to the presupposition “of the form ‘some *x* said *p,*’ ” (243). This is the only conventional content for *daw*. She goes on to specify that, essentially, this is an anaphoric presupposition, requiring as antecedent an event *e* where *x* is the agent and the event is *x* making an utterance with content *p*. Thus, use of *daw* places a constraint on prior context, requiring some agent to have previously uttered *p*. Kaufmann states that “[s]tandard assumptions of presupposition satisfaction” (243) allow derivations of the wide scope, narrow scope, and projective readings. As an example I use a variant of (21), with *daw* added. As it has already been shown what the three possible readings are for such an example, I give translations for all three, and a context that allows all three readings. I label the readings as WS for wide scope, NS for narrow scope, and P for projective for convenience.
(7) Context: John ran in a race this past weekend. The winner of the race got a gold medal for winning:

\[ \text{[Akala ni Sue na [nanalo daw si John]$_S$]$_S$.} \]

\text{falsely.believe IND Sue COMP win.PERF.AV RPT DIR John}

'It was reported that Sue falsely believes that John won.' (WS)

'Sue falsely believes that it was reported that John won.' (NS)

'Sue falsely believes that John won and it was reported that John won.' (P)

Kaufmann assumes the general framework of van der Sandt (1992), where presuppositions must be satisfied at some level of interpretation; if satisfaction is not possible, they must be accommodated. With respect to embedding, satisfaction is attempted first at the most embedded level, moving outward if necessary; if necessary, accommodation is attempted at the most global level, then moving inward if necessary. The process terminates when satisfaction or accommodation is achieved. In our example, the reportative presupposition must be satisfied in the local context of \textit{akala} ‘falsely believe’, or if not, at the global level. If satisfaction is not possible, the reportative presupposition must be accommodated at the global level, or if not, in the local context of \textit{akala} ‘falsely believe’.

If the prejacent proposition of \textit{daw} is \( p = \text{Sue falsely believes that John won}, \) then \textit{daw} is at the root level, and the reportative presupposition is \( q = \text{It was reported that Sue falsely believes that John won}. \) If this presupposition is satisfied at the root level, then \( q \) was already in the context, and (7) confirms that it was reported that Sue falsely believes that John won. If the presupposition is accommodated at the root level, then (7) adds new information that it was reported that Sue falsely believes that John won. In either case, (7) implies the wide scope (WS) reading.

If the prejacent proposition of \textit{daw} is \( p = \text{John won}, \) then \textit{daw} is embedded under \textit{akala} ‘falsely believe’, and the reportative presupposition is \( q = \text{It was reported that John won}. \) If this presupposition is satisfied (or accommodated) in the local context of \textit{akala} ‘falsely
believe’, then (7) implies that Sue falsely believes that it was reported that John won. This gives the narrow scope (NS) reading.

If the reportative presupposition is \( q = \text{It was reported that John won} \), but this presupposition cannot be satisfied in the local context of \( akala \) ‘falsely believe’, then satisfaction or accommodation at the root level is attempted. If the reportative presupposition is satisfied or accommodated at the root level, it projects, and so (7) implies that it was reported that John won. However, as now the reportative presupposition is not interpreted in the scope of \( akala \) ‘falsely believe’, \( akala \) ‘falsely believe’ has no content in its scope. In this case, the prejacent is “activated as a last resort,” (Schwager, 2010, 244). So, (7) implies that Sue falsely believes the prejacent proposition, i.e., Sue falsely believes that John won. Thus, as a whole, (7) implies that Sue falsely believes that John won and that it was reported that John won. This yields the projective (P) reading. Thus, Schwager (2010) is able to capture all three possible readings for \( daw \) with an embedding operator.

There are theoretical issues with a presuppositional analysis for \( daw \), however. We have seen cases where this proposed presupposition associated with \( daw \) has no antecedent event in prior context. One is (3) from Chapter 2, reproduced below as (8):

\[
\text{(8) Context: Phil, who lives in Ohio, has been inside all of yesterday and today, in his windowless apartment, working. He watches the weather report on the local news, which says it rained yesterday. He calls his friend Sam who lives in California. He starts the conversation by saying:}
\]

\[\text{Umulan} \quad \text{daw kahapon.} \]
\[\text{rain.PERF RPT yesterday} \]
\[\text{‘It rained yesterday, it was reported.’} \]

As context specifies that the utterance with \( daw \) is the first in Phil’s conversation with Sam, and Sam lives in California and so would not have seen the local Ohio news, the weather report cannot be in the common ground of Phil and Sam, and thus the reportative
implication is new information in (8). In order to capture such data while still assuming a presuppositional analysis, we would need to assume that the presupposition triggered by *daw* could be accommodated (Lewis, 1979). That is, *daw* imposes a constraint that it must be in the common ground that there was a report. If it is not in the common ground that there was a report, then this information is added to the common ground. In a way, the reportative implication of *daw* is both a constraint and also not a constraint in Kaufmann’s analysis: the projection of the reportative implication of *daw* is explained because the reportative implication is a presupposition, i.e., a constraint on prior context. However, if prior context does not contain such a report, there is no infelicity. So in another sense the reportative implication is not a constraint because there is no example where use of *daw* is precluded because prior context does not contain a report.

Simons et al. (2010) take issue with this kind of analysis of a projective meaning that is analyzed as a presupposition which is often accommodated. They point out that there is “evidence that true common ground constraints are in fact not amenable to accommodation,” giving as paradigm examples *too* and pronouns:

(9) If she didn’t sleep in the hammock, I don’t know where she slept.  
(Simons et al., 2010, 313)

Use of *she* is felicitous only if there is a unique woman salient in the common ground. This is truly a constraint on prior context: if no such woman exists, a listener cannot accommodate the fact that this woman exists; the utterance is just infelicitous. Thus, while *she* and *daw* both share the property that they are associated with projective content, their projective contents behave differently in other respects, and so it is not clear that they should be given the same analysis just because the two contents share the one property of projection.

Furthermore, other instances of non-presuppositional projective meanings have been proposed in the literature. Horn (2002) discusses the polar implications of English *barely* and *almost* as being “assertorically-inert”, and thus not a regular entailment, but not a
presupposition either. Tonhauser et al. (2013) discuss factives and possessives in Paraguayan Guaraní, and show that while these triggers are associated with implications that project, there is no evidence that these projective implications impose a constraint on prior context. Finally, Potts (2005) discusses the class of conventional implicatures (CIs) and shows they are associated with projective implications, but these implications must be new information, and thus are not presuppositional. I propose that since the reportative implication of *daw* can be new information, it is more similar to these non-presuppositional projective contents than true presuppositions like that associated with *she*.

So, while Schwager (2010) can account for the readings of *daw* when embedded, the account cannot explain how the projective content of *daw* is different from the projective content of, e.g., a pronoun. As discussed, it is becoming increasingly clear that there is a class of non-presuppositional projective contents, and I argue that *daw* is associated with non-presuppositional projective content. As such, Schwager (2010) misses an important aspect of the meaning of *daw* in treating its content as presuppositional. Next, I consider analyses of projective evidential content which does not treat the content as presuppositional.

### 4.3.2 Non-presuppositional analyses

Murray (2014) proposes a framework for the analysis of a variety of items, including evidentials. With evidentials, she wants the analysis to capture the contributions of the evidential content, and any contribution of the content in the evidential’s scope (the prejacent content), and differences between two. One item she analyzes in the framework is the Cheyenne reportative evidential *séstse*.

(10)  *É-hó’táheva-séstse* Sandy  
3-win-RPT.3SG  Sandy  
‘Sandy won, I hear.’  
(Murray, 2014, ex. 31 p. 2:33)
The framework is dynamic, so sentence meanings are modeled as functions that update an input context to yield an output context. Murray (2014) proposes three different kinds of updates: “direct updates to the common ground, context structuring updates, including proposed common ground updates, and updates that introduce discourse referents,” (Murray, 2014, 2:7). With declaratives, the context structuring update will be a proposed update to the common ground, proposing to remove worlds from the common ground. For other speech acts, like questions, the structuring update may not remove worlds, but instead impose a partition on the common ground.

Murray shows that for a sentence like (10), the speaker is committed to only the evidential content that it was reported that Sandy won, and not the prejacent that Sandy won. Also, the evidential content cannot be subsequently refuted, while the prejacent content can. Because of these differences, Murray proposes different treatments of the evidential and prejacent contents. The evidential content is treated as a direct update. Direct updates cannot be rejected, so the fact that the evidential content cannot be rejected is captured in this way. A propositional discourse referent is introduced for the prejacent content, but not the evidential content. As no discourse referent exists for the evidential content, it cannot later be referred back to with a refutation. Since a discourse referent exists for the prejacent content, it can later be refuted. In Murray’s system, all declaratives propose an update to the common ground. Since the only content in (10) that the speaker is committed to is the evidential content (which is already handled by the direct update) the proposed update proposes to keep the common ground the same, and removes no worlds.

Any formal implementation of this update process that I have just discussed in general terms needs three things: a representation of a common ground, a way to distinguish direct updates from ones that are only proposed, and a representation of a set of discourse referents. Murray (2014) gives a formal implementation in the language of Update with Modal Centering. This language assumes a framework where contexts are a set of pairs of tuples. Each pair of tuples in the set is made up of a “top sequence”, the first tuple
of the pair, and a “bottom sequence”, the second tuple of the pair. So, one context could be \(\{\langle w_1, p_0 \rangle, \langle w_1 \rangle \}, \{\langle w_2, p_0 \rangle, \langle w_1 \rangle \}\). One reason for top and bottom sequences is that it allows the differentiation between direct and proposed updates: direct updates change the top sequence, and proposed updates change the bottom sequence. Each sequence is a tuple of worlds, propositions and individuals. Each world, individual, or proposition is called a “top world/individual/proposition” or “bottom world/individual/proposition” depending on whether it is part of the first tuple in the pair or the second. The set of all top worlds represents the common ground.

A direct update modifies the set of top worlds, and so directly changes the common ground. A proposed update modifies the bottom set of worlds, and so cannot directly change the common ground. In this system there is not necessarily a single proposal step: any update that modifies the bottom worlds can be seen as as a proposal step. The proposed update comes from all steps that modify the bottom worlds. Accepting a proposed update is the process of removing top worlds that are not also bottom worlds. So, a proposed update modifies the bottom worlds, which then represent the update that is proposed. If the update is later accepted, it will then change the common ground by modifying the top worlds. The bottom worlds allow us to store the content of a proposed update before it is accepted. Besides worlds, the sequences can also include individuals or propositions. These represent discourse referents: a new discourse referent is introduced for an individual or proposition by adding a new individual or proposition to a sequence. The sentence in (10) has its meaning modeled as the set of updates in (11), with further discussion of these updates following them.

\[
(11) \quad \top [x | x = \text{sandy}]; [w | \text{won}_w (\top \delta)]; [p | p = \bot \omega | \lambda]; [\text{RPT}_\top \Omega (i, \bot \omega)]; [w | w = \top \omega]; \\
[\bot \omega \in \top \omega | \lambda]; [\top \omega = \bot \omega]; ^\top [p | p = \top \omega | \lambda]
\]

At the root level, the set of top worlds for the current context represents the common ground, and the set of bottom worlds is empty. I now consider how the updates change
such a context in more detail. Recall that the goal of all the updates, taken together, is that the common ground is updated with the evidential content and a discourse referent is introduced for the prejacent proposition. As a (10) is a declarative, there must be a proposed update to the common ground, but the goal is to have this not actually change the common ground.

The first update introduces an individual discourse referent for Sandy (since she was mentioned, and so is now salient in context) into each top sequence. The second update introduces the worlds where Sandy\(^5\) won into each bottom sequence. The bottom sequence is used because the prejacent content cannot directly modify the common ground. After introducing worlds where Sandy won into each bottom sequence, the set of bottom worlds is now the prejacent proposition (since this set was empty previously). The third update introduces a propositional discourse referent to each bottom sequence for the proposition composed of all bottom worlds (i.e., \(\bot\omega\)), which is the prejacent proposition. This accomplishes the goal of introducing a discourse referent for the prejacent proposition. The fourth update checks whether the speaker has reportative evidence for the prejacent proposition\(^6\) in all top worlds (\(\top\omega\)), eliminating any pairs where she does not have reportative evidence in the top world. Thus, the fourth update models a direct update on the common ground with the evidential content. After this update, the top sequences only contain worlds where the evidential proposition is true; this satisfies the goal of having updated the common ground with the evidential content. The only thing remaining is to ensure that the proposed update, represented as the set of bottom worlds, cannot change the common ground. The fifth and sixth updates accomplish this. The fifth update introduces each top world into the bottom sequence; this means that the set of bottom worlds will be a superset of the set of top worlds. The sixth update requires each bottom world (\(\bot\omega\)) to be in the set of top worlds (\(\top\omega\)), eliminating any that are not. After the fifth update, the set of bottom worlds

\(^5\)\(\top\delta\) is the most prominent individual discourse referent in the top sequence, which here is Sandy.

\(^6\)\(\bot\Omega\) is the most prominent proposition in the bottom sequence, which is the just introduced discourse referent for the prejacent proposition.
worlds was a superset of the set of top worlds. After removing any bottom worlds that are not also top worlds, the set of bottom worlds is now identical to the set of top worlds. The proposed update has not been accepted at this point. However, the fifth and sixth updates ensure that the proposed update (represented by the set of bottom worlds) cannot change the common ground (as now the sets of top and bottom worlds are the same). The seventh update models acceptance of the proposed proposition, represented by the set of bottom worlds: sequences are removed to ensure the set of top worlds becomes equal to the set of bottom worlds. However, as the set of top worlds was already the set of bottom worlds, no changes are made. The final update introduces a discourse referent for the new common ground (which is the same as the old common ground).

These updates have three main overall effects: any top worlds where the evidential proposition is false are removed. A discourse referent is introduced for the prejacent proposition, but not the evidential proposition. A proposed update is made to not change the common ground. Since the prejacent content can be refuted, but the evidential content cannot, we only have a discourse referent for the prejacent proposition. Since the speaker is not committed to the prejacent content, we do not want the proposed update to be this content, so the proposed update is made to be vacuous. On a large scale then, Murray’s proposal is that an utterance with the Cheyenne reportative does two things: it directly updates the common ground with the evidential proposition and introduces a discourse referent for the prejacent proposition.

Murray’s analysis of the Cheyenne reportative could not be extended to *daw*, at least not covering all the embedded cases. In her analysis of the Cheyenne evidential, the semantics is determined by the fact that the evidential content is a speaker commitment that cannot be refuted, whereas the prejacent content can be refuted. This means that the evidential content is represented by a direct update, and the prejacent content is represented by a propositional discourse referent. For *daw*, at the root level, the evidential content is also a speaker commitment that cannot be refuted, whereas the prejacent content can be. Thus,
would be given the same analysis, where the reportative proposition is represented by a direct update, and the prejacent content is represented by a propositional discourse referent.

Recall that when *daw* is syntactically embedded under, e.g., the modal *baka* ‘maybe’, there are three readings: wide scope, narrow scope, and projective. The problem for the analysis that Murray (2014) gives comes with the narrow scope and projective readings. In the narrow scope reading, the content in the scope of the modal is the evidential proposition. In the projective reading, the content in the scope of the modal is the prejacent proposition, and the evidential proposition projects. Murray (2014) does not investigate the semantics of the embedding operators, so one would have to extend the system with a semantics for a modal like *baka* ‘maybe’. When giving a semantics for *baka* ‘maybe’, a decision would have to be made as to what content comprises the scope of the modal. I see only two options: the scope of the modal could be a salient propositional discourse referent, or a proposition that was extracted from one of the updates by composing a proposition from all the top worlds or all the bottom worlds.

If the semantics of *baka* ‘maybe’ has that the scope of the modal is a salient propositional discourse referent, then given the semantics for *daw*, the scope of the modal would always be the prejacent proposition. This would not be able to capture the narrow scope reading, where the scope of the modal is the reportative proposition. If the semantics of *baka* ‘maybe’ has that the scope of the modal is a proposition extracted from an update, then it could not be the prejacent proposition, as this is not represented in any of the updates. This would not be able to capture the projective reading, where the scope of the modal is the prejacent proposition. Thus, given a semantics for *daw* parallel to that of the Cheyenne evidential, it is not possible to cover all readings for embedded *daw*. 
4.4 Summary

In Chapter 3 I argued that when *daw* was embedded under an operator, e.g., the modal *baka* ‘maybe’, three readings were possible: *daw* could have wide scope over the *baka* ‘maybe’, *daw* could have narrow scope under *baka* ‘maybe’, or *daw* could be syntactically embedded under *baka* ‘maybe’, but its evidential content projects. These three readings were also present with the antecedent of a conditional, and the attitude predicate *akala* ‘falsely believe’, as shown in Table 3.6. Also, at the root level, the evidential content of *daw* could be new information.

An analysis of *daw* thus requires it to be able to syntactically embed, take scope with respect to operators, and also have a mechanism to handle projection for the reading where the evidential content projects. In addition I have argued that the fact that the evidential content can be new information rules out a presuppositional analysis.

None of the previous analyses discussed here contain all these required elements of an analysis of *daw*. A speech act modifier analysis like Faller (2002, 2011) precludes *daw* from being able to syntactically embed. Murray (2014) also has problems when *daw* syntactically embeds, as no operators are given, and extending the analysis to cover cases where *daw* is syntactically embedded raises serious problems. Analyses without a projective mechanism like McCready and Ogata (2007); Matthewson et al. (2007) cannot capture the projective reading. A presuppositional analysis like Schwager (2010) is rejected on the theoretical grounds that it is improper to treat content that can be new as a presupposition. Given that none of the analyses discussed here are adequate, in Chapter 5 I present my own.

I give an analysis of the syntax and semantics of *daw* in a formal system. This system utilizes the work of Kierstead and Martin (2012); I will review this prior work in the next chapter, as well as introduce my own formal system, and show how the work of Kierstead and Martin (2012) is integrated into it.
Chapter 5

Analysis of *daw* in declarative sentences

In this chapter I develop a fragment of Tagalog in a dynamic logical grammar. The grammar is based on the framework of Martin and Pollard (2012). However, as I will not be discussing presuppositions or anaphora, I will not be utilizing the full complexity of the Martin and Pollard (2012) system. As my grammar contains simplifications, I give it a different name, and call it Linear Grammar (LG). The analysis will capture the readings of *daw* at the root level, when syntactically embedded under the modal *baka* ‘maybe’, and when *daw* syntactically embeds *baka* ‘maybe’. As the readings available with *baka* ‘maybe’ were parallel to those with conditionals and the attitude predicate *akala* ‘falsely believe’, the analysis I show for *daw* and *baka* ‘maybe’ could similarly be used for those other operators.

For questions, I showed there were speaker anchored and addressee anchored readings which were, respectively, parallel to the wide scope reading and projective reading for *baka* ‘maybe’. I left determination of the correct syntactic structure for future research. As there are parallelisms in the readings with questions and other operators, it may be possible to also extend the analysis given in this chapter to questions. This would depend on what the syntax of Tagalog questions is determined to be. Even beyond that, the analysis of *daw* in questions would need to be modified from the one given here for two reasons. First, unlike with *baka* ‘maybe’, there is no reading with questions parallel to a narrow scope reading; an analysis would have to explain why this reading does not occur. Also, it is important that
for the addressee anchored reading, the report is one heard by the addressee and not the speaker; an analysis would need to have some analysis of the anchoring of daw in general to capture this.

The analysis of daw will borrow heavily from Kierstead and Martin (2012), but will also introduce a modal operator similar to that proposed by Matthewson et al. (2007). The fragment must account both for the position of daw, and also what readings are possible given its position.

Before analyzing daw, I will introduce LG and the framework in general with the derivations of some English examples. For the semantics, I will build up to the Kierstead and Martin (2012) system by starting with a static semantics, then using a dynamic semantics, and finally using a multistratal dynamic semantics. After the full complexity of the system is introduced, I will give the derivation of a sentence with daw at the root level. Finally I will give derivations for utterances that contain daw and baka ‘maybe’, covering both the cases where daw embeds baka ‘maybe’, and also where baka ‘maybe’ embeds daw.

5.1 Maybe Emily is from Rhode Island in LG with static semantics

In LG, there are three components that work in tandem: the phenogrammar (or simply pheno) the tectogrammar (or simply tecto) and the semantics. The order of words in the sentential string is determined by the pheno, the tecto represents the syntactic structure of the sentence, and the meaning is determined by the semantics. So, if we want to represent the English sentence Emily is from Rhode Island, we would do so with three components. They are ordered with the pheno first, then the tecto, then the semantics, with semi-colons separating each:
(1)  *Emily is from Rhode Island* in LG:
Emily is from Rhode Island; S; r

The pheno specifies how the sentence is said, the tecto of S specifies that its syntactic
category is that of a sentence, and the semantics specifies that its meaning is the proposition
\( r = \text{Emily is from Rhode Island} \). To start, I assume a static semantics, so the meaning of a
sentence is a proposition.

LG is a logical grammar, meaning that sentential derivations are modeled using proof
theory. That is, the atomic parts of sentences are modeled as axioms, since these are the
basic units from which we start. The way in which axioms can combine is governed by a
few general logical rules (for our purposes, only one is needed), which also state how to
combine the meanings. A grammatical sentence in the fragment is something that we can
prove is a sentence starting from our axioms and using our logical rules.

As the focus of this thesis is on *daw*, I abstract away from the internal composition of
basic sentences for simplification. Thus, a simple sentence like *Emily is from Rhode Island* I
take to be an axiom of the system. So, (1) is taken to be an axiom, which can be combined
with other axioms.

To see how we can combine (1) with other axioms, I introduce the English modal *maybe*,
and derive the sentence *Maybe Emily is from Rhode Island*. I take *maybe* syntactically to
be a sentential modifier. That is, it combines with a sentence to form a new sentence. This
is stated in LG by giving it a tecto category of S\( \rightarrow \)S. The \( \rightarrow \) means that *maybe* combines
with an item of the category to the left of the \( \rightarrow \) to create an item with the category to
the right of the \( \rightarrow \). For the pheno, as *maybe* combines with a sentence, the pheno of *maybe*
must modify the string of the input sentence to create a new string. So, the pheno of *maybe*
is a function from strings to strings, in particular: \( \lambda s. \text{maybe } s \). This function takes in an
input string \( s \), and modifies it by placing *maybe* at the front. For the semantics, I assume
*maybe* is a weak epistemic modal, and so has semantics \( \lambda p. \diamond _{ep} p \). This operator is defined
as:

(2) **Epistemic modal possibility operator:**

\[ [\diamond_{ep}p]^w \] is defined iff there is an epistemic modal base \( f \). If defined, \( [\diamond_{ep}p]^w = 1 \) iff 

\[ \exists w' \in \cap f(w), \ p \text{ is true at } w' \].

We can now represent the lexical entry for *maybe* with the following axiom:

(3) **Lexical entry for maybe** (static):

\[ \lambda s.\text{maybe } s; \S \to \S; \lambda p. \diamond_{ep} p \]

We now have the two pieces needed to derive the sentence *maybe Emily is from Rhode Island*, but we do not have a way to combine them. For this, we need a logical rule: a rule that allows us to take two items that have been proven in the system—either because they are axioms or because they have been derived previously—and derive a new item from these two. Only one rule will be needed for our purposes here, that of \( \to \)-elimination. It states that if we have one item of tecto category A, and a second item that can combine with an item of category A to yield an item of category B, these can combine to yield an item of category B. The pheno states that the item with category A has some string of words \( s \) as its pheno, and that the item of category A\( \to \)B must have as its pheno a function \( f \) that somehow takes the string \( s \) to make a new string \( f(s) \). The semantics states that the semantics of item of category A\( \to \)B is a function, which is applied to the semantics of the item of category A. This captures that items with “\( \to \)" in their tecto have, as their semantics, a function. The name \( \to \)-elimination is due to having eliminated the “\( \to \)" in the tecto A\( \to \)B.
We can use this rule to combine `maybe` and *Emily is from Rhode Island*, as the latter is a sentence, and the former can combine with a sentence. The derivation is:

\[
\begin{align*}
\lambda s. & \text{maybe } s; S -\circ S; \lambda p. \circ_{ep} p & \text{Emily is from Rhode Island}; S; r \\
\end{align*}
\]

Above the line, we have the two items we are combining, with the result of the combination below the line. As `maybe` has the tecto category with a \(-\circ\), it occurs on the left. After `maybe` combines with a sentence, the result is a sentence, so the tecto of the result is S. In the pheno, `maybe` is concatenated to the front of the sentence, so the result has pheno `maybe Emily is from Rhode Island`. In the semantics, the modal operator takes the proposition denoted by the sentence as its scope. This shows how to derive a sentence in LG with a static semantics. To see how the multistratal dynamic semantics of Kierstead and Martin (2012) works, I next redo the example with a dynamic semantics.

### 5.2 Dynamic (unistratal) semantics

For a dynamic semantics, the meaning of a sentence is represented in terms of how it updates an input context. Thus, the meaning of a sentence is a function from an input context to an output context. To start simple, I assume that a context is a single proposition, so the meaning of a sentence is a function from propositions to propositions.

The framework of Kierstead and Martin (2012) seeks to model the difference between proposing to update a context with a certain content, and the content being accepted. The meaning of a sentence in the framework just includes the new content that would update the input context, and does not represent what the updated context would look like. The acceptance of an update is done in a separate step, but that will not be relevant.
for our purposes here. For a sentence like *Emily is from Rhode Island*, this means that the semantics cannot be a proposition any longer, but instead it must be a function from an input proposition (the context), yielding a proposition representing the new content introduced by the sentence. The semantics for *Emily is from Rhode Island* is then \( \lambda p.r \), as \( r \) is the new content from the sentence.

(6) **Axiom for *Emily is from Rhode Island* in LG (dynamic):**

\[
\begin{align*}
\text{Emily is from Rhode Island}; & \quad S; \quad \lambda p. r
\end{align*}
\]

The semantics for *maybe* must also be changed, as its semantics must be a function from sentence meaning to sentence meaning, and we have changed the type of a sentence meaning. So, *maybe* must take in an input function from propositions to propositions, and output a function from propositions to propositions. As a modal, *maybe* must modalize the new content updating the context. So, we give *maybe* the semantics \( \lambda f \lambda p. \diamond_{ep}(f(p)) \). Here \( f \) is a function from propositions to propositions (the input sentence meaning), and \( p \) a proposition. The proposition \( f(p) \) is the new content that the sentence with meaning \( f \) would update context \( p \) with. *Maybe* modalizes this proposition. The new axiom for *maybe* becomes:

(7) **Lexical entry for *maybe* (dynamic):**

\[
\begin{align*}
\lambda s.\text{maybe } s; S; & \quad S; \quad \lambda f \lambda p. \diamond_{ep}(f(p))
\end{align*}
\]

Note that even though we now have a dynamic system, the same static modal operator is used. This is fine because the system still uses propositions. Since \( f(p) \) is a proposition, the modal operator can modify it. As the result \( \diamond_{ep}(f(p)) \) is also a proposition, it can be used in the system where a proposition is needed. With the two axioms redone in a dynamic system, we can now redo the derivation with the new axioms:
Having now done a dynamic derivation, I do a dynamic multistratal derivation. Kierstead and Martin (2012) introduce two strata to handle projective content. To show how the strata handle projective content, I will consider a different example sentence, one with projective content: *Emily, a chef, is from Rhode Island.*

5.3 Dynamic multistratal semantics

Kierstead and Martin (2012) propose a framework that captures non-presuppositional projective content, anaphora, and their interaction. As the current thesis does not deal with anaphora, however, I will focus just on the machinery for handling non-presuppositional projective content. Also, since the thesis does not handle presuppositions, I will call non-presuppositional projective content just “projective content.”

Unlike the dynamic semantics just shown, the framework is multistratal. So instead of contexts being propositions, now contexts are pairs of propositions. Thus, the meaning of an sentence is a function from a pair of propositions to a pair of propositions. The two strata are used to distinguish projective content from the other content of the sentence (the non-projective content). For example, let us take the English sentence *Emily, a chef, is from Rhode Island*, example (1-a) from Chapter 1. Let us say this has projective content that $c = \text{Emily is a chef}$, and other content $r = \text{Emily is from Rhode Island}$. These are

---

1. The framework builds on the previous analysis of one kind of non-presuppositional projective content, conventional implicatures (CIs), by Potts (2005). Potts (2005) gives an analysis of CIs where there are two dimensions of content, one containing the CI content, and one containing the non-CI content. The particular way Potts (2005) separates the two kinds of content has been shown to have problems with anaphora between the two (Amaral et al., 2007). Kierstead and Martin (2012) attempt to retain the multidimensionality of Potts (2005), while fixing the problems with anaphora. To emphasize that the two dimensions are not the same as Potts’, they are not called dimensions, but instead strata. Thus, Kierstead and Martin (2012) is a multistratal analysis.

2. Presuppositional projective content is treated as a constraint on the input context. As I have argued that *daw* has no presuppositional content, the handling of presuppositions in the framework will not be discussed.
the two new contents that (1-a) would update an input context with. However, we need to distinguish the projective content from the other content, so that they can be treated differently by embedding operators. This is what the strata are used for: the projective content is placed in the first stratum, and the other content is placed in the second stratum. Our semantics for (1-a) is then $\lambda(p, p').\langle c, r \rangle$. Since contexts are now pairs of propositions, the input context is a pair of propositions, $\langle p, p' \rangle$. The output context contains the new content that the sentence would update with. This is the pair $\langle c, r \rangle$, as the projective content is that Emily is a chef, and the other content is that Emily is from Rhode Island. As a whole then, the axiom for (1-a) is:

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(9) **Axiom for Emily, a chef, is from Rhode Island in LG (dynamic multistratal):**

Emily, a chef, is from Rhode Island; S; $\lambda(p, p').\langle c, r \rangle$

We have a lexical entry for *maybe*, but not in a dynamic multistratal form. Thus, we must again change the semantics. As a sentence modifier, the semantics of *maybe* must be a function from a sentence meaning to a sentence meaning. Thus, it is a function that takes in a function-from-pairs-of-propositions-to-pairs-of-propositions, and yields a function-from-pairs-of-propositions-to-pairs-of-propositions. So if $f$ is a function from pairs of propositions to pairs of propositions, then the meaning of *maybe* would be $\lambda f \lambda(p, p').\langle q, q' \rangle$, where we must still determine what $q$ and $q'$ should be. If we consider the meaning of (1-a), we would want the modal to not have the projective content, $c$, in its scope, but only the content $r$. So if *maybe* combines with (1-a), we want $\langle q, q' \rangle = \langle c, \diamond_{ep} r \rangle$. There is one formal complication: the meaning of (1-a) is a function from a pair of propositions to a pair of propositions, not just a pair of propositions. This does mean that if we apply the functional meaning of (1-a) to a pair of propositions, we get a pair of propositions. So if we combine *maybe* with (1-a), then the meaning of (1-a) will be $f$, and $f(\langle p, p' \rangle) = \langle c, r \rangle$. We only want the modal to take the second element of the pair $\langle c, r \rangle$ in its scope, so we need some way to separate these
two contents. For this I introduce the following pair of projection functions:

\[(10) \quad \text{Projection functions:} \]
\[\pi_1(\langle x, y \rangle) = x \]
\[\pi_2(\langle x, y \rangle) = y \]

So, \(\pi_1(\langle c, r \rangle) = c\), and \(\pi_2(\langle c, r \rangle) = r\). In the general case, we want the modal to take scope over the second proposition in the pair, but not the first. So, we want the final pair of propositions, temporarily named \(\langle q, q' \rangle\) above, to be \(\langle \pi_1(f(\langle p, p' \rangle)), \diamond \circ \pi_2(f(\langle p, p' \rangle)) \rangle\). This makes the new entry for \textit{maybe}:

\[(11) \quad \text{Lexical entry for} \ \textit{maybe} \ (\text{dynamic multistratal}): \]
\[\lambda s. \text{maybe } s;S \circ S; \lambda f \lambda (p, p'). \langle \pi_1(f(\langle p, p' \rangle)), \diamond \circ \pi_2(f(\langle p, p' \rangle)) \rangle\]

With these two entries, we can now do a derivation where \textit{maybe} combines with (1-a) from Chapter 1, which happens to be (1-b) from Chapter 1:
\[ \lambda s.\text{maybe } s; S; \lambda f \lambda \langle p, p' \rangle. \langle \pi_1(f(\langle p, p' \rangle)), \circ_{\text{ep}}(\pi_2(f(\langle p, p' \rangle))) \rangle \]

Emily, a chef, is from Rhode Island; $\lambda \langle p, p' \rangle. \langle c, r \rangle$

Maybe Emily, a chef, is from Rhode Island; $\lambda \langle p, p' \rangle. \langle c, \circ_{\text{ep}} r \rangle \rightarrow E$
As desired, the two dimensions allow the modal to not target the projective content \( c \), and only the other content \( r \). This is the only derivation possible with the two axioms given, so this analysis predicts that the content associated with the appositive *a chef* will always project. Were we to encounter a second reading of (1-b) where the content \( c \) was in the scope of the modal (and it would then not project), this could not be covered by the derivation above. We would need a second axiom for (1-b) where the content \( c \) was placed in the second stratum, since we did not want it to project.

Having now seen the full complexity of the system with English examples, I turn to Tagalog. I start off with the simple Tagalog sentence *Tumahol si Zelda* ‘Zelda barked.’ As *baka* ‘maybe’ is a little simpler than *daw*, I introduce it next. Then I show *daw* at the root level, followed by the two readings where *daw* was embedded under *baka* ‘maybe’: the narrow scope reading (\( \text{MAYBE(DAW}(p)) \)), and the projective reading (\( \text{DAW}(p) \land \text{MAYBE}(p) \)). I finally consider the last reading: the wide scope reading (\( \text{DAW(MAYBE}(p)) \)).

### 5.4 Semantics of a simple Tagalog sentence

To start, let us consider the meaning of the sentence \( S = \text{tumahol si Zelda} \) ‘Zelda barked.’ Let us give a name to the proposition that Zelda barked; call it \( b \). \( S \) has no projective content, but has non-projective content \( b \). At a high level then, the meaning of \( S \) is a function that takes an input context and proposes to update it with \( b \). But we also need to have some sort of content in the first stratum to satisfy the requirements of the framework that we use pairs of propositions. Formally, the meaning of \( S \) in the system is: \( \lambda(p, p'), \langle T, b \rangle \), where \( T \) is the name of a tautological proposition. That is, the meaning of \( S \) takes an input context, represented as a pair of propositions \( \langle p, p' \rangle \) and proposes to update them with a tautology \( T \) and \( b \), respectively. There is no null proposition to set as the projective content, but updating a context with a tautology does not change it truth-conditionally. Thus, the tautology \( T \) actually represents that there is no new projective content to add. Any time the
projective stratum is just the tautology $T$, it represents that there is no projective content.

We can give the axiom for the sentence as:

(13) **Axiom for basic sentence:**

$tumahol si Zelda; S; \lambda(p,p').(T,b)$

As I treat simple sentences as axioms, no other derivation is needed. I now move on to the modal *baka* ‘maybe’.

**5.5 The modal *baka* ‘maybe’**

I analyze *baka* ‘maybe’ as a sentential modifier. Thus it has tecto $S \rightarrow S$. As *baka* occurs sentence-initially, in the pheno, it must take a sentential string, and concatenate ‘baka’ to the front of it. Semantically, *baka* ‘maybe’ must take the meaning of a sentence (the function $f$) and a context as arguments. As *baka* ‘maybe’ is an epistemic possibility modal, it uses the epistemic possibility modal $\diamond_{ep}$. However, this operator should not affect the projective content, as we want that content to project out of the operator. So, we only have $\diamond_{ep}$ take the projective content in its scope. As before, $\pi_2$ isolates the non-projective content, so $\diamond_{ep}$ scopes over only the non-projective content of $f$, which is $\pi_2(f((p,p')))$. The modal proposition $\diamond_{ep}\pi_2(f((p,p'))) becomes the non-projective content of the *baka*-sentential-clause. As *baka* ‘maybe’ does not add any projective content, the projective content is just that of $f$, $\pi_1(f((p,p')))$. Thus, the projective content of the embedded sentence, which is $\pi_1(f((p,p')))$, projects, and so is unaffected by $\diamond_{ep}$. This shows the two strata in action: the separation of the projective and non-projective content allows the modal operator to just target the non-projective content.
(14) **Lexical entry for baka ‘maybe’:**

\[ \lambda s. baka \ s; S \to S; \lambda f \lambda (p, p'). (\pi_1(f(⟨p, p'⟩)), \diamond_{ep} \pi_2(f(⟨p, p'⟩))) \]

Now that we have an entry for baka ‘maybe’, we can derive the meaning of baka ‘maybe’ applied to our basic sentence \( S = \text{tumahol si Zelda ‘Zelda barked’} \). \( S \) has no projective content, and baka ‘maybe’ does not add any. So, the result has no projective content, and the first stratum is \( T \). The non-projective content of \( S \) is \( b \). Baka ‘maybe’ takes this as its scope, so the non-projective content is \( \diamond_{ep} b \).
$\lambda s.baka\ s;S;\circ\;S;\lambda f\lambda(p,p').(\pi_1(f((p,p'))),\circ_{ep}\pi_2(f((p,p'))))$ tumahol si Zelda;$S;\lambda(p,p').(T,b)$

$baka\ tumahol\ si\ Zelda;$S;\lambda(p,p').(T,\circ_{ep}b)$

$\rightarrow E$
Having seen baka ‘maybe’, we now turn to daw. As a preview, recall that with the English sentence Emily, a chef, is from Rhode Island, the content that Emily is a chef will always project since I only posited one axiom. As we have seen that the reportative content of daw does not always project, this means that more than one lexical entry will be needed. I start by just presenting one, the entry which will derive a narrow scope reading. After seeing an example with it at the root level and embedded under baka ‘maybe’, I will then introduce the second entry, which can derive the projective reading.

5.6 *Daw* (scopal) at the root level

I assume that daw has a modal component to its semantics. The reportative proposition states that there is a report of some proposition. I represent this kind of statement by saying that for a given report, the proposition in question is true for all worlds where the content of the report is true. In the formal system, I use the following reportative modal operator:

\[
\square_{\text{rpt}} p
\]

Even though the system is dynamic, it still uses propositions. So, similar to Tagalog baka ‘maybe’, entries or derivations can include a proposition like \(\square_{\text{rpt}} p\).

Kierstead and Martin (2012) propose that daw is polysemous, with two entries. One entry is used to capture the narrow scope reading, and so I call it *scopal daw*. I give the definition, then a general explanation of the definition, and finally an example with it applied to the simple Tagalog sentence. It is defined as follows:
Scopal entry for daw:

\( \lambda s.\text{put2nd}(\text{daw}, s); \text{S} \rightarrow \text{S}; \lambda f \lambda \langle p, p' \rangle. (\pi_1(f(\langle p, p' \rangle)), \square_{\text{prej}} \pi_2(f(\langle p, p' \rangle))) \)

Daw has tecto category S→S since it is a sentence modifier. In the pheno, I introduce the function put2nd, which I use to place daw as the second element in the input string s. In the semantics, daw must take as arguments the meaning of a sentence, and also a context. The argument \( f \) is for the meaning of the input sentence. The meaning of a sentence is a function from pairs of propositions to pairs of propositions. The input context is \( \langle p, p' \rangle \).

The expression \( f(\langle p, p' \rangle) \) is then also a pair of propositions, i.e., a context. It is the result of applying the meaning of the input sentence to the input context. When we apply the meaning of a sentence to a context, we get the content that the sentence would update the context with. Thus, \( f(\langle p, p' \rangle) \) is the content that the input sentence would update the input context with. I have called the content of the sentence that daw combines with the prejacent content, so \( f(\langle p, p' \rangle) \) is the prejacent content.

As with the derivation of Maybe Emily, a chef, is from Rhode Island, we need to separate the projective content and other content of \( f(\langle p, p' \rangle) \) so that the reportative modal operator only takes the non-projective content in its scope. \( \pi_1 \) and \( \pi_2 \) separate these two different types of contents. E.g., \( \pi_2(f(\langle p, p' \rangle)) \) is the new non-projective content of the prejacent content. The reportative proposition is the one that there was a report of, for which I use the reportative modal operator. For a narrow scope reading, we want the reportative proposition to not project, so it is placed in the second stratum. The projective part of the prejacent content is placed in the first stratum, as it needs to project.

Having seen the entry for scopal daw, I now apply it to the sentence Tumahol si Zelda ‘Zelda barked’:
(18)  \[ \lambda s.\text{put2nd}(\text{daw}, s); S \rightarrow S; \lambda \langle p, p' \rangle . \langle \pi_1(f(\langle p, p' \rangle)), \square_{\text{rpt}} \pi_2(f(\langle p, p' \rangle)) \rangle \quad \text{tumahol si Zelda}; S; \lambda \langle p, p' \rangle . \langle T, b \rangle \]

\[ \text{tumahol daw si Zelda}; S; \lambda \langle p, p' \rangle . \langle T, \square_{\text{rpt}} b \rangle \quad \rightarrow E \]
The result has *daw* placed directly after the predicate *tumahol* ‘barked’. It has no projective content, as the first stratum is $T$. The other content is that there was a report of *b*, that Zelda barked. Thus overall the content is that there was a report that Zelda barked. Next, I consider *baka* ‘maybe’ applied to the result of the above derivation, which gives the narrow scope reading when *daw* is syntactically embedded under *baka* ‘maybe’.

5.7 Narrow scope reading: MAYBE(DAW(p))

For the narrow scope reading, we apply *baka* ‘maybe’ to *tumahol daw si Zelda*, where scopal *daw* was used in the derivation. This derivation yields:
\[\lambda s.baka\ s;S \mapsto_S \lambda f\lambda p,p'.\langle \pi_1(f(p,p')),\diamond_\pi\pi_2(f(p,p'))\rangle \quad \text{tumahol daw si Zelda};S;\lambda p,p'.\langle T,\Box_{\text{rp}b}\rangle \]

\[
\text{baka tumahol daw si Zelda};S;\lambda p,p'.\langle T,\diamond_\pi\pi_2(\Box_{\text{rp}b})\rangle \quad \rightarrow E
\]
For the result, we have the correct pheno, *baka tumahol daw si Zelda*. This is because we started with the string *tumahol si Zelda*, added *daw* as the second word to get *tumahol daw si Zelda*, and then concatenated *baka* to finally yield *baka tumahol daw si Zelda*.

For the semantics, we have $\lambda\langle p,p'\rangle.\langle T,\circ_{ep}(\Box_{rpt} b)\rangle$. This has no projective content in the first stratum. This is because the original sentence has no projective content, and neither scopal *daw* nor *baka* ‘maybe’ adds any projective content. For the other content, we have $\circ_{ep}(\Box_{rpt} b)$, which gives us a narrow scope reading, as the reportative modal has narrow scope with respect to the epistemic. The non-projective content comes about by starting with the projective content of the simple sentence, which is $b$. Scopal *daw* applies next, and has non-projective content that $b$ was reported, i.e., $\Box_{rpt} b$. *Baka* ‘maybe’ has $\circ_{ep}$ scope over the non-projective content, $\Box_{rpt} b$, yielding $\circ_{ep}(\Box_{rpt} b)$. Thus, this derivation captures the narrow scope reading.

With only the one scopal entry for *daw*, this is the only reading available when *daw* is embedded under *baka* ‘maybe’. To obtain the projective reading, we need a second entry for *daw*. I present this entry next, and use it in derivations at the root level and under *baka* ‘maybe’.

### 5.8 *Daw* (projective) at the root level

Kierstead and Martin (2012) give the following entry for *daw* to capture the projective reading:

\[
\lambda s.\operatorname{put}2nd(daw, s); S \rightarrow S; \lambda f \lambda (p,p').\langle p, p' \rangle.\langle f((p,p')), \pi_1(f((p,p')))) \land \Box_{rpt} \pi_2(f((p,p'))), \pi_2(f((p,p'))) \rangle
\]

It is the same as scopal *daw*, except for the semantics. Since this entry must account for the reading where the reportative proposition projects, it is part of the first stratum. The
reportative proposition is conjoined with any projective content from the sentence that \textit{daw} combines with, $\pi_1(f(\langle p, p' \rangle))$. Empirically, for the projective reading, the content in the scope of operator is just the prejacent proposition. Thus, the non-projective content in the second stratum is $\pi_2(f(\langle p, p' \rangle))$. We can see an example of a derivation using projective \textit{daw} if we apply it to the sentence \textit{tumahol si Zelda} ‘Zelda barked’.
(21) \[ \lambda s. \text{put2nd}(daw, s); S \rightarrow S; \lambda f \lambda \langle p, p' \rangle. (\pi_1(f(\langle p, p' \rangle)) \land \square_{\text{rep}} \pi_2(f(\langle p, p' \rangle)), \pi_2(f(\langle p, p' \rangle))) \quad \text{tumahol si Zelda}; S; \lambda \langle p, p' \rangle. (T, b) \]

\[ \text{tumahol daw si Zelda}; S; \lambda \langle p, p' \rangle. (\square_{\text{rep}} b, b) \]
The basic sentence has no projective content. However, projective $daw$ adds the reportative proposition, $\Box_{\mu}b$, as projective content, so it is in the first stratum. The other content with projective $daw$ is just the prejacent proposition, which is $b$ here. So, the second stratum contains the new non-projective content $b$. Thus, the new content for the derivation with projective $daw$ is both the reportative and prejacent propositions. This corresponds to a reading where the speaker has heard a report of the prejacent proposition, but also believes the prejacent proposition to be true. As we have seen in example (15) from Chapter 3 that one can endorse the prejacent, this derivation also matches a reading that we find empirically. I now consider projective $daw$ syntactically embedded under $baka$ ‘maybe’.

5.9 Projective reading: $\text{MAYBE}(p) \land \text{DAW}(p)$

To get a reading where the evidential content of $daw$ projects, we need to use projective $daw$, and have $daw$ embedded under $baka$ ‘maybe’. So, we need to take our simple sentence, $\text{tumahol si Zelda}$ ‘Zelda barked’, and apply projective $daw$ to it first. This has already been done; this is the result of derivation (21). So, we need to apply $baka$ ‘maybe’ to the result of the derivation (21).
\[
\lambda s. baka s; S \rightarrow S; \lambda f \lambda (p, p'). (\pi_1(f((p, p'))), \circ_{ep} \pi_2(f((p, p')))) \quad \text{tumahol daw si Zelda; } S; \lambda (p, p'). (\square_{rep} b, b)
\]

\[
\overset{E}{\longrightarrow}
\]

\[
baka \text{ tumahol daw si Zelda; } S; \lambda (p, p'). (\square_{rep} b, \circ_{ep} b)
\]
For the result, we have the correct pheno, *baka tumahol daw si Zelda*. This is because we started with the string *tumahol si Zelda*, added *daw* as the second word to get *tumahol daw si Zelda*, and then concatenated *baka* to finally yield *baka tumahol daw si Zelda*.

For the semantics, we have the reportative proposition $\square_{rpt} b$ as projective content. This comes about because projective *daw* takes the reportative proposition, and adds it to the first stratum as projective content. *Baka* ‘maybe’ does not affect the projective content in the first stratum, so when *baka* ‘maybe’ is applied, the projective content $\square_{rpt} b$ is passed through, and not in the scope of the modal $\Diamond_{ep}$. This is because for *baka* ‘maybe’, $\Diamond_{ep}$ only targets the second stratum of non-projective content. For non-projective content, we have $\Diamond_{ep} b$. This comes about because projective *daw* has $\Diamond_{ep}$ scope over the non-projective content $b$, yielding $\Diamond_{ep} b$. Thus, the new content is two propositions, $\square_{rpt} b$ and $\Diamond_{ep} b$. This aligns with the projective reading, where two propositions are implied: that it was reported that Zelda barked and Zelda might have barked. Thus, this derivation captures the projective reading.

We have now captured the readings of *daw* at the root level, and when it is embedded under *baka* ‘maybe’. I now consider the last reading, the wide scope reading (DAW(MAYBE(p))). I first consider this reading when *daw* cliticizes to *baka* ‘maybe’. Here I assume that *daw* syntactically embeds *baka* ‘maybe’, due to the position of *daw*. I then consider the wide scope reading when *daw* cliticizes to the embedded predicate. As *daw* does not cliticize to *baka* ‘maybe’ in this case, I assume that *daw* syntactically combines with an embedded sentence. Thus, *baka* ‘maybe’ syntactically embeds *daw*, even though *daw* has semantic wide scope over *baka* ‘maybe’. I explain in the latter case why neither of the entries for *daw* can capture the wide scope reading, and introduce a third entry that will.
5.10 Wide scope DAW(MAYBE(p)): *daw* cliticizing to *baka* ‘maybe’

The pheno for *daw* is that it takes an input string, and places *daw* as the second word of that string. So, if we have a pheno\(^3\) *baka daw tumahol si Zelda*, this must have been formed by starting with the string *baka tumahol si Zelda*, and adding *daw* as the second word of it. So, we need to start with a sentence that has pheno *baka tumahol si Zelda*. The result of the derivation in (15) has such a pheno. Thus, to get *daw* to cliticize to *baka* ‘maybe’, we start with the result of (15), and apply one of the entries for *daw* to it. I start by applying scopal *daw* to the result of the derivation in (15).

---

\(^3\)I do not gloss phenos or strings of words, as a string or a pheno on its own has no meaning. As part of a derivation, a pheno is associated with a meaning, but in the abstract a pheno could be associated with multiple meanings, and so it is not possible to give a pheno a single gloss in general.
\[
\begin{align*}
(23) & \quad \lambda s. \text{put2nd}(daw, s); S \rightarrow S; \lambda f \langle p, p' \rangle. \langle \pi_1(f((p, p'))), \Box_{\text{rpt}} \pi_2(f((p, p'))) \rangle \quad \text{baka tumahol si Zelda; } S; \lambda (p, p'). (T, \diamond_{\text{ep}} b) \\
& \quad \quad \quad \text{baka daw tumahol si Zelda; } S; \lambda (p, p'). (T, \Box_{\text{rpt}} (\diamond_{\text{ep}} b)) \quad \quad \quad \rightarrow E
\end{align*}
\]
This derivation is in accord with the assumption that \textit{daw} syntactically embeds \textit{baka} ‘maybe’, as \textit{daw} syntactically combines with a sentence that contains \textit{baka} ‘maybe’. The result of the derivation has the correct pheno, \textit{baka daw tumahol si Zelda}. For the meaning, we have \textit{daw} scoping over \textit{baka} ‘maybe’. This yields a wide scope reading: DAW(MAYBE(p)). This is because the result of (15) has non-projective content $\Diamond_{eb}$. Scopal \textit{daw} applies the reportative modal $\Box_{rpt}$ to this proposition. Neither the simple sentence \textit{tumahol si Zelda} ‘Zelda barked’, nor \textit{baka} ‘maybe’, nor scopal \textit{daw} add any projective content, so the first stratum has just $T$. So, the framework correctly predicts that a wide scope reading is possible when \textit{daw} cliticizes to \textit{baka} ‘maybe’.

We also must consider a derivation when applying projective \textit{daw} to the result of (15). This will have the same pheno, \textit{baka daw tumahol si Zelda}. However, the meaning will have the projective \textit{daw} applied to the semantics of \textit{baka tumahol si Zelda} ‘maybe Zelda barked’. This has non-projective content $\Diamond_{eb}$. Projective \textit{daw} applies $\Box_{rpt}$ to this, and adds it as projective content, so we have projective content in the first stratum: $\Box_{rpt}(\Diamond_{eb})$. The non-projective content in the second stratum is just the prejacent proposition $\Diamond_{eb}$. This is again a wide scope reading, as the resulting semantics contains the proposition $\Box_{rpt}(\Diamond_{eb})$. There is also the prejacent $\Diamond_{eb}$. This is similar to (21)—the speaker has heard a report of the prejacent $\Diamond_{eb}$, and also believes the prejacent is true. As it is possible to endorse the prejacent with \textit{daw}, this is an acceptable reading.
(24) \( \lambda s.\text{put2nd}(\text{daw}, s); S; \rightarrow S; \lambda f \lambda (p, p').(\pi_1(f((p, p'))) \land \Box_{\text{rpt}}\pi_2(f((p, p'))), \pi_2(f((p, p')))) \quad \text{baka tumahol si Zelda;} \lambda (p, p').(T, \diamond_{\text{ep}} b) \)

\( \rightarrow E \)

\( \text{baka daw tumahol si Zelda;} \lambda (p, p').(\Box_{\text{rpt}}(\diamond_{\text{ep}} b), \diamond_{\text{ep}} b) \)
These are the only two derivations that have a pheno of *baka daw tumahol si Zelda*, where *daw* cliticizes to *baka* ‘maybe’, and both are wide scope readings. Thus, the framework correctly predicts that only a wide scope reading is possible when *daw* cliticizes to *baka* ‘maybe’. I now turn to when *daw* cliticizes not to *baka* ‘maybe’, but to the embedded predicate.

5.11 Wide scope DAW(MAYBE(p)): *daw* cliticizes to the embedded predicate

Given the machinery so far, it is not yet possible to derive the wide scope reading when *daw* does not cliticize to *baka* ‘maybe’. I will first explain the problem with the wide scope reading, then give a new entry for *daw* that allows us to derive the wide scope reading, and then give that derivation.

For a wide scope reading with *daw*, we should use scopal *daw*, as a wide scope reading involves no projection. For *daw* to cliticize to *baka* ‘maybe’, we must apply *daw* before *baka* ‘maybe’. So we apply *daw* to (13). We have already done this however: this is (19), which did not give a wide scope reading. The problem is that we want *daw* to have widest scope, so we want it to apply last. However, we want *daw* not to cliticize to *baka* ‘maybe’: *baka* ‘maybe’ will be the first word, and placing *daw* second will put it directly after *baka* ‘maybe’. Thus, right now the framework incorrectly predicts that a wide scope reading can only be achieved by placing *daw* directly after *baka* ‘maybe’.

To solve this, we create a new entry for *daw*, which I call raised *daw*. The entry is given generally, but I first describe roughly how it works with *baka* ‘maybe’. Raised *daw* takes both a sentence and *baka* ‘maybe’ as arguments. In the tecto, *daw* combines first with the sentence, and then the result of that combination combines with *baka* ‘maybe’. Thus, Kroeger’s generalization is still followed, in that *daw* cliticizes to the first word of the sentence that it syntactically combines with. For the pheno, there are two steps. First,
daw is placed second in the sentence. Next, baka ‘maybe’ is concatenated to the beginning of the sentence. For the semantics however, daw has scope over baka ‘maybe’, so we still get a wide scope reading.

For the general entry for raised daw then, it takes in a sentence (tecto S), and a sentence modifier (tecto S→S), so raised daw has tecto S→(S→S→S). For the pheno, it takes two arguments: a string s that represents the string pheno of the sentence, and a function f, as the sentence modifier will have a function for a pheno. It places daw as the second word in the string s before passing that result to f. In this way, daw will be the second word of the original sentence.

The semantics of raised daw has three arguments. The first is a function f, representing the meaning of the sentential argument. The second is a function g, representing the meaning of the sentential modifier. The third argument is a context. As g is the semantics of a sentence modifier, it is a function that can take the meaning of a sentence as argument. Thus, g(f) represents the meaning of the sentential argument, modified by the sentential modifier argument. So, to give daw wide scope, we essentially treat g(f) as a sentential meaning and then mimic the semantics of scopal daw. As we apply g, the meaning of the sentential modifier, to f before daw, we still give daw wide scope.

(25) Raised entry for daw:

\[ \lambda s f. f(\text{put2nd}(\text{daw}, s)); S\rightarrow(S\rightarrow S)\rightarrow S; \lambda f \lambda g \lambda \langle p, p' \rangle. \]

\[ \langle \pi_1(g(f)(\langle p, p' \rangle)), \square_{\text{rpt}} \pi_2(g(f)(\langle p, p' \rangle)) \rangle \]

Now that we have seen this new lexical entry in the abstract, we can see it applied to baka ‘maybe’ and tumahol si Zelda ‘Zelda barked’. For readability, I do this in two separate derivations. First I apply raised daw to tumahol si Zelda ‘Zelda barked’. Note how already daw is placed as the second word of the pheno, so it is after tumahol ‘barked’ as required. Also note the tecto of the result is (S→S)→S, so it still needs to combine with a sentential
modifier (e.g., baka ‘maybe’).
\( (26) \quad \lambda f. f(\text{put2nd}(\text{daw}, s)); S \to (S \to S) \to S; \lambda f. \lambda g. \lambda (p, p'). \langle \pi_1(g(f)(\langle p, p' \rangle)), \Box_{\text{rpt}} \pi_2(g(f)(\langle p, p' \rangle)) \rangle \quad \text{tumahol si Zelda}; S; \lambda (p, p'). (T, b) \)

\[ \lambda f. f(\text{tumahol daw si Zelda}); (S \to S) \to S; \lambda g. \lambda (p, p'). \langle \pi_1(g(\lambda (p, p'). (T, b))(\langle p, p' \rangle)), \Box_{\text{rpt}} \pi_2(g(\lambda (p, p'). (T, b))(\langle p, p' \rangle)) \rangle \to E \]
After applying raised *daw* to *tumahol si Zelda* ‘Zelda barked’, we take the result and apply it to *baka* ‘maybe’. Due to the extreme width of this derivation, I break the derivation into two: I do one derivation excluding the semantics, and I immediately redo it excluding the pheno. These should be understood as a single derivation though.
(27) \[\frac{\lambda f. f(tumahol daw si Zelda); (S\rightarrow S) \rightarrow S \quad \lambda s. \text{baka } s; S\rightarrow S}{\text{baka tumahol daw si Zelda}; S \rightarrow E}\]

(28) \[\frac{(S\rightarrow S) \rightarrow S: \lambda g \lambda (p, p'). \langle \pi_1 (g(\lambda (p, p'). \langle T, b \rangle)), (p, p') \rangle, \square_{\text{rpt}} \pi_2 (g(\lambda (p, p'). \langle T, b \rangle), (p, p'))}{S: \lambda (p, p'). \langle T, \square_{\text{rpt}} (\circ_{\text{cp}} b) \rangle \rightarrow E}\]
For the pheno, we simply concatenate baka onto the pheno tumahol daw si Zelda, yielding baka tumahol daw si Zelda, where daw does not cliticize to baka ‘maybe’, as required. The semantics is equivalent to that of (19), so daw still has wide scope. Thus, we can now capture the reading where daw cliticizes to the embedded predicate, but still has wide scope over baka ‘maybe’.

5.12 Summary

In this chapter I developed a dynamic, multistratal framework to analyze daw, building on the work of Kierstead and Martin (2012). I showed how the analysis correctly predicts that daw can syntactically embed baka ‘maybe’, to give a wide scope reading, and that this is the only possible reading when daw syntactically embeds baka ‘maybe’. I also showed how to capture the wide scope reading where baka ‘maybe’ syntactically embeds daw, but daw still has semantic scope over baka ‘maybe’.

The analysis also correctly predicts that daw can be embedded under baka ‘maybe’, and in this case daw does not directly follow baka ‘maybe’, but is after the embedded predicate. With this syntax, in addition to the wide scope reading, two other readings are possible: one where daw takes narrow scope, and one where the reportative proposition projects. As such, the analysis is able to capture what positions daw can occur in, and what readings are possible for those positions.
Chapter 6

Conclusion

This thesis has considered the behavior of the Tagalog reportative evidential *daw*, at the root level, and under a variety of embeddings. When *daw* embeds an operator, *daw* cliticizes to the operator, and only one reading is possible, where *daw* takes wide scope over the embedding operator. When *daw* is embedded under an operator, *daw* cliticizes to the embedded predicate, and three readings are possible, one where *daw* takes wide scope over the embedding operator, one where *daw* takes narrow scope under the embedding operator, and one where the reportative proposition associated with *daw* projects. Previous research on evidentials was considered for a range of languages, but no other language gave clear evidence for projection of evidential content. Thus, the data on *daw* expand our knowledge of what kinds of items are associated with projective content.

I argued that the behavior of *daw* could not be adequately captured by previous accounts of evidentials, including speech act analyses (Faller, 2002), presuppositional analyses (Schwager, 2010) or modal analyses (Matthewson et al., 2007; McCready and Ogata, 2007). I gave an analysis of *daw* at the root level, when *daw* embeds the modal *baka* ‘maybe’, and when *daw* is embedded by *baka* ‘maybe’, utilizing the multistratal analysis of Kierstead and Martin (2012).

The original fieldwork data presented shows that there is an evidential associated with projective content. I have argued in Chapter 4 that there are important differences between
the projective evidential content of *daw* and other kinds of projective contents, e.g., that there exists a referent for the pronoun *she*.

Tonhauser et al. (2013) investigate the taxonomy of projective contents, and propose four classes based on the two properties of a content possibly being subject to a Strong Contextual Felicity constraint (or not), and giving rise to Obligatory Local Effect (or not). With two binary options for each of these properties, we have four classes. A content is subject to a Strong Contextual Felicity constraint if “it can be used felicitously only if some implication associated with the trigger is established in the utterance context,” (Tonhauser et al., 2013, 67). A content gives rise to Obligatory Local Effect if “it is necessarily part of the content that serves as the operator’s semantic scope,” (Tonhauser et al., 2013, 67). Since the reportative proposition of *daw* can be new information, *daw* can be used felicitously even when the reportative proposition is not in prior context, so the reportative proposition is not subject to a Strong Contextual Felicity constraint. For the projective reading, the reportative proposition was not part of the operator’s semantic scope. Thus, the reportative proposition does not give rise to Obligatory Local Effect. Since the reportative proposition associated with *daw* exhibits neither of the two properties, it falls in class B of the taxonomy of Tonhauser et al. (2013). This class also includes conventional implicatures, e.g., the content associated with the appositive *a chef* as seen in (1) in Chapter 1.

The data where the reportative proposition of *daw* projects shows that not only do evidentials need to be represented in the taxonomy of projective content, but also that the reportative proposition of *daw* is most similar to conventional implicatures. More research on evidentials contents, particularly if others can be found that project, can allow us to see if evidential contents are represented in all classes, or only class B. This gives us a new way to examine the diversity in the class of evidential contents, as well as allowing us to identify similar non-evidential contents. The latter may help to guide us in our analysis of the semantics of evidentials. Thus, the study of *daw* increases our knowledge of the space of projective and evidential content.
Chapter 7

References


